Emerging Trends, Challenges and Innovations
Community Based Natural Resource Management (CBNRM) in Cambodia

Learning Symposia and the Development of Selected Papers

CBNRM Learning Institute
Volume II - 2009
The views expressed in the following papers are those of the authors and are not necessarily reflective of the supporting partners.

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CBNRM Learning Institute
2009
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List of supporters and contributors
MESSAGE FROM SAMDECH AKKA MOHA SENA PADEI TECHO HUN SEN

Prime Minister of the Royal Government of Cambodia

This is the second CBNRM volume, and again I am pleased to offer support for this initiative. The first volume, published in 2005, has proved to be a useful source of reference and this second publication shows how the community-based natural resource management approach has developed since then and the many successes it has already achieved.

This publication covers a broad spectrum of issues, trends, challenges and innovations which have emerged from the observations of researchers, practitioners, managers and decision-makers involved at various levels of implementation. It describes their experiences in the practice and application of the new government policies, strategies and legislation in natural resources, land tenure and governance. It also reflects the second term of the Rectangular Strategy of the Royal Government of Cambodia (RGC) proclaiming and recognizing the need for the continuing promotion of good governance and improving public sector performance in critical sectors of land and natural resource management.

Over the past decade, the RGC has enacted reforms and key legislation aimed at empowering and transferring authority to the lower levels of Cambodian society. The process of decentralization that is now occurring in Cambodia has far-reaching implications for natural resource management and for the livelihoods of communities living in and around forested areas, fish habitats and protected areas. Hundreds of thousands of Cambodian rural dwellers rely on these natural resources for their livelihoods – food, fuel, medicine, shelter and cash income. In addition, decentralized forest and fishery administration and the subsequent implementation of procedures for better governance, often encourage greater participation among people living at local levels.

Good governance is an important element in supporting this process, which is why this lies at the core of the RGC strategy. Indeed, if social and economic development as a whole is to be sustained in Cambodia, then improved governance is an imperative: hence the implementation of the decentralization and deconcentration reforms. I therefore commend the Community Based Natural Resource Management (CBNRM) Learning Institute for the work it
does in promoting CBNRM, good governance and sustainable livelihoods in Cambodia.

I would also like to congratulate the authors, researchers and development partners for their efforts in achieving this publication. It is a tribute to good teamwork – bringing together a wide range of CBNRM practitioners from Cambodia and the wider region - and a willingness to innovate and to share the lessons learnt from academic study and field research.

This publication demonstrates the integration of theories and concepts with field-based experiences, along with challenges and problem-solving in the local and community-based context, in implementing and adapting CBNRM approaches. It especially relates these to the important issues of equity and benefit sharing, gender, good governance, tenure and conflict, and participatory planning and management of Community Forestry and Community Fishery initiatives, Community-Based Ecotourism and Community Protected Areas.

In addition, I extend my appreciation to the peer reviewers, editors, supporters and development agencies, NGO partners, the Board of Directors and the team at the CBNRM Learning Institute: whose support and dedication have also played a vital role.

This collective effort makes a significant contribution to the implementation of the Rectangular Strategy Phase II and the series of policy reforms that are currently being implemented by the RGC with the ultimate aim of achieving Cambodia’s Millennium Development Goals. These include sustainable development, poverty alleviation, decentralization, good governance and environmentally-sound economic growth in our country.

I hope that there will be more of these initiatives to come in future. I am also optimistic that everyone involved will continue to endorse the importance of the CBNRM Learning Institute’s role as a national focus and facilitator for community-based natural resource management, and to provide the financial resources, technical assistance and general support to accomplish goals of environmental and social sustainability.

Samdech Decho Hun Sen
Prime Minister
Royal Government of Cambodia
Foreword from CBNRM Learning Institute

Hundreds of thousands of Cambodian rural families rely on natural resources for basic needs - food, fuel, medicines, shelter, and cash incomes. But as we all know, such natural resources are rapidly being degraded and disappearing, thus putting in danger all those who depend on them. We, as multi-disciplinary researchers and learners together, are finding ways to understand, document, slow down this process, and ensure the dependant groups sustain accessibility and security to those resources. We also need to learn how to manage and adapt to the new emerging issues and challenges.

Following the first publication “CBNRM Volume I” in 2005, this publication “CBNRM Volume II” reflects the benefits of building partnership and learning base process to work effectively together across sectors and disciplines from local to national levels. Through a process of facilitating learning symposiums to develop this publication, participants have compiled information, analyzed data, and sharing insights and experiences trends, challenges, innovations and approaches to community based natural resources management across the country.

Preparing this document has truly been a remarkable collective effort and collaboration with more than 70 dynamic authors and 30 peer review editors from various partner organizations, government as well as academic institutions. The groups of multi-disciplinary authors have brought different skills, strengths and their professionalism to contribute to the team work output. Key important donors such as IDRC, Danida, HBF, WorldFish Center/WAP, and AFSC have contributed both financial and technical support. The series of thematic symposiums were held with assistance and facilitation of our partners, namely, FAO and Siem Reap Forestry Administration Cantonment, WWF in Kratie, Provincial Department of Environment in Koh Kong, VSG and Akpivat Satey organization in Battambang, and CDRI at the national symposium.

CBNRM Learning Institute is pleased to play the important role of coordinating and facilitating all relevant stakeholders in sharing and learning of what the community researchers found to contribute to the development of research capacity in Cambodia.

Srey Marona
Executive Director
CBNRM Learning Institute
By: Heng Chinda, Keam Han and Toby Carson

CBNRM Volume II is the outcome of a series of learning symposiums, consultations, meetings and workshops, staged over a period of two years with local and international practitioners and academics working in the field of CBNRM. Their collaborative efforts have led to the development of 31 chapters with more than 70 authors and 30 peer reviewers (please see the author and peer reviewer profiles section for more details) who have shared their skills and experiences and dedicated their time and energy to this process.

The development of this publication focused on both the quality of the outcome and process of development. Therefore, a clear strategy and mechanism was designed and implemented by the coordination team of the CBNRM Learning Institute as shown in the figure below:
During January to April 2008, a call for papers was issued to gather interested authors and abstracts. More than 25 abstracts were selected and categorized according to the five themes: 1) participatory planning and local monitoring; 2) tenure and conflict: boundary access and rights 3) governance: decentralization policies and practices; 4) livelihoods: equity and benefit sharing; and 5) the future of CBNRM in Cambodia.

During April to September 2008, four thematic learning symposiums, as well as a national symposium, were organized as shown in the table below:

<table>
<thead>
<tr>
<th>Thematic Symposiums</th>
<th>Location</th>
<th>Local Supporting Partners</th>
<th>Date</th>
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<tbody>
<tr>
<td>Participatory planning and local monitoring</td>
<td>Siem Reap</td>
<td>FAO and Forest Cantonment</td>
<td>23-24 Apr</td>
</tr>
<tr>
<td>Tenure issues: boundaries, access and rights</td>
<td>Kratie</td>
<td>WWF</td>
<td>03-04 Jun</td>
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<tr>
<td>Governance: decentralization policies and practices</td>
<td>Koh Kong</td>
<td>Provincial Department of Environment</td>
<td>30 Jul-01 Aug</td>
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<td>Livelihoods: equity and benefit sharing</td>
<td>Battambang</td>
<td>VSG and Akpivat Satrey organization</td>
<td>12-15 Aug</td>
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<tr>
<td>Development Research Forum: emerging trends, challenges and innovations</td>
<td>Phnom Penh</td>
<td>Cambodian Development Research Institute</td>
<td>10-11 Sep</td>
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</table>

This series of symposiums was designed and facilitated by the coordination team of the CBNRM Learning Institute, and included study visits supported by local partners. Selected authors, resource people, staff of line departments and community representatives were invited to attend. The symposiums aimed to give selected authors an opportunity to present their findings, to gather feedback from resource people on their research methodology and analysis, to develop an understanding of the concepts and theories of each theme, to gain awareness of academic writing styles, and to build communication and networking with other stakeholders who participated. The symposiums also aimed to select the most appropriate papers for CBNRM Volume II, and all selected authors were invited to present their research findings at the national Development Research Forum (DRF) symposium held in Phnom Penh on 10th to 11th September, 2008.
After the completion of the series of learning symposium, 31 papers were selected by the coordination team for this volume of which 10 are discussion papers, and 21 are research papers. The successful authors were invited to develop their draft chapters in English following guidelines for research papers and discussion papers. The draft chapters were reviewed by national and international peer reviewers and discussed in the initial peer review feedback workshop. The authors were then invited to revise and submit the new version to the coordination team of the CBNRM Learning Institute for final editing, formatting and proofreading.

CBNRM Volume II is available in both Khmer and English, in hard copy and CDRom format. It has benefited from the support and contribution of more than 30 organizations and institutions as shown in the table below:

<table>
<thead>
<tr>
<th>Institutions support to the development of CBNRM Volume II Book</th>
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<td>3SPN</td>
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<td>Asia Foundation</td>
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This book serves as an important source of information about the development of CBNRM in Cambodia during the years from 2005 to 2009. Building on the first publication (CBNRM Volume I), this second book has been written in a more analytical fashion, endeavouring to link concepts and theories to practical implementation.
<table>
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<tr>
<th>Acronym</th>
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<tr>
<td>3SPN</td>
<td>Sesan, Sekong, and Srepok Rivers Protection Network</td>
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<td>ALEDABankPc</td>
<td>ACLEDA Bank Plc.</td>
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<td>ADB</td>
<td>Asian Development Bank</td>
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<td>ADI</td>
<td>Analyzing Development Issues</td>
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<td>ADRA</td>
<td>Adventist Development and Relief Agency</td>
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<td>AFSC</td>
<td>American Friends Service Committee</td>
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<td>Akaike Information Criterion</td>
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<td>Asian Institute of Technology</td>
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<td>AMK</td>
<td>Ankor Microfinance Kampuchea</td>
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<td>AND</td>
<td>Automotive Navigation Data</td>
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<td>APMAS</td>
<td>Andhra Pradesh Mahila Abhivriddhi Society</td>
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<td>ARCM</td>
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<td>ASC</td>
<td>Alternative Specific Constant</td>
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<td>ASDL</td>
<td>Asymmetrical Digital Subscriber Line</td>
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<td>ASEAN</td>
<td>Association of Southeast Asian Nations</td>
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<td>B2B</td>
<td>Business to Business</td>
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<td>B2C</td>
<td>Business to Customers</td>
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<td>BIC</td>
<td>Bayesian Information Criterion</td>
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<td>BNP</td>
<td>Bokor National Park</td>
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<td>C/S</td>
<td>Commune / Sangkat</td>
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<td>C2C</td>
<td>Citizens to Citizens</td>
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<td>CamCode</td>
<td>Cambodia Code</td>
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<td>CARD</td>
<td>Council for Agricultural and Rural Development</td>
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<td>CARERE</td>
<td>Cambodian Area Regeneration and Rehabilitation</td>
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<td>CBCBA</td>
<td>Community Based Cost Benefit Analysis</td>
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<td>CBEE</td>
<td>Community Based Enterprise</td>
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<td>CBET</td>
<td>Community Based Eco-Tourism</td>
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<td>CBMEM</td>
<td>Community Based Mangrove and Ecotourism Management</td>
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<td>CBMP&amp;EP</td>
<td>Community Based Mangrove Protection and Ecotourism Management</td>
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<td>CBNRM</td>
<td>Community Based Natural Resource Management</td>
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<td>CBO</td>
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<td>CC</td>
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<td>CDP</td>
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<td>CBFLMP</td>
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<td>CEMAT</td>
<td>European Conference of Ministers Responsible for Regional Planning,</td>
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<td>CF</td>
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<td>CFMP</td>
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<td>Organization for Economic Cooperation and Development</td>
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<td>Participatory Management of Coastal Resources</td>
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<td>Purchasing Power Parity</td>
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<td>Description</td>
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<td>PPWS</td>
<td>Phnom Prich Wildlife Sanctuary</td>
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<td>Provincial Spatial Data Infrastructure</td>
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<td>REDD</td>
<td>Reduced Emissions from Deforestation and Degradation</td>
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<td>RRI</td>
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<td>RSVPs</td>
<td>Répondez s'il vous plait</td>
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<td>Southeast Asian Fisheries Development Center</td>
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<td>Strengths, Weaknesses, Opportunities and Constraints</td>
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<td>Villagers Support Group</td>
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<td>Wetlands Alliance</td>
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<td>World Bank</td>
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EXECUTIVE SUMMARY

By: Heng Chinda¹, Keam Han² and Toby Carson³

Since the 1980s, many countries in the Asian region, including Cambodia, have seen a groundswell of support for community based approaches to natural resource management. This is based on the premise that sustainable resource management, underpinned by supportive government policies and legal frameworks, can lead to more secure livelihoods for impoverished and marginal rural communities.

For those interested in community based natural resource management (CBNRM) as a tool for good governance and sustainable livelihoods, it is timely to reflect critically on the extent to which this potential is being met. How equitably are benefits and costs being shared in CBNRM initiatives? To what extent are the voices of marginalized groups shaping the design and implementation of community based resource management systems at local, national, regional and global levels? How have local government policies and practices supported or strengthened community initiatives for sustainable resource use?

The CBNRM Book Volume II “Emerging Trends, Challenges and Innovations for CBNRM in Cambodia” responds directly to these questions and is a follow-up to the CBNRM Book Volume I “Community Based Natural Resource Management in Cambodia: Selected Papers on Concepts and Experience” published in 2005.

The CBNRM Book Volume II is divided into six sections (sections A-F) and 31 chapters.

Section A gives an overview of the past and present situation of CBNRM in Cambodia particularly the main emerging trends, challenges and innovations. Discussion in this chapter is based on the results of a series of learning symposiums and on a keynote address by H.E Dr. Hang Chuon Naron, Secretary General, Ministry Economy and Finance and Permanent Vice Chairman of Supreme National Economic Council at the National Symposium of the Development Research Forum held from 10th to 11th September, 2008.

¹ Heng Chinda, University liaison manager for the CBNRM Learning Institute
² Keam Han, CBNRM symposiums and volume II manager for the CBNRM Learning Institute
³ Toby Carson, Senior programme adviser for the CBNRM Learning Institute
Section B focuses on participatory planning and local monitoring, relating theory to practice. This section consists of six chapters. It starts by introducing contributors’ experiences of participatory planning and local monitoring in Southeast Asia in general, and in Cambodia in particular, then looks at practical experience and implementation in different provinces in Cambodia including Siem Reap, Kampong Thom and Ratanakiri.

Chapter one starts by discussing planning and monitoring in Community Forestry. This chapter identifies and discusses many issues surrounding forestry management. In addition, the authors use their own experience of working in the field of Community Forestry in various provinces in the Mekong region to discuss the premise that robust monitoring systems need to be devised in ways that correspond to lessons learnt. These must be integrated into revised plans.

Chapter two focuses on the challenges and opportunities of the participatory planning process for natural resource management in Cambodia. It provides a theoretical backdrop for the consideration of participatory planning practice in the Cambodian context and discusses the argument that some participatory processes are, in fact, externally motivated and directed: they seek superficial community input to satisfy the growing pressure from donors, and to comply with development trends, to apply participatory approaches.

Chapter three also focuses on participatory planning, but puts more focus on public participation: it maintains that the public can be most effectively involved in environmental policy and planning if key factors of understanding between stakeholders and proponents are understood and acted upon.

Chapter four outlines the experience of developing a Community Forestry Management Plan in Siem Reap province, particularly focusing on the challenges faced along the way and recommendations for future action.

Chapter five addresses the need for experience and research relating to the implementation of the inventory guidelines proposed in the Ministry of Agriculture, Forestry and Fisheries (MAFF), Prakas 219 on Community Forestry – Annex 4 on management planning. It features a case study that was conducted in Viel O Kdey Community Forestry in Kraya commune in Kampong Thom province.
Chapter six focuses on experience of the participatory monitoring and evaluation process initiated in Kampong Thom province. It details the methodology used and key outputs produced during the process and highlights the four main principles as well as criteria and indicators used for monitoring and evaluation.

Section C focuses on tenure and conflict: boundaries, access and rights. This section consists of five chapters. The discussion starts by providing an overview of the concept of tenure, moving on to a discussion about its implementation in different communities in Cambodia including Kampong Chhnang, Ratanakiri, Stung Treng, Sihanoukville and Battambang.

Chapter seven explores the conceptual terrain of tenure to bridge theory and practice. Two different paradigms of tenure are discussed; tenure as a legal institution and tenure as social relations.

Chapter eight discusses the efforts of the local community in forest protection in Krang Skear commune, Toek Phos district, Kampong Chhnang province. It analyses the methods used and the tenure framework supporting these efforts in considering the possibility of replicating them in a wider context.

Chapter nine focuses on negotiating tenure conflict between members of an indigenous community in Ratanakiri using the Participatory Action Research method. In addition, it provides in-depth detail of the land dispute between the three villages and explores possible reasons why the indigenous communities were unable to resolve the problem.

Chapter ten focuses on mobilizing people to resolve land disputes using the Participatory Action Research method in Stung Treng province. This chapter provides an in-depth analysis of the causes and consequences of a land dispute between the local community and a small local company.

Chapter 11 focuses on understanding the rights and responsibilities of two Community Fisheries in Cambodia - in Shihanoukville and Battambang provinces. It explores the perception and level of understanding of community members and stakeholders about their rights and responsibilities in Community Fishery management and protection.
Section D focuses on governance: decentralization policies and practices. It has seven chapters, starting with a discussion about different approaches to decentralized natural resource management, and continuing with a discussion about practical experiences on the ground in Ratanakiri, Stung Treng and Battambang provinces.

Chapter 12 discusses different approaches to governance of natural resource management in Cambodia such as state command and control, sub-national government, market based approaches, and self organized groups. In addition, it explores the concepts of entitlement, endowment, externalities collective action, property rights and subsidiarity.

Chapter 13 explores the lessons for improving the decentralized natural resource management planning process presented by three case studies. This chapter presents the argument that decentralized natural resource management can work well when some crucial conditions are met, clear functions are identified and resources have been transferred to enable commune councils to perform their tasks.

Chapter 14 focuses on fishery sector policy, including the legal and institutional framework in Cambodia. It provides a review of the existing legal and institutional frameworks relating to fisheries, particularly focusing on policy plans and practices in the field. Moreover, it seeks to review progress made since early 2000 in relation to the legislative and institutional changes, in order to develop and consider options for implementing the newly adopted Organic Law.

Chapter 15 explores the process, experience and lessons learned in decentralized wetland resource management by the Wetlands Alliance in Northeast Cambodia. This chapter presents a new approach to building the capacity of local partners by mainstreaming supported activities within the local and sectoral planning initiatives. It also describes a Wetlands Alliance intervention approach that can address the problem of the degradation of wetlands and aquatic resources, relating them to cross-sectoral issues.
Chapter 16 discusses the initiative taken by villagers in contributing to the decentralization development process by contributing to wetlands resource management. It draws on the experiences of local people in Stung Treng province, gleaned from conducting their own research according to their own agenda.

Chapter 17 explores the experience of villagers who were mobilized to stop illegal fishing along Srepok river in Ratanakiri, using the Participatory Action Research method. It discusses how villagers can develop and implement community action plans to reduce destructive practices and effectively coordinate with commune councils and government officials to implement their plans.

Chapter 18 presents a spatial planning perspective to enhance community based natural resource management in Cambodia. By using the Battambang spatial planning framework as a basis, this chapter reviews some of the limitation of CBNRM implementation during the last ten years. It then focuses on detailing the methodology used to develop and build the framework at the provincial level, in order to reinforce local actions and give communities stronger recognition.

Section E focuses on livelihoods: equity and benefit sharing. It has nine chapters, starting with an introduction to the concepts relating to the achievement of sustainable livelihoods, then moves to specific case studies.

Chapter 19 provides an overview of the concepts and theories relating to livelihoods, sustainable livelihoods, and how they can be implemented in real situations. It explores experiences gained and lessons learned by institutions that are implementing livelihoods projects with communities at ground level.

Chapter 20 explores the experience of establishing community based initiatives for sustainable wild honey harvesting and marketing in Koh Kong and Mondulkiri provinces. It provides specific details about the projects and interventions designed to address environmental, social-cultural, economic, and policy oriented issues.
Chapter 21 analyses experiences in establishing self-help groups as a workable livelihood strategy in Community Fishery development. It uses these to provide recommendations for the continued development of the community.

Chapter 22 focuses on the use of local credit, and how it affects local livelihoods and natural resources in a community in Preah Vihear province. In addition, it presents an example of best practice for credit providers in similar local communities to enable them avoid offering credit that could be used in a way that is detrimental to local natural resources and livelihoods.

Chapter 23 explores the benefit sharing results of a community-based rattan management and production model. This chapter also emphasizes the link between sustainable rattan harvesting and management of forest resources, and market demands and added value product opportunities.

Chapter 24 focuses on identifying a more appropriate approach to achieve the twin goals of conservation and livelihood diversification. It examines the current Community Based Eco-Tourism development process and practice in Cambodia in two case studies featuring different processes.

Chapter 25 explores the potential of ecotourism in Mondulkiri. It provides tourist profiles using descriptive data, applying a latent segment model to evaluate the marginal willingness of visitors to pay for different attractions and services.

Chapter 26 explores the roles of women in Community Fishery (CFi) management in six communities in Battambang, Kampong Chhnang, Kampong, Kep, Takeo and Stung Treng, particularly in respect of the challenges they face, their aspirations for the future and the opportunities they have to contribute to improving CFi in Cambodia. This chapter also provides practical strategies for increasing the participation of women in CFi planning and implementation.

Chapter 27 explores the understanding various stakeholders have of the complex realities of CBNRM, and the impact it has on local livelihoods. It focuses on a case study based in Stung Treng and Koh Kong.
Section F focuses on the future of CBNRM in Cambodia. This section consists of four chapters, starting with a discussion about what the ‘spaces of engagement’ associated with CBNRM are, and how these can be used to support local empowerment through participatory governance. The section continues with a focus on the development of information and communication technology in Cambodia and its use in supporting the development of CBNRM.

Chapter 28 focuses on creating space for the critical engagement of Cambodian citizens in the governance process. It presents the argument that new spaces for citizen engagement are often characterized by inequalities in participation, where marginal groups in society may be excluded, silenced, or co-opted through processes which reinforce existing power relations and the interests of those with the greatest influence.

Chapter 29 describes a new initiative – the Green Book directory - designed to help commune councils and other service seekers to find suitable and skilful partners in the field of natural resource and environmental management more easily than has previously been the case. This chapter also explores the strategy and processes involved in the development and launch of the Green Book, and lessons learnt for the future.

Chapter 30 describes the general situation in Cambodia in terms of research sharing and accessibility to important research findings. It focuses on the use and value of ICT in cross-cutting activities including participatory development communications, business and, academic activity and the communication of valuable information to a variety of stakeholders.

Chapter 31 explores the huge potential of information and communications technology (ICT) in the creation of sustainable development, improved governance and responsible resource management in Cambodia.

As the various approaches to CBNRM continue to develop in Cambodia, further lessons are learned, and new issues continue to emerge. Climate change, and the need for adaptation, is just one example. We anticipate that the next volume of CBNRM issues and practices – the third – will continue to reflect these changes and how they are affecting development in Cambodia. We hope, therefore, that the authors and researchers will continue to collaborate together to document and share their experiences for the benefit of all concerned.
### LIST OF CASE STUDIES FROM DIFFERENT GEOGRAPHICAL AREAS

<table>
<thead>
<tr>
<th>Code</th>
<th>Papers/Topics</th>
<th>Location of case studies</th>
<th>Research Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>The Experience in Siem Reap Province on Community Forest Management Plan (CFMP) Development Process</td>
<td>Taeng Commune, Banteay Srei District, Siem Reap Province</td>
<td>FAO, FA in Siem Reap province</td>
</tr>
<tr>
<td>B</td>
<td>Experience of CF inventory data collection</td>
<td>Kraya Commune, Santuk District, Kampong Thom Province</td>
<td>RECOFTC CBNRM LI</td>
</tr>
<tr>
<td>C</td>
<td>Local-Level Monitoring in Decentralized Forest Management: Exploring the Spaces for Community Participation</td>
<td>Tbeng Krapeu Commune, Stung Sen District Kampong Thom Province Typou Commune, Santuk District, Kampong Thom Province</td>
<td>CBNRM LI</td>
</tr>
<tr>
<td>D</td>
<td>Community Based Forest Protection: a case study from Krang Skear Commune, Toek Phos District, Kampong Chhnang Province</td>
<td>Krang Skear Commune, Toek Phos District, Kampong Chhnang Province</td>
<td>NGO Forum on Cambodia</td>
</tr>
<tr>
<td>E</td>
<td>Negotiating Tenure Conflict in Indigenous Villages of Ratanakiri Province</td>
<td>Krang Skear Commune, Toek Phos District, Kampong Chhnang Province</td>
<td>ADI/CCC</td>
</tr>
<tr>
<td>F</td>
<td>Mobilizing People to Solve a Land Dispute in Sre Krasaing Village, Stung Treng Province</td>
<td>Sre Krasaing Commune, Siem Bouk District, in Stung Treng Province</td>
<td>Oxfam Australia</td>
</tr>
<tr>
<td>G</td>
<td>Understanding the Rights and Responsibilities of Small-Scale Fishing Communities in Cambodia</td>
<td>Tum Nup Rolok Commune, Stung Hav District, Krong Preah Sihanouk Prek Luong Commune, Ek Phnom District, Battambang Province.</td>
<td>CBNRM LI FIA</td>
</tr>
<tr>
<td>H</td>
<td>&quot;Decentralized Natural Resource Management Planning Process: Exploring the Success of Three Case Studies at the Commune Level&quot;.</td>
<td>O’Tapong Commune, Bakan District, Pursat Province Sna Ansa Commune, Krokor District, Pursat Province Pream Krosoab Commune, Mondul Seima District, Koh Kong provinc</td>
<td>NCDD</td>
</tr>
<tr>
<td>I</td>
<td>Decentralization in Wetlands Resource Management: Process, Experience and Lessons Learned by the Wetlands Alliance in Northeast Cambodia</td>
<td>Sambour District, Kratie province</td>
<td>PRDC Kratie province WWF WorldFish Center</td>
</tr>
<tr>
<td>J</td>
<td>The initiative of villagers in decentralization development process contributing to wetlands resources management</td>
<td>Samaki Commune, Stung Treng District, Stung Treng Province</td>
<td>WA/WorldFish Center</td>
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<tr>
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</tr>
<tr>
<td>K</td>
<td>Mobilizing Villagers to Stop Illegal Fishing along the Srepok River in Ratanakiri Province</td>
<td>Chey Otdam Commune, Lumphat district along the Srepok river, Ratanakiri Province</td>
<td>ADI/CCC 3SPN</td>
</tr>
<tr>
<td>L</td>
<td>Going along the river by the bend; entering the village by the country: A spatial planning perspective to enhance community-based natural resource management in Cambodia</td>
<td>Kampong Preah Commune, Sangkae District, Battambong province Thepdey Commune, Koas Kraal District, Battambong Province Takream Commune in Bakan District, Battambong Province Kampong Lpeu Commune, Samlout District, Battambong Province Takrey Commune, Kamreing District, Battambong Province</td>
<td>DED</td>
</tr>
<tr>
<td>M</td>
<td>A Journey from Forest to Market: Experiences in Securing Benefits from Community-based Initiatives on Sustainable Wild Honey Harvesting and Marketing in Cambodia</td>
<td>Pu Chrey and Krangties commune, Pich Chenda district, Mondul Kiri province Sre Ambel and Dong Peng commune, Sre Ambel District, Koh Kong province</td>
<td>CFP/Pact WWF NTFP-EP</td>
</tr>
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<td>N</td>
<td>Understanding Self-Help Groups for Credit in Community Fisheries in Cambodia</td>
<td>Kampong Krasang Commune, Bourei Cholsa District, Takeo Province Kampong Pou Commune, Krakor District, Pursat Province</td>
<td>CFDD/FiA</td>
</tr>
<tr>
<td>O</td>
<td>The Impacts of Credit Use on Livelihoods and Natural Resources: A Case Study of Phnom Dek Village, Romani Commune, Rovieng District, Preah Vihear Province</td>
<td>Romani Commune, Rovieng District, Preah Vihear Province</td>
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<tr>
<td>P</td>
<td>Lesson Learnt from Benefit Sharing: Case Study of Rattan Cultivation in Prek Thnout Community Protected Area, Bokor National Park, Kampot Province.</td>
<td>Prek Thnout Commune, Kam-pot District, Kampot Province.</td>
<td>SCW WWF</td>
</tr>
<tr>
<td>Q</td>
<td>Community-Based Ecotourism and Rural Livelihood Diversification: Reframing the Approach</td>
<td>Chambok, Kampong Speu province</td>
<td>Yeak Loam Ratanakiri province</td>
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</tr>
<tr>
<td>S</td>
<td>Gender Implications in CBNRM: Important Roles of Women in Community Fisheries</td>
<td>Teuk Hout Commune, Rolaer Paer District, Kampong Chhnag Province. Rusey Srok Khang Lech Commune, Kampong Trach District, Kampot Province Prek Luong Commune, Ek Phnom District, Battambong Province Angkaol Commune, Damnak Chang eur District, Krong Kep Samaki Commune, Stung Treng District, Stung Treng Province Prey Yuthka Commune, Koh Andeth District, Takeo Province</td>
<td>CBNRM LI CFDD/FiA WorldFish Center</td>
</tr>
<tr>
<td>T</td>
<td>Understanding the complex realities of CBNRM: multiple perceptions of community fisheries practice</td>
<td>Samaki Commune, Stung Treng District, Stung Treng Province Chrouy Pras Commune, Koh Kong District, Koh Kong Province</td>
<td>CBNRM LI</td>
</tr>
<tr>
<td>U</td>
<td>The future of CBNRM: creating spaces of critical engagement</td>
<td>Samaki Commune, Stung Treng District, Stung Treng Province Chrouy Pras Commune, Koh Kong District, Koh Kong Province</td>
<td>CBNRM LI</td>
</tr>
</tbody>
</table>
Section A

Overview of past and present situation of CBNRM in Cambodia: Emerging Trends, Challenges and Innovations

Photo by: CBNRM Learning Institute, 2008
Overview of the past and present situation of CBNRM in Cambodia: Emerging Trends, Challenges and Innovations

By: Toby Carson, Hou Kalyan

This section explores the main emerging trends, challenges and innovations for CBNRM in Cambodia. The discussion is partly based on the results of a series of learning symposiums and on a keynote speech by HE Dr. Hang Chuon Naron at the National Symposium of the Development Research Forum held from 10th to 11th September, 2008. References are made to other chapters of this volume. In summary, this section argues that in order for CBNRM to be a viable management option, there needs to be support from various stakeholders for good governance principles, participatory planning and local monitoring, community benefits including viable livelihoods that are equitable and shared, secure tenure arrangements, and suitable information management and coordination. In particular, there is a need for official recognition from the relevant authorities. Although an adequate policy and legal framework have already been developed, the next key challenge is to ensure effective implementation of these policies and legal instruments.

INTRODUCTION

This overview section provides a summary of the main themes and the key discussion issues facing community based natural resource management (CBNRM) as it continues to develop and evolve in Cambodia. Throughout this book, a wide diversity of authors and CBNRM practitioners have shared their valuable knowledge and experiences. Some of the chapters are discussion papers on concepts and theories while most are research papers that illustrate case study examples and research findings.

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1 This chapter is partly based on a keynote speech by HE Dr. Hang Chuon Naron at the National Symposium of the Development Research Forum held from 10th to 11th September, 2008
2 Toby Carson, Senior Program Advisor for the CBNRM Learning Institute
3 Hou Kalyan, Training Coordinator, Capacity Building for Sustainable Forest and Land Management Project (CBSFLMP), RECOFTC
This publication is an opportunity to learn about the trends, challenges and innovations in respect of the following five main themes: 1) Participatory planning and local monitoring, 2) Tenure issues: boundaries access and rights, 3) Governance: decentralization policy and practices, 4) Livelihoods: equity and benefit sharing; and 5) Future of CBNRM: information management and coordination.

**PARTICIPATORY PLANNING AND LOCAL MONITORING**

The theme of ‘participatory planning and local monitoring’ delves into key questions: What consultative and participatory tools can help to clarify the roles of community stakeholders, government and civil society in local level planning and monitoring? How can these tools assist in fostering participatory approaches as a means of achieving equitable and efficient outcomes?

Participatory planning processes involve stakeholders who have different roles, interests and perceptions regarding natural resources. Therefore, one of the emerging trends is the need for participatory processes to be more flexible and adaptable to specific conditions (see chapters 1 and 2). It is important to engage the key stakeholders from the beginning of the process to encourage ownership and to build a sense of rights and responsibilities. Local monitoring can be a tool to support community participation and decision-making.

A key challenge relating to civil society involvement and public participation is how to build trust and cooperation among diverse groups with various interests. Another is to improve two-way approaches to communication, acknowledging the diversity of stakeholders, their differing perceptions, and the cultural aspects that shape their lives (see chapter 27). The planning process should be considered as an empowering tool for all stakeholders, not just those that are already in positions of power. Therefore, the facilitation methods should be adaptable to the local conditions, there should be adequate access to information, and local people should be involved in the process at all key stages (see chapters 2 and 3).

Participation of local people in planning for sustainable land and natural resource management offers a number of opportunities, including: more effective and responsive plans; community empowerment and increased confidence;
Emerging Trends, Challenges and Innovations for CBNRM in Cambodia

Section A: Overview of past and present situation of CBNRM in Cambodia: Emerging Trends, Challenges and Innovations

valuing of local knowledge; community ownership and engagement; long-term sustainability; strengthening social capital and community cohesion (see chapter 2).

**Participatory innovations** - One innovative approach to participatory monitoring and local planning is the development of a nine-step process to develop a community management plan for CF used in Siem Reap Forestry Cantonment (see chapter 4). Another is to use principles, criteria and indicators for learning as well as a participatory tool for measuring the outcomes. This tool helps define what local people themselves would like to achieve from their specific management practices (see chapter 6).

**TENURE ISSUES: BOUNDARIES, ACCESS AND RIGHTS**

Most rural Cambodians depend on their customary rights of access, tenure and use of natural resources in addition to agriculture to sustain their livelihoods. The key questions for this theme on tenure include: How do individuals and groups secure access to land and associated resources? Are these tenure arrangements and boundaries regulated through statutory law or customary law (including social relations)? Are people’s relationships to resources and interests in resources translated into claims, then into associated rights? (see chapter 7).

Issues of conflicting boundaries, land disputes and unclear access are key emerging challenges that threaten the future of CBNRM approaches. Facilitating appropriate negotiations for conflict management is an important emerging trend and challenge (see chapters 8, 9, 10 and 11). Another key challenge for land management is the issue of registration of community lands for indigenous groups. The rapid increase in the number of economic land concessions (ELCs) exerts pressure on community lands. Furthermore, ELCs seem to be quickly acknowledged while recognition of local community managed areas takes much longer. Local people are feeling increasingly frustrated and hopeless about this situation (see chapters 8, 9, and 10).
Encouraging trends and innovations - One innovation has been the development of community based forest protection (see chapter 8). There is a growing concern for local rights. Therefore, stakeholders are starting to help with conflict management and resolution (see chapter 11). A recent trend has been for the Forestry Administration (FA) and Fisheries Administration (FiA) to become more active in trying to solve conflicts of overlapping claims between concession and CF/CFi areas. For example, in the case of ELCs overlapping with claims of Community Forestry in Kampong Thom, Kratie and Pursat, the FA played a major role in the coordination of meetings with funding support from NGOs and projects working in the area. In Kampong Thom, the FA has coordinated and negotiated with company owners to agree for five CF sites that included areas within Economic Land Concessions to be allocated for the local community to protect and use for their own benefits. There needs to be more efforts like this. There is a need to have a strong commitment from concerned institutions in partnership with other stakeholders to support these negotiation processes. Otherwise, community members may lose hope and will no longer be willing to participate in the process.

GOVERNANCE: DECENTRALIZATION POLICY AND PRACTICES

The theme on ‘governance and decentralization’ delves into key questions such as: How can participation, transparency and accountability be ensured? At what levels should decision making and other related activity take place? And how do we combine socio-economic goals with environmental sustainability objectives?

In Cambodia there has been a trend towards developing policies for the transferral of functions and resources to sub-national levels through decentralization, delegation and deconcentration. Decentralization is the transfer of functions and resources to elected sub-national councils. These consequently have discretion to implement, at local level, the functions and to utilize the resources while being accountable to citizens. Delegation is the transfer of a function to sub-national councils so that it is carried out on behalf of the delegating authority such as a ministry. Deconcentration is the transfer of tasks from a national department to its sub-national provincial departments or district offices (see chapter 11). There are some pre-conditions to realizing the
potential benefits of decentralization, including good decision-making about which level should receive functions. Corresponding resources and capacity development must also accompany these functions. It is necessary, too, for local councils to practice principles of good governance.

The reforms in the forestry and fisheries sectors, and related policy developments, are a partial reflection of the Rectangular Strategy of the Royal Government of Cambodia (RGC), and have given rise to some important innovations. They have also opened the way for official recognition of community based approaches to natural resource management.

During the past few years there have been a number of important developments in Cambodia to support community-based initiatives in the management of renewable natural resources. These are Community Forestry, Community Fisheries and Community Protected Areas. Other important approaches to community natural resource management include water resource governance, participatory and commune land use planning, and community based ecotourism.

Table 1: Community managed areas initially identified (before 2005)

<table>
<thead>
<tr>
<th>Number of community managed areas initially identified (before 2005)</th>
<th>Community Forestry</th>
<th>Community Fisheries</th>
<th>Community Protected Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of villages, people, families/ households</td>
<td>237</td>
<td>264</td>
<td>69</td>
</tr>
<tr>
<td>416 villages;</td>
<td>411,440 people</td>
<td>351 villages;</td>
<td>117 villages;</td>
</tr>
<tr>
<td>411,440 people</td>
<td></td>
<td>302,705 people</td>
<td>10,533 households</td>
</tr>
<tr>
<td>Total size of community managed areas (ha)</td>
<td>71,724 ha</td>
<td>227,785 ha</td>
<td>66,498 ha</td>
</tr>
</tbody>
</table>
Table 2: Community managed areas officially identified or officially recognized (after 2005)

<table>
<thead>
<tr>
<th>Number of community managed areas officially identified or officially recognized (after 2005)</th>
<th>Community Forestry</th>
<th>Community Fisheries</th>
<th>Community Protected Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>290</td>
<td>509</td>
<td>73</td>
<td></td>
</tr>
</tbody>
</table>

Source of information after 2005:
- Community Forestry Data Base; Community Forestry Office of the Forestry Administration, MAFF (June 2009)
- Community Fisheries Development Division (CFDD); H.E. Por Try, Secretary of State for the MAFF (19th October, 2007)
- H.E. Touch Kroung Vutha, Secretary of State for the MoE (in a speech at the annual CPA planning workshop in Battambang from 12th to 13th December, 2007)

At least 290 proposed Community Forestry sites have now been identified across Cambodia. On 15th November, 2007, in Siem Reap, the first ten Community Forestry Agreements were officially recognized by the Forestry Administration of the Ministry of Agriculture, Forestry and Fisheries, in support of the National Community Forestry Program. Currently, 18 CF sites have now been recognised and many more are pending recognition. A total of 32 CF sites were officially recognised on 27th March, 2009 in Kampong Thom province which means that, up to now, 50 CF sites have achieved this status. More information is available from the Community Forestry Office of the Forestry Administration, MAFF and the Community Forestry Data Base.

Since the fisheries reforms of 2001-2002, 56.46 percent of fishing lots have been handed over to small-scale fishing and management by local communities. At the moment, more than 509 Community Fishery initiatives have been registered across the country, covering both inland water and coastal areas. These are now officially recognized by the Fishery Administration and other government institutions. The Fisheries Law was passed in March 2006, the Community Fisheries Sub-Decree in June 2005, and the Praks on Community Fisheries Guidelines was finalized in August 2007. Further information about Community Fisheries is available from the Community Fisheries Development Division (CFDD) of the Ministry of Agriculture, Forestry and Fisheries.
There are 73 Community Protected Areas located throughout the country that are recognized by the Ministry of Environment. These involve no fewer than 117 villages and 10,533 households, covering an area of 66,498 ha. In February 2008, the Protected Area Law was passed by the National Assembly and ratified by His Majesty, King Norodom Sihamoni. Guidelines (prakas) on Community Protected Areas have been drafted, and are expected to be finalized soon. Further information about Community Protected Areas is available from the General Directorate of Nature Conservation and Protection of the Ministry of Environment.

As the two following tables illustrate, there is already a comprehensive policy and legal framework for the development and implementation of CBNRM approaches. However, the current challenge is to ensure effective implementation of these laws and policies.

**Table 3: List of relevant policy documents and legal instruments developed until 2005**

<table>
<thead>
<tr>
<th>Policy Documents and Legal Instruments</th>
<th>Date of Enactment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constitution</td>
<td>24th Sept, 1993</td>
</tr>
<tr>
<td>Royal Decree on the Creation and Designation of Protected Areas</td>
<td>1st November, 1993</td>
</tr>
<tr>
<td>Environmental Protection and Natural Resources Law</td>
<td>24th Dec, 1996</td>
</tr>
<tr>
<td>Law on Commune Administration</td>
<td>19th March, 2001</td>
</tr>
<tr>
<td>Socio-Economic Development Plan - SEDP2</td>
<td>2001 - 2005</td>
</tr>
<tr>
<td>National Poverty Reduction Strategy - NPRS</td>
<td>2003 - 2005</td>
</tr>
<tr>
<td>Land Law</td>
<td>September, 2001</td>
</tr>
<tr>
<td>National Forest Policy</td>
<td>2002</td>
</tr>
<tr>
<td>Forest Law</td>
<td>August 2002</td>
</tr>
<tr>
<td>Community Forestry Sub-decree</td>
<td>December 2003</td>
</tr>
<tr>
<td>Sub-Decree on Economic Land Concessions</td>
<td>27th December, 2005</td>
</tr>
<tr>
<td>Rectangular Strategy</td>
<td>2004-2008</td>
</tr>
</tbody>
</table>
Table 4: List of relevant policy documents and legal instruments developed since 2005

<table>
<thead>
<tr>
<th>New Policy Documents and Legal Instruments</th>
<th>Date of Enactment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protected Areas Law</td>
<td>Feb 2008</td>
</tr>
<tr>
<td>Guidelines on Community Protected Areas Management (MoE Prakas)</td>
<td>Draft in progress</td>
</tr>
<tr>
<td>Organic Law on Sub-National Administration</td>
<td>2008</td>
</tr>
<tr>
<td>National Strategic Development Plan (2006-2010)</td>
<td>22nd December, 2005</td>
</tr>
<tr>
<td>Draft Declaration on Land Policy</td>
<td>In progress</td>
</tr>
<tr>
<td>Sub-decree on the registration of the lands of indigenous communities</td>
<td>In progress</td>
</tr>
<tr>
<td>Sub-decree on Procedure for Commune Land Use Planning</td>
<td>2008</td>
</tr>
<tr>
<td>National Fisheries Policy Statement</td>
<td>15th June, 2005</td>
</tr>
<tr>
<td>Fisheries Law</td>
<td>24th May, 2006</td>
</tr>
<tr>
<td>Guidelines for Community Fisheries (MAFF’s prakas)</td>
<td>13th July, 2007</td>
</tr>
<tr>
<td>National Forest Programme (NFP)</td>
<td>Draft in progress</td>
</tr>
<tr>
<td></td>
<td>February 2009</td>
</tr>
<tr>
<td>National Community Forestry Plan (NCFP)</td>
<td>Draft in progress</td>
</tr>
<tr>
<td></td>
<td>February 2009</td>
</tr>
<tr>
<td>Guidelines for Community Forestry (MAFF’s prakas)</td>
<td>21st July, 2006</td>
</tr>
<tr>
<td>Political platform of the RGC of the Fourth Legislature of the National Assembly</td>
<td>25th September, 2008</td>
</tr>
<tr>
<td>Rectangular Strategy (Phase II)</td>
<td>26th September, 2008</td>
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</tbody>
</table>

The National Strategic Development Plan (2006-2010) aims to ensure that land and natural resources are used in an efficient manner in order to support sustainable and equitable socio-economic development for all Cambodian citizens. In late 2008, the new political platform of the RGC of the Fourth Legislature of the National Assembly was unveiled. In this new political platform of government reform, the stated aims of the RGC are to strengthen good governance at all levels of government institutions so as to ensure that all public services are delivered in a transparent, effective and accountable manner as well as to strengthen the rule of law, social justice and equity. This platform also includes a dedication to enhance management, preservation and exploitation of the forestry and fisheries resources in accordance with the laws and regulations in order to protect the interests of the general public and local communities.
The Rectangular Strategy of the RGC proclaims and recognizes the need to continue the reform of forestry, fisheries and land sectors while diversifying and intensifying agricultural production. Good governance is at the core of this strategy.

The RGC (along with development partners) is in the process of implementing decentralization and deconcentration reforms that are overseen by the National Committee for the Management of the Decentralization and Deconcentration reforms (NCDD). The development of Organic Law is important for the further transfer of functions and resources to sub-national levels (see chapter 12).

These are important policy steps towards realising the potential of CBNRM approaches, although there is still a long way to go. Recognition remains limited, and debate as to the long-term viability of CBNRM approaches without outside support, is ongoing. The current challenge is to ensure effective implementation.

The RGC has followed up on the fisheries policy reforms of 2000-2001 with the development and passing of a National Fisheries Policy Statement (2005), Fisheries Law (2006), Sub-decree on Community Fisheries Management (2007), and Guidelines for Community Fisheries (2007). However, an important challenge will be to clarify the emerging role of key stakeholders and to build the capacities of local councils for fisheries management (see chapter 14).

In the forestry sector, earlier reforms brought about the development of the National Forest Policy Statement (2002), Forest Law (2002), and the Community Forestry Sub-decree (2003). These were followed by the development of Guidelines for Community Forestry (2006), National Forest Programme (NFP) and the National Community Forestry Plan (NCFP) that are currently in the drafting and consultation phase. Although relevant policies and a regulatory framework are in place, the implementation and enforcement of this regulatory framework for Community Forestry is still limited. Again, the key emerging challenge in the forestry sector is the need to move towards efficient official recognition and effective implementation of Community Forestry approaches. For example, the process for developing Community Forestry management plans may need to be simplified and expedited (see chapters 4 and 5).
Land reform is also crucial in increasing agricultural production and national food security. There has, therefore, been a focus on reforms relating to security of tenure, especially among farmers and vulnerable minorities. Since the 1980s, the RGC has enacted important laws, and established management mechanisms and development programmes to facilitate these reforms. The most significant legislation includes the Land Law enacted in 2001, and the Land Policy Framework adopted in 2002. Part of the Land Reform programme - the sub-decree on Social Land Concessions - is being implemented, as are the sub-decrees on State Land Management and Economic Land Concessions. However, there have been a significant number of conflicts about land allocation and possession rights (see chapters 9 and 10).

**Significant trend and innovation** - Commune councils have become increasingly more involved in natural resource and environmental management issues. For example, a commune council in Koh Kong province is involved in initiating mangrove conservation activities. In Stung Treng, another commune council has issued local regulations to support the natural resource management committee to crack down on illegal fishing activities (see chapter 17). More and more commune councils are using the Commune Development Plan and Investment Program (CDP/CIP) to implement natural resource management projects within their communes (see chapter 13). The newly passed legislation on Commune Land Use Planning (CLUP) will provide added support to participatory planning at local levels. Decentralized NREM can work well when clear functions are identified and appropriate resources are allocated.

An important challenge is to develop the necessary capacity of commune councils and the proposed district councils to deal with decentralised NRM issues. Local capacity can be strengthened through basic training on participatory planning, facilitation skills, community motivation and organization, strategy formulation, development of local work plans, evaluation and monitoring. Additionally, for long-term CBNRM to be successful, community management committees need clear roles and responsibilities to enable the community to develop rules, regulations and good planning practices for efficient management and monitoring into the future. For this
reason, the capacity of local people to understand and use the law and sub-decrees also needs to be enhanced so that local communities are able to incorporate their traditional management roles to comply with the existing legal framework. Local knowledge systems should be encouraged as a key contribution to good governance (see chapter 16).

The development and strengthening of cross-sectoral linkages would provide appropriate support mechanisms for local communities and CBNRM approaches. For example, an innovative framework for comprehensive spacial planning in Battambang province suggests that the integration of CBNRM initiatives into this framework can reinforce local actions and provide stronger recognition for communities (see chapter 18).

**LIVELIHOODS: EQUITY AND BENEFIT SHARING**

Perhaps the most important trend and challenge will be to demonstrate how community approaches to NRM can improve community benefits and sustainable rural livelihoods. In other words, how can CBNRM initiatives help in reducing poverty through, for instance, the diversification of livelihoods that also ensures equity and benefit sharing? How do different people within communities understand their livelihoods? Do local people think about sustainability if their main concern is daily survival? How do local people analyze their own lives and what factors influence people in making livelihood choices? These are all important questions discussed in this theme.

Sources of rural income are becoming increasingly vulnerable as the access local people are allowed to them decreases and as land, forest and natural resources come under growing threat. The development of CBNRM initially focused on the protection and conservation of natural resources. However, recent years have shown an increasing trend towards supporting livelihood benefits from CBNRM approaches. For example, local communities are now developing management plans to harvest poles in Community Forestry areas of Siem Reap province after securing agreements and gaining recognition from government authorities (see chapter 4). The key challenge for these CBNRM approaches is to build upon human and social capital and other livelihood assets to secure tenure and to manage natural resources for sustaining and improving the food security and well-being of resource dependant communities (see chapter 19).
Several projects have been designed to secure benefits from community-based initiatives. For example, forest dependent communities have been supported to develop sustainable wild honey harvesting and marketing in Mondulkiri and Koh Kong provinces (see chapter 20). The benefit sharing mechanisms in this project include a consideration of social and cultural benefits as well as environmental and economic ones. Another innovative example of benefit sharing is that of rattan cultivation in Kampot province (see chapter 23). This project highlights both monetary and non-monetary benefits.

While efforts towards improving local management of natural resources and securing land tenure are positive, there is also the potential to increase the marginalisation of certain groups within communities based on gender, social status, wealth or ethnicity (see chapter 19). Helpful here, is a study designed to understand the important roles of women in community management, to recognize the challenges involved in their participation, and to suggest practical strategies to support their aspirations and opportunities (see chapter 26).

Local communities participate in natural resource management most effectively when their livelihoods are assured, their concerns are recognized and incentives are in place. People can gain more confidence and experience when using credit in their livelihood development as part of a more comprehensive strategy (see chapters 21 and 22). The key challenge is to develop a clear understanding of poor and vulnerable groups (women, widows, female-headed households) within the community for livelihood improvement activities to be successful (see chapter 21). There should also be appropriate mechanisms to monitor the effects of credit use so that it is not employed in a way that adversely affects local natural resource use and consequently local livelihoods (see chapter 22).

Multiple livelihood activities should be encouraged in order to encourage participation from local communities in a diversity of coping strategies. Multiple livelihood strategies and options can improve people’s quality of life. However, this depends very much on the existing resources that local people have and their ability to make decisions about those strategies. The role of social capital is important in community decision-making, and seasonal and permanent migration patterns have a strong impact.
Emerging Trends, Challenges and Innovations for CBNRM in Cambodia

**Interesting trend and innovation** - According to the Cambodia Community Based Ecotourism Network (CCBEN 2008), there are about 30 community based ecotourism sites in Cambodia. Tourism development can help the communities involved to conserve the forests and natural resources while also preserving their culture and gaining livelihood benefits. It is argued, however, that there is a need to reframe the approach to community based ecotourism and rural livelihood diversification (see chapter 24).

Another future trend may include more integration of CBNRM approaches with sustainable agricultural development, particularly considering emerging global issues related to food security. Other examples of diversified livelihood activities could include integrated rural development, pig or other animal raising, fish farms and small scale aquaculture. Other possibilities include capacity building in specialized skills, and making traditional items from non-timber forest products such as traditional baskets and mats. Assistance in finding possible markets for the sale of these items can also prove highly beneficial to those involved. This would enable local communities to generate more income to support their livelihoods. Moreover, there needs to be cooperation among community members to ensure that the work load is distributed fairly and equitably in managing forest resources.

**Noteworthy innovation** - The development and recognition of Community Protected Areas in Cambodia support environmental conservation goals as well as providing livelihood benefits for local communities. For example, the Tmat Poey Theun Krasang Community Protected Area was established in 2003 inside Kulen Prum Tep Wildlife Sanctuary with the support of the Department of Environment under the Seila program. A community of 232 households was able to obtain approval from the Ministry of Environment on 14th May, 2004, to manage an area of 1,763 hectares within the protected area. With clear rights and responsibilities, this community is strong and trusting. This is because they have received full recognition from the line agency and also have the full support of local government officials. Most importantly, the former illegal hunters are also included as members in the management process. This success has enjoyed external support from...
organisations such as the Wildlife Conservation Society (WCS). They have played an important role in enabling this particular CPA to become a community based eco-tourism site to the extent that it has now received two international awards. This case clearly indicates that trust can be built in the local community through full participation by members in the overall planning and decision-making process, and through the development of benefit sharing mechanisms based on equity. These are the key principles in achieving sustainable community based management.

In strengthening local livelihoods, marketing remains a key factor and creates a greater variety of options for local people (see chapters 20, 23 and 25). One significant issue is the potential for market failure in community based natural resource management. Markets alone cannot be expected to perform all the necessary functions. For example, if land distribution is left to the market, the result will be more and more big plantations and economic land concessions, and the smallholders with disappear. This issue is also a reminder of the challenges of cost efficiency versus equity. For instance, efficiency would allow the stronger and more powerful to gain the benefits, while a consideration of equity issues ensures that vulnerable groups, such as widows, can also benefit.

A further challenge for CBNRM approaches is the issue of economies of scale. How can smallholders or single communities compete in the market with large-scale plantations or economic land concessions? Forming community networks can help create economies of scale. For example, the network of honey producers is more able to enter domestic and international markets. Another potential example is the network of 12 communities in Oddar Meanchey that are proposing to participate in the market-based forestry scheme (called reduced emissions from deforestation and degradation or REDD) to trade carbon credits in both national and international markets (see chapter 19). This scheme could enable forest communities to protect over 60,000 hectares of forest land from large-scale logging interests while supporting global climate change efforts to reduce CO₂ emissions. However, the detailed mechanisms for sharing the benefits still need to be clarified and, therefore, the real benefits for forest communities are yet to be realized.
INFORMATION MANAGEMENT AND COORDINATION

Information and knowledge are power. Coordination helps to distribute and share knowledge and information, thereby increasing the opportunities for sharing power and decision making among a wider array of citizens. The key questions for this theme include: How can CBNRM approaches lead to better participation and decreased inequalities? How can ICT technology be made available and usable for local communities? And how can service seekers at the local level be linked to service providers in order to meet their needs?

One important challenge for CBNRM approaches has been the issue of inequalities of participation from marginal groups. Rather than becoming empowered, some citizens may be excluded, silenced or co-opted through processes that actually reinforce the existing power relations and give the most benefits to those who already have the greatest influence. Future CBNRM efforts will need to address this important issue.

**Innovative research** - An interesting study explored current perceptions of citizen engagement in two case studies of Community Fisheries in Koh Kong and Stung Treng provinces (see chapters 27 and 28). Some factors that might limit participation in CBNRM approaches include the realities of poverty, cultural norms and the current legal framework. This study also suggests that conflict could be seen as an opportunity to expand existing spaces of critical engagement between key stakeholders, rather than interpreting conflict in only negative ways.

The key challenge for CBNRM will be to promote participatory governance that can open up new spaces for citizen engagement. These are spaces where a diversity of people with varying interests and perceptions come together to contest, negotiate and exchange information on the practical management of natural resources. In this case, there may be both contested areas and collaborative areas between state and society.
Some government agencies, international organisations (IOs) and NGOs are now working together on the legalization process for CBNRM. For example, there are sub-grants to Forestry Administration (FA) Cantonments to support the Community Forestry (CF) legalization process following the guidelines of the legal framework. Cooperation with other important stakeholders and building their capacity for recognizing CF sites is important. These stakeholders need to be more aware about their respective roles and responsibilities according the RGC’s regulatory framework related to CBNRM development. However, the awareness strategy needs also to ensure that the same messages are used with all stakeholders, so as to avoid duplication or conflict among agencies, as well as to improve the approval process from line departments. By improving cooperation between line departments, IOs and NGOs, the process could be more efficient and resources could be used more effectively.

It will be increasingly important to facilitate mechanisms for the sharing of resources, knowledge, information and lessons learned. This is an important role for the CBNRM Learning Institute, the Cambodia Development Research Institute (CDRI), the Regional Community Forestry Training Center (RECOFTC) and other learning and research forums such as the newly formed Development Research Forum (DRF) of Cambodia (see chapter 30).

There needs to be better coordination among relevant institutions and organizations without further stretching the limited capacities of communities and commune councils. This particularly relates to interventions of key stakeholders at the grassroots levels and is an important challenge for the decentralization policies and strategies of the RGC.

**Useful innovation** - As part of the decentralization strategies, the development of the Green Book has been a positive initiative. This directory has been designed to match commune councils and other service seekers with suitable service providers in the field of natural resource and environmental management (see chapter 29). However, the Green Book does not yet address issues of problem analysis, service quality control and the coordination among public and private sectors to provide the best possible services at local levels.
A key challenge will be coordination between the implementing agencies in order to ensure effective activity. The establishment of a system for electronic governance by the RGC is an important step forward (see chapter 31). This system, based on information and communication technology (ICT), aims to provide services and information exchange for citizens in a more transparent and accessible manner.

Information communication technologies are useful tools, but the trend towards finding better governance and natural resource and environmental management needs to be followed up with concrete actions and effective implementation.
Section B

Participatory Planning and Local Monitoring: Relating Theory to Practice

Photo by: CBNRM Learning Institute, 2009
Section B  Participatory Planning and Local Monitoring: Relating Theory to Practice

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By: Kate Bradlow

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Chapter 1
Planning and Monitoring in Community Forestry: Lessons from the Region

By: Ronnakorn Tiraganon¹ and Yurdi Yasmi²

Using experiences in forestry from various countries within the Mekong Region, this paper suggests that forests and forestry activities need to be planned in such a way that they can address complexities and minimize risk. The paper argues that robust monitoring systems need to be devised in such a way that they allow lessons from past mistakes to be integrated into new and revised plans. The paper identifies and discusses many of the issues surrounding forestry management including complexity, dynamic situations, multiple actors, and local knowledge in an attempt to formulate what elements are essential to address these issues. It is argued that the achievement of participatory planning and monitoring cannot happen without a proper process, with clear objectives, indicators, institutional roles and responsibilities, as well as a large enough scope to allow for learning and adapting. Furthermore, it is suggested that there are a number of factors that must be considered for effective planning and monitoring including genuine representation from stakeholders and a mechanism to ensure the benefits will be shared fairly.

INTRODUCTION

Asia has enjoyed high stable economic growth over the last 20 years. Until 1997, Asia attracted half of the total capital inflow in developing countries. Spectacular growth between 8 to 12 percent occurred in the following countries in the late 1980s and until the late 1990s: Indonesia, Malaysia, Singapore, South Korea and Thailand (Stiglitz, 1996). Krugman (1994) – who received a Nobel Memorial Prize for Economic Sciences 2008 - called this the “Asia Economic Miracle”. According to the recent assessment by UNESCAP (2008) the region is progressing well with poverty reduction. Between 1990 and 2004 it reduced the number of people living in extreme income poverty

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from 1.9 billion to 641 million – mainly a result of rapid reductions in Southeast Asia and China. This means that the proportion of people living on less than $1 (purchasing power parity/PPP) a day fell from 32 to 17 percent. A number of countries until recently maintained spectacular economic growths such as India, China and Vietnam and the growth in Malaysia, Thailand and Indonesia have also stabilized in recent years. The World Bank believes that Asia will definitely make poverty history in 2015.

Despite these positive experiences, economic development in the region also creates and deepens inequality and the gap between the “haves” and the “have not’s”. A study by the World Bank suggests that inequality, including income inequality, continues to be a major issue in the region (Ahuja et al. 1997). One of the main reasons for the creation and continuation of inequality results from the fact that some groups were left out in the development, change favoured the better-off, and the rich acquired their wealth unfairly.

Other problems in the region relate to environmental disaster, e.g., a high rate of deforestation. In the past decade the following countries have lost their forests at an alarming rate due to illegal logging and associated forest crimes: Cambodia, Indonesia, Myanmar, Nepal and the Philippines. In early 2000, estimates suggested that 90 percent of the timber in Cambodia was harvested illegally (Smith 2002). In Myanmar and Indonesia timber produced illegally was estimated at 90 percent and 50 percent, respectively (Brunner 1998; Scotland 2000). Other estimates suggest that in Indonesia illegal timber may account for as much as 70 - 85 percent of the total harvested. The World Bank estimates that the governments around the world are losing USD 15 billion a year as a result of illegal logging (Contreras 2007). EIA/Telapak (2008) reported that 600,000 cubic metres of illegal timber were exported to Vietnam from Lao-PDR (worth approximately USD 250 million).

The impacts of illegal logging on forest ecosystems, economy and society are serious. Loss of biodiversity has a clear impact on ecosystems. The Indonesian government is predicted (RRI 2008) to lose USD 4 billion annually due to illegal logging. Social conflicts including violence are often associated with illegal logging. Weak state control, law enforcement, corruption, and lack of transparency are among the main factors that contribute to weak forest governance in the Asia-Pacific region. In its recent report, Transparency International released a Corruption Perception Index (CPI); countries with high
deforestation and illegal logging coincide with countries that have a low CPI which can be illustrated by Table 1. For example, Myanmar, where 80 percent of the timber produced in the country is considered illegal is also the country with the lowest score of CPI (1.4). Likewise, Cambodia has a low CPI score and it is also found that most of the timber from the country is harvested illegally (Smith 2002).

**Table 1: Corruption Perception Index (CPI) 2007**

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>CPI SCORE</th>
<th>RANK (OUT OF 180 COUNTRIES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cambodia</td>
<td>2.0</td>
<td>166</td>
</tr>
<tr>
<td>2. China</td>
<td>3.5</td>
<td>73</td>
</tr>
<tr>
<td>3. India</td>
<td>3.5</td>
<td>75</td>
</tr>
<tr>
<td>4. Indonesia</td>
<td>2.3</td>
<td>144</td>
</tr>
<tr>
<td>5. Lao-PDR</td>
<td>1.9</td>
<td>168</td>
</tr>
<tr>
<td>6. Malaysia</td>
<td>5.1</td>
<td>43</td>
</tr>
<tr>
<td>7. Myanmar</td>
<td>1.4</td>
<td>180</td>
</tr>
<tr>
<td>8. Nepal</td>
<td>2.5</td>
<td>131</td>
</tr>
<tr>
<td>9. Philippines</td>
<td>2.5</td>
<td>132</td>
</tr>
<tr>
<td>10. PNG</td>
<td>2.0</td>
<td>163</td>
</tr>
<tr>
<td>11. Thailand</td>
<td>3.3</td>
<td>91</td>
</tr>
<tr>
<td>12. Vietnam</td>
<td>2.6</td>
<td>127</td>
</tr>
</tbody>
</table>

Source: Transparency International

Moreover, forests and forestry issues cannot be seen in isolation from broader societal change. Whatever change occurs outside of the forestry sector will eventually have a big impact on forests and forestry. For example, recent increases in commodity prices, hikes in energy prices, urbanization and resource scarcity are among major drivers of change in society today (RRI 2008). Recent developments indicate that the collapse of world financial systems is also one of the major drivers that shape our society. Hobley (2008: p7) writes that, “these new drivers have already had a significant impact on forests, and some of them will have an increasingly larger impact in the future. It is imperative that we take their potential implications seriously”.

It is obvious that forests and forestry have enormous challenges as a result of internal and external factors. To what extent can we cope with all these challenges and achieve sustainable forest management (SFM)? How do we address complexities and uncertainties associated with forest management? How do we minimize negative impacts on broader development to forests and forestry? And, to what extent do local actors play a role in managing those challenges?

While addressing these questions is quite challenging, it has been argued that one way to cope with all of these problems is through careful planning and monitoring carried out with the involvement of local actors. In other words, forests and forestry activities need to be planned in such a way that they can address complexities and minimize risk.

In order to observe and identify progress made on certain objectives, robust monitoring systems need to be devised in such a way that they allow lessons from past mistakes to be integrated into the new/revised plan. Based on this argument, this paper attempts to discuss the importance of planning and monitoring in forests and forestry activities based on the authors’ experience. It does not aim to provide answers to all problems in forests and forestry – as this is beyond the scope of the paper – but rather it aims to spark more discussion on this topic.

**WHY IS LOCAL PARTICIPATION IMPORTANT IN CBNRM PLANNING AND MONITORING?**

There is evidence within the Southeast Asia region proving that the management of local natural resources has a greater chance of achieving sustainability when there is partnership between local people and external agencies; when agendas made are relevant to local aspirations and circumstances. Managing natural resources for sustainable livelihoods requires this premise to show that the process for improving natural resource management must incorporate participatory and user-focused approaches, leading to development based on the needs and knowledge of local resource users.
Local people must have more of a role and opportunity to share in decision-making and not simply share the responsibilities for implementing management actions, data collection, and enforcement. In traditional natural resource management approaches, experts have thought that they need to conduct research for finding out solutions, and then they manage those resources based on what they get from research. Such an approach involves identifying practices that work, highlighting ‘success stories’, and promoting these results to other contexts. However, it has often been the case that this ‘blueprint’ approach does not always work; it becomes difficult in dynamic, heterogeneous, and uncertain environments including the socio-economic as well as the biophysical aspects of the environment in which natural resource management takes place especially in developing countries.

Based on our experience working on CBNRM in many countries within the Mekong region, we found that the involvement of local people and other relevant agencies is essential. People can contribute their knowledge and the resources available within the area combining with modern technology. The approach requires shared values in respect of democratic, cultural, ecological, economic and social ideals and commitments among stakeholders to make change together for the optimal benefit of all. There are many reasons to support local participation in CBNRM.

**Complexity of Natural Resource Management Practices**

When discussing multiple natural resources, this discussion refers to the diversity of products and services people gain from the natural environment they are living in. Despite the rapid growth of industrialization and the expansion of economic development among developing countries, most people in Asia still remain directly dependent on a productive natural resource base for their livelihoods. Forest land in many countries has been increasingly cut, burned, and converted for other purposes, such as palm oil production, rubber tree plantation, or pasture land for raising cattle. This is leading to an expansion of and high demand for cultivated land even into areas which are ecologically fragile and inappropriate for permanent cultivation. People have over-exploited resources to serve the market demand and under these driving forces, people have to rely on existing policies and institutions which rarely provide much incentive for people to participate in the decision making event.
The processes and power relations within communities also have a profound impact on the success or failure of CBNRM, particularly with regard to equity in decision-making and the distribution of benefits. Communities themselves are also very complex and diverse. Rights and access over resources influence decisions and create implications for exercising the desired actions.

**Dynamic situation**

Regional and global economic growth has led to a shift in the role of natural resources over local livelihoods. In the past, people did not have problems in getting natural resources for their consumption as there were plenty of them. Under the rapid growth of economic development, natural resources have been shrunk through different harvesting practices to support regional and global demands. Over-exploitation and unwise use have led to a scarcity in the number of natural resources. While the price of oil continues to fluctuate, the demand for energy crops and alternative energy sources including biofuel has increased. The financial crisis in the United States affects the world markets and farming production, and sequentially leads to unsustainable use of resources. Powerful industries such as mining, tourism, dam construction, and cash crop plantations all force people in rural areas to become more vulnerable to rapid market demands.

Uncertain legal and regulatory frameworks for decentralization create insecurities in entitlements and benefits that undermine the viability and sustainability of local resource management (Colfer et al 2008). An unstable political atmosphere and unclear institutional structure in Thailand makes the country fail in its attempt to address NRM issues. Problems related to the sustainable management of natural resources therefore become critical, especially for those directly dependant on them. Consequently, natural resource degradation can lead to irreversible loss of food productivity and cause the breakdown of ecosystem capacity and species habitat.

The poor people do not have many choices for their livelihood which causes them to put more pressure on the resources that are available nearby. People need to find ways to mitigate and adapt to the impacts of climate change. There is no clear solution that can fit all changing contexts, therefore people must learn to live together and undertake responsibility for accommodating these changes.
Multi-stakeholder processes become a challenge

Various case studies illustrate that stakeholders involved in natural resource management do not only come from communities and governments, but they also include active groups from the private sector, education sector, health sector, rural development sectors, agriculture sector, or even from the sectors of law enforcement and justice. These stakeholders have different perspectives on ‘value’, ‘problems’, ‘solutions’ and on who is responsible for the problems and who has the potential to provide solutions. These differing perspectives combined with a fundamental imbalance of power among stakeholders in natural resource management lead to an undemocratic and failing system regarding the management of natural resources.

Decisions made by one particular group may affect others causing negative consequences. Negotiation therefore becomes a critical component in NRM. There should be a common understanding from all of the main interest groups on what management approach is being applied. Since different groups have different ways of working towards achieving goals, having partnerships, wherever possible, has the potential to create a shared sense of responsibilities and investment towards any desired actions.

Particularly in communities where there is fear – for instance, that others may be trying to gain territorial advantage – it is essential that the rules and boundaries are clearly defined, understood and agreed upon. The management objectives and roles of people involved should be clear and transparent. The major challenge then focuses on how to engage relevant stakeholders in CBNRM processes effectively.

Local setting for CBNRM

Countries in the region have different historical, political and economic settings, and this has resulted in a variety of community-based natural resource management modalities. In some areas, rural communities living in or near forestland use forest resources according to some form of indigenous management system. In other locations, local communities are perceived as legitimate partners for the effective management of forest resources. However, many governments have ignored their success. Forest resources were taken back and are now managed by government forestry authorities.
Approaches taken towards forestry management vary from country to country. In the case of Nepal, access and rights to forests are given to forest users, whereas in Vietnam, forestland is allocated to individual households. On the other hand, in Thailand, many Community Forestry initiatives are occurring in the absence of any national framework to legitimize their local efforts. In contrast, the legal framework for Community Forestry is widely recognized in the Philippines, but it is yet to be translated into a reality that benefits the local communities. All of these cases reflect the perception local people have and the capacities they have in term of their contributions to the sustainable management of natural resources.

CBNRM has been widely accepted as one of the community empowerment processes. Long-term community sustainability depends very much on developing human and social capital. There needs to be more effort towards providing the opportunity for local people to develop their own skills and capacity, incorporating local views, traditional practices, and local knowledge in assessing their own situation. Having the ability to make their own decisions, run their own programs, and manage local assets can create a real learning process within the context they belong to for improving their livelihoods and ensuring the wise and sustainable use of natural resources.

**SOME THOUGHTS ON PARTICIPATORY PLANNING AND MONITORING**

Attempting to work toward conservation and poverty reduction in an integrated way requires working at multiple levels and multiple points of entry. Participation of multiple stakeholders is therefore a necessary characteristic for successful CBNRM. The Regional Community Forestry Training Center for Asia and the Pacific Region (RECOFTC) perceives ‘participation’ as an activity and process involving local people in the development of plans, implementation strategies, and monitoring of the proposed activities (RECOFTC: Strategic Plan 2008).

Participation is a continuous process that should take place throughout all stages for all stakeholders for effective negotiation and decision making at various levels. As previously mentioned, participation of multiple stakeholders in the planning, implementation and monitoring process is a key element for CBNRM to successfully ensure that arrangements for management negotiated by stakeholders that are based on a set of rights and privileges (tenure) is
recognized by the government and accepted by resource users. In addition, public participation is critical in the process of establishing power sharing among stakeholders to make decisions and exercise control over resource use. The achievement of participatory planning and monitoring cannot happen without the following elements:

**Appropriate process**

There is evidence to support the fact that if people do not participate in and ‘own’ solutions or agree upon decisions, implementation will be half-hearted or at best probably misunderstood, and more than likely fail. The outcome and impacts from any intervention heavily depend on the participants and the context of the process.

Due to the fact that there is a tremendous range of, and diversity in, stakeholder characteristics, there is a variety of ways to learn and engage in natural resource management practices. There are many different participatory tools and techniques available, so the facilitator of the process must be cautious when choosing which ones to apply to ensure the tools and techniques are appropriate for the parties involved. During participatory processes, ideally all stakeholders are encouraged to actively involve themselves and express their opinions in an open and safe environment.

Appropriate participatory processes have the ability to strengthen people’s capacities in several ways within a safe environment: stakeholders become more courageous in raising difficult or sensitive issues and in discussing them openly. Furthermore, participatory processes allow them to learn how to share their needs and opinions as well as learning to discover and acknowledge the diversity of opinions and backgrounds of all stakeholders involved.

**Clear objectives and indicators**

Natural resource management is complex and it is often found that one intervention may cause consequences, positive or negative, to other bio-ecosystems or people whose livelihoods depend on the resources. To help mitigate and respond to unanticipated consequences, local people must monitor changes regularly. Therefore, the plan should be clear about its own objectives. Collective objectives must be developed by stakeholders
through a participatory process to ensure that they all achieve something together and be more responsible to make it happen collectively. The objective must be specific enough so that stakeholders can recognize the change.

Indicators supporting objectives can be developed, and the mechanism can be designed for appropriate measurement of the objectives. Within a single community some people may rely on fishing while others rely on agriculture. Therefore, resource management decisions will affect them differently, so the mechanism used to monitor changes will also be different. Women are often affected differently from men in natural resource management decisions; therefore, gender issues resulting from gender-based labour differences should also be included. All indicators developed should attempt to recognize the types of differences that occur in heterogeneous communities.

**Clear institution; roles and responsibilities**

Lack of trust between different levels of government and among communities and other stakeholder groups also inhibits progress toward effective CBNRM and constrains innovation to find locally appropriate solutions to address issues. The involvement of a range of stakeholders can easily result in confusion and conflict. Concerned institutions and users at different levels have to develop and agree on appropriate standards, systems, and processes to make CBNRM work in their specific contexts.

The main constraint in CBNRM is not a lack of assets, or site specific problems, but it is subject to wider factors such as a lack of legal access to resources, inadequate marketing systems, and other limitations including policy support. Countries like Lao-PDR, Thailand, Indonesia, Vietnam, and Cambodia claim that they have clear national policies that support the participation of local people in forestry and fishery management, that they have legislation frameworks that allow officers to promote the application of Community Forestry, that they have agencies designated to work for community-based natural resource management. However, these claims are further questioned by how much of the existing institutional structures allow officers to work closely with communities, how much communities can voice their concerns and opinions and become more active in NRM, and how much the regulatory framework is open to incorporating an effective multi-stakeholders process.
Enough scope for learning and adapting

An adaptive management approach is another critical element for successful community-based natural resource management. Experience from working within Southeast Asia proves that it is difficult to identify a solution that can solve all natural resource problems at one time and, as mentioned earlier, one solution may cause consequences resulting in other problems. An adaptive approach provides a framework that allows the resource manager to learn, reflect, and deal with complex ecological systems for which there are constant changes therefore making available information incomplete. The strength of an adaptive approach is that it establishes a learning mechanism to integrate local experimentation and scientific knowledge into resource management within a local setting.

The whole process of CBNRM is about learning and doing. An important part of learning is that the assumptions, the actions taken, and the results from monitoring are documented and shared widely to all stakeholders. The reflection and documentation process is important so that future resource managers know what has been tried and tested, enabling them to respond in a systematic way. It also allows resource managers elsewhere to learn from one another’s experiences without having to go through an entire process themselves. Effective planning and monitoring must therefore be flexible and provide an arena for learning. The progress and success of CBNRM must be measured both on the outcomes of its plan and outcomes from the working process.

KEY CONSIDERATIONS FOR HAVING A PARTICIPATORY PLANNING AND MONITORING PROCESS

Representation

Many studies have proved that participation in community-based natural resource management activities is dependent upon various social, economic and biophysical factors. Communities are very rarely homogeneous: there are poor and rich, young and old, direct beneficiaries and indirect beneficiaries, and different values and perceptions. In Thailand, the family who have a big piece of farm land are normally too busy with their own farming business often leaving them with less of an opportunity to participate in NRM. Those families
who own less land are the more active participants in natural resource protection since they have to secure their resources for livelihoods. Although people, including women, the poor, and the landless, who reside close to the resources and market, have shown that they exert a strong influence on participation in resource utilization, they have less input in decision making. The key factors identified for the low participation of women and the lower castes in decision-making were education and traditional customs resulting in low representation in resource user group committees (Fisher et al 2008).

Cases from Nepal and India show that Community Forestry management is dominated by the elite who capture and create benefits for certain groups of people. In Lao-PDR under the implementation of the Land and Forest Allocation Policy, representatives from village organizations must technically be involved in the planning and monitoring process. Even so, in many cases it was found that these representatives were not really women or men who entered the forests daily to collect their food. Although the women’s union is a part of the village organization and its representatives attend village meetings, their role in decision making remains minimal. Representation from the community and key stakeholders is essential. Increasingly, there is strong pressure for the inclusion of the poor, women, and marginalized groups within community-based natural resource management practices in decision-making and benefit sharing.

In order to have democratic legitimacy of knowledge, basic principles like truth, trust and accessibility to all decision making opportunities must be applied, and should serve stakeholders’ interests particularly to create fair benefits among all stakeholders. More democratic and interactive processes among stakeholders are therefore necessary and desirable in ensuring equitable forms of participation and governance in CBNRM.

Local capacities

Evidence from many countries in the region, including Thailand, Cambodia, Nepal, Indonesia, and Vietnam, proves that communities have the capacity to manage their own resources sustainably (Fisher et al 2008). Despite the encouraging evidence, CBNRM should not be romanticized. Communities often lack the capacity or desire to manage resources sustainably and are
frequently unable to deal with external constraints such as market forces, uncertainty of the current political situation, or natural disasters. Such factors limit their capacity to review their situation and make decisions regarding any changes that occur either internally and externally.

The success of CBNRM should not be measured in terms of the absence of assets and resources available within or around the community. The lack of capacity among stakeholders, including local people, to realize the benefits of these assets and how to optimize them effectively for the society in which they live, should be taken into consideration. In many situations they need to think beyond the local level to multiple geographical scales and landscapes. The development of skills, capacities, and the social and political infrastructure remains critically important and requires continuing support. Recognizing local and traditional knowledge, the integration of modern knowledge, and local practices must also be included to support the main objectives in CBNRM.

**Power relations**

CBNRM is a social process embedded in local politics, social relations and histories. Patterns of hierarchy, dominance, exclusion and inequities are woven into the local contexts. The general assumption behind CBNRM is that the power to make decisions is meaningfully devolved to participants. It does not mean that all stakeholders will win their objectives, but that they will have a meaningful role in negotiating outcomes and making decisions collectively.

Power relations refers to the pattern through which stakeholders exercise their legal traditional power, influence, interest, and control, or exert authority as an individual or group over resource management. It often happens that those who have connections with local politicians or political parties obtain more of an advantage than ordinary people in fulfilling their objectives. Marginalized people and groups are typically under-represented in institutions while management groups are generally dominated and controlled by elite groups or privileged classes whereby decisions are made in favour of the group with the most control. Unfortunately CBNRM does not have the ability to remove inequity from society unless user rights and tenure for local people are established and put in place.
Governance

Adequate and honest consultation, transparent and accountable decision-making, and a genuine participatory approach to CBNRM continue to be major challenges across countries in the region. A lack of trust between different levels of government and among communities is still a major constraint hindering successful CBNRM. Good governance lies at the heart of sound natural resource management. In order for sustainable resource management to be achieved, good governance principles must underlie the policy, legal, and institutional conditions that influence what can happen on the ground.

Good governance means that governance processes (authority and decision-making) are carried out in a way that is responsive and accountable to local people, effective, and that respect the law. The issues of transparency, accountability, and effective participation among stakeholders toward the management objectives need to be addressed for the decentralization of power to support the success of CBNRM in the long term. The question of legal jurisdiction and authority to grant or extinguish rights and issue permits is still unclear yet significantly important for determining which activities are legal or illegal, and who can define them.

Security of rights and access

Although it is clear that people can participate without having full legal tenure, securing rights is a fundamental factor for achieving poverty reduction through natural resource management. Resource use rights among community forest management agreement holders in many countries have been suspended or cancelled. Processes for local participation and procedures for recognition of collective and individual rights are confusing, cumbersome, and in need of simplification. Even in Papua New Guinea, where 97 percent of the land and forests is owned by communities under customary tenure, forest owners are not necessarily in a position to make decisions or even meaningfully participate in decision making about their forests (Potter and Bun 2008).

The real fundament for the long term viability of CBNRM requires major changes in process and conducing institutional arrangements especially on how rights, roles, responsibilities and rewards are allocated and by whom.
Security of tenure is a critical yet often under-acknowledged component in determining how rural people can improve their livelihoods and reduce poverty. Tenure encompasses the right to secure, long-term access to land and resources, their benefits, and the responsibilities related to these rights.

**Intermediate agents’ roles**

Development agencies, extension agencies, and NGOs play a significant role in facilitating and stimulating an effective participatory planning and monitoring process. Communities need tools for planning and monitoring their own resources. They also need support to defend their rights allowing them to participate in natural resource management decision-making and implementation. These agencies may provide support to local community networks in gaining more power to exercise their rights, helping people to become aware of what they can and cannot do, and assisting them to obtain more access to market information. However, the agencies must show their neutral role and maintain the trust not only among community people but also with other stakeholders to ensure that the participatory process can run without taking sides.

The way in which stakeholders at local levels participate in CBNRM is often affected by existing social and political relations. Therefore, the intermediary must be aware of this and enter any process cautiously to ensure the balance of power. On the other hand there is still a gap in the capacity of local authorities to adopt the concept of public participation in NRM. Given the rapid recognition of the values of people participation, the planning and monitoring process requires attitude change. The extension agent should play a bridging function to help local officers recognized the role that is needed and to gain more confidence in CBNRM.

**Equity benefits**

The approaches and practices used in community-based natural resource management (CBNRM) are diverse but mainly share the objective of integrating social and environmental goals by devolving power and authority in resource management from central government to the local level.
A number of efforts have been made to advocate CBNRM as a means for improving the socio-economic conditions of the rural poor, a means of improving sustainable resource management, and increasing the power and participation of marginalized groups (Kellert et al. 2000). Recent studies have questioned this potential, observing that in practice the equity outcomes of CBNRM fall short of expectations (Agarwal 2001; Agrawal and Ostrom 2001; Agrawal and Gupta 2005). In the Philippines we found limited economic activities allow for local people to gain benefits over resource management. Recognizing the traditional system in one case from India, forest access and collection practices are determined strictly with regard to whether a person bears a clan name, resides in the area, and is male. As one of the least developed countries in the region, the government of Lao-PDR has been trying to diminish shifting cultivation, which it views as environmentally degrading, and to reduce poverty by promoting the adoption of permanent commodity-oriented agricultural crops. At the same time the growing market demands for sugar and rubber in China, and the success of a model rubber plantation, have resulted in a boom in sugar cane and Para rubber plantations especially in the northern part of Lao PDR. Because local people are very poor, they were unable to bear the investment costs required for rubber plantation. The only way they could benefit from this boom was to give their land to a big rubber plantation concession company and receive very little compensation. They could no longer use their land to support their daily livelihoods and needed to clear more forest land for their subsistence farming.

The process of setting an equity benchmark to be achieved through an equity framework is important, and requires reference to the social context as well as explicit discussion and negotiation between stakeholders. This rarely occurs in practice. A tradeoff between achieving more equitable distribution of resources and better resource management must be seriously considered. Communities, and those institutions supporting communities such as NGOs and donors, must struggle to find the most appropriate mechanism to achieve a balance between realising the objectives of better resource management and more equitable distribution of access rights to resources.
Chapter 1: Planning and Monitoring in Community Forestry: Lessons from the Region

CONCLUSION

The participation of local people in planning and monitoring cannot be overlooked in CBNRM and it is not easy for it to work effectively. It requires genuine commitment and effort from all stakeholders and supporting agencies to process CBNRM towards agreed goals. There are a number of critical elements that all stakeholders and intermediaries must consider in the planning, implementation, and monitoring process. Facilitating agencies should be aware of which appropriate participatory processes can be used, how to help develop collective objectives and indicators, how to work under existing institutions, and how to use CBNRM as an opportunity for learning and adaptation. However key thoughts for effective participatory planning and monitoring must be considered. They include genuine representation from stakeholders, the degree of capacity local people have to be involved in the process, the balance of power relations within the decision making process, governance in CBNRM, right and tenure for people to actively participate in NRM, the role of intermediaries, and a mechanism to ensure that benefits will be shared fairly.

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Chapter 2
Challenges and Opportunities of Participatory Planning Processes for Natural Resource Management in Cambodia

By: Kate Bradlow

This discussion paper explores community participation and the many challenges and assumptions related to it. The paper argues that some 'participatory' processes are, in fact, externally motivated and directed processes which seek superficial community input to satisfy the growing pressure from donors and development trends to apply participatory approaches. By considering the assumptions surrounding participatory planning and providing a critique on the associated development principles, the paper attempts to provide a theoretical backdrop for the consideration of participatory planning practice in a Cambodian context. Through a series of discussion questions including: (1) why use a participatory approach, (2) what do we mean when we refer to ‘community’ and (3) do all participatory planning processes promote empowerment and community ownership of land and natural resources, the paper concludes that participatory planning approaches should be carefully thought through before engaging community members, and the process must be subject to ongoing reflection.

INTRODUCTION

Community participation is widely acknowledged within development theory as a central approach for effective and empowering development. In Bourdier's discussion of the development paradox in South-East Asia, participation is described as an 'act of faith for development, something practitioners profoundly believe in and rarely question' (Cleaver 2001 as cited by Bourdier, p6 2008). The term has undoubtedly become a staple in development rhetoric, a mantra that is shared by multilateral agencies, governments, donors and grassroots organizations alike. Conceptually, participation is difficult to contest, with its strong associations to equally popular notions of empowerment and

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self determination. It provides a forum for community led decision-making and ownership of the resulting strategy and activities. In theory, approaches are responsive to community priorities and activities are informed by local knowledge and reflect community relationships. However, I suggest that some 'participatory' processes are, in fact, externally motivated and directed processes which seek superficial community input to satisfy the growing pressure from donors and development trends to apply participatory approaches. Participation in practice can be fraught and, if poorly facilitated or applied in an inappropriate context, a disempowering approach.

The objective of this paper is to identify the core principles of participation and the opportunities to apply participatory approaches within the context of community based natural resource management in Cambodia. By considering the assumptions surrounding participatory planning and its closely associated concepts, I provide a theoretical backdrop for the consideration of the experiences of participatory planning practice in Cambodia. I address the issues relating to participatory planning through a series of discussion questions. Each of these questions should be considered before starting a process. Through these questions, we can explore the assumptions we make about participatory planning processes.

**BRIEF OVERVIEW OF LAND AND NATURAL RESOURCE MANAGEMENT IN CAMBODIA**

Cambodia is currently experiencing rapid and sector intense development. Despite widespread poverty, Cambodia is a mineral and resource rich country. However, the benefits of these natural resources are experienced by only a small proportion of the population. Rural communities are becoming increasingly vulnerable to the rapidly growing pressure on natural resources. With the influx of international companies and their monopoly over Cambodia's rich natural resources, communities are finding themselves being pushed out of their land to make way for mines, hydro dams, and rubber plantations. Gaps in literacy and education mean that community members are often excluded from processes relating to the decision-making and management of their own land and natural resources (LNR). Since 2001, the Cambodian government has been undertaking a process of decentralization with increasing decision-making and administrative powers being transferred from national to provincial and local levels. This
decentralisation offers an opportunity for natural resource management that is informed by local, historical knowledge of environmental trends and traditional use of resources. It also lends itself to an acknowledgement of the complex social, cultural and political dimensions that both influence and result from the way in which natural resources are managed.

**WHAT ARE PARTICIPATORY APPROACHES?**

In order to provide a context for the use of the term participatory planning, it is necessary to first define participation and the principles of participatory approaches (PAs). As Cornwall (2006, p1) states, 'participatory approaches involve recognition of the ways in which dominant actors and forms of knowledge render others subordinate'. By this definition, she acknowledges the potential for a process to be both empowering for some and disempowering for others. Participatory approaches theoretically aim to move away from the seesaw of power\(^2\) by instead focusing on mutual and collective empowerment.

Participation in development can be viewed on two levels. The first is the concept of participation in a broad societal context; the social, political, economic, cultural and spiritual participation of individuals. This view of participation transcends marginalizing elements such as age, gender, education and ethnicity. Participation at this level is closely connected and arguably dependant on the promotion of participation at the second level; namely participation in interventional, rather than organic, traditional activities. This includes participation in structured planning processes, as well as in development projects and bureaucratic processes. These processes are introduced, led, or supported by outside actors and often require a level of formulated structure.

In this paper, I focus on participation in what I refer to as an intervention planning process. It is important to acknowledge that, as non community members, reference to LNR management planning is within an introduced, rather than preexisting context. While traditional cultural practices often play an important role, the processes are nevertheless formalized into structures such as cost-benefit analysis, strengths, weaknesses, opportunities and

\(^2\) the idea that power is limited and for some to gain power, others must lose it
threats (SWOT) analysis etc; tools that have been devised in offices far away from the rural communities of Cambodia. It is not my intention to delve into the contentious but important discussion of development intervention in this short paper. Instead, I want to discuss the factors that need to be considered to enable people to participate in the processes of facilitated planning, and why this is essential to the effectiveness and long-term sustainability of the management of their land and natural resources.

PAs are a set of working engagement principles that can be used in a wide variety of situations. The flexible nature of PAs enables them to appear differently and contribute to varying outcomes depending on the context. Despite these subtle differences, I suggest that the fundamentals of the methodology are universal. It is widely agreed upon that participatory approaches emphasize the process rather than the end product (Freire 1972 as cited by Cornwall 1996). The essence of this conceptual framework is methodology and the impact of these methodologies on the outcome of an activity. Specifically, participatory approaches seek to promote the sustainability and overall effectiveness of activities undertaken.

At the centre of PAs is the promotion of empowerment of participants. Empowerment is a concept that is becoming increasingly more popular within development rhetoric. However, interpretation of empowerment and its pursuit in practice differ significantly. According to the World Bank (1996, p2), empowerment is:

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...the process of increasing the capacity of individuals or groups to make choices and to transform those choices into desired actions and outcomes. Central to this process are actions which both build individual and collective assets, and improve the efficiency and fairness of the organizational and institutional context which govern the use of these assets.
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In this definition, empowerment is referred to as a process and vital to this process is capacity building. The building of effectively governed assets is both part of the process, and an empowering output. This definition, I suggest, provides a rather institutional view of the abstract nature of empowerment.
Empowerment is often thought of in terms of the transfer of power from one, more powerful party, to another, less powerful party(s). However, I suggest that this idea is, in itself, a disempowering approach and views power as something of which there is a limited quantity that can be given or taken away. It imposes a hierarchy and suggests that marginalized people must rely on the generosity of more powerful people in order to be empowered themselves.

Instead I propose that empowerment is both a process and an outcome involving the realization of an individual’s or group’s potential power so that they can use this power to define, determine and manage their own futures.

**WHY USE A PARTICIPATORY PLANNING APPROACH?**

Every situation is different and participatory planning, when adopted, is done with the aim of satisfying different priorities and agendas in different contexts. A wide range of activities can be termed participatory, but crucial to the effectiveness of these activities are the levels of participation and the implications of the participation.

Despite the broadness of these approaches, I suggest that there are two fundamental motivations for undertaking participatory planning. These are:

1. Effectiveness of resulting program/activity. I suggest that one rationale for the use of participatory planning approaches is its potential to positively influence the outcome of the planned activity. It is increasingly acknowledged that, while it brings with it its own challenges, local community involvement in planning can add value to the process by providing insights, local knowledge and community support.

2. Participant Empowerment. The process of participating in planning should be an empowering experience in itself. Furthermore, the implementation and outcomes of the resulting plan should also be a vehicle for empowerment of participants and the broader community.
WHAT DO WE MEAN WHEN WE REFER TO ‘COMMUNITY’?

Although the complexities of defining community go beyond the scope of this paper, it is important to address applications of this term in order to understand the context for participation. I suggest community can be broadly defined as a network of people bound together by common identity and/or interest.

Community is becoming, at least conceptually, increasingly valued and recognized within the context of development. The slogan ‘local solutions for local problems’ is being used (and potentially abused) in wide-reaching development contexts. The idea and ideal of community remains extremely powerful and is often romanticized. There is a misperception that “communities are, in an ineffable way, good, and enshrine sacred values” (Brokensha and Hodge 1969, p21). Although the term community suggests support, inclusion, and shared values, accompanying this is the potential for exclusion, discrimination, and oppression.

Within the context of participatory planning in land and natural resource management in Cambodia, community is most appropriately identified geographically; collectives residing on and utilizing common land and resources. Typically, all communities are made up of men and women, young and old, literate and illiterate, powerful and vulnerable. With the diversity of community members comes a diversity of priorities and perspectives. Therefore, when developing and implementing participatory planning processes, the question of how these various community viewpoints are represented is essential. When working with a group of Khmer development facilitators on a participatory research tool, we discussed the question of ‘what makes a good community participant?’. To this, the facilitators suggested a number of qualities that a participant should posses including: (1) they should be respected and popular within their community, (2) should be knowledgeable about the relevant topic, (3) able to communicate clearly, (4) should be influential, and (5) have decision-making powers. From the perspective of a development facilitator or implementer, it is undoubtedly more straightforward to work with people with capacity, influence and knowledge. However, this inevitably results in the marginalization of those with lower status and authority from decision-making processes. Therefore, consideration must be given to the complex power dynamics involved in community participation in such processes, particularly relating to the idea of representation. Self selecting participants can play an important role in the development and implementation
of plans, but they are not necessarily mandated representatives of the community; their ideas, inputs and perspectives are their own and they have not been selected by the rest of the community to speak and make decisions on their behalf. The issue of self selecting participations must be acknowledged in order to avoid creating conflict within a community.

**WHY IS PARTICIPATORY PLANNING VALUABLE TO NATURAL RESOURCE MANAGEMENT IN CAMBODIA?**

According to Thomas and Bendapudi (2003, p1), participatory planning aims to identify the critical problems, joint priorities, elaboration and adoption of (development) strategies. In principle, the participation of local people in the planning offers a number of opportunities for sustainable land and natural resource management for the following reasons:

**Effectiveness and responsiveness of plans** - If a participatory planning process is undertaken appropriately, the resulting plan should be responsive to the context and priorities of the communities and the environment they live in. I suggest that if activities are responsive, they are more likely to be effective in meeting their objectives. Furthermore, community participation in the implementation and monitoring of planned activities will enable the ongoing review and development of activities to respond to the ever changing context.

**Empowerment and community confidence** - Involvement in planning and decision-making potentially enables communities to take control of their futures, empowering them to pursue their own priorities. Regardless of the context, participation in decision-making has an important role in building the collective power of whole communities involved in the process. As Cornwall (1996, p2) points out, being involved not as objects but as active participants in dialogues and mutual learning can contribute to building confidence and self esteem in local people. Within the context of Cambodia, this confidence is often lacking within rural communities; complicated and bureaucratic systems of resource administration can often lead people feeling belittled by the external processes.

**Valuing local knowledge** - Local people often have an enduring relationship with their environmental surroundings that cannot be replicated by outside actors. This includes historical knowledge relating to the complex biodiversity of the area, seasonal changes, the impact of weather changes, and the
pressures on the environment. In addition, the cultural and spiritual relationships of communities to their land, forests, and water play an important role in the way that these resources have been utilized in the past and the maintenance of this relationship in the future. The encouragement of participation is effectively saying 'your opinion and knowledge is important and valued'.

**Community engagement** - The process of participation is intended to result in the engagement of participants. By engagement, I refer to the full attention and commitment of community members which relates closely to the concept of ownership. When participants feel engaged, they also consider their own roles and responsibilities to the process. In the instance of LNRM planning in Cambodia, I propose that community members who feel involved in every level of the process are more likely to have a sense of obligation and commitment to ensure its sustainability. However, in order for engagement to be meaningful and enduring, opportunities to participate in processes must be consistent and respected. Full engagement is accompanied by certain expectations and assumptions. It is the role of the facilitators of planning processes to manage these expectations appropriately.

**Community Ownership** - Within development discourse, ownership does not relate to the rights of exclusive possession, the conventional meaning of the term. Instead, ownership refers to the relationship among different stakeholders and development actors, particularly their respective capacity, power or influence to set and take responsibility for a development agenda, and to sustain support for that (Saxby 2008, p2). The concept refers to a sense of commitment and responsibility to a process in the long term. When referring to community ownership, this suggests that it is the community that not only acknowledges its central role within a process, but the commitments and responsibilities that are accompanied by that role. Put simply, community ownership suggests that communities feel "this process is ours and, because it is ours, we want to look after it and ensure it is effective".

**Long term sustainability** - A strong argument for community participation of planning in LNR management is that communities have an ongoing relationship with the land and natural resources within their geographic setting. This notion is based on the fact that many communities are often well established in an area for a number of generations. Community members have a lifelong
connection to their community and are less likely to move away than local government administrators, public servants and NGO workers. Therefore, this offers a consistency in governance that cannot be provided by external governance. However, the assumption of community stability must be considered in the context of Cambodia, where the Pol Pot regime led to the relocating and reformation of many communities, resulting in communities being relatively recently established. Additionally, within the present climate of land development and community relocations, geographic communities are under the threat of displacement and division.

**Strengthening social capital and community cohesion** - Social capital is a popular concept in community development rhetoric. In terms of community wellbeing, social capital relates to the features of a community or society that enables collective action, as described;

> Social capital consists of the stock of active connections among people: the trust, mutual understanding, and shared values and behaviors that bind the members of human networks and communities and make cooperative action possible (Cohen and Prusak 2001, p 4, as cited by Smith 2006).

Sociologist Robert Putnam (1993, 2000), identifies an increasing lack of social capital as the cause of the decay of social cohesion. He concludes that the lack of social cohesion allows for community members to develop a feeling of isolation which can often lead to self serving behavior that is detrimental to the wider community. An example of this situation that is relevant and occurring in Cambodia is the selling of communal land by individuals. In contrast, community cohesion is the collective confidence, trust and inter-reliance of a community. I suggest that, without strong social capital, such cohesion is not possible in the long term. The process of participatory planning has a significant impact on internal community relations, not necessarily positive. However, a reflective and thoughtful process can have a positive impact on community solidarity and social dynamics. It provides a shared focus and an acknowledgement of the collective strength of community.
WHAT IS THE ROLE OF COMMUNITY IN THE MONITORING AND EVALUATION OF PLANNED ACTIVITIES?

Development practice in Cambodia and other development contexts is often input and output focused with little emphasis on the real impact and effectiveness of activities undertaken. In order to ensure that any program, project, or working approach is effective, a level of monitoring and evaluation (M&E) is required. Just as community members have a significant role in activity planning, their insight into subtle changes, knowledge of everyday occurrences, and access to anecdotal feedback means that community members are in the best position to monitor progress. This must be factored into the planning process to ensure that monitoring systems are practical, accessible, and relevant. Such monitoring systems should be developed with community members to ensure that they are not time consuming, unnecessarily complex, or resource intensive. I suggest that evaluation of a project requires a certain level of analysis and objective reflection that requires qualitative input, as well as relevant quantitative measures. Due to their proximity to the situation, community members play an essential role in collecting and sharing information. Capturing the experiences of participants can be done through the use of narratives, including the collection of stories and anecdotes relating to the project experiences. This provides a real context for participant experiences during a process, and allows them to lead the conversation by providing feedback in the form of their story, rather than in response to set questions. This does not however, diminish the role of set questions in M&E. By setting questions, we are able to collect information relating directly to the areas of particular interest. It is how these questions are posed that is important. Closed questions with ‘yes’ or ‘no’ provide a very limited insight and do not provide the opportunity for participants to contribute their ideas and reflections. Passively limiting feedback in this way suggests that the perspectives and reflections of community members are of limited value.

DO ALL PARTICIPATORY PLANNING PROCESSES PROMOTE EMPOWERMENT AND COMMUNITY OWNERSHIP OF LAND AND NATURAL RESOURCES?

As I have asserted throughout this paper, the positive impacts and effectiveness of participatory planning are dependant on the methodology and thoughtful undertaking of the processes. Facilitators of a participatory planning process
have a responsibility to participants to ensure that their input is fairly represented and respected. As discussed, community can be a forum for collective identity, strength, and social participation. It can also be hierarchical, dominant and excluding. Facilitators of participatory processes must use the knowledge of local partners to gain an understanding of complex community dynamics. Taking a gender approach and recognizing the role of potentially marginalized community members is also critical in ensuring that the process is both empowering and effective. In many instances, the relationship that women have with LNR differs from that of men. Therefore, it is essential that the perspectives and insights of both men and women are incorporated. Similarly, elderly community members have often experienced the impact of changes in LNR management and the environment over a significant period of time and therefore possess stories that can provide lessons for the future. In addition to the importance of the elder community members it is also necessary to recognize and include the younger generation as they are responsible for the long-term implementation of strategies and plans. Their input in the planning stage is essential to ensure their ownership of and commitment to the implementation of planned actions. From a methodological perspective, participatory processes must be accessible and empowering in themselves. If a community is not literate, methods such as storytelling, picture drawing and priority identifying tools (such as the 'Ten Seeds' technique) can be utilized to guarantee that limited education and literacy is not a barrier to participation. It is vital that planning takes place at times and places that do not automatically exclude the participation of some groups. For example, if planning takes place at certain times of the day, women may not be able to leave their household responsibilities. At certain times of the year, community members are busy with planting or harvesting rice. In some indigenous communities, special ceremonies may be taking place. All of these factors should be considered. Potentially excluding factors should be identified before the start of a community process and approaches developed to overcome these limitations.

Another source of potential disempowerment in a participatory process is the lack of acknowledgement of participants input in the resulting plan or activity. Tokenistic consultation and inconsistent participation can be more harmful than an entirely 'top down' approach. If a community is asked to input local priorities, knowledge and experiences into the development of a process, a reasonable expectation is created that this input will be incorporated and reflected in the planning processes and outcome. If this is not the case, it can
have significant repercussions on the relationship with communities and is, in itself, a statement against the value of community input. Although participatory processes encourage different levels of engagement, it is essential that expectations are managed and that, if possible, communities are involved in every stage of the process to avoid exclusion and confusion.

Although I am a strong advocate for community led and participatory processes, I suggest that participatory processes are not always appropriate and should not be universally employed without consideration. For example, it is not useful to engage a community in a process where their input will, realistically, not impact the outcome of the process. This, again, serves to raise unrealistic expectations and leads to disappointment and reluctance to participate in future processes.

RESPONSIBILITISATION

As Bourdier (2008, p7) recognizes, there is a risk of ‘transforming the message of participation into a tool for manipulation’. One issue associated with participatory planning processes is the notion of “responsibilisation”. With power comes responsibility as a process of empowerment, participatory planning can also be a tool to shift responsibility. The concept of “responsibilisation” (Rose 2000, p327; Basok and Ilcan 2004, p132) refers to the transfer of responsibility from government to communities and individuals. This is associated with “choice, personal responsibility, control over one’s fate, self-promotion and self-governance” (Rose 2000, p 337). Government responsibilities are assigned to communities, yet these communities are forced to conform to standardised systems and processes. The distinction must be made between communities being empowered to plan for and manage their own land and natural resources, and communities undertaking government’s responsibilities. With these responsibilities also come the expectations of effective management and sound decision-making. However, communities and their members are not necessarily familiar with government and donor bureaucratic accountability and administrative systems. Therefore, the transfer of decision-making power and responsibility to communities without thorough and thoughtful preparation can inadvertently set those communities up to fail. If this is the case, the participatory process can result in immeasurable disempowerment to the community and significant, immediate, and long term damage to the community’s internal and external relationships.
BUREAUCRATIZATION OF COMMUNITY PROCESSES

Another significant challenge to the effective engagement of communities in formal planning processes is the complex relationship between community systems and the complex demands of bureaucracies. In order for community based planning and project management to be effective, I suggest a two pronged approach must be taken:

Community capacity building - The first approach focuses on community capacity building around some of the more technical aspects of processes and activities being undertaken. This approach is widespread in Cambodia, with extensive training and workshops conducted in communities. Additionally, organizational development with local community organizations and networks has sought to strengthen community based administrative and formal planning structures. These structures are often designed to align with the structures of national organizations, government or international donors. I suggest that, although there is value in community capacity building to enable communities to engage with higher level decision-makers, significant attention should be refocused onto the second approach;

Adaptation of administrative and governance systems for responsive engagement - The second, and less acknowledged aspect, is the adaptation of the complex procedures currently employed by organizations, donors and governments, to more accessible and appropriate processes for implementation by community members. The development of systems, including planning, M&E and accountability systems, should be adapted with participation from community members so that they are relevant and accessible. This approach, in combination with community capacity building, encourages effective participatory LNR management by closing the gap between traditional community governance systems and high-level bureaucracies by creating a mutually applicable middle ground.

CONCLUSION

Participation is not a new idea to most communities; it is a way of working that underpins all activities. However, much of what currently passes as participatory are local people taking part in other people’s projects, according to agendas set by external interests (Cornwall 1996, p2). Cambodia has
examples of community driven processes, as well as community participation in externally driven processes, as illustrated in the case studies of this collection. In this discussion paper, I have argued that despite the diversity of contexts for participatory planning processes, the core principles must be acknowledged and assumptions questioned. Participatory planning approaches should be carefully thought through before engaging community members, and the process must be subject to ongoing reflection. The involvement of community in decision-making is essential for long term sustainable management of LNR. It has the potential to promote ownership, recognizes the value of local knowledge, and acknowledges the custodianship of communities over their land and natural resources. It provides opportunities to strengthen community solidarity and build social capital, as well as empowering marginalized community members. However, it also has the potential to create conflict within communities and further exclude marginalized voices. Without reflection and careful consideration, participatory planning processes can not only be ineffective but disempowering for participants.
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Chapter 3
Participatory Approaches towards Sustainable Development: Is public participation an answer?

By: Ken Serey Rotha

This paper argues that the public can be most effectively involved in environmental policy and planning if key factors of understanding between stakeholders and proponents are understood and acted upon. These key factors include the two-way approach to communication between stakeholders and proponents, acknowledging diversity of stakeholders, greater acknowledgement of cultural aspects, increased power sharing, utilizing education as a tool for effective public participation, and allocation of more adequate resources. Following a discussion of these topics the paper concludes that theoretically, public participation looks easy and achievable but in reality it is costly and time consuming. Furthermore, there are different forms of public participation in which it means different things to different people.

INTRODUCTION

The Earth Summit held in Rio de Janeiro in June 1992 by the United Nations Conference on Environment and Development (UNCED) was a remarkably successful event which brought together world leaders and heads of state as well as representatives from the United Nations agencies, international organizations and non-governmental organizations from around the globe. They gathered to make commitments to achieve sustainable development goals by the evolution of comprehensive plans and strategies. UNCED agreed under Agenda 21 to focus on rethinking the approach to environmental management, highlighting the importance of involving and encouraging public participation at different relevant levels and accommodating indigenous knowledge, local values, and interests (UN 1992).

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Since the Summit in 1992 there has been a growing recognition that public participation and consultation in natural resource management is a desirable objective (Baker 2003; Roberts 1995). This has led to a demand on countries in the South for public participation by some countries, particularly Britain, Canada, and the United States of America, and international funding agencies, such as the World Bank, the United Nations Development Program, and other major donor agencies, if their international assistance is provided.

Given that a participatory approach is a Western concept, public involvement in achieving desirable outcomes in the decision-making and planning processes remains a difficult task, particularly in the field of environmental and natural resource management as well as in environmental policy and planning. National governments see this as an opportunity to get funding from the international agencies. However, the assistance from the international communities may stay at the national level for conference, policy debate, documentation, and technical training for national staff, while local issues remain unsolved and local people continue to be accused by resource managers as being contributors to resource degradation. For that reason, the public, and especially the marginalized groups within the community, do not bother to participate in projects, if their interests and voices are not discussed and heard.

This paper argues that the public can be most effectively involved in local planning if key factors of understanding between stakeholders and proponents are encouraged. These key factors include the two-way approach of communication between stakeholders and proponents, acknowledging the diversity of stakeholders and the cultural aspects that shape their lives, increasing power sharing, utilizing education as a tool for effective public participation, and allocating more adequate resources.

**A TWO-WAY APPROACH TO COMMUNICATION BETWEEN STAKEHOLDERS AND PROONENTS**

In practice, public participation tends to be a one-off process: it is conducted once instead of facilitating an ongoing reflection of the process, and the public are often invited to participate only at a late stage of the process. In some processes the public have become distrustful because of a lack of observation of consulting organizations using and incorporating the results of
their inputs. In many cases this leaves the public to ask themselves, ‘why should we bother with participating this time, when you did not use our input last time?’ (Roberts 1995).

In many cases, the process of public consultation is set up and implemented without clear objectives, goals, and decision-making mechanisms. As a result, public concerns and interests are rarely considered by the decision making body. For example, in the case of Taiwan, the public, interested groups, and relevant agencies have the right to participate in public consultation at several stages of the environmental impact assessment (EIA) process. However, the final stage of decision-making is conducted by the EIA Review Committee: there is no formal involvement of local government or local communities (Cooper and Elliott 2000, P.345). It has been suggested that these problems and constraints can be overcome by improving the two-way approach to communication between stakeholders and the proponents.

Harding (2002) makes the point that a two-way approach to communication between all relevant stakeholders and the proponents can effectively motivate people to engage in environmental and natural resource management. Because participants have access to information, new knowledge, network building opportunities, and their voice is heard, the two-way approach to public participation ensures windows of opportunity for all relevant stakeholders, including marginalized groups, uneducated people, and the poor. This approach provides them with access to the information and provides for full participation in the discussion process. In addition, this approach puts people into small groups that are relevant to them. A small group setting often provides an open environment where people are free to express and share their information, concerns, and interests with other group members. This approach seeks to ensure that the views of all individuals, interest groups, and other actors, as well as their ideas, concerns and interests are taken into account (Harding 2002).

My observation and experience from working with different stakeholders from government offices, private sector businesses, and civil society including the rural communities in Cambodia, leads me to believe that this approach has positive results: once they have shared information, concerns, interests and other important issues in relation to their local areas, people are much more inclined to start building trust among themselves. Given the opportunity
to build trust and share information with each other, people feel that they are empowered and own the discussion. Being empowered, people immediately recognize and respect the result of discussions and they are motivated to seriously participate in the discussion.

**ACKNOWLEDGING THE DIVERSITY OF STAKEHOLDERS**

While recognizing the importance of acknowledging cultural aspects in securing high public involvement in natural resource management and environmental policy and planning, it is not always practical. In some cultures, women are powerless in society and they are not encouraged to be involved in any decision-making processes.

Giving opportunity and paying respect only to the village leaders of the community may not encourage other community members to participate. This means that concerns and interests of village leaders may not represent the interests and concerns of all community members. Roberts (1995) indicates that there is no single public interest, but there more many public interests. In addition, the decision-making process does not achieve high quality results if only selective people are invited to the meetings and discussions and their views do not represent the public as whole (Cooper and Elliott 2000).

Some community members manipulate and utilize the public participation process for their own interests and personal gains, ignoring the interests of the community as whole (Roberts 1995). For example in the case of the Bolinao Cement Plant Complex project in the province of Pangasinan, Philippines, in 1994, during the public meeting some members within the community supported the project because they were offered employment opportunities and economic benefits and this led to conflicts and confrontations within the community (Cooper and Elliott 2000).

Effective public participation should be customized to suit circumstances, and can combine different aspects successfully to achieve greater advantages than might be offered by a single aspect alone (Ross et al. 2002: 205). A misreading, and exclusion, of the local context can discourage people from actively involving themselves in the discussion, planning and decision-making process, if sustainable development is to achieve positive outcomes to benefit society as a whole.
GREATER ACKNOWLEDGMENT OF CULTURAL ASPECTS

Culture plays a significant role in motivating people to engage in public meetings and discussions (Harding 2002). For example, in a rural Cambodian community, people will participate in a discussion actively if their interests and culture are respected. Harding points out that understanding cultural differences and paying respect to religious traditions are necessary to help motivate people to become involved in the public discussion. More importantly, understanding cultural influences helps to avoid members of a community taking offence or becoming distrustful of public meetings and discussions.

My work experience in remote rural Cambodian villages, especially with the disadvantaged minorities in the northeast and the watershed communities in Stung Siem Reap, shows that village leaders of the community must be respected and consulted from the beginning of the process. This consultation and respect is essential to gain cooperation and support from the leaders of the community. In addition, engagement of other groups including disadvantaged groups, women, uneducated people, and the poor in understanding, paying respect and attention, and learning from, and listening to their concerns and interests, can motivate them to actively participate in discussions.

INCREASING POWER SHARING

People may not be active in community participation because they are not empowered by their community by, for instance, being given the opportunity to participate in decisions about managing resources or developing plans. People may not be interested in a discussion - especially if such a discussion is just a formality to comply with a required regulation and participants do not have knowledge about it prior to their participation. For example, positive outcomes of the project or discussion will not be achieved when a discussion only involves stakeholders in the discussion but actually the decision has already been made (Kapoor 2001).

Information about development projects or discussion is significant to stakeholders, if their participation is to be engaged. This means that if information is not widely accessible to many stakeholders prior to their engaging in the discussion, people will not be interested in that discussion. My experience indicates that without sufficient information, people may not be motivated
to participate in discussion. More importantly, sometimes the participatory process is manipulated by the elite people and private sector representatives. In this case - and as discussed in the scholarly literature on elite capture - members of the elite or private sectors take the opportunity to influence those who are quiet but that are key relevant stakeholders of the issues (Dasgupta and Beard 2007; Platteau 2004).

For participation to be meaningful, and for the public to be motivated, involvement by relevant stakeholders is required in all stages of discussion, planning and decision making, and throughout the program cycle - from design to implementation and evaluation (Kapoor 2001). According to Arnstein (1969), people are motivated to participate in sharing their concerns and interests when they are involved in the early stages of the process. Some people can be more motivated if they are involved in the early stage of the process because they feel that they own such discussion and hold the responsibility for a decision made.

More importantly, people can become active participants if they are empowered to express their concerns, and these are taken into account for seeking a solution in an open discussion. Dovers (2000) emphasizes that some people do not participate directly, but prefer to observe while others may intend to participate in different ways at different stages in the policy process. This suggests that to obtain effective involvement of people in policy planning, they should be placed in an appropriate stage of the process. For example an environmental impact assessment may involve people from scoping, screening to the public consultation stages. This also means that empowerment is essential for people to actively participate. This empowerment is a central element to secure the active involvement of people in the policy planning process.

**EDUCATION AS A TOOL FOR EFFECTIVE PUBLIC PARTICIPATION**

Education, both formal and informal, plays an important role in enhancing the level of public participation because people are given the opportunity to participate in the decision-making process. Given that knowledge is significant in shaping people’s understanding, education may help to facilitate more effective involvement by different groups of people to strengthen the communication between stakeholders and proponents.
Diduck (1999) indicates that education can help to enhance communicative competence, which enables people to understand what someone says or means. In addition, education can help community members to clarify meanings, intentions and values, rather than merely accepting those of others.

Diduck also explains that environmental education has the potential to be a means and tool to facilitate public participation in natural resource management. In addition, environmental education can help to empower local communities to take greater control of resource use decisions. This is confirmed by Greenal and Robottom (1993 in Diduck 1999:88) who argue that critical education empowers learners to participate in a democratic transformation of society. Therefore, environmental education may form part of the solution to get people effectively involved in environmental policy and planning.

**ALLOCATION OF MORE ADEQUATE RESOURCES**

Resources, including human, financial, technical, and economic, play an important role in making a substantial difference to the quality of environmental policies and planning processes. Time and resources are scarce for everyone in society as a whole including community members and other relevant stakeholders. Therefore, it is often difficult for people to find these scarce resources to participate in any discussion and planning meeting (Harding 2002). If possible, the proponent may take this into account by making resources available to ensure a broad range of people within the society are able to participate. This helps to overcome the constraints and barriers which may prevent the participation of particular sectors. These resources should be used to compensate those taking part, and to cover the costs of, for example, childcare, translation services and travel allowances. But the resources should not be used to buy people’s participation in any discussion or planning meeting.

However, resources are not always available, or are limited. In some cases, the proponents are not interested at all in spending their resources to cover the expenditure of conducting public participation. My experience working in Cambodia is that because public participation is costly and time consuming, it is often conducted in a short time and manner. This means
that only selected small groups of people are invited to participate in discussions, and that the marginalized and the poor are not invited. As a result, people as a whole do not recognize a decision made at the discussion because they feel that they do not own the process.

**CONCLUSION**

The earlier discussion confirms that, if the key factors are met, public participation is a desirable and useful concept to produce positive and sustainable outcomes. Theoretically, public participation looks easy and achievable but in reality it is costly and time consuming. Further, there are different forms of public participation. Public participation means different things to different people.

However, effectively involving the public in environmental policy and planning is achievable if increased understanding between stakeholders and proponents is nurtured, to improve a two-way approach to communication, acknowledging the diversity of stakeholders and the cultural aspects that shape their lives, increasing power sharing, and allocating more resources. This helps to ensure that the public are fully empowered, that they have access to the information they need and that they are involved in the process at all key stages of the development project.

It is observed that increased participation is about making services more responsive and/or including voices of those usually left out of decision making processes. More importantly, participation usually aims to give the public influence in decisions that may directly affect them. Therefore, it is feasible that the public can be effectively involved in policy and planning, but it takes time and resources.
REFERENCES


Chapter 4
The Experience in Siem Reap Province of the Community Forest Management Plan (CFMP) Development Process

By: Prak Marina

Based on experience in Siem Reap community forests, this paper provides a detailed breakdown of the stages involved in the creation of a Community Forestry Management Plan (CFMP) along with challenges faced along the way and recommendations for future action. The creation and legal authorization of CFMP’s is necessary for community forestry initiatives if they wish to engage in commercial harvesting of their forest resources. The process of developing a CFMP requires a combination of technical capabilities supplied by the Forestry Administration (FA) and local knowledge and support from the community. Since the CFMP needs to be both technically accurate and a real reflection of the communities’ aspirations, the author stresses the importance of a collaborative approach between the community and the FA during each stage of the design.

BACKGROUND

Food security, income, nutrition, employment, energy and livelihood are linked with forests and other natural resources (Ashwell undated; Malla undated). The forest is one of the important natural resources that support most rural communities in Cambodia (Sokh and Ty 2005; Malla undated; CDRI 2002; World Bank 2006). Fuelwood is the main source of energy for the majority of the rural poor (Malla undated). Even if most community forests in the country offer limited benefits from timber, they support the household economies of communities during lean months in terms of Non-Timber Forest Products (NTFPs) such as mushrooms, honey and wild fruits, bush meats, resins, rattan and many others (Gerrard 2006; Seng et al. 2004). Foods from the forests are essential during periods of rice shortages. (MRC 2003)

1 Prak Marina, Deputy Director of Siem Reap Forestry Administration Cantonment
Recognizing the importance of the forests, the Community Forestry Management Committees (CFMCs) of Community Forestry initiatives entered an agreement with the FA Cantonment to develop the community forests. The FA recognized the rights of the communities to manage community forests and has given them the right to utilize the forest resources in a sustainable manner as prescribed by the Community Forestry (CF) guideline.

The CFMP is an important document that provides details of sustainable development and utilization of the community forests by the community. The CFMP that are developed by the community through the CFMCs, contain information about the status of forest resources, development activities and the extent of utilization. In some countries, the CFMP is used as a basis for granting access to forest resources. (Meijboom et al. 2008)

The CFMP is very important to the Community Forestry initiatives in Cambodia since it will be used as a basis in the approval process for the commercial extraction and utilization of the forest resources by the Forestry Administration (FA-MAFF 2006) as provided in the Prakas for CF. The plan is submitted to the Cantonment for approval and thereafter is used as a basis for the actual commercial management of the community forest.

**OBJECTIVES**

The purpose of this paper is to present the experience in developing a CFMP and the lessons learned among the CF members. The paper will also present the challenges of developing the CFMP and areas needing improvement.

**Specific objective are:**

1) To provide CF facilitators with guidelines on how to work with communities to prepare management plans for managing natural resources in community forests
2) To suggest participatory tools and approaches that can be used to collect information for management planning and describe those tools
3) To provide guidelines for CF facilitators regarding the content and organization of information within management plans.
METHODOLOGIES AND APPROACHES

The CFMP is an important tool that guides the community in managing the community forest. As such, the information it contains must be correct and so the inventory data gathering process must be rigorous and reliable. The frequently used tool in assessing the resources in the community is Participatory Resource Assessment (PRA) (Start and Hovland 2004) which is frequently used in CF. Participatory Rural Appraisal (PRA) does, however, have certain limitations particularly in obtaining the information needed in formulating the CFMP.

Despite the explicit provisions in the CF guidelines, the resource inventory (the scientifically accepted method of gathering forestry data) is often set aside on account of its complexity.

Technology plays an important role in the formulation of the CFMP. For instance, geographical information system (GIS) is indispensable, and has increased the capability of the FA staff in land use planning. The gathering of spatial information is greatly facilitated by the staff of the FA who are skilled in using global positioning system (GPS) and GIS.

CF guidelines require a resource inventory to be an integral part of the CFMP development process. ITTO (2004) recommended that communities must be closely involved in the development and management of the forests. The general approach that was followed by the FA Cantonment of formulating the CFMP is shown in Figure 1.
Figure 1. Community Forest Management Plan Development Process

Source: Guideline on Community Forestry
COMMUNITY FOREST MANAGEMENT PLANNING PROCESS

There are nine basic steps in developing the Forest Management Plan, illustrated in figure 1. This paper provides a general guide and the steps may be interchangeable depending on the situation of the site.

Development for Management Planning (Step 1) consists of:
- Reviewing existing information, case studies, regulations, maps, the number of community members, and CF agreements;
- Reviewing the objectives of the process, roles and responsibilities among facilitators;
- Identifying the objectives for forest management (productive forest, protection of water sources, spirit forests); and
- Preparing forms for gathering information, the inventory, and the forest structure analysis.

Discussion with the Community (Step 2) consists of:
- Selecting 30-50 participants including CFMC members or user representatives.
- Reminding them of the CF activities within the community including community concepts, processes and objectives. Conducting a meeting for the presentation of the objectives of the plan development as well as data requirements such as forest maps, boundaries and block divisions.

Involvement of CF Members (Step 3)
Selecting 15–20 participants representing various groups of the community, including the forest committee, the village authority, and user representatives in developing a management plan. These participants should also be included in training and directly participate in organizing the inventory.

Community Forest Demarcation (Step 4)
Before proceeding in the development of the CF management plan, the facilitators conducted a demarcation survey of the community forest. The demarcation survey was based on the indicative map that was developed by the community in the PRA session. Earlier, a participatory mapping session was held with the community to determine the relative location of the resources present in the area. But since these are indicative locations, a
A more precise resource map was developed by demarcating in the field the boundary of the resources using global positioning system (GPS). A map of actual forest resources was produced which served as a basis in planning.

**Subdivision to Blocks and Sub-blocks (Step 5)**

Conflicts commonly arise over disagreements about tenure, access, control and distribution of forest lands or products (Means et al. 2002). The systematic planning of the forest resources will provide a means of minimizing the conflicts by bringing in a consensus of the appropriate use of the area.

The allocation of the area gives priority in the management of timber products as provided in the CF guideline by subdividing the forested areas to different silvicultural treatments. The significance of timber and fuel wood in providing income for local communities is recognized (Ashwell undated; Vickers & Dickinson 2006) and should be given paramount importance in planning.

The allocation of the community forest to sub-blocks is based on the forest land use, goals of use and cutting cycles or silvicultural treatments. The forestland uses were classified into different vegetative cover types. It is important to classify the community forest to different types because the CF guideline prescribes different types of sampling to different types of forest. In the guideline, there are two major classifications of the forest: (1) deciduous; and (2) evergreen, semi-evergreen or mixed evergreen. However, during the actual inventory that was conducted in the area, it was observed that most of the forest types in the area were degraded and were just recovering. In areas where these forests are effectively protected by the communities, the forest is mostly composed of secondary growth. The different vegetation types were further subdivided into different types of stocking conditions (either fully stocked, moderately stocked, or degraded). The subdivision of the forest to different stocking conditions is important to avoid the resulting bias in the estimation of the standing volume. Each vegetation type and stocking will result in a different forest stand (representing a distinct population that requires separate sampling treatments).

Another consideration in defining the goals of community forest management was ensuring immediate and long-term timber needs. Zones or blocks were identified for the production of short-rotation timber to meet customary uses such as firewood, poles, posts, seedlings, bamboo and vines.
Chapter 4: The Experience in Siem Reap Province of the Community Forest Management Plan (CFMP) Development Process

Learning Symposiums and the Development of Selected Papers

Representative of Evergreen Forest
Photo by: Research Team

Representative Stand of Deciduous Forest
Photo by: Research Team
Section B: Participatory Planning and Local Monitoring: Relating Theory to Practice

Emerging Trends, Challenges and Innovations for CBNRM in Cambodia

Representative of Second Growth Forest
Photo by: Research Team
Organizing the Inventory (Step 6).
The determination of plots and the plot sizes followed the sampling design as provided by the CF guideline (FA-MAFF 2006). However, a modification of the method was made owing to the conditions in the field. In the CF guideline, the timber products are categorized into three only, mainly based on the diameter sizes. These are: (1) construction or saw timbers (diameter ≥ 30 cm dbh); (2) poles (timbers with 10-30 cm dbh) and (3) seedlings (less than 10 cm in diameter and greater than 1 metre in height). Because of the market for poles (trees having a minimum diameter size of 4 cm) among fishing lot owners and construction industries, the FA staff deemed it appropriate to include in its inventory saplings (trees 4-10 cm in diameter). In fact, this category is the main source of intermediate revenue for the communities.

The FA team assisted the community in conducting the inventory, the measurement of the diameter and height of each species, and the recording of other resources such as the seedlings and NTFPs as provided in the CF guideline.

**Table 1: Required number of sample plots**

<table>
<thead>
<tr>
<th>Forest Area (ha.)</th>
<th>Number of Sample Plots</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Evergreen or Semi-evergreen Forest</td>
</tr>
<tr>
<td>&lt; 100</td>
<td>6</td>
</tr>
<tr>
<td>100 - 200</td>
<td>6 - 12</td>
</tr>
<tr>
<td>200 - 500</td>
<td>12 - 30</td>
</tr>
<tr>
<td>500 - 1,000</td>
<td>30 - 60</td>
</tr>
<tr>
<td>1,000 - 1,500</td>
<td>60 - 90</td>
</tr>
<tr>
<td>1,500 - 2,000</td>
<td>90 - 120</td>
</tr>
<tr>
<td>2,000 - 2,500</td>
<td>120 - 150</td>
</tr>
<tr>
<td>2,500 - 3,000</td>
<td>150 - 180</td>
</tr>
<tr>
<td>3,000 - 3,500</td>
<td>180 - 210</td>
</tr>
<tr>
<td>3,500 - 4,000</td>
<td>210 - 240</td>
</tr>
</tbody>
</table>

Source: FA-MAFF, 2006
Figure 1-A. Size and Form of Sample Plot for Deciduous Based on the CF Guideline

- **Trees ≥ 30 cm**: I, II & III 50 x 50 m = 0.25 Ha.
- **Trees 10 – 29 cm**: II 25 x 50 m = 0.125 Ha.
- **Trees < 10 cm, Height > 1 M**: I 25 x 25 m = 0.0625 Ha.
- **Bamboos and Important TFPs**: II 25 x 50 m = 0.125 Ha.

Figure 1-B. Size and Form of Sample Plot for Evergreen and Semi-Evergreen Forest Based on the CF Guideline

<table>
<thead>
<tr>
<th>Tree Size</th>
<th>Block</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trees ≥ 30 cm</td>
<td>I, II &amp; III</td>
<td>50 x 100 m = 0.5 Ha.</td>
</tr>
<tr>
<td>Trees 10 – 29 cm</td>
<td>I &amp; II</td>
<td>50 x 50 m = 0.25 Ha.</td>
</tr>
<tr>
<td>Trees &lt; 10 cm, Height &gt; 1 M</td>
<td>I</td>
<td>25 x 50 m = 0.125 Ha.</td>
</tr>
<tr>
<td>Bamboos and Important TFPs</td>
<td>II</td>
<td>25 x 50 m = 0.125 Ha.</td>
</tr>
</tbody>
</table>

Figure 1-C. Size and Form of Sample Plot for Secondary Forest

<table>
<thead>
<tr>
<th>Tree Size</th>
<th>Block</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trees ≥ 30 cm</td>
<td>I, II &amp; III</td>
<td>50 x 100 m = 0.5 Ha.</td>
</tr>
<tr>
<td>Trees 10 – 29 cm</td>
<td>II</td>
<td>50 x 50 m = 0.25 Ha.</td>
</tr>
<tr>
<td>Saplings Trees &lt; 10 cm, Height &gt; 1 M</td>
<td>I</td>
<td>25 x 50 m = 0.125 Ha.</td>
</tr>
<tr>
<td>Seedlings &lt; 4 cm, Height &gt; 1 M</td>
<td>II - A</td>
<td>12.5 x 1.25 m = 0.0625 Ha</td>
</tr>
<tr>
<td>Bamboos and Important TFPs</td>
<td>II</td>
<td>25 x 50 m = 0.125 Ha.</td>
</tr>
</tbody>
</table>
Figures 1-A and 1-B and 1-C show the different sampling methods specified by the CF guideline. However, the experience of the CF in Siem Reap found that sampling of the saplings and seedlings was very tedious because of the very dense population of plants. The plot was modified by reducing the sub-plot to 12.5 x 12.5 m for sapling and seedling assessments (plot II-A).

**Presenting the Results of the Inventory (Step 7)**

The results of the inventory should be presented to the community in a simple and understandable manner. The following should be presented or discussed with the community:

- The selection of utilization management, development activities, forest information: forest status per block, and the quantity and volume of standing trees in blocks
- Dominant tree species broken down into percentages, and the quantity of trees that can be harvested annually
- Status of the tree seedlings (per hectare) and dominant tree species in percentages
- Status of NTFPs and the quantity that can be collected annually.

**Development of the Community Forest Management Plan (Step 8)**

The aspirations of the community were formally reflected in the CFMP. A writeshop was conducted with the community which formalized the aspirations of the community over the forest resources that they are protecting. The plan reflected the products and condition of the forest resources, silvicultural treatments, development activities, utilization and important information to guide the community about what to do in respect of the forest resources. The plan also translated the action plan of the community. The CFMP follows the general format provided by the CF guideline.

In developing the CFMP, the following must be considered:

- Condition of the community forest
- Socio-economic condition of the CF area
- Forest and NTFPs requirements of the community
- History and current forest background
- Results of the inventory
- Goal selection and management strategy
- Rules for community forest allocation.
**Review and Decision-Making Process of the Management Plan (Step 9)**

After the CFMP is developed, it will be presented to the CF members by the CFMC and then submitted to the Cantonment for approval after being reviewed by the Triage and Division.

**PROBLEMS AND CHALLENGES IN CFMP DEVELOPMENT**

The paper demonstrates the benefits of carrying out a scientific resource inventory. Some aspects of the CFMP development are, however, highly technical. Conducting a resource inventory and processing the data requires technical skills and demands professional foresters.

Some sectors will consider that this is not fully empowering the community. Although such concerns are valid, the need to come up with accurate resource data is equally important. Clearly, the current financial position of the community will constrain them. In the meantime, however, the NGOs and assisting organizations may provide the technical assistance to the CF representatives, including technical, financial and capacity building. After a long time spent in producing the CFMP, the community still awaits final approval.

**CONCLUSION**

CF has demonstrated that local people are concerned about forests and are prepared to plan for forest protection and management; establishes a prior claim (IFS Team 2004). But despite all its potential, the CF initiative in Siem Reap is still eagerly awaiting the go-ahead to enable them to proceed to the commercial harvesting of the community forest. The experience of CF in Siem Reap has already demonstrated the possibility of making a CFMP with the community when they are provided with technical assistance. The real test of their capability to manage the community forest will be when the community themselves start to manage it for commercial production. However, this opportunity will not be realized unless the CFMP is approved.
LESSONS LEARNED

- Involvement of the community in data gathering, organizational development, and resource planning is a long process. Nevertheless, it is essential in vesting ownership of the plan in the community. Giving the community the rights and responsibilities over the forest resources they protect proved a very effective approach in sustainable forest management. The experience of the CF project in Siem Reap showed the importance of the close collaboration with the government (i.e., the local FA and local government-Commune Councils and provincial governors) as an important element in the successful development of the management plan.

- Capacity building is essential in the implementation of a CFMP. It is vital that the assisting organization should focus on the technical skills of the local FA and the community members. In developing the CFMP, capacity building should focus on surveying and mapping (using GPS and digitizing), the processing of inventory data (using spreadsheets), a writeshop and the use of other community development tools. Assistance from the development organizations will be crucial for the CF to complete the legalization process. The experience of Siem Reap CF demonstrates the capability of the community to manage the community forest if they are given guidance and technical assistance by the FA and other assisting organizations. The use of technology such as GIS is very important in land use planning within CF sites.

- Participatory land use planning proved a viable tool in the allocation and planning of land resources. The assisting organizations should possess skills in facilitating the participatory land use planning process. Using the participatory land use planning method, the community was able to come up with a plan that reflected their aspirations.

- The experience indicated the necessity of modifying the procedures to suit the actual conditions in the field. Nevertheless, the CF guideline was found to be a very useful guide in the development of the CF management plan.
• The experience of the CF in Siem Reap has proven that the CF guideline can be implemented if technical assistance is provided for the Community Forestry initiative. There is also a need to modify the methodology as specified in the CF guideline to be applicable to the field.

RECOMMENDATIONS

The following recommendations are based on the foregoing experiences of CF in Siem Reap:

• The community should be involved in the management and protection of the forest resources. The CF representatives should foster strong collaboration with local government and the local FA in order to be able to develop the CFMP. The local FA should be reorganized to improve its ability to assist the Community Forestry initiative.

• Assistance should focus on building the capacity of the community. Many NGOs are adept at facilitation and PRA, which are needed during the initial community development phase. However, skills in resource management, surveying, inventory production, and facilitating the writing of management plans are still limited. The experienced foresters should be persuaded to provide technical assistance for the Community Forestry initiative in different aspects of forest management such as resource inventory production, data processing and writing the management plan.

• Participatory land use planning should be institutionalized in the management of the community forest.

• The CF guideline that provides for the inventory of forest resources needs to be reexamined. A modified sampling method used by the FA team in Siem Reap may be considered in conducting an inventory of the community forest.

• The community should be involved in writing the CFMP.

• There is a need to intensify the commercial management of the community forests. Because of this, there is a need to have the CFMP approved in order that the community can proceed to the commercial management of the community forest.

• The Community Forestry initiative should be given full support. The development and approval of the CFMP in other CF sites should be expedited.
REFERENCES


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Chapter 5
Inventory in Community Forestry in Cambodia
Reviewing MAFF Prakas. 219

By: Søren Brofeldt¹, Keam Han² and Ken Piseth³

This chapter was written in cooperation with the Regional Community Forestry Training Center (RECOFTC) and their Capacity Building for Sustainable Forest and Land Management Project (CBSFLMP) in Cambodia. The report was created to address what the author and RECOFTC felt was a need for experience and research regarding the implementation of the inventory guidelines proposed in the Ministry of Agriculture, Forestry and Fisheries’ (MAFF) Prakas. 219 on Community Forestry (CF) - Annex 4 on management planning⁴. As there is very little experience available in the country in doing this work, and as more CF becoming formalized in line with the Prakas and many CF communities will soon find themselves required to do this work, this report aims to document the implementation of the official guidelines and explore options for improving them in order to ease the process of establishing CF initiatives in Cambodia. It is not the intention that all recommendations made in this study should be implemented immediately, or at all, but rather that it may serve as an example of what issues might be involved with inventory production in CF management planning, and recommend a number of possible solutions for these.

BACKGROUND

To understand the basic concern that has led to the creation of this report, one must first understand what the term CF covers and, more specifically, what CF in Cambodia is. CF is a form of decentralized forest management, where the responsibility of managing a forest area is

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³ Ken Piseth, CBNRM Symposia and Volume II Volunteer of the CBNRM Learning Institute
⁴ For the rest of this study, this will just be refered to as “the Prakas”.
delegated to a village or local community living in or near it, to ensure Sustainable Forest Management (SFM) by securing tenure of the land and user rights for the local community giving them an incentive to engage in long term (and ecologically sustainable) planning and protection of their forest resources (Phuntsho & Sangye, 2007).

The fundamental justification for CF in Cambodia is that there is a large and very poor rural population living close to, or in, the great, but diminishing, resource that the Cambodian Permanent Forest Estate (CPFE) constitutes. Giving these people secure access to this resource, under a requirement of sustainable management, can help reduce poverty and protect the forest at the same time.

Before 2002, the CPFE was managed through a logging concession system, granting concessions to logging companies in return for revenue paid to the state. Because of improper implementation by the concessionaires, and poor governance in the regulatory authorities, this system was suspended in December 2001 (WB, 2006 a; Mckenny et al., 2004; ADB, 2000). Thus, large areas of forests currently remain in a post-concession management vacuum and are under threat from illegal and unsustainable harvesting, degradation and land encroachment and conversion. Therefore, a management modality is needed that can support the livelihoods of the people depending on the forest, and also ensure sustainable management of the forest resource.

Since 1991, the Royal Government of Cambodia (RGC) has considered CF as a possible alternative management modality for some of the CPFE, and with the formulation of the Forestry Law in 2002, the Sub-Decree on CF in 2003, and the Prakas detailing the Sub-Decree in 2006, a legal framework was created to formally engage in CF in Cambodia. With the process of recognizing CF sites moving forward, many CF communities around the country will soon have to consider the development of a Community Forest Management Plan (CFMP). This includes the production of an inventory according to the guidelines specified in the Prakas. As official CF is so new to Cambodia, and there is very little experience in implementing the guidelines in the field, the objective of this study is to critically review the requirements in the Prakas on forest inventory, to document the experience and identify any over complications or impracticalities in the guidelines, and subsequently to give some recommendations on how to improve or adjust these so CF becomes more practical for communities and more cost efficient.
The main focus will be on the inventory methodology in evergreen forests, and the data analysis will be included as far as it helps explain or address aspects of the practical fieldwork.

According to the Prakas, inventory is the first task that must be undertaken during the management planning process, and so will also be the section that will become relevant to CF communities across the country first. Therefore, this study focuses on how the Prakas on inventory is applied on the ground, and what changes could be made to better facilitate this process. This is done by first doing a theoretical analysis of the Prakas, identifying sections that are considered potentially problematic for whatever reason, followed by a set of participatory field trials (FT1) to confirm or deny these potential problems. This creates the basis for a better understanding of what implementing the Prakas involves, which in turn becomes the basis for a revised set of guidelines, addressing the identified issues. These “new” guidelines are tested in the field under the same circumstances (FT2), and these results, will be the basis for a list of recommendations for revisions to the existing guidelines.

CRITICAL ANALYSIS.

The identification of the possible issues addresses a number of different aspects of the Prakas Guidelines that are analyzed relating to four criteria. These are also used for analyzing the results of the field work. The four criteria are:

A) Performance – relating to the time consumption and people involved.
B) Precision – relating to the overall results of the inventory.
C) Accuracy – relating to the actual collection of the data.
D) Simplicity – relating to the villagers’ capacity and the selection of inventory techniques.

The points are addressed in random order and there is no hierarchy in their importance.

A: Performance

- The Prakas dictates laying out 100m by 50m sample plots in evergreen forests. Large sample plots take a long time to lay out and might end up consuming an unreasonable amount of time compared with the data collection.
• The heights of all trees with a diameter of more than 10cm (DBH) must be measured. Measuring all heights might be unnecessary if a Diameter/Height Regression (DHR) could give the height, with reasonable precision, based on diameter measurements alone.
• The Prakas dictates counting and measuring all tree species. Being selective in what tree species and sizes you measure and count could lighten the workload considerably, as you would only be measuring trees of interest to the management objectives.
• The boundaries of plots must be demarcated by clearing strips of vegetation. Demarcating boundaries in this way risks taking up an unreasonable amount of time compared with the time spent on data collection. Demarcation by other means might prove to be possible and less time consuming.

B: Precision
• The large plot size decreases the number of degrees of freedom, subsequently reducing precision compared with the overall sampling intensity.
• The sampling intensity does not seem to be linked to achieving a specific precision in the data collected. As such there is a risk that the precision could become greater than necessary, making the inventory process more time consuming and expensive than it needs to be. Related to this is also the consideration of accuracy against precision, meaning that having high precision based on generally inaccurate measurements might give you a false picture of the forest.

C: Accuracy
• Inaccuracy in the sample plot demarcation can give an inaccurate picture of how big an area the collected data represents.
• Inaccuracy in the measuring of heights in particular can potentially result in a great discrepancy between the actual and estimated volume based on these measurements.
• Inaccuracy is introduced in the counting of seedlings and Non-Timber Forest Products (NTFPs) by clearing vegetation inside the sample plot to demarcate the sub-plots.
• Inaccuracy is introduced by using one old formula for volume calculation on all tree-species.
D: Simplicity

The requirements of the Prakas guidelines must be fitted to the capacity of the CF members and FA triage staff who will need training and equipment to be able to undertake the inventory work satisfactorily. This aspect is hard to analyze as capacity will vary from site to site, but it might be prudent to keep the level of sophistication as low as possible, and design the inventory process based on this principle of simplicity.

THE FIELD TRIALS

The chosen location of the field trials was Viel O Kdey Community Forest in Kraya commune in Kampong Thom province. The work was set up as a participatory inventory course, involving both CF members and FA triage staff. The overall goal was to collect time data and experiences from local people doing the inventory following the Prakas and a new modality was created based on this experience. At the same time, the work would provide the participants with good practical experience and knowledge for undertaking the rest of the inventory work in their CF, and would enable not only the collection of data on the inventory technique (IT) itself to be conducted, but also give an idea of the capacity and experience of the people who will be implementing the Prakas. Each set of Field Trials was planned to last five days including a training session on fundamental inventory technique, followed by actual inventory work in the forest that would be directly applicable to the CFMP. The specific location chosen for the inventory work was a patch of evergreen forest of approximately 185 ha near the northeastern corner of the CF area.

Based on existing map material a sample plot map, was created that would enable the team to find the plots either by a global positioning system (GPS) reading, or a 412m transect line in either of the cardinal directions GPS, as described in the Prakas. It was decided that the existing road system would be mapped using the, and transect lines would be cleared from the nearest point accessible by road. The full 412m transect line would be cleared only where no roads offered shorter routes. Three points were chosen as target plots for the inventory study of the Prakas Guidelines (numbered A, B and C) and three for inventory study of the ‘New Modality’ (NM) (numbered D, E and F).
A paradox became apparent as the existing maps were not accurate enough to reflect the conditions on the ground. It was agreed to follow the conditions on the ground, as following inaccurate maps as if they were accurate would give inaccuracies in the inventory data collected, making this data less useful for management planning purposes.

It was considered crucial to involve the same people collecting the same data in the same area of the forest in both field trials to ensure that the premise for comparing the two tested modalities was genuine.

Although all work was undertaken in the same area, the specific sites selected for sampling would not be exactly the same in both field trials, and so naturally occurring variations would influence the results.

As the same people would be participating in both field trials, another bias was introduced into the comparison of the two field trials that must be recognized, as the higher experience level among the participants in FT2 increased performance compared to FT1. It is not possible to estimate how big a role this played, but it is important to bear in mind when analyzing the results of this study.

**Table 1:** Results of the inventory in plots A to F. The results indicate that there is no significant difference between target forests for the inventory studies, reducing the affect of naturally occurring variations on the comparison of the inventory modalities.

<table>
<thead>
<tr>
<th></th>
<th>Trees pr. ha:</th>
<th>Average Diameter (cm):</th>
<th>Average Height (10&lt;29) (m):</th>
<th>Average Height (30&lt;) (m):</th>
<th>Seedlings/Coppice pr. ha:</th>
<th>NTFPs pr ha:</th>
<th>Basal area pr ha (m²):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plots A, B and C</td>
<td>400</td>
<td>19,7</td>
<td>13,3</td>
<td>10,1</td>
<td>6165,3</td>
<td>4688</td>
<td>1237,2</td>
</tr>
<tr>
<td>Plots D, E and F</td>
<td>328,7</td>
<td>25,8</td>
<td>10,5</td>
<td>13,5</td>
<td>4474,7</td>
<td>5536,0</td>
<td>1788,0</td>
</tr>
</tbody>
</table>
THE PRAKAS GUIDELINES

The results from the inventory conducted in accordance with the guidelines in the Prakas are analyzed according to the four criteria presented in the critical analysis. Overall, the field trials of the Prakas have shown that it is possible to conduct an inventory based on the guidelines presented in it, and that there are some challenges involved when doing this. However, these can to some extent be overcome by using simple and inexpensive techniques, but at the expense of some accuracy.

A: Performance

The primary unit for measuring performance is man-hours spent, and experiences from FT1 indicate that certain tasks can be carried out in simpler ways than is described in the Prakas. An optimum number of people involved in each task has been identified which will be the basis of comparison with the data from the FT2.

Experiences from the field show that clearing strips of vegetation is in some cases a good idea as these give a good base from which to work. But the need for transect lines between plots to be cleared is more debatable, as these only serve as transport corridors.

The total number of man-hours required to finish all work in one plot is around 40, excluding clearing the transect lines between plots. It takes roughly 10 hours for demarcation, which amounts to 25 percent of the total man-hour consumption. This suggests that there is some time to save by reducing the amount of boundary line cut, while not eliminating it altogether.

The seedlings in the luxury or first timber class, which would be the ones of interest to timber production (given that this was the selected management objective), constitute only 8 percent of the counted seedlings, confirming the issues raised that sampling some species selectively can increase performance.
The time it takes to measure big and medium-sized trees depends heavily on a number of factors, including density, the size of the trees, and how many trees must be measured. The time it takes to measure big trees varies considerably because the individual trees take longer to measure. Measuring a smaller selection of species would greatly reduce the time needed for tree measuring. Using a DHR could be a way to increase accuracy, but further study is needed.

**Table 2: Performance of the different tasks in the inventory process.**

<table>
<thead>
<tr>
<th>Task</th>
<th>A: Performance</th>
<th>Suggested n. of man-hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task</td>
<td>Average n. of man-hours</td>
<td></td>
</tr>
<tr>
<td>Boundry demarcation:</td>
<td>15,3</td>
<td>10,9</td>
</tr>
<tr>
<td>NTFP counting:</td>
<td>5,3</td>
<td>5,3</td>
</tr>
<tr>
<td>Seedling counting:</td>
<td>6,3</td>
<td>6,2</td>
</tr>
<tr>
<td>Tree measurement:</td>
<td>8,9</td>
<td>8,9</td>
</tr>
<tr>
<td>Planning:</td>
<td>8,9</td>
<td>8,9</td>
</tr>
<tr>
<td>Total excl. transect-line:</td>
<td>44,8</td>
<td>40,2</td>
</tr>
<tr>
<td>Transect-line cutting:</td>
<td>12,9</td>
<td>23,9</td>
</tr>
<tr>
<td>Total incl. transect-line:</td>
<td>57,7</td>
<td>64,1</td>
</tr>
</tbody>
</table>

**B: Precision**

As was argued, a certain sampling intensity or number of sample plots should not, in itself, be the target of the inventory, but rather a specific precision. Confidence limits are a measure of how exact the estimate of the mean is, and thus how accurate a picture the collected data gives of the overall forest outlook. From this it follows that, by setting a standard sampling intensity without first considering a desired precision, you risk ending up either with a precision that is greater than required, making the inventory more expensive than need be, or a precision that is less than what is actually required, making the data less useful for management purposes. The achieved accuracy also has to be considered in relation to precision, as high precision based on inaccurate measurements will give a false picture of the overall forest outlook. The number of trees/ha must be regarded as the figure with the least amount of inaccuracy in the measurement, and so is the best estimation of the actual precision achieved: as can be seen in the table below, the estimation of
the mean is within plus-minus 53.6 percent. The relatively poor precision, compared with the relatively high sampling intensity is because, with only three plots, only two degrees of freedom exist. In spite of the large size of the plots the variation between them, is still substantial. The large number of small CF in the country (Community Forestry Office Database, 2009), for which six plots are the minimum, does still raise the question whether a better precision could be reached within the same sampling intensity by using more smaller plots. Regardless of what method is used it is important to consider the relationship between accuracy and precision, so the great precision is not compromised by great inaccuracy and vice versa.

Table 3: Precision achieved on a number of key figures.

<table>
<thead>
<tr>
<th></th>
<th>Plot A</th>
<th>Plot B</th>
<th>Plot C</th>
<th>Accumulated Mean</th>
<th>Confidence limits</th>
<th>Con.Lim in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trees pr. ha:</td>
<td>408.0</td>
<td>310.0</td>
<td>482.0</td>
<td>400.0</td>
<td>214.3</td>
<td>53.6%</td>
</tr>
<tr>
<td>Average dia (cm):</td>
<td>14.9</td>
<td>22.4</td>
<td>21.7</td>
<td>19.7</td>
<td>10.2</td>
<td>51.9%</td>
</tr>
<tr>
<td>Average h. (10&lt;29) (m):</td>
<td>11.7</td>
<td>12.3</td>
<td>15.8</td>
<td>13.3</td>
<td>5.5</td>
<td>41.7%</td>
</tr>
<tr>
<td>Average h. (30&lt;) (m):</td>
<td>7.6</td>
<td>12.4</td>
<td>10.3</td>
<td>10.1</td>
<td>5.9</td>
<td>58.9%</td>
</tr>
<tr>
<td>Seed./Copp. pr. ha:</td>
<td>10336.0</td>
<td>3568.0</td>
<td>4592.0</td>
<td>6165.3</td>
<td>9062.2</td>
<td>147.0%</td>
</tr>
<tr>
<td>NTFPs pr ha:</td>
<td>4065.0</td>
<td>5272.0</td>
<td>4736.0</td>
<td>4688.0</td>
<td>1513.9</td>
<td>32.3%</td>
</tr>
<tr>
<td>Basal area pr ha (m²):</td>
<td>715.6</td>
<td>1220.9</td>
<td>1775.0</td>
<td>1237.2</td>
<td>1316.4</td>
<td>106.4%</td>
</tr>
</tbody>
</table>

C: Accuracy and biases

Figure 1 shows the three plots A, B and C, and the actual length of the sides as they were measured after finishing the inventory work. As can be seen, the laying out of the plots in the exact size specified in the Prakas has not been accomplished in any of the plots. The main inaccuracy is in the direction given by the compass, as it takes considerable practice to aim the line accurately. On a 50m stretch 1 degree of inaccuracy in either direction will give 87cm of sideways divergence on the finishing point, subsequently resulting in inaccuracy regarding the actual size of the plot. The areas of the plots deviate a maximum 4 percent, but it does constitute an inaccuracy in the extrapolation of the inventory data collected in the plots to a per hectare figure and onto the forest block they are to represent (whose area is also inaccurately determined due to inexact mapping).
Even though the lines cleared for boundary demarcation never exceed 1m in width, this removal of vegetation, especially inside the 50m by 100m plot itself, affects the overall accuracy of the inventory. Considering the need for passable corridors from which to work in denser forest areas, it is suggested that the clearing of vegetation in a strip no wider than 1m can take place in the inventory process, but efforts should be made to minimize the effect on the vegetation inside the plots.

A problem regarding counting of seedlings and NTFPs was identified, which did seem to have some impact on the data collected, and relates to the standard set for the minimum height of seedlings counted (1m). In both plots A and C it was noted that there seemed to be a pattern whereby a patch of seedlings were either all above 1m, or all under 1m, resulting in the fact that some patches were fully counted, while others went completely unnoted. This is fundamentally a problem of timing: if you wait a year and then do the seedling-counting again, the patches previously too small to be part of the inventory will now be above 1m, and will therefore be included, but new patches will have arisen that are too small to be included, and so on. The question is therefore what the seedling data is needed for, as the number of seedlings does not necessarily indicate what trees will grow to full size. This is because some tree species will be better suited to a specific location than others, and may be favored for silvicultural intervention. The solution might be to omit counting seedlings altogether and just consider some re-growth a given, or accept that this constitutes a systematic error in the data collection and carry on counting seedlings as described in the Prakas.
The measuring of bigger trees introduces a big window for bias and inaccuracy, as trees are measured using crude methods that rely heavily on a subjective estimate of height. The main concern faced in undertaking this work is keeping the level of sophistication low enough that expensive and inaccessible equipment is not relied upon, while at the same time ensuring the highest possible accuracy especially in height measurement. In spite of this, control measurements done by clinometer indicate that, after some practice, the inaccuracy is rarely higher than 5 percent, and statistical analysis of the deviation between the estimated height and the measured height indicates the difference is small enough to be statistically insignificant. The dataset is not big enough to make this statement with complete confidence, but it does show that crude methods for height estimation can be used effectively in the CF inventory process.

**THE NEW MODALITY (NM)**

Based on the problems identified in the three categories of accuracy, precision and efficiency, a number of changes have been made to the Prakas guidelines to improve the overall performance of the inventory process. The NM relates to a number of overall changes that can be made individually or all at once, as is considered necessary by lawmakers and those implementing them. Three main changes focus on:

1) The design and layout of the plots
2) The measuring of trees
3) What data to actually collect

**The plots**

Based on the findings from the FT1, a 'New Plot' design has been devised that will help minimize a number of the problems previously identified. The proposed solution to the problems regarding the big size of the Prakas plots, is to decrease the size of the plots and increase the number of plots to reach a higher number of degrees of freedom within the same sampling intensity. The smaller plots will be easier to lay out. As can be seen in the figure below, they will be laid out with one side constituted by the transect line, and the other demarcated with string and a post in each corner. Thus, these would need only to be cleared sufficiently to allow passage, thereby increasing demarcation efficiency and reducing the effect of line clearing on the vegetation inside the plot.
Measuring heights

The measuring of heights, combined with the use of only one formula for volume calculation, introduces a large inaccuracy in the end total result of the inventory. This figure for volume is a central part of the rationale behind conducting the inventory and, as the measuring of heights is a time consuming undertaking, and considering the low level of accuracy reached, one might question whether it is cost-effective to spend time collecting this data. A possibility is using clinometers, but this would increase time consumption considerably, and requires access to this equipment. The solution could be to eliminate the measuring of heights completely from the inventory process, and devise a way to calculate volume based on diameter alone. As mentioned in the critical analysis a DHR could be one solution to this problem, but eliminating the measuring of heights on all trees requires more knowledge about how this would affect accuracy.

Selective sampling

A selective approach to what species to include in the inventory and what sizes of trees to measure can be adopted by considering management objectives before the start of the inventory. In that way the inventory can be designed so that only data necessary for management is collected, reducing the time it takes to do the inventory, while possibly increasing the accuracy of the collected data. One can be selective in both what species and what sizes to sample, and of course the more specific your sampling becomes the less time it will take. The amount of time that can
be saved can easily be demonstrated by analyzing how long it takes to do an inventory of all species and sizes as described in the Prakas. It can then be determined how much of the collected data falls within a certain set of criteria. The result will be subject to some bias and inaccuracy as the time it takes to measure and count trees is not only dependent on the number of trees to sample, but also on the size of the plot you are working in.

**OVERALL RESULTS OF FT2**

Many of the problems identified can be minimized if some of the changes suggested in the NM are followed.

**A: Performance**

The demarcation of the plots saw an increase in performance as the average number of man-hours for demarcating one Prakas plot dropped to eight, or two man-hours pr. NM plot. Performance in respect of seedling counting can be increased drastically by introducing selective sampling. Furthermore, this principle could be transferred to the NTFPs counting, targeting for sampling only certain NTFPs important for the management objectives. By eliminating height measurement, performance can be potentially increased by 0.6 man-hours. If all changes suggested in the NM are incorporated, the performance of the inventory process can be increased considerably without the loss of accuracy and precision.

**Table 4: Increases in performance considering the changes suggested in the New Modality**

<table>
<thead>
<tr>
<th>Task</th>
<th>Suggested n. of man-hours</th>
<th>Man-hours with selective sampling of heights</th>
<th>Man-hours with selective sampling of species</th>
<th>Man-hours using dia/height regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Saved</td>
<td>Total</td>
<td>Saved</td>
<td>Total</td>
</tr>
<tr>
<td>Boundry Demarc:</td>
<td>2.05</td>
<td>x</td>
<td>2.05</td>
<td>x</td>
</tr>
<tr>
<td>NTFP Counting:</td>
<td>0.56</td>
<td>x</td>
<td>0.56</td>
<td>x</td>
</tr>
<tr>
<td>Seed. Counting:</td>
<td>0.59</td>
<td>x</td>
<td>0.59</td>
<td>0.21</td>
</tr>
<tr>
<td>Tree Measuring:</td>
<td>2.60</td>
<td>0.36</td>
<td>2.24</td>
<td>1.35</td>
</tr>
<tr>
<td>Planning:</td>
<td>2.24</td>
<td>x</td>
<td>2.24</td>
<td>x</td>
</tr>
<tr>
<td>Transect-lines:</td>
<td>3.18</td>
<td>x</td>
<td>3.18</td>
<td>x</td>
</tr>
<tr>
<td>Total:</td>
<td>11.22</td>
<td>0.36</td>
<td>10.86</td>
<td>1.57</td>
</tr>
</tbody>
</table>
B: Precision

One of the main reasons for the new plot design was that the smaller plots would give a higher number of degrees of freedom, increasing overall precision. This is because in this forest type, the big plots failed to give the small variance they were designed to. By decreasing the area of the plots, and maintaining the same sampling intensity, the number of degrees of freedom have increased from three to 12. The data show that the confidence limits on the number of trees/ha is only 26 percent.

<table>
<thead>
<tr>
<th>Table 5: Confidence limits for data from second field trials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurements</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>Trees pr. ha:</td>
</tr>
<tr>
<td>Average dia. (cm):</td>
</tr>
<tr>
<td>Average H. (10&lt;29) (m):</td>
</tr>
<tr>
<td>Average H. (30&lt;) (m):</td>
</tr>
<tr>
<td>Seed. pr. ha:</td>
</tr>
<tr>
<td>NTFPs pr ha:</td>
</tr>
<tr>
<td>Basal area pr ha (m²):</td>
</tr>
</tbody>
</table>

C: Accuracy and biases

Accuracy in the plots must be said to be as close to 100 percent as is practically possible. An inaccuracy of up to half a metre was allowed on one of the corners furthest from the transect line, introducing an inaccuracy of maximum 12.5 m² or 1 percent of the inside plot size. It was difficult to confirm whether all the corners were exactly 90 degrees, but using the Pythagoras triangle was the most accurate practical way of laying out the corners.

Regarding the counting of seedlings and NTFPs the problem of clearing vegetation inside the plot for boundary lines was largely eliminated by only demarcating with rope.

The measuring of big and medium trees still presented the same problems as in FT1, although a solution has been suggested in the form of the DHR. The only conclusion that can be made at this stage is that it might be a way of increasing precision by eliminating the need for measuring heights using crude and relatively inaccurate methods. But further study is needed.
THE PRAKAS GUIDELINES VS. THE NEW MODALITY

The two modalities can be compared using the achieved accuracy in the methods used for collecting the data, the precision achieved in the inventory data, and the performance and time consumption of the inventory work.

A: Comparison of performance

Table 6: Time comparison

<table>
<thead>
<tr>
<th>Time consumption for data collection equal to one plot according to the Prakas (5000 m²) measured in man-hours.</th>
<th>Plot (Prakas)</th>
<th>Plot (New)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time saved</td>
<td>Total time</td>
<td>Time saved</td>
</tr>
<tr>
<td>All data collected</td>
<td>X</td>
<td>64,1</td>
</tr>
<tr>
<td>1. Heights estimated by regression</td>
<td>6,9</td>
<td>57,2</td>
</tr>
<tr>
<td>2. Selective species sampling (Timber classes only)</td>
<td>8,2</td>
<td>55,9</td>
</tr>
<tr>
<td>3. Selective size sampling (&gt;30 only)</td>
<td>7,6</td>
<td>56,5</td>
</tr>
<tr>
<td>1. + 2. Heights estimated by regression and selective species sampling</td>
<td>15,1</td>
<td>49,0</td>
</tr>
<tr>
<td>1. + 3. Heights estimated by regression and selective size sampling</td>
<td>14,5</td>
<td>49,6</td>
</tr>
<tr>
<td>2. + 3. Selective species and size sampling</td>
<td>15,8</td>
<td>48,3</td>
</tr>
<tr>
<td>1. + 2. + 3. Heights estimated by regression and selective species and size sampling</td>
<td>22,7</td>
<td>41,4</td>
</tr>
</tbody>
</table>

The average number of man-hours is somewhat lower in plots D, E and F than in plots A, B and C, supporting the expectation that collecting the exact same data as required by the Prakas, but in the NM plots, is faster than it is when the Prakas plots are used. The cutting of transect line accounts for much of the time consumption of the NM, and the fact that all transect lines must be cut in full, must be considered its biggest weakness. As can be seen, adopting the changes suggested in the NM will reduce the time required to conduct the inventory by almost two thirds. It would of course
take some effort to create a working DHR, but considering the large number of CF in Cambodia the effort might be well spent. As the NM was also considered simpler to follow by the participants of the field trials, this clearly demonstrates that CF communities could benefit from a revision of the existing legislation with a focus on simplifying and speeding up the process of doing inventory in CF.

**B: Comparison of precision**

Comparing the precision of the two modalities, it is found that the NM produces a remarkably better result than the Prakas on all but one set of data. The numbers speak for themselves and based on this result it is clear that, at least for small forest areas, the NM can produce precision superior to that of the Prakas. One additional figure has been added to table 7 (below), which is the confidence limits calculated on all six plots, if all are treated as Prakas plots. This number is of interest as six plots are the minimum number required by the Prakas for small forests under 100 ha. As can be seen, the confidence limits of the three Prakas plots measured in accordance with the NM, is almost as good as that of the six plots following the Prakas.

**Table 7: Summary of performance saved by adopting the new guidelines.**

<table>
<thead>
<tr>
<th>Modality</th>
<th>Accumulated Mean</th>
<th>Confidence limits</th>
<th>Con.Lim in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trees pr. ha:</td>
<td>Prakas</td>
<td>400,0</td>
<td>214,3</td>
</tr>
<tr>
<td></td>
<td>New Modality</td>
<td>328,7</td>
<td>85,4</td>
</tr>
<tr>
<td></td>
<td>PG six Plots</td>
<td>364,3</td>
<td>81,2</td>
</tr>
<tr>
<td>Avarage Dia. (cm):</td>
<td>Prakas</td>
<td>19,7</td>
<td>10,2</td>
</tr>
<tr>
<td></td>
<td>New Modality</td>
<td>25,8</td>
<td>4,0</td>
</tr>
<tr>
<td></td>
<td>PG six Plots</td>
<td>22,7</td>
<td>5,0</td>
</tr>
</tbody>
</table>
### Table 8: Comparison of precision between the Prakas and the New Modality.

<table>
<thead>
<tr>
<th>Modality</th>
<th>Accumulated Mean</th>
<th>Confidence limits</th>
<th>Con.Lim in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prakas</td>
<td>13,3</td>
<td>5,5</td>
<td>41,7%</td>
</tr>
<tr>
<td>New Modality</td>
<td>10,5</td>
<td>1,7</td>
<td>15,8%</td>
</tr>
<tr>
<td>PG six Plots</td>
<td>11,9</td>
<td>2,7</td>
<td>22,5%</td>
</tr>
<tr>
<td>Average H. (10&lt;29) (m):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prakas</td>
<td>10,1</td>
<td>5,9</td>
<td>58,9%</td>
</tr>
<tr>
<td>New Modality</td>
<td>13,5</td>
<td>2,3</td>
<td>16,7%</td>
</tr>
<tr>
<td>PG six Plots</td>
<td>11,8</td>
<td>2,8</td>
<td>23,9%</td>
</tr>
<tr>
<td>Average H. (30&lt;) (m):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prakas</td>
<td>6165,3</td>
<td>9062,2</td>
<td>147,0%</td>
</tr>
<tr>
<td>New Modality</td>
<td>4474,7</td>
<td>1404,3</td>
<td>31,4%</td>
</tr>
<tr>
<td>PG six Plots</td>
<td>5320</td>
<td>2818,8</td>
<td>53%</td>
</tr>
<tr>
<td>Seed. pr. ha:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prakas</td>
<td>4688,0</td>
<td>1513,9</td>
<td>32,3%</td>
</tr>
<tr>
<td>New Modality</td>
<td>5536,0</td>
<td>2792,3</td>
<td>50,4%</td>
</tr>
<tr>
<td>PG six Plots</td>
<td>5112</td>
<td>1439,2</td>
<td>28,2%</td>
</tr>
<tr>
<td>NTFPs pr ha:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prakas</td>
<td>1237,2</td>
<td>1316,4</td>
<td>106,4%</td>
</tr>
<tr>
<td>New Modality</td>
<td>1788,0</td>
<td>752,3</td>
<td>42,1%</td>
</tr>
<tr>
<td>PG six Plots</td>
<td>1512,6</td>
<td>585,3</td>
<td>38,7%</td>
</tr>
</tbody>
</table>

### C: Comparison of accuracy

The Prakas plots set up in the FT1 were found to contain inaccuracies of up to 4 percent of the total area, and as demonstrated in the first field trials, the plot design made accurate demarcation of the plot practically impossible in dense forest conditions. Reducing the size of the plots made laying them out accurately easier, with inaccuracy never exceeding 1 percent.

Because of the large size and cleared boundary of the Prakas plot, if inaccuracies were found, they would be massively time consuming to correct whereas the NM plots were easier to redo. The problem posed by the minimum height of 1m of seedlings sampled has not been solved and can only be solved by either counting all seedlings regardless of size, or by eliminating the counting of seedlings completely from the inventory requirements.

The measuring of heights by crude methods introduced considerable inaccuracy in the estimation of the total volume, although control measurements indicated that the methods are surprisingly accurate (<5 percent). The inaccuracy can be completely eliminated by omitting the measuring of heights and estimated heights by DHR.
The formula used in the Prakas for calculating volume risks introducing some inaccuracy, but it is outside the reach of this study to establish if this is the case and if so how much.

**RECOMMENDATIONS**

The following is a list of recommendations based on the experiences from both field trials, and the comparison of the two, the recommendations should not be seen as codependent, meaning that each recommendation can be followed independently of the others.

**Plot design**
Reducing the size of the plots, will increase the accuracy of setting them up, and of collecting data. Smaller plots will also increase the number of degrees of freedom while maintaining the same sampling intensity. The increased number of degrees of freedom gained by the small plot size of the NM makes the NM more effective at achieving a high precision in small forest areas.

**Plot demarcation**
Demarcating the plots clearing as little of the boundary as possible, reduces the impact of the clearing activities on the vegetation inside the plot. It also increases performance on plot demarcation and the accuracy of the setup as plots are easier to redo if found to be inaccurate.

**Target precision**
The inventory should aim at a target precision in the inventory data instead of a target sampling intensity. This will ensure that the data collected is sufficiently accurate to serve the management objectives without collecting more data than necessary.

**Diameter/ Height Regression**
By eliminating the need for measuring heights, all the biases and inaccuracies involved with this would be eliminated. One way to do this would be to adopt the DHR. But whichever model is chosen, it is important that the accuracy of the model is better than the accuracy of the height measurements.
Omission of seedling counting
Given the inaccuracies in seedling counting, it is worth reconsidering why this data is collected and if it would be worth eliminating it completely from the inventory process.

Selective sampling
Adopting selective sampling would increase performance considerably, but this requires management objectives to be determined (or at least considered) before the design of the inventory.

Two metre stick
Using a two metre stick to estimate the heights is the simplest method of producing a reasonably accurate result, and it is easy to learn and understand the use of these for the CF members.

Selection of management objectives
Designing the inventory before selecting the management objectives means that it cannot be specifically tailored to fit the requirements of these. In such cases, you risk collecting too little information of what is relevant to the objectives, and some information that will not help in the management of the forest. If the process of designing the inventory is changed so that management objectives are considered before the inventory is designed, the inventory can focus on collecting only the information required, and with better results.

IMPLICATIONS
The total number of man-hours required to do one plot, including the clearing of a transect-line to the plot, is 64. This is a lot considering that in Viel O Kdei, which is 2500 ha, covering the 145 plots the Kraya FA triage have been instructed to by the FA cantonment is going to require between 5829 and 9295 man-hours depending on how much transect line needs to be cut. This equates to 10 people spending between two and a half and four full months in the forest doing inventory work for eight hours a day excluding breaks and transport time, and working every weekend without exceptions. This is of course not taking into account the fact that some of the forest is deciduous, where the plots are smaller and therefore faster to do.
In terms of cost calculations, at a rate of USD 2/day/person, the inventory will cost between USD 1460 and USD 2320 to complete, if just the work conducted by the CF members themselves is taken into account. Additional expense in respect of the inventory is incurred by the fact that higher paid staff, such as FA triage and NGO staff, will have to be involved to build the capacity of the CF members, and undertake all the planning and data-analysis. Thus, the need to simplify the inventory requirements becomes apparent.

If all changes suggested in the NM are incorporated, the total number of man-hours for one NM plot becomes 8.7. At this performance level, a 12-man team would be able to finish the inventory of the Viel O Kdei CF, including the cutting of all transect line, in just under two and a half months, working every day, but only seven-hour days including lunch and breaks. Of course, again, this does not take into account the fact that some of the forest is deciduous, where the plots are smaller and therefore faster to do.
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Chapter 6
Local-Level Monitoring in Decentralized Forest Management: Exploring the Spaces for Community Participation

By: Tol Sokchea¹, Srey Marona² and Diepart Jean-Christophe³

This paper explores a participatory monitoring process initiated in Kampong Thom province with 3 Community Forestry (CF) sites where CF development was facilitated by Forestry Administration (FA) staff and externally supported by German Technical Support-Rural Development Programme (GTZ-RDP). The paper details the methodology used and the key outputs produced during the process, it highlights the four main principles of the principle, criteria, and indicator Monitoring and Evaluation (M&E) which are: (1) that forest health is maintained, (2) public wellbeing is improved, (3) community wellbeing is assured, and (4) external support is effective. The results show that in all three CF, the land integrity and the forest resource itself was improved between the baseline and follow-up surveys. Despite the positive results, many of the challenges and limitations were acknowledged including the difficulty in capturing all different points of view and opinions when there are such a large number of people involved and consulted as well as how this can lead to a slowdown within the whole process and is very expensive. The paper concludes suggesting that a local level monitoring system can help to build local capacity, improve decision-making, reduce conflict between local forest dependents and responsible authorities as well as empower local community members, especially marginalized groups.

BACKGROUND

Forest management modalities are being reshaped in Cambodia. The forest concession system implemented since the early 1990s is now at an impasse (IFSR 2004). The contribution of the forest concession system has been very

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limited in terms of rural development; it gave little consideration to the livelihood needs of forest-dependent communities living in or around forested areas. The serious degradation of forest resulting from uncontrolled logging inside the concession has also questioned the mere existence of these large commercial systems for the management of Cambodia’s main natural assets. The Independent Forest Sector Review (IFSR) recommended in 2004 that the concession system should be entirely closed. They argue that it is unlikely that companies would engage in long-term forest management approaches because there are still no real economic incentives and property right security for such investments (IFSR 2004).

Since the late 1990s, the policy debate has opened up with greater focus on other forms of forest management, recognizing that more locally based management models are needed in order to enhance the contribution of forest utilization to rural development in post concession areas (Heov, et al. 2006) as well as in other permanent forest estates. Anticipating or following the policy dialogue, decentralized forest management emerged as a family of sustainable forest management options. The core objective of decentralized forest management is to involve local people and institutions in the protection and management of forest resources. The rationale of this approach is to grant land security and give secure harvesting and user rights over the forest to forest-dependent communities so that they have the incentives to protect and manage these forests in a sustainable way. Decentralized forest management is thus likely to serve as a basis for locally driven rural development in those communities.

The term decentralized forest management has emerged as an umbrella term denoting a wide range of activities which link rural people with forest and trees, and the products and benefits to be derived from them (Evans and Guariguata 2008). In Cambodia, the prevailing mode of decentralized forest management is widely known as CF. CF as echoed in the specific set of legal documents developed by the Forestry Administration, refers to “production” forest which is one of the three sub-categories of the permanent forest reserve (together with the "protection" and "conservation" forests). The user rights of CF group members are restricted to customary user rights prescribed in article 40 of the law on Forestry and the rights to sell and barter Non Timber Forest Products (NTFPs) as prescribed in the same law (RGC 2002). Nevertheless, other
forms of decentralized forest management are also being piloted in Cambodia. Three are noteworthy: (1) Community Conservation Forestry in the Forestry Administration administered protected forests, (2) Partnership Forestry for which the management is co-institutionalized between the forestry administration and a commune council and (3) Community Commercial Forestry aiming directly to generate revenue from the commercial (ie timber logging operations), yet sustainable, exploitation of the forest. Each different decentralized forest management modality has its specificity in terms of forest management and institutional partnership. They each rest on co-management principles, meaning that the management rights and responsibilities for forest management are shared by the local FA and the CF group.

The development of decentralized forest management is now embedded in a recently approved, though uncompleted, legal framework. The law on forestry passed in 2002 opened a space for communities to be involved in forest management (article 40). A year later, the sub-decree on the management of CF was approved, and in 2006, the prakas on the guideline for Community Forestry establishment. The sub-decree and prakas apply mainly for CF in the production forest. Other decentralized forest management modalities are developing under differentiated rather than unifying frameworks. The National Community Forestry Program coordination committee is now trying to develop a harmonized legal framework for all decentralized forest management modalities that enable rural communities to manage forests (NCFPCC 2008). Currently there are more than 400 identified existing and potential CF sites throughout Cambodia (Ty, et al. undated). Among those, the Ministry of Agriculture, Forestry, and Fisheries has recognized potential CF areas in six provinces (Siem Reap, Kampong Thom, Kampot, Oddar Meanchey and Beantey Meanchey and Koh Kong). Among those, only 71 CF sites are endowed with an area agreement duly signed by the Cantonment and the respective Community Forestry Management Committees (CFMC).

**PARTICIPATION AND MONITORING IN DECENTRALIZED FOREST MANAGEMENT**

Decentralized forest management suggests that local communities become real actors in the technical and social management of the forest. It creates spaces for people to participate and engage in various aspects of forestry management.
Community Forestry group members can lend their voice to the decision-making process to guide and influence community forest management. They directly elect the members of the management committee, as well as contribute to the design, approval and amendments of community forest regulation and management plans, including the forest benefit sharing mechanisms between the members of the community (individual benefits) and the CF group as a whole (collective benefits). A fundamental aspect of decentralized forest management is that the members of the CF groups can exclude others (non members) from their area to ensure the implementation of sustainable harvesting methods. This represents a shift away from open access regimes. CF members also become key operators of the technical management of the physical resources. They harvest timber and NTFPs according to technical norms (silvicultural systems) and harvesting levels specified in the management plans; they patrol the community forest to limit encroachment and ensure its territorial integrity.

By its nature, CF is multi-purpose oriented as it balances multiple benefits. Productive benefits such as timber and non-timber forest products are the most direct and obvious. These products can have either a direct livelihood value (for self-consumption or sale) or as an input to develop added-value processing activities (distillation, handicrafts, energy technologies etc). But CF also offers an opportunity to secure access to grazing places. CF contributes to the cultural and spiritual development of the community. CF also fulfils environmental services such as biodiversity conservation or watershed protection as it usually interacts with pastoral, agricultural, and fishing activities. In fact, forest resources are elements integrated into a more diverse land use pattern specific for each rural community. Due to these interactions, joining the efforts of the community forest protection and management can also be a means to influence the management of other land use components including the access to formal conflict resolution mechanisms. Not all members share the same reasons and rationale to participate in the CF efforts. The modalities of household contribution in CF are diverse and the recognition of this diversity is crucial to ensure that CF contributes to 1) increasing the productivity of forest resources, 2) promoting social justice in the way that forest benefits are distributed and 3) securing the environmental sustainability of the local ecosystem.

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4 This chapter refers mainly to Community Forestry in production forest. Nevertheless, the conceptual framework, methodology and results are also relevant for other modalities of decentralized forest management, including Community in Protected Areas.
From a community viewpoint, the participation in decentralized forest management and the responsibility exerted in forest management can be a driver for institutional development. New accountability links can be created with other community-based organizations and local authorities. It can play an active role in reinforcing or mediating relationships between the commune councils and the people who have elected them.

The new opportunities that arise from participation have also created new duties and functions for the co-management group, especially for the CFMC who are in charge of the daily management. First of all, there is a need to measure the evolution of the availability of forest resources to ensure that CF activities are implemented according to the CF regulations, agreements, and management plans. Second, the diversity of the different contributions and expectations of members with regard to CF also need to be captured and quantified to ensure sustainable forest management.

Local-level CF monitoring designed and implemented in collaboration with the CFMC, the FA staff, and the Community Forestry supporters can be instrumental in fulfilling these new functions. It would provide evidence-based data on the basis of what proper decision-making can be made. Given that pluralistic partnership is central in CF, monitoring can be seen as useful to support the dialogue between different stakeholders involved.

This paper documents the process of a local-level monitoring of CF in Kampong Thom province. The goal of the initiative was to provide CFMC, members and local authorities at three pilot CF groups and local FA staff there with a capacity development opportunity to design a monitoring framework that addresses the different dimensions of Community Forestry management, assess its performance and communicate the results among the CF stakeholders.

The paper details the methodology used and the key outputs produced during the process. The paper also discusses the lessons learned from such an initiative and the opportunity to scale it up to other areas.

5 The monitoring framework is the ready-to-use monitoring guideline and has to be considered as a product of the monitoring process, which has involved training, feedback discussion, surveys and case study writing.
METHODOLOGY

Conceptual Framework

The local-level monitoring applied within this initiative is based on the concept of Principles, Criteria, and Indicators (PCI) for sustainable community based forest management. The tool originated from Centre for International Forestry Research (CIFOR) which is a leading organization in forestry research and is experienced in such monitoring matters (Evans and Guariguata 2008). The PCI elements form a three-level monitoring framework which addresses all dimensions leading to decentralized forest management or sustainable community based forest management in particular. Principles are the most general aspects of the monitoring, Criteria constitute the intermediate level or second order principles, and Indicators give the most accurate monitoring feature. Figure 1 shows the hierarchical structure of the PCI monitoring framework with definitions of its key elements. According to the figure one principle is defined by several criteria. One specific criterion is detailed or conditioned by a few indicators.

Figure 1. Hierarchical Structure of Principles-Criteria-Indicators
In respect of sustainable CF management, four main factors, which represent the principles, are required. These include forest resources, individual or household well-being, community or institutional well-being of the forest dependent communities, and external actors. Each of these is further conditioned and specified by criteria and indicators to give a comprehensive view of its desired achievement (Srey and Diepart 2008).

The first principle (forest health is maintained) refers to the demarcation of the community forest, its zoning into specific management blocks, the use of timber and NTFPs, as well as the biodiversity and watershed management functions of the forest itself. The second principle deals with people’s well-being. It depicts the benefits in-cash and in-kind that the CF group members obtain from forest resources. It details the system through which the members share the access to, and the benefits from, the forest and the diversity of forest products contributing to people’s subsistence. The third principle apprehends the social governance of the community forest, namely the accountability of the elected CFMC towards the group members, the elected commune council and the FA. It specifies the internal regulation of the committee and the regulations fixing the appropriation rules of the forest products and their enforcement. The fourth principle represents the technical and legal supports to the CF group provided by the FA and other relevant stakeholders or facilitators.

**Partnership**

The local-level monitoring process was implemented within three CF sites and group members in a collaborative effort between the CBNRM Learning Institute and the Natural Resource Management Component of GTZ-supported Rural Development Program Kampot-Kampong Thom (GTZ-RDP) in close partnership with Kampong Thom Forestry Administration Cantonment and the Provincial Department of Environment. The CBNRM Learning Institute and GTZ-RDP acted as technical assistance. The local FA and CFMC acted both as training recipients and facilitators.
Sequence of activities

Throughout the course of this initiative, the implementation of activities at each pilot community contributed to the overall improvement of the forest management. The improvement was measured and quantified through repeated surveys (base-line and follow-up) conducted with a representative sample of CF members’ households.

This pilot initiative took place over the course of 21 months from early 2006 to late 2007. A variety of different activities was undertaken and can be summarized into seven phases. These included (1) Introduction, (2) Monitoring framework design, (3) Baseline survey, (4) Monitoring framework review, (5) Case study production, (6) Evaluation survey, and (7) Monitoring framework finalization and the participatory monitoring guidebook development.

After selecting CF sites and defining both partners and methodology, the facilitators and CFMC designed the first draft of their monitoring frameworks based on PCI concepts (the complete framework is given in the annex). A baseline survey was then conducted to identify the level of Community Forestry development in the three CF sites. It consisted of a structured household investigation conducted with a sample of households (n=159), randomly selected and representative of the overall population in each village. The questionnaires were designed on the basis of the monitoring framework produced earlier, consistent with all principles, criteria and indicators. The data analysis was carried out with SPSS software and led to quantification of the baseline situation in each CF site.

The findings from the baseline survey enabled the CFMC and facilitators to review the monitoring frameworks and develop case studies. Exactly one year after the baseline survey, an evaluation survey was conducted on the basis of the baseline survey (same household sample and same questionnaire) to measure the development trends in those CF groups. Eventually, the lessons learned from the whole process allowed for the finalization of the monitoring frameworks and the development of an easy-to-use participatory monitoring guidebook. This guidebook is a simplified version of the whole monitoring framework that the local community and the local FA can easily use to monitor the progress of CF development.
Figure 2. Community Forestry selected for the M&E Initiative
Community Forestry site settings

Three CF sites in Kampong Thom province have been selected to pilot the participatory monitoring initiative.

The Prey Cheung Phum CF site is located in Choam Thnahn village, Tipou commune, Santuk district. This 149 ha two-block CF area has received good care from the villagers since the early nineties. The designation of the area as CF was a means to officially recognize their efforts. The site was selected for the monitoring initiative because of the enthusiastic involvement of the village leader and villagers to protect the forest (Srey and Diepart 2008).

The Prey Tbong Domrei CF area is located in Chong Da village, Tbong Krapeu commune, Steung Saen district. The area is divided into two parts: a heavily degraded forest (148.5 ha) and a high value forest (4.5 ha). It is located 20 km from the provincial town. The overwhelming conversion of forest into chamcar plantation is significant in this area and has threatened the integrity of the community forest. The villagers were keen on establishing a CF to secure their access to non-timber forest products and grazing land for their cattle. This area was selected because of active involvement of the CFMC in dealing with land encroachment around the community forest (Srey and Diepart 2008).

The Prey Kbal Bey CF area is located in Kbal Bey village, Tipou commune, Santuk district. The community forest area size is 768 ha and is divided into four management blocks. The decision to designate the complete area as CF was to avoid putting pressure on any specific parts of the forest that would consequently result in degradation of the forest overall (Srey and Diepart, 2008).

RESULTS AND RESEARCH FINDINGS

In the three CF sites, the perception about land integrity and forest resources was improved between the baseline and follow-up surveys. Figure 3 shows the thoughts of the CF group members relating to the protection of community forest land against encroachment. The number of people who thought the community forest land integrity is ensured significantly increased between both surveys. The efforts of the CFMC and members with support from relevant parties to consolidate the community forest boundary by means of
cement poles, contributed partly to this result. This activity helped improve the knowledge of the CF members about the boundary through their participation in the demarcation days. It also helped to prevent conflict between the CF group and the adjacent land owners by providing the opportunity to clarify the boundaries before posting the poles. A patrolling system was another factor in pushing forward the protection of both forest land and the forest resources themselves. In general, CFMC are responsible for leading the patrol while the group members participate in every patrolling event, on a voluntary basis, or as a duty.

Nevertheless, the CF group members regarded the community forest for protection purposes mainly. The common understanding of members about the use of the community forest was to collect and consume NTFPs in a way\textsuperscript{6} that was harmless to the overall forest health. In this regard, they realized the importance of conserving the forest resources for future use. Nevertheless, detailed investigations revealed that the people in Chong Da did protect their community forest but at the same time cleared forest in other areas to supply their daily needs (Hou et al 2008).

\textsuperscript{6} Most CF members said they knew that they are allowed to collect NTFPs but not to cut down even one tree in the CF according to the regulations.
It was found that the community forest is typically a multi-functional area which played important roles in supporting the livelihoods of the forest-dependent people. Among other benefits, NTFPs are crucial in the livelihoods of forest dependent people, especially the poorest. A case in Kbal Bey community forest showed that NTFPs enabled its members not only to save money but also to generate cash income through direct sale at the Kampong Thmar market. This case study also concluded that the forest activities were an integral part of the labor diversification strategies of local people throughout the year particularly during the dry season when they are not busy with farming (Nop and To 2008).

Figure 4 presents the percentage of the households collecting NTFPs from the community forest during the evaluation survey in 2007. Common types of NTFP collected were seasonally growing products such as mushrooms and wild fruits. In addition to providing the NTFPs for CF members to freely collect, the CF areas were very secure and peaceful grazing areas to feed their cattle, especially in the situation where surrounding forested areas have been privatized.
The CF regulations is one of the key management documents for the CF group as it specifies all appropriation rules of access and use of forest-based resources. Between the baseline and follow-up survey, there was a significant improvement in awareness of the CF group members with regard to the existing CF regulations (Tol et al 2008). However, the knowledge of the CF members about the detailed contents of those regulations was still scant because of limited dissemination by the management committee. Figure 5 presents the answers of the respondents in the three villages in respect of their awareness of CF regulations.

**Figure 5: Knowledge of the CF group members about the community forestry regulations**

![Figure 5: Knowledge of the CF group members about the community forestry regulations](image)

Involvement of CF group members in CF activities was another aspect related to community well-being. The level of participation of CF members in the three CF sites was always improvable. As shown in Figure 6, the level of people’s participation varied from one village to another. While the degree of participation of local people was satisfactory in Choam Thnanh and Kbal Bey villages, the situation in Chong Da village was very different. The main reason that prevented people from joining CF activities was the...
overlap with other activities, which the members judged more important to their livelihoods (Tol et al 2008). Lack of information about conducting CF activities also affected the participation of the CF members. Establishing a clear information sharing system, formal or informal, can allow for more active participation in CF development and protection activities (Preap and Van 2008).

**Figure 6: Participation of CF members with Community Forestry activities**

![Figure 6](image)

In addition, findings showed that the overall support of external facilitators increased in the period between the baseline and evaluation surveys. Training, CF-related dissemination information and meetings were conducted and this enhanced the awareness of the members (Tol et al 2008). Nevertheless, support was still needed to improve the technical skills of CF groups. It was also found that the commune council was an important CF development partner. The commune councils in the case of this initiative played crucial roles helping CFMC in their daily management such as combating illegal activities in the community forest. Integration of CF activities into commune development plans was a good indication of the interest of commune councils in protecting the forest in their territories (Tol and Meam 2008). Another factor considered as external support to the CF group was the market system of the NTFPs. This was closely associated with the livelihoods of the CF group members. According to the findings of the surveys and case studies, NTFP collection had become an
important livelihood strategy among the CF members, especially the poor, and yet the utilization of NTFPs was not very effective. A case in Choam Thnanh village revealed an opportunity to set up a system inside the village for NTFPs to be marketed. This case indicated that the price of the NTFPs sold to middlemen inside the village fluctuated according to individual negotiations between sellers and buyers. Setting up a depot for buying in and selling out all NTFPs within the community could be helpful for the villagers in managing the NTFP price. Furthermore, information about the market for particular NTFP types helped them to sell their NTFPs for an appropriate price (Meas and Im 2008).

**DISCUSSIONS AND LESSONS LEARNED**

**Stakeholder participation in Community Forestry monitoring**

Community participation is required during all phases of the monitoring process because local knowledge and skills are the key elements to build on in order to achieve sustainable decentralized forest management. Participation in the monitoring process should allow for local communities to contribute their knowledge, experience and skills, including ecological, cultural and socio-political practices to address declining availability of natural resources and to solve conflicts associated with the control over forest resources.

The consideration and collection of knowledge of rural communities in the daily management of their resources is crucial information for facilitators and experts to propose approaches and methods that could lead to sustainable forest management. Therefore, the combination of technical experts and community local knowledge is necessary for successful sustainability to be achieved. In accordance with this new understanding, encouraging local people to identify their needs, set their objectives, and play an active role in the planning, managing, monitoring and evaluating processes can lead to sustainable forest management.

The design and implementation of the local monitoring process in three CF areas in Kampong Thom province relied on the participation of local people who provided valuable experience and perspectives. Nevertheless, community participation has some limitations. Indeed, it is difficult to capture the different points of view when there are a large number of people involved and consulted. This might lead to a slowdown in the whole process.
At the early stage, participatory approaches are expensive because they require more external support and are time consuming. The consultation process takes a long time and requires good facilitator support to reach consensus among different groups of people within the community and outsiders on how to manage forest resources in a sustainable manner.

On the other hand, participatory approaches tend to favor local elites and those who are better off, reinforcing their power, and therefore causing socio-political problems at the local level. The local elite and management committee members are usually the information gatekeepers of any planning and decision-making processes governing the future of the CF group. Therefore, the local poorest communities and members need to be encouraged and allowed to take a more active role in planning and managing their forests for sustainable income. Additionally, there is a need to ensure that forests belong to each local community, especially the marginalized groups including children and women in order for CF to be effective and sustainable.

Importantly, the monitoring system implies a ‘two way communication’ which enhances mutual understanding and consensus among the stakeholders. It should be a mirror of the whole diversity existing within rural communities, which particularly includes the marginalized groups such as women, the poor, widowers and cultural minorities who are the most affected by any decisions. It provides them with a mechanism for the coordination of information across ecosystems and sectors in the discussions for any progression and in the actual performance of CF decision making.

Furthermore, results from monitoring offer the opportunity to open up communication, allowing for dynamic learning, building on experience, learning from previous mistakes and making communication among stakeholders more transparent. This can be seen as a pre-condition that leads to achieving sustainable forest management in the long run.

**Capacity Development and Institutional Strengthening**

The ability of people to understand and adopt good practices and communicate with provincial or national institutions is fundamental to the long term success of decentralized forest management. In this regard, local-level monitoring can be seen as a useful tool for capacity development activities to be addressed for all CF stakeholders from local to national
level including government and local community as well as commune council. The capacity development activities conducted in the frame of this Kampong Thom initiative served to strengthen participatory commune land use planning and communication.

For long-term sustainable forest management to be ensured and for communities to have ownership over forest resources, a local management committee needs to be put in place with clear roles, responsibilities, and regulations. To empower and help communities to focus on the development and implementation of rules/regulations and to deal with conflict, the capacity of local people to understand the context and use the monitoring tools/framework needs to be enhanced so that local communities can be considered key actors in decentralized forest management.

The result of monitoring enables the local community to develop and improve their CF management and performance and also informs the local forestry administration and other stakeholders about the actual level of performance and the progression of CF. In addition, monitoring has the ability to strengthen, cross-sectoral links which can provide appropriate support mechanisms to local communities.

**Policy Support**

The current forest management policies and framework are emphasizing the increasing role given to decentralized forest management in Cambodia. The challenge facing local authorities at the provincial, district and commune levels is how to integrate CF into their development program when the legal framework and policy are incomplete.

However, the forestry sector is developing a new national forestry program and is in the process of decentralizing management tasks and reforming administrations to allow for greater integration with other forms of decentralized forest management. It is necessary to finalize the legal and policy framework relating to forestry, to develop human resources, and to improve the capacity of relevant organizations from national to local levels. In this regard, monitoring activities regularly conducted with CF groups can supply policy makers with first hand information and serve as a reference in the on-going discussion to develop the national forest policy.
In order to increase the effectiveness of decentralized forest management, a monitoring system must be established at the local level to neutrally monitor and evaluate the performance of all stakeholders including the CF committee, villagers, and third parties (external environment support). It would ideally lead to local management plans and law enforcement by all stakeholders.

**CONCLUSION**

It is widely recognized that sustainable decentralized forest management requires the participation of local communities to properly address their needs and aspirations and enable them to develop sound forest management practices. Local-level monitoring can help to build local capacity, improve decision-making, reduce conflict between local forest dependents and responsible authorities as well as empower local community members, especially marginalized groups.

It also provides a space for constructive technical dialogue between rural communities and stakeholders (forestry administration, NGOs and local authorities) to assist in solving institutional constraints and issues. Monitoring can promote local control and ownership over resources and lead to better forest management. Nevertheless, monitoring as implemented in Kampong Thom has its weaknesses, which include time and resource constraints which may delay the development process.

If local-level monitoring is to be successful for sustainable decentralized forest management, it requires a strong political will to involve local communities at the grassroots level in the planning and decision-making process governing the management of their forest resources. It also implies that trust is built among all the stakeholders involved in decentralized forest management.
REFERENCES:


Table 1: The PCI monitoring Framework for Sustainable Community Forestry management

<table>
<thead>
<tr>
<th>1st Principle: Forest health is maintained</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criteria</td>
<td>1-1-1 Signals and posts along community forest border are established</td>
</tr>
<tr>
<td>1-1 Community forest is clearly demarcated and zoned</td>
<td>1-2-1 Non-timber forest products utilization plan is prepared</td>
</tr>
<tr>
<td>1-2 Non-timber forest products (NTFPs) are properly managed</td>
<td>1-3-1 Reforestation plan is designed and implemented</td>
</tr>
<tr>
<td>1-3 Forest biodiversity is improved</td>
<td>1-4-1 Soil erosion is reduced</td>
</tr>
<tr>
<td>1-4 Micro-watershed management is improved</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Principle: People’s well-being is assured</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Criteria</td>
<td>2-1-1 All Community Forestry group members can use NTFPs for their needs</td>
</tr>
<tr>
<td>2-1 Community Forestry members benefit equitably from the forest</td>
<td>2-2-1 Community Forestry regulations express the right to access to the forest of community forestry group members and outsiders</td>
</tr>
<tr>
<td>2-2 Rights of Community Forestry members to access to the forest are assured</td>
<td></td>
</tr>
<tr>
<td>2-3 Forest plays an important role in maintaining people’s health</td>
<td>2-3-1 NTFPs are utilized as medicinal plants</td>
</tr>
<tr>
<td>2-4 Forest supports people’s subsistence</td>
<td>2-4-1 Forest provides timber for agricultural and housing equipments</td>
</tr>
</tbody>
</table>
### 3rd Principle: Community well-being is assured

<table>
<thead>
<tr>
<th>3-1</th>
<th>Community based organization stands for the whole community</th>
<th>3-1-1</th>
<th>Community Forestry management committee is transparently elected and women are able to be candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>3-1-2</td>
<td>Community Forestry regulations are approved and agreed by the local community and other stakeholders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-1-3</td>
<td>Community Forestry members participate in Community Forestry activities voluntarily</td>
</tr>
<tr>
<td>3-2</td>
<td>Right of access to, and use of the forest is understood and is the responsibility of all Community Forestry members</td>
<td>3-2-1</td>
<td>Procedure for collecting and using NTFPs is respected and followed by all Community Forestry members</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-2-2</td>
<td>Right to use the forest is in accordance with the regulations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-2-3</td>
<td>All Community Forestry members respond to their roles</td>
</tr>
<tr>
<td>3-3</td>
<td>Community Forestry management committee is strong in managing the Community Forestry work</td>
<td>3-3-1</td>
<td>Community Forestry management committee is able to extend information to Community Forestry members</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-3-2</td>
<td>Community Forestry management committee is able to write reports and manage documents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-3-3</td>
<td>Community Forestry management committee is able to arrange activities for Community Forestry members</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-3-4</td>
<td>Community Forestry management committee is able to build relationships with other stakeholders</td>
</tr>
<tr>
<td>3-4</td>
<td>Procedures and institutions to address and solve conflict are operational</td>
<td>3-4-1</td>
<td>Conflict resolution procedures are available for the local community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-4-2</td>
<td>Local community is able to solve conflicts</td>
</tr>
</tbody>
</table>
### 4th Principle: External environment is supportive

| 4-1 | Non-formal dissemination and training is supportive towards sustainable forest management | 4-1-1 | A system of dissemination about the benefits of the forest is put in place  
4-1-2 | Local community have access to information related to Community Forestry  
4-1-3 | Training on forest management conducted regularly |
| 4-2 | Community Forestry group members cooperate with other stakeholders to manage their forest resources | 4-2-1 | Related institutions provide technical support in Community Forestry management committee elections and regulation formation  
4-2-2 | NGOs, local authorities, and technical institutions assist in solving conflict in the community |
| 4-3 | Good market system for NTFPs and timber products is in place | 4-3-1 | Government and other stakeholders assist in finding markets for forest products |
| 4-4 | Community Forestry management is in line with priority goals of government in forest development and management | 4-4-1 | Local community contributes to implementing forest land management rights  
4-4-2 | Government provides consultations on Community Forestry management  
4-4-3 | Local community contributes to implementing forest management policies |

Source: Srey and Diepart, 2008
Section C

Tenure and Conflict: Boundaries, Access and Rights

Photo by: Research Participants - 2003
Section C  Tenure and Conflict: Boundaries, Access and Rights

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Chapter 7
The Terrain of Tenure: Conceptual Paradigms in Resource Research

By: Kate Frieson

This contribution to the section entitled Tenure and Conflict: Boundaries, Access and Rights, aims to explore the conceptual terrain of tenure to bridge theory and practice of resource use in the papers that follow.

Two different paradigms of tenure will be discussed for these purposes: tenure as a legal institution and tenure as social relations. The intent is not to set up these paradigms as mutually exclusive, but rather to see how aspects of each are complementary and therefore useful for researchers, civil society groups, and communities in framing their experiences and terms of debate. A caveat is that while these conceptual paradigms of tenure do not exhaust possible approaches, they nevertheless serve well as introductory examples of how scholars have typically approached the issue of tenure in debates about boundaries, access and rights over scarce resources.

INTRODUCTION

Tenure as a legal institution and tenure as social relations have tended historically to operate in isolation from each other in conceptual thinking. (Maxwell and Wiebe 1998; Feder and Feeney 1993) Recent scholarship has endeavored to bridge the divide with some interesting results, notably in looking at the legal apparatus of tenure arrangements through the lens of social relations to explain inequalities of access and rights among segments of populations, such as women, ethnic minorities, those disenfranchised by poverty and so forth. (Blocher 2006; Feder and Feney 1993; Torhonen 1993) For these reasons, the conceptual paradigms serve as examples of how using a concept such as tenure can deepen inquiries and understanding of the complex web of cultural, social, political and economic meanings of boundaries, access and rights of natural resources in Cambodia and other countries in the Asian region and beyond.

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It is useful to briefly discuss terminology, starting with the meanings of boundaries, access and rights as they are conceived herein:

**Boundaries** have multiple meanings, crossing the divide between geographical, moral, legal, temporal, and socio-economic and cultural.

**Access** refers to the multiplicity of ways in which people claim, benefit, control, and negotiate their use over natural resources, including land and water. Access can be articulated in different forms: physical, legal, moral, political or cultural in scope.

**Rights** are what belong to people. There are moral and legal dimensions of rights in securing tenure and the gamut of tenure options—temporary, permanent, sharecroppers, renters, owners, leaseholders, free-riders, open access, common property, common pool and so forth. Rights are often discussed through statutory or customary law, and via international human rights conventions and legislation.

**WHY TENURE? A RATIONALE**

Apropos of introducing these paradigms of tenure in natural resource issues, it is useful to provide the rationale for exploring the terrain of tenure; I offer three.

**The Temporal Importance of Tenure**

First, at a basic level, this chapter provides an entrée to one of the defining themes of this volume: tenure and conflict. And it is this twinned theme—tenure and conflict—- that is center-stage in the tenure of land use in Cambodia. Who owns what, for how long, and for what purposes? Who has rights to take away ownership; on what legal, moral, hierarchical basis is this done? What are the stakes and who has access to them? What does losing tenure battles cost in terms of cultural loss, eco-system upsets, and social morass? These are some of the issues and questions that the follow-on papers confront in this section on tenure and conflict.
Tenure, and conflicts over it, has been paramount for at least a decade, and especially since the lucrative marketing of resources including land, trees, minerals, and oil. For this reason, tenure is a natural concept to rally narratives of conflict over the use of scarce resources, including water, land, forests, and coastal environs. The threats to the diverse eco-systems that live within these resource niches have been well documented, but the over-riding source of conflict regarding their tenure has arguably been the threats posed to human livelihoods rather than to those of the animal world. Wrapping up this first point, the ever growing conflict over land and resources makes this thematic section on tenure timely and urgent.

**Philosophical Tenacity of Tenure**

Second, at a deeper intellectual level, the tenacity of tenure as a concept is hard to resist. Land, after all, and the natural resources on it, is the single most precious resource that people have in this world. (FAO, Land Tenure Studies 2007, p.1) The concept of tenure has ancient roots in both Asian and European philosophies of ownership, control, rights and access. From Hobbes to Marx to Mao, the vexing issues of human ownership and access to material wealth, particularly natural resources, have lain at the heart of central organizing principles of scholarship on individual liberties and rights, collective responsibilities and ownership and social equity and justice in the benefits of natural resources production and conservation.

Cambodia presents a historical mosaic of many of these contending and differing approaches to tenure rights. If we peel off the layers of foreign influence on Cambodian tenure experience we can find Hindu concepts of the cosmos where tenure was associated much more with control over populations than land per se, (Khmer and Cham kingdoms where complex tenure systems over rice agriculture and water supply created glory and collapse during the eclipse of Angkor - Mabbett and Chandler 1996); Chinese and Portuguese introductions of coinage and markets in the 16th century created a valuation system that affected tenure patterns over marketable goods (Reid 1990); and more recently, French colonial introduction of private property, state taxation systems, agricultural production for the state, and corvée labor altered fundamentally the tenure pattern of social, cultural and economic relations that are now the familiar family farm systems we have in the 21st century (Robequain 1944).
This brief historical exposition is meant to point out how different types of tenure systems have evolved over the centuries. And we should all be aware of the past as a precursor to the present in any discussion of tenure issues and conflicts over boundaries, rights and access in the modern period.

**Linguistic clarity and meaning**

A final and pressing rationale remains. What begs to be known is that while there is always a need for clarity in the use of concepts, this was especially the case of tenure in the Cambodian research context. There are two reasons for this. The first is simple yet significant: there is no linguistic equivalent, either oral or written, in the Khmer (Cambodian) or Jarai languages, which have been used in the research endeavors reflected in this section. During the development of this theme at a provincial symposium of research presentations, it was clear that the local researchers themselves were for the most part unaware of tenure as a concept, how it could be developed as a reference for framing research questions, and the historical and theoretical significance of its applications in the Cambodia context. Partly this was due to linguistic boundaries and access to relevant literature in translation from English. This was also due to the design limitations of the studies themselves that precluded the formation of a theoretical and conceptual framework in which to situate their queries.

However, this current context does not necessarily obviate the conceptual relevance of tenure as a term in the Cambodian papers in this section. For one thing, terms such as human rights, governance, transparency and accountability are also newly transported into the Khmer language. They are not wholly understood nor researched, nevertheless they have relevance and meaning for local researchers making inquiries of the environmental landscape. The same can be said for the application of tenure as a centralizing concept. The studies in this section covering forest protection, land use conflicts, fishing community rights and responsibilities are naturally harmonious with the conceptual application of tenure, although none has applied this concept in a conscious or systematic way. Let us hope future researchers may do so.
DEFINING TENURE

There are some basic working definitions of tenure useful for our purposes. As a precaution it should be noted that there is never one perfect definition, but rather variations on imperfect ones. Further, as I shall note, the different definitions presented are not contradictory but rather convey a particular approach to the study of tenure. For simplicity’s sake, I have grouped the definitions into the two tenure paradigms that are featured in this chapter: tenure as social relations definition, and tenure as legal framework definition.

Tenure as Holdings: A Social Relations Definition

It is helpful to view the following definition as an English derivative from the Latin tenere, to hold (O’Flaherty 2003). Thus tenure is defined as:

"Control over resources, or the way in which people hold, or do not hold, individually or collectively, exclusive rights to land and all or part of the natural resources upon it.

(CBNRM.net/Rihoy 1999, italics added)"

In this definition, the onus is on holdings, ownership and access to land, and natural resources bestowed upon it. This definition fits best with a Khmer translation of tenure as: kan kap dei, or taking hold of land.

In the English language definition, there are references to ways of holding land, and explicit mention of exclusionary rights, therefore implying issues connected to boundaries, access and rights. However, these explicit and implicit meanings are not packaged into the Khmer definition of tenure, which, as mentioned above, is expressed most commonly as kan kap dei, and so by extension, they are most likely not bundled into the conceptual understanding of the term among its users.
That is not to say that the Cambodian language does not have narrative scope for discussion of ways of ownership, inclusionary and exclusionary rights, but rather that the Khmer translation of the English language concept of tenure as used in environmental and natural resource use research does not incorporate the interlinked nodes of exclusion, inclusion, rights, boundaries and access. Therefore, there is still scope in Khmer scholarship and among current Cambodian scholars to deepen their conceptual definition and understanding of tenure in these ways, looking for patterns of exclusion and inclusion based on social relations or other criteria. At the present time, tenure studies tend to focus on the minutiae of case details rather than on what these tell us about changing social relations within the conceptual orbit of exclusion, access, boundaries and rights.

However, as O’Flaherty writes in relation to land issues, viewing tenure only as bounded by ownership obscures the social and cultural dimensions of access (O’Flaherty 2003):

A land tenure system is not just a legal instrument through which rights to resources are assigned so as to mediate conflict over productive resources. Rather, a land tenure system constitutes a social practice employed to some set of social ends, although not necessarily any single or consistent set of social ends. In this respect, tenure systems are much like tradition; they are not things to be recorded and categorized but practices that express and reinforce social relations and cultural values.

**Tenure as Legal Institution Definition**

A definition of tenure that focuses on its legal status emphasizes the “institutions governing access to and ownership of land and natural resources” and noting that “land tenure derives from both statutory and customary law” (Maxwell and Wiebe 1998:4). It should be noted that there is no Khmer legal definition of tenure as such that approximates this rather refined approach to laws and institutional relationships that accompany it.

Tenure has also been defined as an institution that can be applied in whole or in part to human systems of resource governance. As argued by Rihoy (1999), “Tenure is one of the key factors determining the way in which resources are
managed and used, and the manner in which the benefits are distributed.” In this definition then, tenure itself is the organizing principle for the management of natural resources and this application has both legal and social applications.

For the purposes of this chapter the above definitions are acceptable and complementary as they reflect nicely the differing approaches to the study of tenure issues that are briefly sketched in this chapter.

**Tenure Paradigms: Social Relations and Legal Institutions**

In reviewing these definitions of tenure, what is apparent is a dichotomy between the social and legal constructions of tenure. In the first definition, the onus is on people, and who has rights to own, exclude and so forth proprietary rights to resources. Factors such as culture, hierarchy, gender identity and historical impacts are inherently present in examinations of the social relations of tenure. In the second definition, the emphasis is on the legal systems in place that define the boundaries, access and rights to tenure of property and natural resources. This is what leads to the posing of two possible paradigms of tenure for discussion: tenure as social relations and tenure as legal institutions.

**Tenure as Social Relations**

Tenure as a system of social relations, views the material distribution of natural resources from the realm of human social and cultural relationships. And within these, the indices of political power, economic influence, social and gender hierarchies and control are guiding lights to illuminate why tenure systems exist as they do, and how and why there are struggles over them at certain points in time.

In terms of boundaries, several important studies have indicated that their social dimensions are becoming more restricted in the wake of increasing land values and competition over scarce resources. (Feeney 1993) Studies in West Africa indicate that land tenure rights by temporary and secondary users have been set back as a result of market penetrations and globalization forces allowing more powerful players to emerge to contend for user rights (ibid.)
The rights associated with tenure through a social relations paradigm of tenure are typically concerned with investigating who can hold and use resources, for how long, and under what conditions. Additionally, those scholars interested in the aspects of tenure and rights are concerned with the questions as to how tenure situations change over time, and how changes affect equity, development and social and economic security.

In the last decade especially, the gender dimensions of land tenure have surfaced as women in many countries are provided with differential access to land tenure because of their sex (Agarwal 1995). According to Howard (2005) research in Africa on tenure systems revealed that:

In many places women have fewer rights to land than do men within a household. Women’s rights are also often subordinate to those of men. Moreover, many barriers prevent women from translating formal land rights into economic benefits. Gender-specific social norms may restrict women’s economic activities and decision-making roles. Women may face discrimination in the markets for land, labor, and capital. Legally and socially recognized property rights (including ownership) can ensure women’s access to control over land-based earnings.

More specifically, some scholars look at the gendered dimensions of labour in natural resource use and access, such as in Africa (ILC 2005):

The gender division of labor is itself rooted in religious and other social belief systems in which concepts of masculinity and femininity, and norms about behavior that is appropriate for each sex, are intrinsic. These norms prescribe not only the type of activities and responsibilities that are appropriate for men and women, but as well as with whom men and women of different social positions can interact, and in which physical spaces and environments they may carry out activities or socially interact. Much research on land and tree rights shows that men and women may have different access to the same resource areas and also access different spaces. This is in part related to cultural restrictions on women’s mobility, which may be considerably less than men’s, and to cultural beliefs that, for example, may limit women’s access to particular resource areas such as high forests or sacred groves.
So we can see that tenure has social and cultural values and can be central to defining status in a community. As the International Land Commission working group noted: “The social norms governing the access to and control over land reflect power relations, which are usually biased against women.” (ILC 2005)

In Cambodia, bilateral inheritance as a cultural practice offered security of tenure, at least prior to the war years. Increased population pressure on finite land resources, and dispensation allocations in marital disputes have led to women’s rights to be enshrined as land title holders. (Mehrak, Chhay and My 2008).

**Tenure as Legal Institutions**

The legalist approach to tenure is more concerned with the legal frameworks, customary law or statutory law that define tenure systems, and the judicial systems that regulate and monitor the implementation of laws (FAO 2007). Jurisprudence, legal systems, and the operation of these are thus considered benchmarks for examining tenure issues and conflicts that arise over boundaries, access and rights.

Due to the fact that land tenure historically has derived from customary and statutory rights, the legal approach with regard to property rights and ownership cannot be overlooked. Customary tenure, means local practice of tenure systems, unwritten but codified through broad cultural acceptance. Statutory laws regarding land tenure are those that are enshrined by state institutions and have significance in modern jurisprudence and international law.

Customary and statutory law can influence each other, and are not mutually exclusive. For example, if we look at customary law of tenure in Cambodia among the indigenous peoples, this is having a significant influence on how tenure challenges are being drawn out in day to day control and interest in land (Torhonen 2003).

In most cases in Cambodia, we can say that land tenure refers to the ways in which individuals - whether acting on behalf of their families, in common with community members, or on behalf of others who reside outside of their communities - acquire access to land, the rights they hold, and the ways they
defend those rights. What the case studies in this volume tell us is that most decisions made over land tenure have had a direct impact on natural resource management and proprietary rights. What we do not know enough about is the characteristics of that impact - ecological, socio-economic, cultural, and political.

Sustainable management of natural resources is achievable when customary laws regarding tenure rights, practice and access are incorporated within formal legal systems. Social, cultural and ecological patterns of tenure are inter-linked and therefore present a complex web of relationships that change over time in response to economic pressures for growth, government needs to exploit natural resources and private and public demands for access.

**CONCLUSION**

This chapter has provided a preliminary discussion of two conceptual paradigms of tenure in current research: tenure as social relations and tenure as legal framework or institution. An important lesson is that they are neither mutually exclusive nor contradictory but rather both necessary to get the full view of the complexity of tenure systems, and the attenuated boundaries, access and rights that accompany them. The intent of the chapter has been to stimulate interest in situating research questions and approaches within a conceptually defined mode of inquiry.

The choice of these two paradigms stems from the dichotomy in the scholarship on tenure that tends to privilege one approach over the other. This is not unusual or particularly problematic, since the disciplines of economics, law and history do tend towards institutions, laws and theorems as an approach to problem solving. And legal frameworks are germane to understanding rights and access in the post modern world.

Conceptual paradigms as a mode of organizing information in a systematic and interlinked way are not without their weaknesses. For one thing, there are always adaptations to the paradigm that can be made, or tweaking this way and that for clarity, better representation of reality, and not least, relevance.
The benefits of the social relations of tenure paradigm is that the lens of inquiry captures the human dimensions of tenure issues that the legal framework does not automatically include. These foremost are the social relations of power that can protect vulnerable populations through customary practices (marital practices protecting bride wealth and land holdings, for example) and those that act to exclude other segments of population based on economic wealth, social status rankings, urban-rural divides, and ripples caused by migration, disenfranchisement and at times, ethnic identity. Social relations approaches to tenure also venture to inquire into the systems of patronage, hierarchy and “black hat” or corrupted forms of governance that can interfere with jurisprudence and in the worst scenarios, jeopardize the standard of equity in access and rights enshrined in laws and conventions. Social relations approaches also, importantly, deal with the sensitive issue of exclusion, necessary for conservation and the prevention of the “tragedy of the commons” (Hardin 1968).

How can the two paradigms be brought in closer relation with each other, and should they? One way is through an integrated definition of tenure as social relations and institutions governing access and ownership of land and natural resources.

The contemporary drivers of change in tenure systems are what could be called the institutional legal systems that define property and resource rights and access to them, the socio-economic systems that determine value of resources, the global capitalist-driven foreign investment ventures, international banking systems, and the more formalized state extraction industries of natural resources such as oil, bauxite, sand and minerals in the 21st century.

 Communities in crisis are responding to these drivers of change, although, in the main with what lawyers might term a deficit in equality of arms. Individual farmers, fisher-folk, indigenous spirit forest protectors, and forest community managers stand very small beside such industrial giants. The fledgling decentralizing democratic system that is being promoted in Cambodia, along with the rights of communities to organize and voice their visions of tenure and access, offer some positive perspectives if one takes a long view.
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Chapter 8
Community Based Forest Protection: a case study from Krang Skear Commune, Toek Phos District, Kampong Chhnang Province

By: Russell Peterson¹, Sou Sontara² and Megan MacInnes³

By examining the protection efforts of Krang Skear Commune, this paper attempts to analyze the methods used and the tenure framework supporting these efforts in an attempt to consider the possibility of scaling up this type of alternative forest management. The evaluation of the case study suggests that there is a significant amount of potential to engage local communities in the protection of forest areas beyond the normal limits of formal Community Forestry (CF) that are currently being practiced in Cambodia.

INTRODUCTION

Background

The demise of the forest concession system in Cambodia has created an urgent need for discussion on viable alternative forest management systems. As a contribution to that discussion, this research will present a case study of an initial attempt by the population of one commune to introduce community-based forest protection over a large area. It will describe the methods used to protect the forest, analyse the tenure framework supporting these efforts, and identify the communities’ needs for additional support from external stakeholders.

Between 1990 and 1997, the Cambodian government awarded 32 forest concessions, giving well-connected companies long-term control over logging in state forests totalling 6,464,021 ha, or 35 percent of Cambodia’s total land area (Global Witness 2002). The concession system was heavily

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criticised for both poor governance and its negative impact on local community livelihoods (Ashwell et al, 2004). Local communities reliant on forest products for their daily subsistence faced threats and intimidation, found their resin trees illegally cut, and lost access to important forest resources.

In 2004, a multi-million dollar independent Forest Sector Review commissioned by donors and the Cambodian government (Ashwell et al, 2004), called for an end to the concession system suggesting that commune-level partnership forestry be considered as an alternative. This recommendation reflected the high reliance of many rural Cambodians on forests and therefore the importance of promoting community-based methods of forest protection and utilisation. Other studies have indicated that non-timber forest products (NTFPs) provide an important safety net for rural communities and may contribute up to 60 percent of household income in some areas (Babon 2004, pp.6). It is estimated that 8.4 million ha or 66 percent of Cambodia’s forest area is suitable for community-based management, being within 10 km of the nearest villages (and therefore regularly accessible to local households) (Fichtenau and Ly Choung, 2002).
However, officially recognized community-based forest protection in Cambodia is currently practiced only on a small scale although this area is increasing. In 2003, community forests covered only 0.8 percent of Cambodia’s total forest area (Braeutigam 2003). At the end of 2006, the Forestry Administration website listed 264 community forests covering 179,000 ha (about 1.4 percent of Cambodia’s forest), with an average of 678 ha per site. As of February 2009, 280 sites are listed. However, two-thirds of community forests are located in areas of “no, little, or heavily degraded forest resources” (Babon 2004, pp14). Though some larger and better resourced community forests are now being initiated, the Forest Sector Review concluded that the current model of CF in Cambodia was too small-scale and was unable to provide sufficient incentives to support community-based forest protection on a larger scale. Heng and Sunderlin (2006) point out that “Community Forestry benefits are often only a small portion of overall forest resource use in a village”.

Although much of the forest resources used by villagers come from forest outside the boundaries of recognized community forests, little is being done to protect these areas. This raises the question of whether community-based forest protection on a larger scale, or the reformation of CF within a broader definition would provide a viable forest management alternative.
Case Study Selection

This research presents a case study of initial attempts by communities in Krang Skear Commune, Tek Pos District, Kampong Chhnang Province to introduce community-based forest protection over large areas of forested land. The Krang Skear case study was chosen as the community is attempting to protect the whole commune (59,214 ha) instead of just a designated community forest area. Official approval of and support for their efforts would likely improve its effectiveness, given that many threats to the forest are beyond the community’s control. Although the forest in this area is considered to be of ‘low value’ by the authorities, the community finds it valuable and is motivated to protect it. Additionally, the community was well known to the NGO Forum because a number of NGOs with activities in the commune are also active in the NGO Forum, and community leaders from Krang Skear have played an active role in NGO Forum-organized events. This provided a strong basis of trust to support the field research.

Research Objectives

The members of NGO Forum on Cambodia working in the forestry sector were interested in assessing the success of the Krang Skear case and identifying ways in which this example could support other communities also interested in community-based forest protection that overcomes some of the limitations of the official CF approach and protects a larger area of traditionally owned forest. Based on this partner interest and the local context, the research focused on three key objectives:

- Describe the models of forest protection being used by the forest communities;
- Analyse the tenure framework supporting these efforts; and
- Identify the support provided by external stakeholders as perceived by the community members and the recommendations they have for how this could be improved.

4 In addition, it should be noted that the land in Krang Skear has been allocated for future utilisation by an agricultural concession. The community’s dispute with the concession company is not the focus of this piece of research however and will be discussed only in passing.
Chapter 8: Community Based Forest Protection: a case study from Krang Skear Commune, Toek Phos District, Kampong Chhnang Province

Community-Based Forest Protection versus Community Forestry

For this research, it is important to make a distinction between community-based forest protection, which is the focus of this study, and “Community Forestry” In Cambodia, “Community Forestry” is generally understood to encompass activities carried out by a formally constituted “forest community” to manage, develop, protect, use, and benefit from forest resources in a specifically designated area. The rights of this “forest community” are formally laid out in the 2002 Law on Forestry, the 2003 Sub-Decree on Community Forestry Management, and the 2006 Prakas on Community Forestry Guidelines. As mentioned above, the Cambodian experience is that these community forest areas are often relatively small and normally include only a portion of the forest surrounding a village or used by villagers. A CF agreement gives management rights to a Community Forestry Management Committee (CFMC) over the forest for a period of 15 years. The committee is required to develop a Community Forest Management Plan which, if approved, gives the community the right to harvest the designated forest area at sustainable levels above and beyond what may be termed as customary use. Protection is just one of the duties of a formally designated CFMC.

Community-based forest protection, by contrast, comprises any actions taken by a community to protect forest resources in their vicinity; it is one part of Community Forestry, but not limited to official Community Forestry areas. It involves villagers working together to patrol forest areas, report forest crimes, and take action against illegal activities. With appropriate support from government officials, it has the potential to significantly reduce illegal activities in forests that receive insufficient monitoring from overstretched and under-resourced officials. Villagers, unlike officials, are more often present in the forests surrounding their villages and therefore in a better position to take immediate action on forest crimes. The incentive for community-based forest protection is derived from the villagers own dependence on the forest, even where the area is not a designated community forest. Article 92 of the Forestry Law also provides financial incentives for the reporting of forest crimes. Additional NGO

5 While in English the term “community forestry” is normally used, in Khmer the term “forest community” (samakhum preycher) is in common use, perhaps suggesting an emphasis on building a community of forest users rather than on the technical aspects of forest management. In this article, we have used the terms “community forestry” when referring to the system of forest management, “community forest” when referring to the forest itself, and “forest community” when referring to the community group managing the community forest.
or government support may be necessary in some cases to motivate communities, but the costs are only minor and insignificant compared to the cost of formal policing.

**RESEARCH METHODOLOGY AND LIMITATIONS**

The research in Krang Skear used semi-structured interviews and group discussions, during which qualitative Participatory Rural Appraisal (PRA) methods such as timelines, pie diagrams, Venn diagrams and SWOC\(^6\) analysis were used where considered appropriate. The intention was to move from an examination of forest uses and protection methods to a community appraisal of the support provided by external stakeholders. The research was intentionally focused on revealing the perceptions of the community and providing them a voice, an element often missing from more technical discussions. The first phase was done in September 2006, involving 10 community representatives (eight men and two women), from the villages

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6 This is often called a “SWOT” analysis, meaning an analysis of Strengths, Weaknesses, Opportunities and Threats. In Cambodia, the term “constraints” is often used instead of “threats” due to the more violent connotation of the latter word, especially when translated into Khmer.
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of Tuol Samrong, Anhchanh, Krang Skear Tbaung, Damnak Ampil, Chambak Prasat, Trapaing Mlu, Phnom Ta Sam, and Khneang. The second phase in late February 2007 followed this up through visits to the villages of Anhchanh, Sou K’orng, Chambak Prasat and Tuol Samrong and meetings with district and Forestry Administration division officials.

The research was hampered by the usual limitations of time. A second case study in a high value forest, which was intended to provide the research with a more rounded picture, was not completed. However, the preliminary findings of this second case study suggest that high value forests have even greater potential to benefit from community-based protection due to the greater incentives accruing to villagers from preserving them. Despite these incentives, the degree of social capital and the ability of the community to work together collectively are also important factors which can impinge on the effectiveness of the community to protect their forests.

CASE STUDY: COMMUNITY BASED FOREST MANAGEMENT IN KRANG SKEAR COMMUNE

Introduction to Krang Skear Commune

Population figures held by the commune council in Krang Skear indicate that, as of 2006, Krang Skear had a population of 11,445 people, including 2,404 households and 5,932 women. The National Census of 1998 indicated a population of 9,283 people. The population of the commune has increased by 2.7 percent per year since that time. Census figures (NIS 1999) show that the rural population of Kampong Chhnang province, where Krang Skear is located, is 57.8 percent literate (males 66.4 percent, females 50.3 percent).

The commune covers 52,165 ha, with a population density of just 22 persons per sq. km. Although official maps and administrative records show only eight villages in the commune, the commune council is aware of 16 villages. The southwest has large areas of deciduous forest, whereas the agricultural areas are located mainly in the northeast and along the railway. The research participants, based on figures provided by the commune council, claimed that the commune now has 11,280 ha of jungle and 9,005 ha of sparse forest. People have planted cashews and mangos in between tree-stumps in some damaged forest areas, especially in the area south of Phnom Ta Sam. (See maps at end of article).
From a livelihoods perspective, the villages in this commune can be divided into two groups; those living near the railway and those in more remote areas. Villagers near to the railway typically have diverse livelihoods including selling firewood, growing vegetables, farming, running small businesses, and harvesting NTFPs. Those in remote areas are dependent primarily on farming, cattle-raising and NTFPs for their livelihoods. However, villagers from both groups estimated that rice farming represented approximately 40 percent of their livelihoods, forest resources 25 percent, other agricultural practices 25 percent, and other livelihood practices the remaining 10 percent. Research participants explained that forest products did not always have a monetary value, but provided an essential safety net particularly in situations when they were short of money, which for example can occur during the rice transplanting season. It was also noted that forest products are a major source of nourishment for the poorest people in the commune who are landless. Others rely on the forest as an important place for grazing cattle. They admitted that, “Those who rely on the forest by-products for their livelihood don’t become rich. But they benefit from the forest.”

A baseline national assessment of natural resources and rural livelihoods conducted by the Cambodia Development Resource Centre (McKenney & Prom, 2002) noted that villagers’ forest-related activities in Krang Skear provide a sufficient amount of fuel-wood and NTFPs for household consumption, though not an adequate amount for selling.

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7 Direct quotes from research participants are shown in italics throughout this article.
By contrast, research participants estimated that an average rice harvest may bring in one million riel (USD 250) and those who have a lot of cattle may earn up to three million riel (USD 750) in a year. Illegal forestry is much more lucrative however. Participants reported that “An ox cart can hold two cubic metres of timber, and each cubic metre can earn 600,000 riel. In two weeks they [the outsiders] can earn two million riel.”

History of Forest Protection in the Commune

The eldest research participants recalled how abundant the forest was in the commune in the 1960s and before, when “the trees were so big we could not put our arms around them”. They also mentioned the many wild animals living in the forest including large mammals such as rhinoceros. The abundant nature of these forests began to change when heavy deforestation began during the 1980s with the presence of Vietnamese troops. Nevertheless, large areas of forest remained. It was not until the year 2000 that people realized the natural resources they all relied on were in serious trouble and that something had to be done to save them.

Research participants explained the history of forest protection in the forest as follows: “Between 1979 and 1990, there were abundant forest, wild animals, fish, and richness in biodiversity. Between 1990 and 1993, timber traders and uncontrolled groups arrived and destroyed the forest. Between 1993 and 1996, a growing number of people from all over Cambodia came to do their business in Krang Skear commune. The area was at the time under the control of the soldiers of Battalion 6, during which the forest destruction and encroachment for forest land continued at a steady pace. Between 1996 and 2000, the natural resources in Krang Skear commune were put in an even more deteriorative state; poaching of wild game, catching fish with electric shock equipment, use of illegal fishing gear, tree logging, and forest encroachment for land occupation are just some examples of the destructive activities that were taking place. Furthermore, all of these activities were completely uncontrolled.”
Participants continued that “Seeing the constant loss of natural resources, [beginning in 2000] the villagers worked together to form a forest protection committee in each village. When they witnessed forest crimes, they lodged complaints with the concerned institutions, but no resolution was forthcoming.” When the communities requested cooperation from the local authorities, they got no response and saw that offenders paid bribes to the same authorities to allow them to continue their illegal activities.

The community found an alternative strategy, which was to seize and impound the illegal logging equipment and take it to the Kampong Chhnang Department of Agriculture. For each case they received a reward of 100,000 riel (approximately USD 25), as prescribed under Article 92 of the Forestry Law. Seeing that the provincial authorities were willing to take action against illegal loggers, the community was strongly encouraged to continue these efforts.

Following this, the community submitted applications to the district authorities and Forestry Administration Cantonment Chief to establish forest community groups in a number of villages. An application to manage a Community Forestry near Toul Samrong village was accepted. But forestry officials actively discouraged applications for other community forests, these being in the
area also claimed by a then inactive economic land concession (ELC), which covers much of the commune. Fearing that the forest would be completely destroyed by outsiders, the community decided to try and continue to protect the forest even without official recognition. “Although the forest community of Krang Skear commune was rejected, threatened, incited to have internal rifts and faced intimidation, the community groups saw that the forest protector is in the right while the forest destroyer is in the wrong” research participants said.

These participant responses highlight the genuinely community-led nature of the forest protection activities in Krang Skear. Although NGOs have been working in the commune since the mid-1990s and a number of them have provided technical support for community efforts to establish forest communities in each village, they have taken only a peripheral role in protection activities. This is described in greater detail in the section below on “support from civil society”.

**New Threats to the Forest**

Until recently, the main threat to Krang Skear’s forests has been anarchic logging. However, an additional threat to the forest in Krang Skear emerged when approximately 90 percent of the commune was allocated to an investment company for an ELC, covering all villages except for Toul Samrong. Although the company was granted a contract in 2000, they were initially inactive and only carried out limited activities for short periods in 2004 and 2005. However NGO Forum members operational in the area have reported that since mid-2008 the company has scaled up its operations across the concession area, which covers over 315,000 ha in Kampong Chhnang and Pursat provinces. As a result, the community’s progress in protecting the forest, as described in this article, is now under serious threat.

**Methods of Forest Protection**

The villagers have established forest protection committees in all 16 villages within the commune. Each forest protection committee includes a forest patrol group usually consisting entirely of young men whose primary job is patrolling the forests. When confronting illegal loggers, they use active non-violent measures to apprehend the offenders or their tools.
Sometimes we sleep in the forest. We confiscate chainsaws, and then call the Forestry Administration. We are armed only with the Forestry Law. We quote them Article 92, Article 76. We mobilise our group. We surround them, prepare documents, laws, audio-tape, camera. The criminals are scared of being photographed. They try to give bribes, but the people don’t accept. This is our method. We carry only laws, not guns. We solve crimes based on the law, and inform the competent authorities. We use active non-violence. The people are motivated, even though they are illiterate. They have religious belief, faith and customary rules.

Participants had stories of success. “In Tuol Samrong area, there were previously around 50 charcoal factories. Now there are none. The forest patrols took action to block the roads. They slept in the forest. They met with ox carts carrying timber and convinced the people to stop. They took photographs, made phone calls, and showed the Forestry Law and Order of Hun Sen. Now even the cutting of small trees is quiet. Wildlife is increasing.”

However, they also had stories of failure. “About half a month ago, I saw people sawing the trees and reported to the village chief and police, but they were bribed. Thus, I asked them and the police said they found neither chainsaw nor evidence.”
Some villages have up to five forest patrol groups, each consisting of five or more men, and each responsible for patrolling a different area. In some villages, all villagers contribute to a fund to support the forest patrols, but participants felt that the forest patrols were still under-resourced financially and also in terms of equipment.

While the number of villagers patrolling the forest is a factor contributing to the effectiveness of their efforts, the strength of the forest protection committees also varies from village to village with each having different levels of internal organisation. The best organized forest protection committees have a Chief, a Deputy Chief, Cashier and Secretary, while other committee members take responsibility for information dissemination, forest protection, and forest planting. The village chief, elders, and monks are often called on to be advisors to the forest protection committee, though this differs from village to village. Meetings are regularly held to devise strategy, raise awareness, and build consensus. “One by one, each forest protection committee has been set up in the 16 villages. In setting up the committee, a motivated and honest focal person in each village was sought for and chosen with the aim of controlling the forest crime. The effectiveness of these focal persons relies on having close cooperation with the officials of forestry administration, environment, and other relevant authorities.”

In addition to strong internal organization, maintaining social capital, internal community solidarity, and sharing a common goal for forest protection are also recognized as criteria necessary for the success of the forest protection committee.

The protection groups who wanted to protect and maintain the natural resources, culture, tradition and custom, beliefs, religion and lifestyle, gathered to educate people about the importance of the forest. As a result, people’s awareness of this issue has been improved and more of them have become engaged in patrolling the forest, placing signs for forest protection, setting up guard posts, planting poles to mark the borders, organizing the guardian spirit ceremony and helping the neighbouring communes and districts in similar activities.

While the significance of internal organization has been recognized, the forest protection committees have also realised the importance of external support. Some have built supportive relationships with local NGOs and the Forestry
Administration, especially in Toul Samrong village. Furthermore, in February 2007 village forest protection committees elected commune-wide forest protection committees, separated into eastern and western portions, in order to help coordinate forest protection activities across the commune.

In addition to the efforts of protecting the entire forest, the forest protection committee in each village in the commune has designated a community forest area close to their village. Each area is in a different stage of the process in acquiring formal recognition from the Forestry Administration. In Toul Samrong, they have submitted their request for a 179 ha community forest and have received strong support from the Forestry Administration. But as mentioned above, other community forest claims have been discouraged and the research team was informally told by local Forestry Administration officials that no Community Forestry applications within the ELC area could be approved. This is despite the fact that there are no legal impediments to a community forest being within ELC boundaries, provided the concessionaire has no objections.
IMPLICATIONS OF THIS CASE STUDY FOR COMMUNITY BASED FOREST MANAGEMENT

The implications of this case study are divided below into two themes: the first analyses the frameworks which community-based forest protection groups can use to secure tenure and the second describes the community-based forest protection groups’ perceptions of external support for their forest protection activities.

Tenure frameworks securing community rights over the forest and its resources

Statutory tenure and rights

Cambodian law allows villagers to harvest forest products for customary use. Under Chapter 9, Article 40 of the Law on Forestry the State recognizes and ensures traditional user rights of communities living near or within permanent forest reserves for the purpose of traditional customs, beliefs, religions and living. This article states that these traditional user rights consist of:

1. The collection of dead wood, picking wild fruit, collecting bees’ honey, taking resin, and collecting other non-timber forest products;
2. Using timber to build houses, stables for animals, fences, and to make agricultural instruments;
3. Grass cutting or unleashing livestock to graze within the forest;
4. Using other forest products and by-products consistent with traditional family use; and
5. The right to barter or sell forest by-products does not require a permit if those activities do not cause significant threat to the sustainability of the forest. The customers or any third party who have collected forest by-products from local communities with the purposes of trade, in a manner consistent with the provisions of this law, are required to obtain a permit for forest by-products transportation after paying royalty and premium payments.

Article 40 further states that a local community cannot transfer any of these traditional user rights to a third party, even with mutual agreement or under contract. In addition, these traditional user rights must be consistent with the provision of the law, the natural balance and sustainability of forest resources, and respect the rights of other people.
If harvest levels are “at an amount equal to or below the customary subsistence use defined in Chapter 9 of this law” (Article 24) then community members do not require a permit. A CF agreement gives a community the possibility of increasing harvest levels in a designated community forest area in accordance with an approved management plan but is not necessary for customary subsistence.8

Although the community’s right to use forest resources for customary subsistence is reasonably clear, their legal right to protect the forest and take action against violations of the Law on Forestry is subject to legal interpretation. Communities have the ability to patrol forests they wish to protect and to report forest crimes they have witnessed to the Forestry Administration, as has been done by the community in Krang Skear. However, if they witness forest crimes in the absence of a forestry officer, in an effort to effectively protect the forest they may also feel the need to temporarily apprehend offenders and/or confiscate illegal logging equipment. This would be necessary in order to hand over offenders and illegal equipment to the Forestry Administration for further legal action. Neither the Law on Forestry nor the Sub-Decree on Community Forestry Management clearly provides these rights, even in the case of crimes committed in a community forest. Article 80 of the Forestry Law gives powers of temporary detention and confiscation only to ‘Forestry Administration officials qualified as judicial police’ and the list of authorities responsible for suppression of forest offenses provided in Article 78 does not specifically mention a role for members of the public. Nevertheless, an annex to the 2006 Prakas on Community Forestry provides a template for the internal regulations of a forest community which clearly presumes these rights:

- Article 48 states that: "...The CFMC shall detain all evidences and offenders for sending to the respective Forestry Administration Triage to take legal action."
- Article 51 states that: "Any person who is not a Community Forest member or person who comes from outside the local community and commits a forest offense within the community forest, the CFMC shall report and send the offenders to the respective Forestry Administration Triage to take legal action...."

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8 If the community wishes to commercialise their forest products, they may only do so five years after a Community Forestry Management Plan has been approved. Community Forestry may also be a basis for agreeing on increased conservation measures, though there is nothing to stop communities from doing so without an approved Community Forestry agreement.
• Article 52 states that: "Community Forest members can temporarily detain the offenders and evidences and shall inform CFMC or report to respective Forestry Administration Triage about the forest offences occurring within their CF area to take legal action. Any member who plays an outstanding role in reporting and cracking down forest offenses within the community forest area deserves to receive a reward according to Article 92 of the Forestry Law."

Although not specifically granting ordinary people the right to suppress forest crimes, the Forestry Law appears to presume these rights. Article 92 of the Forestry Law states that, “…The Royal Government may decide to award incentives to people and officers who have participated in suppression of specific forest offenses.”

If these presumed rights of temporary apprehension and confiscation do not emanate from the Law on Forestry, they can be derived from general legal principles allowing citizens to temporarily detain a criminal who is caught in flagrante delicto (in the act of committing a crime), for the purpose of handing them over to the relevant authorities. Article 87 of the Criminal Procedure Code provides all citizens with the right to arrest offenders caught in flagrante delicto, or conducting a felony or misdemeanour and take them to the nearest judicial police. Another possible interpretation is when a CF agreement is signed, members of the forest community become by extension ‘concerned authorities’ as described under Article 78 of the Law on Forestry, empowered to cooperate in the suspension of forest crimes. Forestry Administration officials met during this research stated that they believed this Article provides a right to all citizens to assist in the suppression of forestry offences wherever they occur, even in the absence of a CF agreement.

It can be concluded that greater clarity is still required when defining the rights of communities to protect forest resources. Further clarification is also necessary when defining the acceptable means to accomplish these goals within the limits provided by statutory law. According to the observations of this research, it has been noted that while village forest patrols may threaten illegal loggers with detention, they rarely if ever actually do so. They sometimes request the offender to sign a statement saying they will not break the law...
again, while other times they deliver illegal logging equipment to the authorities after it has been left behind by offenders escaping the scene. Given the vagueness of the current legal framework, the cautious approach of the village forest patrols appears quite justified.

**Customary tenure and management**

Although time limited the ability to conduct an in-depth analysis of customary tenure systems in this case study, a brief introduction to this alternative ‘legal framework’ is important for understanding the community-based forest management used in the Krang Skear. Research participants explained that the only strict internal rules they had for governance of the forest by residents is that commercial use is prohibited and that they are only entitled to traditional and customary use. Nevertheless, research participants were able to describe important religious and cultural beliefs which assisted their forest preservation efforts.
People believe in the spirit forest (prey neak ta). Each year, we organize a celebration, gathering people from all villages, and perform a ritual to give offerings to the spirits. There are people who can invoke the chief guardian spirits and become possessed. We play traditional music and beat drums. Annually, around 3,000 people come to Phnom Trong spirit forest. When people prayed, it brought rain. Every village has a spirit forest. We invited all relevant institutions, but they did not come. Police came to investigate, but did not disturb us. People do not cut trees in the spirit forest. They just harvest the forest by-products in the area of the spirit forest and have never cut down the forest except those outsiders who came to log trees in the forest. We still have our forest. If we cut it all, like in Prey Veng, we will not leave a legacy for the next generation. If we preserve the forest, it is an inheritance we can give to our descendants.

The importance that these forest-dependent communities give to preserving the forest is also reflected in the awareness-raising activities undertaken by the forest protection groups as part of their protection methods. This shared awareness can also aid in explaining why community members consider the main threats to the forest come from outside the community; the forest health is jeopardized by those who do not share this common understanding of the forest’s value.

**Community forest group perceptions of external support for their forest protection activities**

**Support from Forestry Administration Officials**

The research participants felt that official support for their forest protection efforts was greatest between 2000 and 2004; that is, after beginning their forest protection efforts and before the concession company commenced activities in the area. During this period, provincial authorities gave rewards to villagers who helped suppress forest crimes in accordance with Article 92 of the Law on Forestry. Cooperation was slowly built between the community and local forestry officials; however community opposition to the concession company strained relationships from 2004 onwards significantly affecting the motivation and effectiveness of subsequent forest protection efforts.
This observation was most evident when comparing the situation of different villages during the field visit. Tuol Samrong village is the only village in the commune located outside the designated concession area, and the only village to have active support from the Forestry Administration for its community forest. The villagers actively patrol the forest once or twice a week, both day and night, and they generally feel that their protection efforts have been effective. Anhchanh and Sou K’orng villages are also active in suppressing forest crimes, but without support from officials can only suppress the smaller crimes: “If we find people cutting trees, we tell our committee, and we mobilise a force of around 15 people to go catch them. But we usually allow them to take away the timber after making them sign an agreement not to do it again.”

In Chambok Prasat village, many villagers have given up on protecting the forest due to witnessing official support for forest destruction. Although they achieved some initial success in their attempts to close down the charcoal kilns around the village, these accomplishments have been short lived with the re-emergence of kilns. Villagers complained that police were in fact the ones running the charcoal kilns but also admitted that this process was fuelled by ordinary villagers supplying the wood.

"Comments made by the villagers in Chambok Prasat included: “Powerful people from outside don’t stop cutting the trees, so why should we stop... Soon the concession company will come to clear the forest, so people think they should clear it first. Before in the 1990s, everyone had chainsaws, but now there are fewer. But authorities have not supported our forest protection efforts. We want the Forestry Administration to cooperate with the people, and help us control a community forest in a clear manner. We need help from higher levels to stop operation of chainsaws. They ask us to protect the forest, but there are still two chainsaws here owned by people with powerful people behind them."

Support from civil society

Research participants strongly conveyed that their forest protection efforts were community led, and were not the result of any NGO intervention. The formation of a network of community groups has allowed for communication
to become established between villages. This network in conjunction with the
meetings they have held has provided villagers with the opportunity to share
experiences and discuss strategies.

Despite being community led, some assistance has been provided by various
NGOs in the form of: technical support for the fulfilment of the requirements
for registering CF areas; legal and rights-based training; liaison with local
officials; and support to community activists through organizing meetings with
community groups facing similar issues, providing assistance for activists being
threatened with arrest, and raising concerns with national decision-makers.
In general, the villagers rated the NGOs working directly in the commune as
most important, and they did not yet have a clear understanding of how
national level NGOs and agencies could assist in advocating their concerns
to higher levels of government. The research team found no clear indication
of any concerted effort by the NGOs to coordinate their assistance to the
community.

**Analyses of this support by participants**

During a Venn diagram research exercise the participants described their re-
lationship with village chiefs, commune chiefs, and NGOs as much closer than
with other authorities. They explained that environment and forestry officials,
soldiers, police, and military police have all been involved in forest destruction;
some of them possess their own chainsaws and have made forest exploitation
their own source of livelihood. Within these authorities, the relationship with the
Forestry Administration is most important to them, but has become strained
due to the granting of the ELC. The Forestry Administration has apprehended
small-scale illegal loggers, but has not taken action against the major timber
traders. The involvement and support of the village chief varies from village
to village, but is considered important in generating the support and
understanding of villagers. The villagers perceived a number of commune
councillors to be supportive of the forest although not all of them.

The research participants agreed that greater cooperation from the authorities
and other stakeholders would improve the impact of their forest protection
efforts. The research participants were asked what they expected from these
external stakeholders and their key recommendations are provided in the box
below.
a) **Forestry Administration:**

- Increase technical support for the establishment and recognition of Community Forestry, Forest Protection Committees, and other ways in which communities are attempting to protect their forests.
- Abide by the law, provide timely intervention against forest crimes and authorize local communities to take action against these offences.

b) **NGOs:**

- Local NGOs should increase their community development initiatives; provide training on the land and forestry laws, establishment of forest communities, advocacy, and techniques for active non-violence; provide technical equipment to the patrol groups; and help build relationships with local officials.
- National NGOs should bring people together through community meetings across Cambodia and protect the forest communities and forest protection committees from official harassment and intimidation by disseminating information and carrying out intervention activities.

c) **Village and Commune Chiefs:**

- Protect and promote the establishment of community forest areas, recognize their statutes, and advocate for their recognition by relevant institutions.
- Provide assistance to community advocacy activities to protect their forests and traditional occupations.
- Provide assistance when forest crimes are committed.
- Help bring villagers together to participate in the forest communities/forest protection committees and take part in community meetings.
- Help provide other development services (e.g., health and education).
As is described in other chapters of this volume, it is commonly understood that the three most significant factors for ensuring sustainable local natural resource management are social capital, tenure security and an enabling environment (Gilmore et al, 2005). The perspectives of the participants of this case study support the importance of maintaining social capital both within each village and between villages facing common external threats. It should also be noted that this research revealed that in the case of Krang Skear commune people were motivated to protect the forest despite a lack of secure forest resource tenure and an uncertain future resulting from the concession being granted over 90 percent of the area. As is described above, the incentive driving the Krang Skear community to protect forest resources is their dependence on these resources for livelihood security. Additional incentives potentially include the financial benefits of reporting forest crimes as described in the Law on Forestry, and support for forest protection activities from NGOs, government institutions and others.

In response to a community petition, a letter from the Prime Minister dated February 18, 2005, suggested that authorities in Krang Skear “Conduct further field study, set up border markers and identify the involved land areas of the villagers to be separated from the concession land and to conserve the forest of some value for them as per the appropriate requests.”

It is therefore very disappointing to note that as this chapter is being finalized (early 2009) the forest community groups in the commune have still not received official recognition. The ELC company has resumed its operations and is pursuing activities including clearing large areas of land claimed by the communities. The incentive for local communities to protect their forest resources is becoming weaker and is now being replaced by a growing motivation to try to maximize individual financial gain before the area’s remaining assets come under the full control of the plantation company.

CONCLUSIONS AND RECOMMENDATIONS

The case study suggests that there is considerable potential to engage local communities in the protection of forest areas beyond the normal limits of formal CF that is currently practised in Cambodia. Communities can be effective in monitoring, reporting, and suppressing forest crimes, wherever they occur. However, these efforts depend on maintaining social capital, tenure
security, and an enabling environment, thereby ensuring that the balance of incentives promotes forest protection rather than extraction. These factors require effective recognition and support from the relevant government authorities. Donors and NGOs may also support these efforts by providing technical assistance and community development initiatives. Some specific recommendations follow:

1. Villagers should be encouraged to monitor, report, and cooperate in the suppression of forest crimes, wherever they occur. Unless community forest areas are significantly expanded, a narrow focus of protecting only officially-designated community forests will not be effective in protecting forest resources at large.

2. Areas of forest which are currently under no kind of management, including ex-concession and inactive concession areas should be considered for community-based protection. Communities need to decide for themselves whether they are willing to help protect the forest, but this may be encouraged by appropriate support from NGOs, donors, and cooperative local authorities.

3. NGOs may assist communities in protecting larger areas of forest by facilitating community organization and providing equipment and funds necessary for increased patrolling and reporting efforts.

4. Until the legal rights of communities to suppress forest crimes are more clearly defined, communities should be advised to be cautious when considering apprehending offenders or confiscating illegal logging equipment. This caution should be applied especially when patrolling forest areas outside of designated community forests. Building good relations with Forestry Administration and other local officials may help provide legitimacy to and support for the community’s forest crime suppression efforts.

5. Field-based staff from the Forestry Administration, Environment Ministry and other institutions need to be provided with guidelines and training on how to take the next step when communities bring illegal activity to their attention; these skills and knowledge are critical to the development of cooperation with communities.

6. Donors should provide technical assistance to help the government realize the potential of cooperation with communities, in particular, clarifying the rights of communities in assisting the suppression of forest crimes.
Chapter 8: Community Based Forest Protection: a case study from Krang Skear Commune, Toek Phos District, Kampong Chhnang Province

REFERENCES


Chapter 8: Community Based Forest Protection: a case study from Krang Skear Commune, Toek Phos District, Kampong Chhnang Province

Figure 1. Krang Skear Commune - Forest Cover 1997
Chapter 9

Negotiating Tenure Conflict in Indigenous Villages of Ratanakiri Province

By: Thann Sokhann¹, Hak Sochanny², Oeur Il³, and John McAndrew⁴

This chapter is based on research conducted from February to June 2008 by the participants of the Cooperation Committee of Cambodia (CCC) Analyzing Development Issues (ADI) community course with the ADI and Indigenous Community Support Organization (ICSO) teams. This research employs a participatory action research (PAR) method in an attempt to mobilize the people of three conflicting communities to solve their own problems regarding land issues. The paper provides in-depth detail of the land dispute between Pa Or, Leu Horn, and Leu Khuon with the objective to trace the historical roots of the conflict, to examine the consequences for the indigenous villages involved, and to explore possible reasons why the indigenous communities were unable to resolve the problem. The research results identified many factors that led to the failure of inclusive conflict resolution including polarization of intentions between local authorities and different claims to land possession. Overall the research concluded that the PAR method can be used effectively only with issues that do not involve powerful outside actors; the existence of these stakeholders complicate the situation such that traditional means of conflict resolution are not a viable solution.

BACKGROUND

The opening up of Cambodia’s economy in the 1990s resulted in a major shift of land use and ownership patterns in Ratanakiri province with far reaching consequences for indigenous people.⁵ Traditionally, indigenous groups used

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⁵ The terms ‘indigenous peoples’, ‘indigenous groups’, ‘indigenous communities’ and ‘hill tribes’ are used synonymously throughout this chapter to refer to the national minorities such as the Tampuan and Jorai in northeast Cambodia who were involuntary incorporated into the larger state and who did not participate in the process of state formation. By contrast, ethnic groups in Cambodia such as the Chinese, the Vietnamese, and the Muslim Cham were voluntarily incorporated into the state through migration (see Kymlicka, 2002 cited in Ehrentraut, 2004).
land resources communally to support their own subsistence. With the transition to a market economy, concessionaires and land speculators exploited land resources privately to increase their own wealth. Concurrently, road construction carried out by logging companies and the Cambodian government into remote areas of the province spurred an in-migration of Khmer settlers and the growth of market centers, particularly in Ban Lung town and Bokeo district along Highway 78. As market activity increased in these areas, Khmer migrants began to acquire land rights from indigenous people for the cultivation of cash crops or for future speculation.

Population growth in Ratanakiri province expanded exponentially from 66,764 in 1992, to 94,243 in 1998, and to 124,403 in 2005 in part due to this Khmer in-migration. As the proportion of Khmer residents increased, the proportion of the indigenous inhabitants decreased, specifically from 68 percent in 1998 to 57 percent in 2005. Khmer in-migration intensified population pressure on land resources and as property values increased land brokers and investors quickly moved to profit from land transactions. More and more, indigenous lands became viewed as a market commodity even by hill tribe people themselves (McAndrew, 2000; Fox et al, 2008).

Although the Land Law of August 2001 makes the sale of indigenous land illegal, a study conducted by the NGO Forum on Cambodia (2004) found that extensive sales and seizures of indigenous land had taken place throughout Ratanakiri province in direct contravention with the law. A follow-up study undertaken by the NGO Forum (2006) revealed that the severity of land alienation had accelerated in almost one-third of the provincial communes. The Sub-Decree on Procedures of Registration of Land of Indigenous Communities, required to clarify the provisions contained in the law, was not drafted until 2008 and had yet to be finalized and adopted.

The land dispute in Ke Chong commune, Bokeo district, examined in this chapter was precipitated by the incursion of Khmer settlers and buyers into Ratanakiri province in the late 1990s and early 2000s. During these years land in the study area increasingly became a scarce and valuable resource. Conflict erupted over the 224 hectares of land in question precisely because it was a contested area under conflicting claims of three indigenous villages.
Chapter 9: Negotiating Tenure Conflict in Indigenous Villages of Ratanakiri Province

OBJECTIVES

This research has three objectives:
1. To trace the historical development of the land dispute,
2. To examine the consequences of the land dispute for the indigenous villages involved; and
3. To explore the reasons why the indigenous groups were unable to resolve the problem.

RESEARCH METHODS

The research was conducted as part of the ADI community course convened from March to June 2008. In February 2008 the ADI project team met with the ICSO staff in Ratanakiri province to discuss the research topic of the upcoming course. For several years ICSO had been working in Bokeo district with indigenous communities involved in land conflicts and this presented itself as a relevant topic for research. ADI and ICSO staff made a field trip to several villages in Bokeo district and, in Ke Chong commune, visited Leu Khuon, Leu Horn and Pa Or villages where indigenous groups were embroiled in a tenure conflict. By the end of the visit to Ratanakiri, the ADI team and ICSO staff decided upon the land conflict in Ke Chong commune as the research topic for the community course training.

In March 2008, the community course commenced in Ratanakiri with ICSO and other NGO fieldworkers from the northeast provinces. The participants spent the first week in a classroom setting and began by reflecting on their current development practice and its relation to the rapid economic and social change occurring in northeast Cambodia. During the initial classroom sessions the participants came to understand development as building the capacity of people to respond and adapt to the changes taking place in their lives. The participants realized that NGOs had much potential to mobilize people to respond to issues emerging in their communities. During this first week of training the concept of participatory action research (PAR) was introduced as a precursor and guide to the fieldwork that would follow immediately in the second week.
PAR is a cyclical method that moves from analysis to planning to action and then to more analysis, planning and action (Figure 1). PAR aims to mobilize people to solve their own problems. The process allows for change and adaptation as action on issues of common concern lead to reflection, analysis, and planning for new action. PAR involves the immersion of the researchers in the communities where the research takes place. The session on PAR was pivotal to the first week of classroom training for it included the steps that participants would implement in the second week of fieldwork: gathering information, identifying and analyzing issues, sharing analysis and ideas with the people, and encouraging the people to develop a community action plan on a specific issue that affected them.

At the start of the second week of fieldwork the participants were divided into three groups with ADI team members assigned to respective groups as facilitators. The three groups then took up residence for five days in one of the three indigenous villages of Leu Horn, Pa Or or Leu Khuon in Ke Chong commune. Through this immersion the participants and team researchers sought to understand the inter-village land conflict from the respective points of view of the various actors through informal interviews and village meetings with a view towards the dispute’s satisfactory resolution.

**Figure 1. Participatory Action Research Cyclical Process**

After three days of informal interviews, indigenous people came together in their own villages to identify the key issues of the conflict from their respective points of view. At the end of these separate meetings, each village developed a plan or strategy to resolve the tenure conflict. On the day following the village meetings, representatives from the three villages came together in an inter-village meeting to listen to the plans of the other groups and to move towards a resolution of the conflict. Initially, representatives from the three villages achieved some progress agreeing to stop all further land sales until a resolution of the conflict had been reached. However, as the negotiation continued the representatives of Leu Khuon village reversed their position arguing that the land under dispute should first be divided up before setting a moratorium on land sales. This led all three groups to become intransigent and revert back to their original positions of exclusive ownership which effectively undermined any prospect for a negotiated settlement.

During the course break from mid-March to early June, the ICSO participants made an effort to follow up with the respective village parties. However, the entrenched positions of the indigenous groups exacerbated by pressure from real estate agents and commune authorities to sell tracts of the land to
Khmer buyers appeared to preclude a satisfactory resolution. While the course participants were unsuccessful in moving the indigenous groups towards a resolution of the conflict, the documentation of the case account was seen to provide valuable insights into the process of indigenous land alienation endemic throughout Ratanakiri. The focus of the research thus shifted from an attempt to bring people together to resolve the tenure conflict to an investigation of the reasons why the negotiations were unsuccessful.

In June 2008, the participants of the community course returned to Ratanakiri to reflect on the outcomes of their participatory action research. The ICSO participants presented an update of the situation in Ke Chong commune, which had worsened since March due to subsequent encroachments and land sales. Although disheartened by the developments of the tenure conflict in Ke Chong commune, the ADI team and the ICSO participants decided to write up the case in detail for submission and discussion at the regional and national symposia organized by the CBNRM Learning Institute.

**MAJOR FINDINGS**

**Description of the Case Dispute**

**Background**

The land conflict in Ke Chong commune involves three indigenous villages: Leu Khuon, Leu Horn, and Pa Or. The residents of Leu Khuon village are primarily Jorai with Khmer settlers, those from Leu Horn village are primarily Jorai, and those from Pa Or village are mostly Tampuan. The land in dispute comprises three parcels of contiguous land in Ke Chong commune on the east side of the road traveling north on the provincial road from Bokeo to Andong Meas district. In total the disputed land area contains about 224 hectares and is divided into three tracts of 120 hectares, 64 hectares, and 40 hectares respectively (Figure 2).
Leu Khuon and Leu Horn villages have long been established in the area near the disputed land. Pa Or village, which was originally established near the O’Suong stream in Ke Chong commune, was transferred by the government in 1982 to its present site adjacent to the now disputed area. This was done to remove the village from the government’s sporadic conflicts with the Khmer Rouge who were still active near O’Suong. The Pa Or villagers established a residential site for their new village and started to clear and cultivate chamcar or slash-and-burn farms on both sides of the provincial road. Given the abundance of slash-and-burn farming land in the vicinity both the Leu Khuon and Leu Horn villagers acceded to the government policy to relocate the Pa Or villages into their area. While some Pa Or villagers returned to O’Suong after the conflict with the Khmer Rouge subsided, the majority continued to live in the new settlement. In 1995 the Provincial Governor of Ratanakiri granted Pa Or villagers the right to rebuild their homes in the area after their village was destroyed by fire.

The incursion of Khmer settlers and land buyers into Bokeo district in the late 1990s and early 2000s gave rise to the current land dispute. In this period Khmer migrants began to move into Leu Khuon village particularly along the road to Andong Meas district while absentee land buyers bought up lands along the road for cash crop production. Leu Khuon and Leu Horn villagers
both sold communal lands to Khmer buyers and Pa Or villagers reportedly sold land in the O’Suong area near their former village. Meanwhile, indigenous villagers recognizing the value of permanent crops started to cultivate cashews and other cash crops on their slash-and-burn farms. Land in Ke Chong commune was becoming a scarce and valuable community and the long-standing accommodation with Pa Or was now being questioned by Leu Khuon and Leu Horn.

In 2002 elders from Leu Khuon met with elders from Pa Or and asked them to vacate their residential and slash-and-burn lands along the provincial road and to return to their former village site in O’Suong. The Leu Khuon elders claimed that the areas occupied by the Pa Or villagers were in fact Leu Khuon ancestral lands granted to Pa Or for temporary use. The Pa Or villagers refused to accept the claims of Leu Khuon villagers arguing that they had established their village and cultivated slash-and-burn farms in the area since the early 1980s.

In 2003 some Leu Khuon villagers were involved in sketching a participatory land use planning (PLUP) map with support from the government’s GIS unit under the Seila programme. According to the commune chief this was a natural resource management map of the entire Ke Chong commune demarcating burial places, spirit forest areas, mountains, farm land and streams. However, the PLUP map did not indicate clear village boundaries and the participation of commune villagers in the drawing and development of the map was limited. Around 2004, Pa Or villagers drew their own village map indicating residential and farming areas. Not surprisingly, the boundaries drawn up by the Pa Or villagers were not recognized by the Leu Khuon and Leu Horn villagers.

The Dispute Worsens

In 2004 the land dispute took what appeared to be an irreversible turn for the worse. Leu Horn villagers found themselves in a situation where they needed to raise money to repay a Khmer buyer who had advanced them money for a parcel of land in their own village. For some reason after the transaction was completed and the money received, the Leu Horn sellers were unable to deliver the parcel due to resistance from other Leu Horn villagers. The only way for the Leu Horn villagers to generate money to requite the Khmer buyer and cancel the agreement was to sell another parcel of land.
The Leu Horn villagers who likewise had ancestral claims to the land used by Pa Or asserted their presumed rights. Leu Horn villagers decided to sell the 64 hectare tract cultivated by Pa Or villagers in the central part of the disputed area to a Khmer businessman for a reported USD 20,000 (Figure 2). To legitimize their purchase of the 64 hectare parcel the Leu Horn villagers obtained the thumbprints of six Pa Or cultivators in the area on a document which attested that they had sold their farms. Two of the six Pa Or households reportedly received about USD 500 each, two received motorbikes, and two had yet to receive anything.

The sales transaction was undertaken without the broader knowledge or consent of the Pa Or villagers and transferred without the signed notification of the Ke Chong commune chief or the Pa Or village chief. However, the sales contract was made with the signed notification of the district chief. Of greater consequence, the Leu Horn transaction with the Khmer businessman was done without the broader knowledge or consent of the Leu Khuon villagers.

The immediate reaction of the Pa Or villagers was to declare the transaction with the six farmers null and void. They argued that the six Pa Or farmers did not understand the transaction and thought that it represented compensation received for cashew nut trees that had been cut down on areas that they worked. In its entirety, the 64 hectare parcel was cultivated mainly to cashew nut trees by 12 to 14 Pa Or farmers and large sections of it were forest area. Given its value to the community, the Pa Or villagers aggressively resisted attempts by the Khmer businessman to take control of the land. Workers hired by the Khmer businessman arrived several times with chainsaws to clear the land but the Pa Or villagers quickly mobilized to stop them. Over the next few years the conflict on the disputed lands remained at a stalemate. However, the Leu Horn villagers had received money for the 64 tract from a Khmer buyer which could not be indemnified. The inclusion of this outside actor effectively placed the dispute beyond traditional means of conflict resolution.

Subsequently, the Pa Or villagers took legal steps to disassociate themselves from the six Pa Or farmers who had made their thumbprints on the sales document held by Leu Horn. Acting through a representative in late 2007, 523 Pa Or villagers filed a complaint in the Ratanakiri Provincial Court against the farmers from Pa Or who had received money from Leu Horn to relinquish
the 64 hectare tract. The complaint accused the errant farmers, who had since left the village, as having secretly sold Pa Or village’s communal land. At about the same time the Pa Or villages also submitted a complaint to the King Father and the Queen Mother asking that the disputed land be recognized as belonging to Pa Or. Provincial authorities advised the Pa Or villagers to resolve the dispute among the indigenous villages involved.

Recognizing that the Leu Horn villagers had benefited from the sale of the 64 hectare parcel while Leu Khuon had not, the Leu Khuon villagers insisted that the entire 224 hectares of land in question should be divided up among the three villages. Leu Khuon further threatened to sell parcels of the disputed areas to Khmer buyers without prior consent if the Pa Or villagers refused to accede to their demand. The Pa Or villagers argued that the loss of their permanent and slash-and-burn farms in the 224 hectare area would greatly undermine their subsistence.

The resolution of the dispute was further complicated by land encroachments taking place in other parts of Ke Chong commune. In O’Suong a Khmer businessman who had purchased indigenous lands in nearby Roy village had encroached upon 300 hectares of slash-and-burn and forest lands at the site of the Pa Or former village. This left the Pa Or villagers without sufficient ancestral lands in O’Suong to support their subsistence in the event of their return. The Leu Khuon villagers countered that Pa Or villagers actually sold this land for USD 3,500 and therefore had no legitimate claim to the ancestral lands of Leu Khuon. The Pa Or villagers tried to make the case that money was received as compensation for trees destroyed and not as payment for land sold. But feelings of mistrust and resentment persisted among all three groups and undermined the credibility and sincerity of the individual positions.

Recent Developments

In May 2008, the Pa Or and Leu Khuon villagers reached a settlement on the 40 hectare tract on the southern portion of the 224 hectares of disputed land (Figure 2). Unfortunately the agreement was reached by selling more land to outside buyers; the Pa Or village apparently sold 20 hectares of the 40 hectare tract to a Khmer businessman. This parcel was located adjacent to the provincial road. The remaining 20 hectares was given back to the Leu Khuon villagers in addition to USD 1,000 in compensation. It is unknown how much the Pa Or villagers received for the sale of the 20 hectares or how this
amount was divided. However as a result of the land sale and the agreement with the Leu Khuon villagers, the Pa Or villagers no longer had the use of the entire 40 hectare area. The conflict on this tract was resolved although half of the land was lost to outsiders.

As of June 2008, the conflict on the 64 hectare tract which had been sold by Leu Horn villagers was still pending. Despite petitions submitted by the Pa Or villagers to several bodies, no resolution had been reached. The Khmer buyer had not made recent attempts to take possession of the 64 hectare parcel and about 15 Pa Or village families cultivated farms on the property. While the dispute was dormant it was only a matter of time before the Khmer buyer would reassert his claim of ownership over the purchased land.

In June 2008, indigenous people from Sa Krieng village in Ke Chong commune started to clear 30 hectares of land within the northern 120 hectare tract of the disputed area (Figure 2). The Sa Krieng villagers claimed this land as their ancestral land. Of the 30 hectares cleared, 10 hectares were reportedly already sold to a Khmer businessman. This development led the opposing Pa Or and Leu Horn villagers to join forces and prepare a petition to the authorities to stop the Sa Krieng villagers from clearing this land and encroaching on the area.

This resistance notwithstanding, Leu Horn villagers approached 10 Pa Or households who cultivated land in the 120 hectare tract and asked them to sell their land rights. The 10 families agreed to give up their lands and each reportedly received USD 200 or USD 2,000 in total. The Leu Horn villagers claimed that they were buying up the land for their married children who did not have slash-and-burn farms and not to sell to Khmer buyers.

Many Pa Or farmers were prepared to sell land rights on the 120 hectare tract and maintained that they preferred private over communal land titles. As a result of the land transactions taking place within the village without prior consultation or discussion, Pa Or villagers had generally lost trust and confidence in their ability to deal with land issues collectively. While conflict over the 120 hectare tract persisted, agents from Leu Horn village actively sought to buy up parcels in this area from the Pa Or villagers. Meanwhile the Leu Khuon villagers who had once made claims over the 120 hectare tract were silent about developments in this area.
Discussion and Analysis of Key Findings

Competing Rights to Land: What is Legitimate and Legal

Indigenous peoples’ rights to land and forest areas in Ratanakiri province have been passed down through generations based on commonly accepted principles of customary law. Under this law land is considered as communal property and held in stewardship for the use and sustenance of future generations. While indigenous groups are able to clear new lands as part of their shifting cultivation, they have to respect village limits and refrain from accessing areas which entail crossing over lands under cultivation by neighboring villages. In the past the abundance of land available for slash-and-burn farming precluded major disputes between neighboring communities (Fox et al. 2008; Pel et al., 2008).

Throughout the 1970s indigenous groups in Ratanakiri were displaced from their ancestral lands as a consequence of war and the coming to power of the Khmer Rouge regime. After the fall of the Khmer Rouge in 1979 indigenous people started to return to their ancestral areas although not all were able to do so on account of sporadic conflicts which persisted between the government and remnants of the Khmer Rouge forces. In the case of Pa Or the government relocated Tampuan villagers onto the ancestral lands of Jorai villagers in Leu Khuon and Leu Horn. Customary law which allocated territorial boundaries to tribal groups was effectively compromised by the prolonged years of conflict and the intervention of the state. While the Jorai villagers in Leu Khuon and Leu Horn had legitimate claims to their ancestral lands in the contested area, the Tampuan villagers from Pa Or had derived rights to their residential and slash-and-burn lands as a result of historical circumstances. That the lands in question remained uncontested for more than a decade indicated that mutual claims of legitimacy were respected.

While all three indigenous groups had legitimate claims to the contested area, all three also had a legal basis to support their claims. The passage of the Land Law in 2001 provides a legal framework for indigenous groups to gain collective ownership of their lands. Article 23 states that: “An indigenous community is a group of people that resides in the territory of the Kingdom of Cambodia whose members manifest ethnic, social, cultural and economic unity and who practice a traditional lifestyle, and who cultivate the lands in their possession according to customary rules of collective use.” The Tampuan
villagers of Pa Or and the Jorai villagers of Leu Khuon and Leu Horn fulfill the conditions of this definition. Article 25 of the Land Law further states that: “The lands of indigenous communities are those lands where the said communities have established their residences and where they carry out traditional agriculture.” Again the three indigenous groups are able to claim ownership of land under this directive. Relevant to this case Article 25 continues: “The measurement and demarcation of boundaries of immovable properties of indigenous communities shall be determined according to the factual situation as asserted by the communities, in agreement with their neighbors....” This provision puts the burden of conflict resolution on the indigenous groups involved and requires clarification in the proposed Sub-Decree on Procedures of Registration of Land of Indigenous Communities. Meanwhile Article 28 of the Land Law makes clear that: “No authority outside the community may acquire any rights to immovable properties belonging to an indigenous community.”

**Beyond Traditional Means of Conflict Resolution**

Elders in indigenous communities possess an intimate knowledge of customary law and for generations have played a pivotal role in negotiating and mediating conflicts. A recent study on indigenous traditional legal systems and conflict resolution in Ratanakiri and Mondulkiri provinces revealed that preserving community solidarity is a key objective of traditional law which seeks to reach agreement between two parties so that the aggrieved is compensated, the guilty party punished, the two parties reconciled, and harmony restored. The study found that indigenous communities overwhelmingly supported their traditional legal system, although it lacked the authority to deal with the growing number of disputes over land and natural resources. The research indicated that indigenous communities overwhelmingly supported their traditional legal system, although it lacked the authority to deal with the growing number of disputes over land and natural resources. The research indicated that indigenous communities were marginalized within the formal legal system, which was often used as a mechanism by powerful people to further disenfranchise them. It also recognized that the formal and informal systems often addressed different kinds of conflict, and that the informal system could not be made to stand in for the formal system. The study argued that efforts to reform the formal legal system were necessary and urgently needed (Backstrom et al. 2006; see also McAndrew and Oeur 2009).

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6 While the 2001 Land Law provides for the issuance of collective titles to indigenous peoples, it does not prohibit the issuance of individual titles to indigenous citizens. Article 30 of the Land Law states that: “Any person who, for no less than five years prior to the promulgation of this law, enjoyed peaceful, uncontested possession of immovable property that can lawfully be privately possessed, has the right to request a definite title of ownership.” This article would appear to bolster the legal claims of the Pa Or villagers who do not possess ancestral rights but who settled in the area prior to 1996 and enjoyed uncontested possession until 2002.
In Ratanakiri the forces driving the land market generally eroded the role of elders in mediating land disputes. Threatening, cheating, and persuading were commonly used by outsiders to acquire land from hill tribes (Pel et al. 2008). Khmer land buyers and speculators normally by passed village elders and negotiated directly with indigenous households; often working through Khmer literate village and commune chiefs to broker their land deals. This was certainly the case in Leu Khuon commune where the commune chief was reputed as an active broker in local land sales (Fox et al. 2008). Elders in the study villages acknowledged that they had no influence over land sales which involved people with money and power.  

Although deemed illegal by the 2001 Land Law, the transfer of indigenous land to Khmer outsiders for cash nullified the role of village elders as mediators. In effect, these transactions placed tenure disputes beyond the realm of traditional conflict resolution where an agreement could be reached, the aggrieved could be compensated, the guilty party could be punished, and the two parties could be reconciled. Ultimately, the land market drastically eroded local governance structures and communal solidarity. Land sales in the contested area of Ke Chong commune not only diminished land resources necessary for sustaining livelihoods, they also debilitated cultural and social resources needed to deal with the exigencies of change itself (see McAndrew 2000).

Market Influences and Communal Solidarity

While the expansion of the market economy has had far reaching consequences for indigenous villages in Ratanakiri, it would be unfair to assert that it has produced only disastrous results. Indigenous groups have showed themselves ready to participate in the benefits brought about by the cultivation of cashews and other cash crops, the growth of local markets, the opportunities for wage work, and the greater access to health centers. The changes brought about by improved roads and expanded trade have not all been detrimental to the valued life ways of the indigenous people (McAndrew 2000; Fox et al. 2008).

7 The elders expressed this by saying that they no longer had toeuk mort prai or salty saliva which one must have to influence others.
Chapter 9: Negotiating Tenure Conflict in Indigenous Villages of Ratanakiri Province

Nonetheless, Khmer in-migration which accompanied the rise of the market economy resulted in increased population pressure and higher market prices on indigenous lands. Faced with constricting areas available for shifting agriculture, eager to earn cash income from cashew production, and needing to protect their farmlands from encroachment, indigenous groups shifted to more permanent land use cultivation. Communal systems of land management gave way to more independent farming of cash crops with benefits accruing to individual households. Land increasingly began to be viewed as a market commodity that could be sold by individuals to acquire motorbikes, televisions, video players, and other consumer goods. To be sure villagers with plots along the road often felt that their land would be encroached upon or sold by others, if they did not sell it themselves. Unable to rely upon the state protection of common property and confronted with the dissolution of communal land use systems, villagers could no longer trust each other to act in the common good. With households looking after their own immediate interests, it was extremely difficult to foster mutual cooperation and communal solidarity so critical to halting further marginalization through land alienation (McAndrew 2000; Fox et al. 2008; see also Diokno 2008).

**KEY LESSONS LEARNED**

The research undertaken for this chapter provides key lessons learned for the development of theoretical and methodological approaches to the study of tenure conflicts among indigenous peoples in northeast Cambodia.

With respect to theory, understanding how the land market works in Ratanakiri province requires in-depth research on land right transactions as social processes and interactions among a variety of social actors. Pierre-Yves Le Meur defines this empirical orientation as ‘ethnography of land rights’. This involves studying land rights in context; how rights are defined, enacted, contested, negotiated and transformed. Within this framework the notion of land market refers not only to land sales and purchases, it encompasses the whole range of land right transactions which may comprise elements of threat, violence, force and corruption. The land market thus constitutes an arena of actors linked in land right transactions involving the transfer of money, goods, information, and the expression of power (Pel et al. 2008).
Le Meur argues that agrarian contracts should be studied as social processes of negotiation between actors, which in the case of conflicts involves political and legal authorities. He maintains that it is critical to identify the places and processes of where and how land transactions are validated and to assess both their legitimacy and legality. This entails taking into account local state workings at commune, district and provincial levels as well as the involvement of formal and informal local leadership. This theoretical approach requires long-term fieldwork that respects the actors’ point of view (Pel et al. 2008).

With regard to method, the PAR approach undertaken in Ke Chong commune underestimated the complex factors surrounding the tenure conflict which it sought to address. The sale of contested land in 2004 to a Khmer buyer operating outside of the indigenous community, and the state’s failure to rescind this illegal transaction, effectively placed the dispute beyond the means of traditional conflict resolution. By comparison, PAR approaches implemented by NGOs in the indigenous Ratanakiri villages of Krala (Poey commune, Ou Chum district) and La En (Toeun commune, Koun Mom district) proved to be effective precisely because villagers were mobilized before land sales had undermined local governance structures and communal solidarity (Fox et al. 2008; Pel et al. 2008).

CONCLUSIONS

In September 2007 Cambodia, together with 142 other member states, voted to adopt the United Nations Declaration on the Rights of Indigenous Peoples. This non-binding declaration establishes that ‘Indigenous peoples have the right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired. States shall give legal recognition and protection to these lands, territories and resources.’ Indeed Cambodia’s 2001 Land Law enables indigenous peoples to gain communal title to their traditional land. However, after seven years the Sub-Decree on Procedures of Registration of Land of Indigenous Communities has still to be finalized and adopted. Moreover, the provision in the 2001 Land Law which prohibits the sale of indigenous land even before rights are recognized and titles awarded is rarely, if ever, enforced.
The tenure conflict described in this chapter emerged within the context of the expanding land market and indigenous land alienation endemic to Ratanakiri province. In the end the negotiations failed to reach a satisfactory settlement and reconcile the parties due to the involvement of outside buyers and brokers, the failure of the commune participatory land use planning (PLUP) map to delineate clear village boundaries, the resentment and mistrust which undermined the credibility of respective village positions, the lack of articulation between traditional and formal conflict resolution systems, the ascending view of land as a market commodity, the breakdown of communal solidarity, and perhaps most crucially the state’s lack of political will to enforce the provisions of the 2001 Land Law.
REFERENCES


Chapter 10
Mobilizing People to Solve a Land Dispute in Sre Krasaing Village, Stung Treng Province

By: Sath Rasy¹, Touch Serey², and Say Sambathdy³

This chapter is based on a study conducted from April to June 2007 by seconded staff of Oxfam Australia in Stung Treng province as their participatory action research (PAR) assignment in a community course convened by the Analyzing Development Issues (ADI) Project of the Cooperation Committee for Cambodia (CCC). The study uses PAR to mobilize people to solve a land dispute in their own community. The research provides an in-depth analysis of the causes and consequences of a land dispute between the people in Sre Krasaing village and a small local company. The research shows that the main cause of the dispute was a lack of transparency and communication among the stakeholders, which led to misunderstandings and accusations. By using PAR, the researchers helped to mobilize the people to find an effective solution to the conflict. Based on this successful resolution of the issue, the people in Sre Krasaing village requested the government for a social land concession. The request was approved by the provincial authorities.

BACKGROUND

Sre Krasaing village is located in Sre Krasaing commune, Siem Bouk district, in Stung Treng province (Figure 1). The village borders National Road No. 7 to the east, Domrey Phong village to the north, the Mekong river to the west and T'Boung Kla village to the south. At the time of the research the village had 444 households with a total population of 2,022.

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The Sre Krasaing villagers are mainly ethnic Lao Cambodians. Their main livelihood strategies are cultivation on upland farms (chamkar) located three to four kilometres from the village centre, and fishing. Villagers grow various seasonal crops on their chamkar farms such as corn, beans and cucumber, and fruit trees mainly for household consumption. They also grow cash crops such as mango trees and cashew for sale. At the harvest, traders come to the village to buy cash crops such as cashew. Villagers who have large chamkar for growing cashew can earn considerable income. Some villagers do not have enough chamkar land for growing cashew.

Natural disasters remain a major challenge for the villagers. Droughts and floods in recent years have resulted in a lack of food security for many village families. Chamkar harvests are much poorer than those before the natural disasters leading many families to rely on fishing as their main livelihood source. Some villagers earn as small traders, while others have migrated out of the village to work as laborers.

**Figure 1.** Sre Krasaing Village, Sre Krasaing Commune, Siem Bouk District, Stung Treng Province

Since 2000, the household population of the village has increased as recently married couples and migrants into the village form new households. Population increase has resulted in higher demand for chamkar land which in turn has resulted in more village land disputes. Most villagers do not have titles for their residential and chamkar lands. However, villagers have documents relating to their land transactions signed by the village and/or commune chief. This has
been the traditional practice of the people which has been recognized by government authorities. Few villagers are aware of the provisions of the 2001 Land Law. While some villagers have questions about land titling and the land registry under the Land Law they do not know whom to approach to answer these questions.

As demand for village lands increases, villagers have become more concerned about their security of land tenure. Some fear losing their lands as a consequence of the changes taking place in the village. In 2006 the concerns of the villagers became real when representatives of a small local company announced their plans to invest in the agricultural lands of Sre Krasaing village. The company was well connected with local government officials who accompanied the company representatives to talk with the people of the village.

**OBJECTIVES**

As seconded staff of Oxfam Australia in Stung Treng province the researchers were aware of the land dispute that had arisen between the Sre Krasaing villagers and the small local company. The researchers felt that this was an issue of common concern that the villagers could solve through their own action. The issue thus presented itself as an interesting topic for their PAR assignment in the ADI community course.

The participatory action research has two objectives:

- To examine the causes and consequences of the land dispute in Sre Krasaing village.
- To mobilize the local people to solve their own community problem.

**RESEARCH METHODS**

In March 2007 the researchers participated in an ADI community course. The first part of the course was conducted in Ratanakiri province. During the first week of classroom training the course participants reflected on their development activities and how these were linked to the rapidly changing economy and society of northeast Cambodia. Through the various course sessions the participants realized that, ultimately, people were responsible for their own development. NGOs could help by building the capacity of people to deal with change. The PAR process provided a method for participants to
mobilize people through community action. Through PAR development, workers could assist the people to identify their own problems and help them develop community action plans to respond to emerging issues. During the second week of training the course participants undertook PAR in four villages of Lumphat district in Ratanakiri province.

PAR is a cyclical method that moves from analysis to planning to action, and then to more analysis, planning and action (Figure 2). PAR aims to mobilize people to solve their own problems. The process involves listening and gathering information from the people, jointly identifying and analyzing issues together, and assisting the people to develop community action plans in response to issues of common concern. The PAR method was discussed with the course participants in the first week of classroom activities and then applied in the field during the second week of the training. Before returning to Ratanakiri province for the final week of training in July 2007 the course participants were asked to conduct a PAR assignment in their own work areas.

Figure 2. Participatory Action Research Cyclical Process

Returning to Stung Treng province the course participants from Oxfam Australia who researched and wrote this chapter decided to conduct their PAR assignment in Sre Krasaing village. The researchers started by living in Sre Krasaing village for a few days to learn more about the land dispute from the perspective of the people with a view towards understanding how the problem could be solved to the satisfaction of all villagers.
Chapter 10: Mobilizing People to Solve a Land Dispute in Sre Krasaing Village, Stung Treng Province

Concerned. The researchers followed the steps of the PAR process that they had learned in the course, interviewing villagers informally and building a consensus among villagers about actions that could be taken.

Once the informal interviews were completed, the researchers convened a meeting inviting the Sre Krasaing villagers and the local authorities to attend. The researchers presented their findings at the meeting and encouraged those in attendance to develop a community action plan to address the identified conflict. The action plan was completed at this time. In the following weeks the researchers monitored the implementation of the community action plan. They asked the people why certain points in the plan had been implemented and why others had not. By reflecting on the progress of their action plan the people were able to work through difficulties that they encountered and build confidence that they could indeed resolve the dispute.

MAJOR FINDINGS

Description of the Conflict

The conflict started in 2006 when representatives of the company came to Sre Krasaing village and informed each family in the village about the investment they planned to make in the chamkar lands presently cultivated by the villagers. The representatives told the villagers that the company had received a licence from the government to invest in the agricultural lands of the people and even showed documents to the villagers to support this. The villagers were given to understand that the investment of the company would provide villagers with employment that would offset the loss of their chamkar lands. The villagers knew nothing about the company or the size of the land area planned for investment. However, the villagers did know that the company was engaged in land disputes with two neighboring villages.
Since the company representatives came to the village accompanied by local authorities, some villagers thought that the local authorities had colluded with the company at the expense of the villagers. According to the villagers, company representatives often met alone with the local authorities to talk. The local authorities told the people to follow the instructions of the company and asked them to identify their chamkar lands especially those located in the proposed investment area. The local authorities never consulted with the villagers. The close relations between the local authorities and the company representative called into question the transparency of the decision making concerning the investment of the company.

The company representatives also contacted officials from the District Forestry Administration with respect to the lands covered by their proposed investment. The contested lands were once forested areas that were converted into chamkar farms. As demand for land increased villagers have cleared forested areas especially since 2000 to meet the needs of the growing population. As mentioned earlier the villagers do not have titles for their chamkar farms and land transactions are certified only by village and/or commune chiefs. Since some of the lands were previously forested it is not clear to the villagers whether the deforested areas are under the jurisdiction of the forestry administration or the local authorities. Given this confusion, many villagers think that the company is trying to establish relationships with the FA to legitimize their claims to the Sre Krasaing lands proposed for investment.

At one point the company representatives, accompanied by some commune council members, told the people that they would receive titles to their lands after the parcels had been measured. Some villagers responded positively to this and thumb marked documents provided by the company. However, putting thumb marks on the papers stopped after one villager raised his concerns that this procedure could actually cause villagers to lose their lands. He pointed out that the document included the provision which stated that: "when the State needs lands, people have to turn the lands over to the State." The Khmer literate villager argued that the company’s desire to measure and document the lands was a trick to take the lands away from the villagers. His position was supported by the refusal of the company to produce the official investment licence signed by the government authorities that was requested by the people. The company representatives maintained that they had no intention of forcing the people to give up their lands. The company representatives said that they simply wanted to evaluate the lands for
agricultural investment. They asked the villagers to be present at their chamkar farms to make the measurement of the lands easier. They said that they had not forced people to sign the documents as some people had alleged.

The Sre Krasaing villagers then became angry when they heard reports that the company would allow villagers to cultivate chamkar farms only three kilometres away from the village centre. Agricultural lands within a three kilometres radius of the village center would belong to the company for their investment. The villagers came together to discuss the information they had received but they did not approach the company representatives to confirm the reports or to express their concerns. The villagers who had not yet thumb marked the documents provided by the company decided together not to do so.

The land conflict in Sre Krasaing village has been aggravated by misunderstandings and miscommunications between the villagers and the commune council. The people contend that the commune authorities did not take an active role in helping them to solve the conflict. They maintain that the authorities have no interest in solving the problem. When the conflict between the villagers and the company arose, people approached the commune authorities for assistance but they received no response. This led the villagers to accuse the authorities of colluding with the company in grabbing people’s land. For their part, the commune authorities declared that they could not take action without a formal complaint from the villagers. The authorities denied that they were working on behalf on the company. They insisted that they had nothing to do with the planned investment project in the village.

**Developing and Implementing the Community Action Plan**

During the village meeting convened by the researchers, the people expressed a strong commitment to solve the problem though their own efforts. They realized that the conflict could not be solved overnight; it would take a step by step process with the people who were affected supporting one another. As a first step the people agreed to create a village committee to patrol the village borders to prevent land encroachment by neighboring villagers. The committee has three groups with five to six members in each. One group is stationed at one end of the village, another group is stationed at the other end, and the third group is stationed in the middle. The committee
members have played an active role in the demarcation of the village borders. They have also tried to bridge the gap between the villagers and the commune authorities in resolving the land dispute with the local company.

The village committee has notified the commune council about their position in respect of the land dispute and has met with the commune council to find solutions to the conflict with the company. The committee has asked the authorities to reject the documents of the company thumb marked by some villagers arguing that these people did not fully understand the contents of the papers and had no clear knowledge of the consequences of their action. Meanwhile as a result of the widespread protests of the Sre Krasaing villagers the company decided to postpone its investment activities. It was unclear when the company would resume its activities.

As part of the community action plan the village committee has also met with the District Governor to discuss village borders in relation to Sre Krasaing commune and other communes in Siem Bouk district. Once the village borders were clearly demarcated, the village committee raised funds among the Sre Krasaing villagers to buy poles for marking the village borders to prevent potential border conflicts.

In developing the community action plan the villagers acknowledged that their fear of losing their lands had been caused in part by their limited knowledge of their land rights under the Land Law. As part of the plan the villagers asked the Provincial Land Titling Department to provide training for them on the provisions of the 2001 Land Law. This training was conducted by the Director of the Provincial Land Titling Department with support from Oxfam Australia. As a result of the training the villagers gained more awareness of their land rights. The participants highly appreciated the training and shared their knowledge with other villagers who had not attended it.

During the training on the Land Law, the Sre Krasaing villagers raised the issue of the land dispute with the Provincial Director of the Land Titling Department. The Director advised the villagers that in addition to seeking a resolution of the land dispute with the company, they should also request the government for lands through the social land concession program. After three months - in July 2007 - the researchers convened a follow up
meeting with the Sre Krasaing villagers to reflect on what they had achieved through the implementation of their community action plan. The villagers noted that it was important for them to initiate action on their own rather than waiting for outsiders to intervene. The villagers were happy that they had implemented most of the actions in their community plan. They were able to establish a village committee to coordinate activities, to improve communications with the commune council, to convince the company to at least temporarily suspend its investment plans, to demarcate village borders more clearly, to participate in training on the 2001 Land Law, and to request the government for social land concessions. In June 2008, the researchers learned that the Stung Treng provincial authorities had decided to provide social land concessions to Sre Krasaing villagers who lacked lands for chamkar cultivation.

**LESSONS LEARNED**

Implementation of PAR is possible with people’s participation on issues that affect them. At the same time mobilizing people to solve land disputes, as described in this chapter, is possible only with the support of village and commune authorities and the participation of outside organizations such as NGOs to build capacity and government agencies such as the Provincial Land Titling Department.

The implementation of community action plans can be carried out effectively once villagers are organized. In this case study the creation of the village committee helped to promote the participation of all villagers while at the same time the committee was able to coordinate several activities and engage with government officials. The actions of the village committee enabled the voice of the villagers to be heard.

**CONCLUSIONS**

The land conflict between the Sre Krasaing villagers and the local company was made worse by the lack of transparency between the company and people and the lack of communications between the local authorities and people. Had the company been more open about its proposed investment and the benefits to be derived by the village, it might have been able to
negotiate an agreement with the villagers. Similarly improved communications between the villagers and the local authorities might have reduced the accusations against each other and led to a more coordinated response to the emerging conflict.

Although the Sre Krasaing villagers and the local authorities held conflicting positions at the outset, their differences were narrowed by coming together in meetings and exchanging ideas. Initially, the local authorities appeared to favor the proposed investment of the company. Later, after more interaction with the villagers, they came to appreciate the position of the villagers who had voted them into office. Interestingly, the local authorities actively participated in developing and signing the request for the social land concessions that was raised by the provincial authorities. Collaboration between villagers and local authorities is possible when open dialogue exists between them.
Chapter 11
Understanding the Rights and Responsibilities of Small-Scale Fishing Communities in Cambodia

Tep Chansothea¹, Meng Kimsan², Deap Polin³, Chap Sopanha⁴

Through secondary and primary research this paper explores the understanding of rights and responsibilities of Community Fisheries (CFi) in two communities, one in Shihanoukville and one in Battambang, to compare the perceptions of inland and coastal fisheries. The research attempts to explore two key questions, (1) how much does CFi understand their rights to fisheries and coastal resources? And (2) to what extent are they aware of the obligations and responsibilities that go along with these rights? In addition to examining these topics, the research also aims to document the initiatives being taken by fishing communities to assert their rights and fulfill their responsibilities in an attempt to develop capacity building initiatives. The research illustrates that awareness of rights is not enough; communities require guidance and support from authorities in order to build more skills and increase their capacity to assert and exercise their rights.

BACKGROUND

It is widely recognised that small-scale fisheries have the potential to significantly contribute to sustainable development, in particular with respect to such key issues as poverty reduction, food and livelihood security, and balanced nutrition. The important role of small-scale fisheries in equitable and inclusive development and in attaining the millennium development goals (MDGs) has received growing attention in national, regional and international forums, from governments, intergovernmental and non-governmental organisations, private sector groups and civil society organizations. However, small-scale fishers often face precarious and vulnerable living and working conditions because of insecure rights to land and fishery resources, inadequate or absent health and educational services and social safety nets, and exclusion from wider development processes due to weak organizational structures and representation and participation in decision-making.

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Cambodia is one of the research partners in Asia of the International Collective in Support of Fish workers (ICSF) required to study the rights and responsibilities of the small-scale fishing communities. The study was led by the CBNRM Learning Institute in partnership with the former Community Fisheries Development Office (CFDO) of the Department of Fisheries and other NGOs. The results of the study were shared among other Asia countries in a regional workshop and symposium in Siem Reap, 3rd to 8th May, 2007.

**SCOPE, OBJECTIVES AND RESEARCH QUESTIONS**

Legally and historically, the state plays a major role in decision-making about fishery use and management in Cambodia. Nevertheless, when the fishery policy was reformed and CFi began in 2000, some space for community participation gradually emerged. Through our research, we wanted to understand two things related to these fisheries reforms:

1. How much do the CFi members understand about their rights to fisheries and coastal resources?
2. To what extent are they aware of the obligations and responsibilities that go with these rights?

The study aimed to answer these questions and to document and explore the understanding that fishing communities have about their rights to fisheries and coastal resources, as well as the obligations and responsibilities associated with these rights, and to document and discuss the initiatives being taken by fishing communities to assert their rights and to fulfill their responsibilities.

Cambodia is different from other Asian countries in that major fisheries yield comes from fresh rather than salt water. Consequently, both marine and inland areas were included in this study.

The study had a limited time frame (three months only) including design, planning and implementation to understand the rights and responsibilities of small-scale fishers in Cambodia. This is considered a scoping study and it is not claimed that the results statistically represent national small-scale fisheries data throughout Cambodia.
Chapter 11: Understanding the Rights and Responsibilities of Small-Scale Fishing Communities in Cambodia

METHODOLOGIES

The methodologies used in this research are desk study and field research survey. The desk study was conducted over a month to gather all information related to a fisheries overview in Cambodia. The fieldwork activities were conducted by two teams for five days in the two selected sites. They used focus group discussions (FGD) with CFi members, non-members, the community committee, the village chief, commune councilors, and village elders. In selecting the study sites, the following criteria were used: availability of information and resource persons; accessibility of the area; willingness of the local people and partners to participate in the research; and advice from the research partners.

We drew on published information and discussions with key organizations. This was followed by case studies based on two CFi - Tum Nup Rolok in Sihanoukville and Bak Amrek-Doun Ent in Battambang - selected because they represent both inland and marine fisheries.

The following specific steps were undertaken:
1. The study plan and agreement between ICSF and the CBNRM Learning Institute was finalized by February, 2007

2. A meeting with key research partners was held on 16th February, 2007. It was attended by SEAFDEC, The WorldFish Center, Oxfam-GB, FACT and CFDO. In this meeting, the CBNRM Learning Institute introduced the study to its partners and asked for feedback and guidance on its implementation.

3. The desk study was conducted from the last week of March until mid-April. The research team collected and reviewed country-level information, including statistical information on (a) the population dependent on fisheries; (b) fisheries production; (c) issues within fisheries; (d) fisheries and other relevant legislation and (e) key fisheries management measures.

4. The fieldwork in the two case study sites were undertaken between 8th and 12th April, 2007. The research team coordinated with the organizations supporting the communities to assist in the fieldwork. The research team met prior to fieldwork to ensure that the team understood the research process. During fieldwork, the team held an introductory meeting with provincial partners to explain about the study, coordinate activities and choose the research participants. Photo and video documentation of the fieldwork was made.

5. Information analysis and preparation of the first draft of a report was completed by the team by the second week of April.

6. A validation and reflection meeting with research partners was held in Phnom Penh on the 19th April, 2007 to share the initial findings from the research and gather feedback and comments from the partners.

7. The comments and suggestions were incorporated into the study report and a final copy was submitted to the ICSF and research partners.

8. The research team presented the results of the study in the Regional Forum.

**MAJOR FINDINGS**

The study explored some basic findings relating to small-scale fishing communities, especially focusing on their rights and responsibilities in respect of fisheries and coastal resources.
Fisheries have been a significant source of food and income and have been integral to the people’s culture and way of life for centuries. This is especially true for the small-scale fishing communities which depend on daily fish catch for food and family income. In Cambodia, annual inland fishery production is estimated at 300,000-400,000 tons which means Cambodia’s freshwater capture fisheries rank fourth in the world (Van Zalinge et al 2000). Furthermore, the Tonle Sap lake achieves the highest productivity worldwide (Baran, 2005). The wild fishery in Cambodia has been so productive that there has been little incentive for aquaculture development. In the Mekong Basin, aquaculture represents only 12 percent of the fish resources basin-wide (Sverdrup-Jensen 2002).

**Small-Scale Fishing**

Small-Scale fishing – in inland fisheries - is also known as “subsistence fishing” or “family fishing”. Small-scale fishing is conducted in floodplain areas, in fishing lots during the closed season and in rice fields during the rainy season. No licence is required for this type of fishing. In the marine area, this refers to
fishing operations in the inshore fishing area, which extends from the coastline at higher tide to a depth of 20 metres. Boats used are without engines or with engines of less than 50 hp. Licences are not required for boats with no engine or with engine below 33 hp. It is open access. Even though the state is the main decision maker on fishery management concerns, small-scale or family fishing is an option that has always been there and which is thus considered “traditional” by the local people.

In the case of Bak Amrek-Doun Ent CFi, the community claimed that small-scale fishing is open to anyone and at any time. The user must not use illegal fishing gear which is stated in the fisheries law. This open right to fisheries is fully acknowledged and freely exercised by the community now with the establishment of the CFi. The community members report that they do not feel pressure from the fishing lot owners anymore. The community also said that all fishers should help in protecting resources.

In Tup Nup Rolok CFi, the community has been using the mangrove forest for firewood and doing hand fishing for a very long time. They said that they have always thought that they have the right to openly fish in their community as long as they follow the laws. Outsiders also have the same rights - they are free to fish within the community domain.

Perceptions of Community

People’s perceptions of community vary according to their location and the existing resources to which they have access. For example, the people in Bak Amrek-Doun Ent CFi described themselves as a fishing community. Everyone who is registered with the village and commune authorities is part of
their community. There is one family in the community who is engaged in fishing and palm water collection. This family was allowed by the Village Chief to live along the canal but community members do not consider that they belong because the family did not register with the village authority.

In the CFi in Tum Nup Rolok, the community members see themselves as CFi but with a special focus on mangrove protection. The protection of mangroves is a calculated activity because people see them as an important resource that is tied to their fisheries. The focus on mangroves was also influenced by the Municipal Government, particularly the Governor, who encouraged the conservation of mangroves in Sihanoukville. The CFi membership totals 815. This number is only a fraction of the total population (7,746) in the CFi area. Presently, non-fishing dependent families are not members of the CFi including businessmen, policemen, doctors, army members, and civil servant families. Some villagers still have a limited understanding about CFi and thus appear to be uninterested in registering as members.

Rights and Responsibilities

Awareness of rights

When the fishery reforms started and the CFi was established, the people in the two study sites said that they became more aware of their right to fish and stop illegal activities through the dissemination activities of fishery institutions and local authorities. This new awareness encouraged them to take action to stop illegal fishing eg destruction of the bamboo enclosure in Bak Amrek-Doun Ent that was a pending case in court. In Tum Nup Rolok CFi the community perceives that everyone has the right to fish and use the mangrove resources for as long as they follow the CFi by-laws. Family fishing (eg hand fishing) and the use of mangroves is open to all at any time. They also perceive that they have the right to engage in aquaculture and to develop eco-tourism activities.

Community Rights Regimes

The state, based on the existing laws, still plays a major role in decision-making on fishery use and management, despite the fisheries policy reforms. For example, some points in article 9 of the new Fisheries Law stated that
“Fishery domains are state property”, and that “the use of fishery domains for non-fishery related purposes must be approved by the government”. The type of fishery management system in place is also a decision made by the state, and even if a CFi exists, decisions on fishery use and management have to be approved by the state and all CFi actions have to conform to the rules of the state.

When the CFi was established, the following changes were reported: (a) the Bak Amrek-Doun Ent CFi committee dared to face up to, and protest about the actions of powerful men; (b) the CFi committee received a training course from the Village Support Group (VSG) about fishery and other laws, and rights and responsibilities in respect of fishery resources; (c) community members acquired information about, and explanations of the fishery law and the right to use fishery resources; (d) fish catch increased so people’s living standard improved, especially widows who can process more fish for pra hoc, pha ork, smoked fish, and dry fish for eating and selling; (e) cutting flooded forest for exploitation and farming land was reduced; and, (f) illegal fishing activities decreased.

Since the establishment of the CFi in Tum Nup Rolok, the community reports that indiscriminate cutting of the mangrove forest has stopped. This is a result of the increase in people’s awareness about resource management and protection. Dissemination activities were carried out by the CFi and supported by the Municipality Fishery Office (MFO). It also helped that a patrolling group monitored illegal fishing and cutting of mangroves. The visibility of a CFi office in the village also helped stop illegal activities. Access to mangrove and fishery resources is perceived to be easier now with the establishment of the CFi.

**Acting within the law**

The CFi Sub-Decree and the Fisheries Law are used as a basis for determining people’s rights to fisheries - ie Article 11 of the CFi Sub-Decree. For example, people have the right to inform the authority about illegal fishing but cannot confiscate or destroy any illegal fishing gear; only the fishery authority in cooperation with local authorities can do that. The legality of people’s action (ie one has to always act in accordance with the law) is an important consideration to the local people.
Chapter 11: Understanding the Rights and Responsibilities of Small-Scale Fishing Communities in Cambodia

Asserting rights

The main threats to fisheries are the use of illegal fishing gears, the conflicts with fishing lot owners, the increasing number of outsiders who fish in the CFi and the continued use of the bia5. Related to farming, the main threats include natural disasters like flood and drought, low agricultural prices and the increasing use of pesticide.

Awareness of rights to fisheries is not enough if the people do not have the capacity to assert their rights and there is an absence of guidance and support from authorities. In the case of Tum Nup Rolok, the CFIs successfully negotiated and stopped the expansion activities of the Army and the development of an oyster aquaculture project because of the CFi committee’s good capacity to negotiate, and the support of the fishery and local authorities. In Bak Amrek-Doun Ent CFi, the people had the support of the VSG, the other neighboring CFi and the fishery and local authorities. The main response to these threats, particularly to fisheries problems, is the establishment of the CFI.

The main threats in the community include the continued use of illegal fishing gears, in particular the use of electro-fishing by villagers and outsiders. Another threat is the perceived support of some powerful people in pursuing business activities such as oyster aquaculture. The community feels threatened by the possible control of powerful people (outside of their community) of fishery resources.

To respond to these threats, a CFI was established in Tum Nop Rolok with the intention of managing fishery resources and in particular, protecting the mangrove resources. The community reports that they were encouraged to establish a CFI because the MFO explained to them the fishery policy reform.

Responsibilities

Along with the rights provided by the law for the community to use and manage resources, there are also responsibilities. The community in Bak Amrek-Doun Ent perceived that fishery resources are common property and that small-scale fishing is open to all at any time of the year (Refer to Table 1).

5 Bia is a big well or pond for stocking fish in the dry season when the water level is low.
Section C: Tenure and Conflict: Boundaries, Access and Rights

However, users of fishery resources have the responsibility of protecting the resources, using only legal gear and not fishing during the spawning season. The resources found in the community, such as birds, tortoises, turtles and pythons are also accessible to users but these need protection as well. Flooded forest use is more restricted. People have the right to reside along the canal and to plant vegetables. Residents along the canal have the responsibility to plant trees to prevent erosion.

Table 1: Rights and Responsibilities of Fishers in Bak Amrek-Doun Ent CFi

<table>
<thead>
<tr>
<th>Fishery Resources and Land</th>
<th>Rights of Fishers</th>
<th>Responsibilities of Fishers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish</td>
<td>Open fishing</td>
<td>Using legal gear, conservation, and no fishing in spawning season.</td>
</tr>
<tr>
<td>Birds</td>
<td>Protection and maintenance</td>
<td>Protection and maintenance</td>
</tr>
<tr>
<td>Tortoises and turtles</td>
<td>Protection and maintenance</td>
<td>Protection and maintenance</td>
</tr>
<tr>
<td>Crocodiles</td>
<td>Protection and maintenance</td>
<td>Protection and maintenance</td>
</tr>
<tr>
<td>Flooded forest</td>
<td>Restricted use</td>
<td>Protection and maintenance</td>
</tr>
<tr>
<td>Pythons</td>
<td>Protection and maintenance</td>
<td>Protection and maintenance</td>
</tr>
<tr>
<td>Land along the canal</td>
<td>Reside along the canal and plant vegetables</td>
<td>Plant trees to stop canal land erosion and keep the environment along the canal clean.</td>
</tr>
</tbody>
</table>

Source: Focus Group Discussion in Bak Amrek-Doun Ent CFi, 9th April, 2007

In Tum Nup Rolok CFi, the local people play a role in protecting and conserving the fishery resources and in reporting any illegal fishing to the CFi committee. The committee, in turn, should lead in eliminating illegal fishing activity, disseminating the fishery law and making people understand about the advantages of community management. The CFi committee is assisted by the Fishery Authority and the Local Authorities. The environment officers should assist in disseminating information about the environment. Community Fishery management should also be supported by the elderly people, NGOs, monks and schools. (Refer to Table 2)
### Table 2: Rights and Responsibilities of Fishers in Tum Nup Rolok

<table>
<thead>
<tr>
<th>Fishery Resources and Land</th>
<th>Rights of Fishers</th>
<th>Responsibilities of Fishers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mangroves</td>
<td>• Use mangroves for the whole year</td>
<td>• Sustainable use, protect and conserve</td>
</tr>
<tr>
<td></td>
<td>• Replant</td>
<td>• Inform and mobilize people to plant mangroves</td>
</tr>
<tr>
<td>Fish and all resources in the water</td>
<td>• Hand fishing for the whole year</td>
<td>• Family fishing methods (hand fishing)</td>
</tr>
<tr>
<td>Channel</td>
<td>• Aquaculture</td>
<td>• Following legal and technical guidelines</td>
</tr>
<tr>
<td>Coastal land</td>
<td>• Create an eco-tourism zone</td>
<td>• Clean the area – sanitation</td>
</tr>
<tr>
<td></td>
<td>• Sell things to reduce fishing</td>
<td>• Replant mangrove and maintain a good road for tourists</td>
</tr>
</tbody>
</table>

*Source: Focus Group Discussion in Tum Nup Rolok, 9th April, 2007*

Fishery management is an important objective of CFi establishment because the community reports that without management, the resources will decline so there will be no fish habitat, no fish, no mangrove forest and no tourism. To manage the fishery resources, they see the need to disseminate the law to the people inside and outside the community, replant mangroves, clean the coastal land where they expect to develop an eco-tourism zone in the future, be recognized by the government to help them with fisheries management, establish a conservation area in the community and explore other possible sources of income aside from fishing.

The community, particularly the CFi committee, is playing the central role in CFi management in Tum Nup Rolok. In particular, the committee is negotiating in cases of competing resource claims and in stopping illegal fishing and cutting of mangroves. The community suggests that it is difficult to undertake fishery management on its own; it thinks that fishery management should be conducted collaboratively between communities, government (local authority and fisheries institutions) and investors ie financial support for supplemental jobs in the CFi.
RECOMMENDATION

Notwithstanding the positive changes, the CFi is still weak in some aspects. Sustaining actions to stop illegal fishing is a main concern of the CFi because it lacks funds and equipment. The community’s understanding about community management is also still limited and collaboration with fisheries authorities can still be improved. Although there is some support, it is still not enough to sustain the CFi members to perform their activities. In addition, the CFi needs to implement more activities to increase awareness of local people in CFi management and to reach out to more people in the community.

To respond to these weaknesses, and further improve fishery management, the community suggests the following:

• More support and collaboration from the government on law dissemination and enforcement, and training in aquaculture for the people

• CFi should establish a clear boundary around the area to be protected and create a conservation area to improve the natural resource condition and people’s livelihoods

• Local authorities and relevant institutions should collaborate with the community to stop illegal fishing activities.

• There should be frequent training courses for the community for them to gain an understanding about fishery law, the advantages of natural resources, and using the fishing gear in accordance with by-laws.

• There should be frequent dissemination about fishery law to people in the community.
CONCLUSION

Fisheries are a very important resource for Cambodians, providing them with food and income, mainly from small-scale or family fisheries. These are generally open access and considered traditional by the local people. Since the fisheries policy was reformed, some legal instruments were adopted and promulgated which opened spaces for local people to use and manage their fisheries resources in a more sustainable way through the CFi initiative. When the CFi was established, the people in the study site became more aware of their right to fish and stop illegal activities through the dissemination activities of fishery institutions and local authorities. This new awareness encouraged them to take action to stop illegal fishing. However, based on existing laws, the state plays a major role in making decisions on fisheries use and management. Even with the establishment of the CFi, decisions about fishery use and management have to be approved by the state and all CFi actions have to abide by the rules of the state. Awareness of rights to fisheries is not enough if the people do not have the capacity to assert their rights and there is no guidance and support from authorities. They need more capacity building in order to build more skills and awareness to successfully implement CFi.
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By: Mam Kosal

Chapter 15: Decentralization in Wetlands Resource Management: Process, Experience and Lessons Learned by the Wetlands Alliance in Northeast Cambodia
By: Khan Cham Nan, Norng Sivouthan, Mam Kosal and Phan Kamnap

Chapter 16: The initiative of villagers in decentralization development process contributing to wetlands resources management
By: Phan Sothea and Mark Dubois

Chapter 17: Mobilizing Villagers to Stop Illegal Fishing along the Srepok River in Ratanakiri Province
By: Gnui Nang Noy, Oeur Il, Hak Sochanny and John McAndrew

Chapter 18: Going along the river by the bend; entering the village by the country: A spatial planning perspective to enhance community-based natural resource management in Cambodia
By: Jean-Christope Diepart and Sem Thol
Is natural resource management best served by ‘state command & control’ or ‘letting a thousand flowers bloom’? Will shifting part of the autonomy to make decisions result in better resource management? At the local level the results of the state’s actions are frequently disappointing and its resource management decisions frequently contested. Local resource use priorities often differ from the objectives of the various state agencies. Many case-studies deliver a simple enough message: local users have experience with resource management. They also underline the importance of local autonomy in designing effective rules. If so, what should be the bounds of local autonomy to manage resources? The latter can be thought of as a bundle of rights, basically consisting of the right to exclude users, set rules for resource use, improve the resource, and transfer any or all of these rights between users. Decentralized resource management implies a reallocation of rights and powers across the various levels of governance. Ultimately, there is no ‘one size fits all’ governance approach for natural resource management. National and sub-national government, self-organized groups and markets determine the fate of natural resources. The emergent approach to resource management should be capable of simultaneously providing local, national and international benefits. At the local level, the state should not supply local institutions for resource management; rather, an effective and inclusive overall environment for local governance of natural resources.

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DECENTRALIZED RESOURCE MANAGEMENT: A NEW MANTRA?

Cambodia has recently embarked on a journey of fundamental change, sometimes dubbed its ‘controlled revolution’: a process of decentralizing governance (Personal discussion, MoI). Whether, how, or to what extent natural resource and environmental management (NREM) should be part of this revolution continues to be a subject of much agonizing and fierce debate. The aim of this paper is to distil and explore the main queries that feed the controversies.

Villagers are all too often seen as ignorant and land hungry peasants, lacking the capacity to make but a few highly monitored decisions (Ribot and Jesse, 2004, P. 127). With these words, Ribot underlines the continued existence of formidable prejudices against decentralized natural resource management. Many governments do indeed prefer to see their natural resource endowments (land, forests, rivers...) as a national heritage, to be managed by its technocratic structures and guarded by the state’s boot - troopers, rangers etc. On the other extreme stands a tendency to view decentralized natural resource management as the panacea for all ills of environmental mismanagement. An uncritical approach risks ignoring the fact that ‘communities’ are at heart political entities, composed of people with differing capacities, needs and motivations.

Is natural resource management best served by ‘state command and control’ or by ‘letting a thousand flowers bloom’? ‘State command and control’ has had ample time and opportunity to demonstrate its limitations, decentralized resource management less so. Any query must start with an assessment of the scaffolding that holds the promise of decentralized resource management together, and the conditions that help deliver this promise. The central arguments are two: local people will identify and prioritize their (environmental) problems more accurately, and feel greater ‘ownership’ of the decisions made. The many case-studies which underline this, deliver a simple enough message: local users have experience with resource management. Rather than treating them as ignorant bystanders, awaiting pre-packaged technical solutions and regulations from government and ‘experts’, recognition of this experience raises the chances of successful management.
There is an important caveat. In Cambodia, a great many people live close to the poverty line and face stark choices when pondering the (mis)management of their resources. To many, the ability to access and use natural resources is the fallback-option. At the same time, poverty puts a premium on instant revenue, even if protection of forests etc. were to result in higher income later. In this scenario, a clear perspective on how resource management will strengthen livelihoods must necessarily complement the mobilization of local expertise. Decentralized management is meaningless if it does not establish a significant outlook on improved livelihoods, including the short term. An agenda based on moral persuasion to protect and preserve, is simply inadequate to counter the dynamics characteristic of resource management in Cambodia.

Historically, Cambodia has been a firm adherent of the ‘state command and control’ approach, at least formally. The ‘Grand Architect’ approach, according to which all parts in the governance system move according to central prescription, is being ditched. It did not work: even with central instructions, 98 percent of flood forests disappeared in a mere ten years (Gum Wayne 2000, P. 122). As in other countries with fragile legal and institutional systems, people with easy access to state structures often take collective ownership to mean control by themselves. According to the World Bank, “there is little tradition of transparency or accountability in the management of state assets generally, and this is certainly true in the case of natural resources” (World Bank, 2007). Not too surprisingly, at a local level the results of the state’s actions are often disappointing and its resource management decisions frequently contested. The poor, who depend most on these resources, typically draw the short straw in such conflicts.

GOVERNANCE OF NATURAL RESOURCES: SEEING THE FOREST THROUGH THE TREES

Can the new mantra live up to its promise? How exactly is decentralized resource management expected to promote ‘better outcomes’? What are these outcomes and who defines them? All too often, the outcomes are considered chiefly – if not solely - in terms of resource endowments: preservation of biodiversity, maintenance of forested areas etc. This is certainly important. However, the idea of enhancing livelihoods calls for another notion to complete that of endowments: entitlements. Livelihood security for rural villagers requires that they be entitled to benefit from local natural
endowments. For example, a forest (endowment) only contributes to the livelihood security of local villagers if they are entitled to use and access it, or benefit from its existence in other ways. Without appropriate entitlement structure, the current stewards of Cambodia’s magnificent natural heritage have no incentives to preserve it for future generations. Their end is livelihood security rather than resource conservation. The central problem then is how conservation can be a means contributing to this end, so that conservation and livelihood security no longer seem polar opposites. Even though the question appears evident, it underlies a paradigm shift in protection which the conservation lobby has been slow to embrace.

This is not all. Entitlements are necessary but not sufficient. Entitlements in and of themselves are meaningless unless local users have the capacity to transform them into livelihood benefits. Local users need capital (financial, physical, human, social...) to effectively exploit the resource. Where the benefits are expressed in terms of the appropriation of resource units – tons of timber harvested from a forest, cubic meters of water drawn from a groundwater basin – part of the capital is private: the money to buy a pump, the knowledge of operating it etc. Some of the capital has to be commonly provided. For example, public capital to construct an access road, or the social capital embedded in the willingness of community members to help each other and respect commonly agreed rules. Social capital gains all the more importance when benefits relate to the existence of the resource rather than harvestable resource units. For example, the creation of a biosphere reserve may require complete restriction of access and harvesting of resource units (cutting timber, hunting wildlife...). Benefits in this situation will be indirect: tourism, carbon sequestration etc. In these cases, local people will need to agree on rules for the creation and allocation of the indirect benefits.

Property right regimes package these complexities. Comparable to how a circuit board regulates electricity flow, property rights direct the transformation of endowments into entitlements. They organize the rights of access, use and management and the conditions by which these may be changed. The choices involved are twofold: the right to use a particular resource (‘who and what’) and the conditions of access and use of that particular resource (‘when, how and where’). A resource management system based on individual private tenure provides the least complicated link between endowments and entitlements. Individuals or corporations with private rights to use resources, even if they do not own the resource, can
exploit them under agreed terms. It is up to them to acquire the human and financial capital necessary to manage the resource and appropriate the resource units. Private property rights enhance the capacity of users to respond to commercial markets and improve their livelihoods. In Cambodia, the state has granted private rights on state land to its citizens over the last 20 years. The current land policy organizes the continuation of this process in the form of social land concessions.

Even so, one should be careful not to paint privatization as the magic potion that will deliver livelihood security to Cambodia’s rural folk. In many cases privatization is not possible or desirable. The resource may be highly mobile (fisheries for example) or it may have many different elements used by different people (a forest). Often, barring a user from such a resource is impractical, even though it is clear that one person’s use reduces the livelihood benefits of another. These resources, also known as common pool resources (CPRs), have a common characteristic with public goods but are also different from them. CPRs and public goods share the difficulty of exclusion; for example: if one user makes improvements to the resource system, such as planting additional mangrove trees in a tidal marsh, all other users will be able to enjoy the subsequent increase in fish and crab yields. CPRs are also different from public goods. In the case of ‘pure’ public goods, one user’s consumption does not rival that of another; one person’s enjoyment of the benefits of public lighting does not diminish the enjoyment by another. For a CPR the picture is mixed. For example, forest timber harvested by one person will not be available to another, whereas the bio-diversity produced by that forest is an ecological service there for all to enjoy.

It so happens that CPRs are important sources of food and income for poor people with limited access to land or other assets. In Cambodia, many of these CPRs are part of the so-called ‘state public land’ and ‘state private land’. It comprises all of Cambodia’s forests, rivers, lakes etc. Hence the management of state public land is an important element in addressing vulnerability and poverty. The word ‘public’ in state ‘public’ land does not mean that these resources are public goods. Rather, it refers to the idea that any exclusion should be organized by common consent. Returning to the core of the analysis, the question is whether the central state should organize this consent (‘command and control’), or rather the local people most affected by such decisions, through local government (‘let a 1000 flowers bloom’).
In formulating answers to this question - hence outlining governance approaches for natural resource management - it is important to realize that private and public property and CPRs are not black and white categories; there is a lot of grey. It is not uncommon in Cambodia for a given resource to be effectively claimed by different groups under both common and private tenures. For example, many areas around the Tonle Sap are common property fishing grounds during the flooded season, and turn into private farmland again when the floodwaters recede. Resin trees are another example of private ownership in what are essentially common property forests (to which the state has laid claim of ownership).

In a nutshell, there is no ‘one size fits all’ to developing governance approaches for natural resource management. Governance systems must recognize that there are many players in a dynamic landscape with wildly varying property regimes: the state ‘owns’ common resources but privatizes them permanently or temporarily (concessions); property itself has many layers of meaning, to the extent that private ownership of a particular tree in a common forest may be recognized, if not in statutory law, then at least in terms of community acceptance. This is a complex and rapidly evolving property rights regime. Inevitably, decisions that shape entitlements and the potential to realize subsequent livelihood benefits raise passions and with it, disagreement and conflict.

With so much at stake, the absence rather than the presence of disagreement would be remarkable. The issue is not how to avoid it; rather, how to organize collective choice and decision-making to achieve a socially acceptable outcome. If decentralization is to be an aspect of democratization, then social acceptance should include those whose voice is seldom heard but who depend most on natural resource access. This is the realm of politics, and of defining the appropriate political arena. The central query of this paper is whether shifting part of that arena to the local level will result in better resource management decisions. As mentioned, this is especially relevant in the case of resources for which exclusion must be organized by common consent (state land). However, as cautioned, an inclusive and participatory process of local choice does not necessarily imply that Cambodia’s cloud forests will stand, giant carps will proliferate and tigers will roam. Poverty is a key factor as much as governance is. The more localized the choice, the starker the trade-offs come into view. So, answers given at one governance level may
not be consistent with views expressed higher up, just as answers given now may not be relevant in the future; twenty years ago there was no talk of ‘climate change’, and Laos had not yet planned a major dam-building program that threatens to impact the hydrology of the Tonle Sap.

Flexibility to respond to changing circumstances is key, as are inclusiveness of local choice and mechanisms to preserve coherence between governance levels. Is there a magic governance formula that allows answering these criteria simultaneously?

**Figure 1:** Decentralized Natural Resource and Environmental Management
(1) To select appropriate management options, local councils must develop a problem statement for their area in terms of habitat maintenance & creation, extraction and value addition.
(2) Policy and legal reform lead to determination of how much and what kind of discretionary authority local councils will have.
(3) Local discretionary authority will not lead to good governance unless it is held to account by its citizens.
(4) Transparent, accountable and inclusive (‘good’) governance is important in defining access and management rights, especially the resources for which exclusion must be organized by common consent (common property resources).
(5) Clear access and management rules, complemented by public investment and service provision, are ways in which natural resources (endowments) can be transformed into tangible livelihood benefits that help to effectively lift people out of poverty.
(6) Enhanced rural livelihoods create and add value and generate revenue, which influences the capacity of local councils to respond effectively to the needs of their citizens.
(7) Non-local factors are important elements: they influence the existence and shape of externalities, markets etc. Because local councils are largely ‘blind’ to non-local factors, coordination will be important.

**LINKING YIN AND YANG: SUBSIDIARITY WITHOUT EXTERNALITIES**

Institutions for collective choice and action are essential for NREM. They are needed to solve the problems associated with creating and maintaining CPRs and the allocation of benefits derived from them. As mentioned, the state has traditionally played this role in Cambodia. Case studies underline the importance of local autonomy in designing effective rules and making effective decisions to manage natural resources\(^2\). The state cannot ‘supply’ these institutions because doing so would contradict local autonomy, the

\(^2\) Once it has been decided that collective rather than private rights should prevail over a particular resource, there should also be institutions for its collective management. These can be the same as the institutions that organize collective choice, but this is not necessary. For example, commune councils have an important role in organizing the collective choice of rural folk, but community-based committees actually manage the collective fisheries or forests.
very feature that makes them successful. Localization of autonomy however begs the question of scaling-up and coherence. How to operate on a large enough scale to have an impact beyond dispersed islands of accomplishment? For example, trade-offs in local land-use decisions may result in the fragmentation of forests. Even if local users then decide to protect what remains, the preservation of bio-diversity can hardly be considered effective.

If the state is not to supply local institutions for natural resource management, it should be concluded that the state should provide an effective and inclusive overall environment for local governance of natural resources. In Cambodia, the current sub-national governance reform aims to organize this environment. The reform is carried out in two phases. In 2001, the ‘Law on the Administration and Management of Communes/Sangkats’ led to the election and establishment of 1,621 commune/sangkat councils. Their general role is to serve the interests of their citizens and improve socio-economic development. Some specific decentralized functions include the protection and conservation of the environment and natural resources. In 2008, the promulgation of the Organic Law established councils for the capital, provinces, towns and districts. Elections are expected by mid-2009. These councils will receive specific functions to implement, including NREM. The appropriate levels for environmental governance will be decided by a review process: which functions to transfer to which councils, and which to retain at the national level.

From a governance perspective, the key principle in organizing an environment for effective decentralized governance is ‘subsidiarity’. This means that decisions should be taken by the lowest level capable of doing so. From an environmental management perspective, the notion of capability refers not only to human capacity, but also to the ability to avoid externalities. Essentially, a local government decision should not result in negative consequences for another. The autonomy to make an environmental decision should therefore rest with the lowest level of government capable of handling it without

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3 There has been a long-standing debate about the nature of community committees (as in fisheries, forestry, protected areas...). Many of them were ‘supplied’ by the state and effectively function as the lowest tier in a deconcentration framework, with upward accountability to the technical administrations. The relation between their mandate and that of commune councils remains unclear.

4 These elections were held in May 2009
significant residual externalities’. At heart, the powers of a sub-national council should have an impact that does not substantially surpass its administrative boundaries. It is clear that ‘subsidiarity’ and ‘minimal residual externalities’ are uneasy bedfellows.

Externalities arise when actions of one person have unintended external effects on others. Essentially, in the presence of externalities, social benefits (or costs) and private benefits (or costs) differ. If the externality is positive, social benefits are higher than private benefits. The bee-keeper’s operations are the classic example: benefits from the bee-hive (honey) are smaller than those enjoyed by the nearby fruit producers (pollination of their fruit-trees). In an activity generating negative externality, social cost exceeds private cost. For example, flooded forests provide an important space for fish to spawn and find abundant food. A rice-farmer near the Tonle Sap considers the value of these trees limited, whereas more farmland means a higher rice production. Cutting the trees has unintended costs, which are insignificant in terms of the impact of the actions of the one farmer. As ever more farmers clear their land of trees, the consequences become more significant and lead eventually to the collapse of certain fish stocks. The private costs which the rice-farmers incur (clearing the trees) is trivial compared with the unintended cost (less fish production) borne by the fishermen. The social cost may exceed the sum of all benefit (more rice production) privately enjoyed by the farmers. This demonstrates that negative externalities result in inefficient allocation of resources: the expenditure of capital and labour actually decreases overall wealth.

The capability to ‘internalize’ negative externalities is important in determining the appropriate unit and level for environmental governance. It would be absurd for a commune council to make decisions that may affect the whole of the Tonle Sap Lake. For example, granting it powers to dam tributaries will affect many people in downstream communes, and alter the hydrology of the lake as a whole. At the level of a commune, such externalities cannot be ‘internalized’. It would be equally absurd for the state, rather than the commune council, to determine the use of a fish pond located in a village. The pond is located within the commune’s boundaries, serves the people within those boundaries, and the impact of decisions affecting it should be well-contained (‘internalized’) within these same boundaries.
Alas, many cases are not that clear-cut. Natural resources have an annoying tendency: although they appear as individual and separate components – a stand of trees or a pond - they are inter-related as part of an ‘ecosystem’: a tree is part of a forest that is part of a watershed that is part of the hydrology of a region. Ecosystems concern the interrelationships among components. A change in any one component will cause a change in the others. How a particular component will respond to management is partially determined by relationships with other components. For example forests act as watersheds: cutting a tree may affect groundwater movement, influence the microclimate etc. Hence the proper framework for natural resource management is integrated resource management.

This complicates the argument for decentralized governance considerably. If natural resources are always inter-related as part of an ecosystem, then how is one to apply the idea of ‘subsidiarity’? A precautionary approach would suggest that the impossibility of knowing ALL the effects in an eco-system does not warrant firm conclusions about the extent to which residual externals are minimized. This argument seems to support centralized rather than decentralized NREM. The more centralized the level of management, the more certain that residual externalities will be minimized within its borders. Ultimately, this is the level of the state5. This train of thought seems to lead to a fairly dead end as far as local governance of natural resources is concerned. Given the inter-related character of natural resources, the principle of subsidiarity cannot assure that all externalities will be contained within local boundaries. Failing this important criterion for local governance, curtain down for decentralized resource management?

In Cambodia, the argument is often implied in the contention that many of the councils will lack the scale or size to sustain management responsibilities. From there it is but a short step to reasoning that district rather than commune councils should be the lowest tier with effective powers for environmental governance. But then what of these experiences that underline the importance of local autonomy in designing rules and making decisions to manage natural resources. How local should local be: what are the bounds of local autonomy? Can an argument about the inter-relatedness of natural

5 The ultimate level is actually that of the entire globe (eg global warming). In the absence of an effective way to manage global externalities, the community of sovereign states is tasked to deal with them, for better or for worse.
resources be used to disenfranchise direct participation in collective choice below a certain administrative level? The answer is that participation in collective choice is not a privilege but a right. The Cambodian government has committed, by way of its constitution, its policies and laws, and its acceptance of several international environmental covenants, to abide by and promote this right. Democratization entails that representatives of the people are accountable to the people via direct elections. From this perspective, the principle of subsidiarity does not translate into a question about what powers and functions should be handed down from the centre. Rather, it translates as the need to motivate any decision to move particular powers and functions from a lower to a higher level.

Environmental governance is crucial to the livelihoods of many rural Cambodians. The simplistic application of the notion of subsidiarity to environmental governance, undermines their right to participate in the deliberation of choices that affect their lives and to hold those that finally make decisions to account. The onus is therefore upon policy makers to develop a sophisticated and imaginative understanding of the concept of subsidiarity. An imaginative approach should ensure that the framework for managing natural resources in Cambodia is capable of balancing the short-term demands for ecological goods and services with the long-term sustainability of the ecosystem, in ways that support the emergence of effective and democratic local institutions. On the one hand, this requires a process of inter-governmental power-sharing and determination of the appropriate powers and functions for each level, as the planned review process will undertake. On the other, it involves the creation of a coordination framework for natural resource governance between these levels, and the conditions that apply.

UNBUNDLING

Local autonomy to manage resources can be thought of as a bundle of rights, which basically consists of the right to exclude users, set rules for resource use, improve the resource, and transfer any or all of these rights between users. In this context, ‘unbundling’ signifies separation of the bundle of rights into separate powers and functions that are redistributed whole or partly to lower level councils.
More light needs to be shed on the nature of these powers and functions. Functions come in a host of flavours - licensing, enforcement, monitoring, adjudication, planning, public information... - whereas powers come in three basic shapes: legislative (establishing rules), executive (making decisions by these rules), and judicial (resolving disputes and interpreting rules). Combining shapes and flavours, provides a large variety of options for unbundling. Take ‘licensing’ as an example of a particular function. Licensing, in this context, refers to the permission to access or use a resource for a defined product, for a defined period of time, in a defined area; for instance licensing of fishing through fishing permits, triage (tree cutting permits), etc. In this example, the legislative power related to ‘licensing’ would consist of establishing and decreeing the relevant processes, norms etc. The executive power could be summarized as entitling actual resource use in line with established rules. The judicial power refers to resolving cases where permissions appear to be contradicting.

In addition, it is worthwhile to put the functions and responsibilities associated with resource management in the context of a so-called value-chain, which considers ‘upstream’ and ‘downstream’ components. As mentioned, if local people are to become stewards of sustainable development, they are to perceive tangible benefits associated with that stewardship. Previously we have considered the resource (endowment) and the resource units (fruits, timber, water etc) that can be privately appropriated. Moving to a more generic language, we can talk of the resource on the one hand, and the goods and services produced by a resource on the other. These goods and services can be units that may or may not be privately appropriated, depending on the property rights regime. Or they can be services, such as clean air, where private appropriation - excluding others - is never an option.

The upstream functions are those which must be undertaken to ensure continued production of goods and services. They concern the ‘provision’ of the resource-base or ‘habitat’: without them, the chances are that the endowments would exist only in altered forms (degraded, fragmented...) or not at all. For example, efforts to create and preserve forests are necessary to ensure that timber, Non-Timber Forest Products (NTFPs) etc. will be available.

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6 Although this part can be developed in great detail, and it is actually important to do so, a detailed examination would lead us too far for the purposes of this paper. More elaboration can be found in a separate publication, also under the auspices of the CBNRM Learning Institute.

7 Referring back to the discussion of externalities, it is clear that these services are actually positive externalities.
for future harvesting, to maintain biodiversity and withdraw carbon from the atmosphere. Downstream functions concern the addition of economic value to the production of ecological goods and services; for example, turning timber into charcoal, crocodiles into shoes and purses, and clean air and scenic beauty into tourism.

Downstream functions are often ignored in the discussion of resource management; in a way, they are not seen as part of resource management at all. This is reflected in the types of government departments that deal with processing and value-addition, which tend to be entirely disconnected from those dealing with provision of the resource base. However, the possibilities to add economic value to a resource and appropriate value from it are an important element in management decisions higher up in the value chain, as demonstrated in the previous example of flood forest trees and rice. If the market provides no reward for the creation and maintenance of a resource, chances are it will be under-supplied.

Bringing all these aspects of resource management together - the typology of functions and powers and the value-chain, unveils a rich format for unbundling. Should commune councils have a say in the provision of a resource, for example the preservation of a mangrove area? Should it be enabled to make decisions related to processing, as in the transformation of trees into timber? If so, to what extent: should its autonomy encompass any or all of the functions (plan, license, enforce...)? And does that autonomy include any or all of the powers to design the rules, apply them (make decisions), and interpret them (settle conflicts)? Out of this complexity should grow a situation where councils at various levels hold part of the total bundle.

Until recently, the state has been in charge of the whole bundle, and has been loath to let go. Decentralized resource management means that the central state will have to agree to a reallocation of powers across the various levels of governance. Considered in this light, the true meaning of ‘controlled revolution’ becomes clear. The state has given itself ten years to complete it, and that may well be necessary considering the complexity of the issues at hand and the starting point (Personal discussions, MoI). Many observers have

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8 The Environmental Impact Assessment being an important example of a connection between the two. Unfortunately, the example is also notorious for the general ineffectiveness that characterizes its execution, and experience in Cambodia is not different.
expressed reservations about this glacial pace, suggesting that by the time the governance picture has been clarified, there may well be few trees and other resources left that are worthwhile managing. Part of the answer to that would be to take full cognisance of the value-chain. Government AND markets determine the fate of natural resources. Both have shown tremendous limitations but also opportunity. While governance is being overhauled, there is nothing to stop the elaboration of market-based incentives for more sustainable development. Before expanding this argument further, the element of coordination is still on the table.

**OF VILLAGE REPUBLICS AND COORDINATION**

Subsidiarity need not be synonymous with ‘externalities running wild’: unbundling allows setting limits to subsidiarity. Marking out governance areas and mandates lets the various sub-national councils reach a problem statement for their area - concerning habitat maintenance and creation, extraction and value addition - to select suitable management options. Since various levels hold part of the total bundle of powers and functions, it is clear that all levels of government will and should be players. The emergent approach to resource management should be capable of simultaneously providing local, national and international benefits.

The other side of determining local autonomy for NREM is the development of a framework that effectively organizes vertical interaction. Many papers speak of ‘nested structures’ that match the inter-connection of eco-systems as spatial hierarchical systems. This concept gives rise to some literature about hierarchy theory that tends to become very complicated very fast. For the purposes of this paper, it is sufficient to establish that the hierarchical structure of ecosystems should be mirrored in the layered structure of governance: every planning area is encompassed in a larger planning area. The blueprint laid out in Cambodia’s decentralization framework responds to these concerns. Even so, it is important to underline the danger inherent in too technocratic an approach. At centre is the management of relations among people. The best design – with carefully crafted criteria for unbundling and meticulously designed nested governance structures for management – will be useless in the absence of adequate coordination. Not only that, also the nature of coordination is important.
Experiences of top-down designed interventions and structures demonstrate the risk of resolving the question of coordination by half-hearted add-on measures. In the case of Cambodia, the need for coordination is endorsed in principle but rarely seen in practice. Currently, agencies of the central government share NREM responsibilities. Existing agency structures have exhibited their poor suitability in managing the interdependent components of ecosystems. Each agency considers the others as competitors in designating land use, and coordination bodies such as Council for Agricultural and Rural Development (CARD) are distrusted. The results have been interagency conflicts, slow responses, poor coordination across elements of the ecosystem, and management vacuums (which those working outside the official legal framework are happy to fill). Difficulties in managing state land – key to resource management in Cambodia - can be traced to divergent claims of ‘ownership’ by these various structures. The parochial approach of managing resources as isolated components is clearly inefficient as well as ineffective.

Decentralization complicates the picture. It alters the governance dynamics between ‘top’ (central government) and ‘bottom’ (communes). Thus far, this relation was strictly ‘command-and-control’. The various agencies – Forestry Administration, Fishery Administration etc. - decided what should happen at local level. In doing so they were often in conflict with local people, if not with each other. Decentralization changes these dynamics fundamentally. It encourages rural communities to be innovative and mobilize their own resources. To do so, local councils must adopt a broad view and determine trade-offs, taking into account the multiple uses and users of their resource base. As the World Bank makes very plain, “given population increase and limited rural urban migration, competition for access to natural resources is increasing, requiring the capacity to set resource use priorities on the basis of multiple objectives and stakeholder inputs” (World Bank 2007, P. 6).

The interests of local councils in setting resource use priorities differ from the objectives of the various state agencies. For example, the singular interest of the Fishery Administration is to maintain the optimum conditions for successful fisheries everywhere. This requires it to consider resource sustainability, biodiversity protection, fish supply for domestic consumption and export, state revenues etc. This is a balancing act insofar as the Administration must consider different users. However, it only need concentrate
on the conditions for one particular use of the resource – upstream or downstream: fishing. Local councils need to balance the claims on the resource base by different types of users (commercial, subsistence...) for different types of use. For example, the fishery resource base must also provide seasonal land for agriculture, water for irrigation, domestic consumption and emerging industries, firewood and poles from mangrove and flood forest trees, space for transport, gravel and sand from the riverbed for construction and public works, water-flow to evacuate effluents and create energy etc. etc.

The creation of sub-national councils with powers that go beyond simple ‘service delivery’ to actual representation of the needs of a political constituency will give rise to ‘policy communities’ at the different sub-national levels of governance. A complex patchwork of policies, strategies and decisions will emerge: grand plans that provide vision and set directions but provide little detail (NSDP, Rectangular Strategy...), national sector strategies, niche strategies and policies (eg a particular area, plant, or species...), provincial strategies, commune investment plans etc. It is clear that public policy should be consistent and that the sum of local plans and decisions should more or less add up to the broader goals and objectives. In determining the trade-offs between use and users, local councils should not fall foul of the strategy agreed for a particular use (fisheries, forestry...), nor a particular user (priority for poverty alleviation).

This presupposes that local councils should be informed of all strategies, policies, laws etc. For local councils to keep up with such a demand by themselves is clearly impossible. A sound coordination framework should be able to overcome the rudimentary nature of information infrastructure, the fragmented nature of the information itself etc. The traditional ‘top-down’ model of coordination amounts to a ‘one-way’ vehicle to deliver directives. A changing context where power becomes effectively more dispersed creates mutual dependence and encourages ‘two way’ negotiation and information across and between the various levels; for example: the need to avoid conflicting land use plans, given that the provincial level already has powers to sanction economic concessions of less than 1000 ha and less than $ 2 million in value. So, at a minimum, effective coordination implies that the national level and various sub-national councils are informed of each other’s plans and progress.
It can be expected that – as capacity expands – people at the various levels will grow more comfortable in their new roles and progressively expand the determination of their own strategies. In doing so, they will also progressively engage the central state. The instruments and structures that provide opportunity for such engagement and dialogue and allow the coordination of management efforts of the various levels effectively, do not exist (yet). Clearly, new mechanisms and rules for coordination at sub-national level (horizontal) and across levels of government (vertical) are needed. What these are and how they can best function should receive as much attention as the efforts to determine the degrees of freedom that each sub-national level will enjoy. In this sense, it is crucial that the planned and (very) long-term functional review exercise to be undertaken by technocratic commissions, committees and working groups will not take place behind firmly closed doors. Also, that the exercise puts measures for effective coordination at the centre of a redesigned institutional landscape, rather than adding it on as administrative decoration.

OF TRADE-OFFS AND INCENTIVES

Besides issues of accountability and regulation, the relation between the various levels of government also involves that of finance. Clearly, sub-national governments will not be able to exercise new powers and functions, unless they are properly financed. In general, local governments have access to revenue mostly through local taxation, complemented by various types of inter-governmental transfers to bridge the gaps between expenditures and locally-raised revenues. This is a specialist and complex subject, outside the bounds of this paper.

However, in light of the analysis so far, it is important to link the creation of value, sustainability, and actual autonomy of these local councils. Increased revenue-generation by local councils enhances their flexibility to provide services in response to local demand. Besides other things such as geographic size and population, value-creation by local economic production determines the amount of local revenue. In a capitalist system, which is the one Cambodia has chosen, the private sector is responsible for creating wealth. Without it, local councils will be highly dependent upon grants from the central government. Upward dependence is not a good basis on which to build downward accountability. In this context, the growth of the local private sector is essential.
The role of the private sector in natural resource management in Cambodia has often been harmful, to say the least. For example, the grave problems that led to the suspension of the forest concession system, left a management gap over half of Cambodia’s territory. The notion of ‘private sector’ is often associated with these excesses. This paper however conceives the private sector as a basic organizing principle for economic activity in a market-based economy. Its hallmarks are that markets, competition, and profit drive allocation and production, and that private initiative – both formal and informal - drives decision-making and risk-taking.

Many markets in Cambodia are not effective or efficient. This means that the allocation of production factors – and natural resources are an important production factor – is far from optimal. Developing this argument fully would also take us too far outside the bounds of this paper. However, one element deserves closer scrutiny. Markets can exist and function efficiently only when property rights on the goods and services exchanged are well defined. This is very relevant in the case of CPRs. Market failures may occur simply because markets for environmental goods and services do not exist.

When markets for such goods and services do exist, the market prices tend to underestimate their social scarcity values. Forest owners/users will normally consider in their private investment and production decisions, only their own revenues and costs and not the costs and benefits to society as a whole, such as pollution or carbon sequestration. The effect is that such resources are considered as “free” factors of production. For example, forestry provides both marketed (eg timber) and non-marketed (eg carbon sink) goods and services. Without markets for indirect benefits, things like habitat preservation, forest cover, biodiversity conservation etc. will be under-supplied.

With low or non-existent monetary values, the Net Present Value (NPV) of many of the ecological services is very low\(^9\). Forest conservation for example may provide indirect economic benefits (such as biodiversity values), but it provides no direct economic returns, apart from the collection of NTFPs. For poor households, it makes sense to harvest a forest and exchange timber for cash now, rather than harvesting the NFTPs associated with it over the next 20 years, or rather than foregoing the cash in favour of preserving the watershed function of the forest. Poverty leads people to

\(^9\) NPV: the present value of the future cash flows which the resource will generate
discount the future more heavily, attaching greater value to cash in hand now than that available in 10 or 20 years. Yet the continued existence of ecological goods and services represents a safety net.

Even if a poor household were willing to adopt a long-term perspective, there is no assurance that others will do the same. This creates a ‘race to the bottom’, leading to the so-called ‘tragedy of the commons’: the outcome which nobody wants, but which everyone contributes to. Avoiding this situation requires assurance that people will be able to appropriate the results of their conservation efforts. That ability depends on the recognition of some form of property right (linking endowments and entitlements). It also depends on the capacity to mobilize capital (human, social, financial, physical capital assets) to transform entitlements into livelihood outcomes – hence poverty alleviation. But how to establish a form of property right on CPRs, and how to mobilize capital on the basis of resource services such as clean air that have no market value? So far, the opportunity to raise capital has been limited to resource goods such as timber. In the absence of clear property rights, allocation of capital to harvest such resource goods has often endangered the very existence of the resource endowment itself.

Answers to such quandaries are emerging; new types of markets and property regimes are creating innovative links between endowments, entitlements, and livelihood capacities. Community ownership of forests and other resources is catching on fast, and Cambodia is no stranger to them. Countries such as Brazil and Costa Rica are experimenting with new property concepts such as ‘Private Natural Patrimony Reserves’. These allow small private landowners to create or maintain forests and join them in larger entities against payment for the ecological services they provide. The creation of ‘carbon markets’ and the ‘Clean Development Mechanism’ are clear examples of a new type of market for ecological services, and of an instrument that allows an ecological service such as carbon sequestration to be valued and traded. Another example is ‘eco-labelling’, which allows the value added by ecological stewardship to a wide range of goods (tropical timber, palm oil...) to attract a market premium. Clearly, the existence of markets for ecological services allows capital to be allocated to it. Since these initiatives raise the Net Present Value of ecological services, access to capital can be offset by future income streams. For example, commercial banks could extend loans against the future income stream derived from carbon sequestration.
Experiences with community ownership are mixed and the jury is still out as far as the effectiveness and capacity for poverty alleviation goes for these new markets. However, these forms of property and markets create at least a potential for change by allowing two things: the creation of tradable value where there was none before; the possibility for those who invested in the creation of ecological services to appropriate that value. The creation of local value has a bearing on the capacity of local government to generate revenue and provides the context for the options it can develop. What’s more, if ecological services contribute to that capacity, there will be a fundamental shift in the concept of conservation: it will be demanded, not only supplied. This demand will be reflected in trade-offs regarding compatible land uses. Past land management and conservation efforts have often been ad-hoc and opportunistic and community-based forest management yielded very low returns to land. Areas would now be protected for their resource value rather than their lack of it.

It would be wrong to posit these developments as the new panacea. Environmental problems arise because of market AND government failures. Seeking remedies for government without considering market failures will not lead anywhere: local institutions have to make economic sense as well. The economic benefits of different land use systems vary across Cambodia depending, for instance, on soil quality and distance to markets. They also vary over time with changes in input and output prices. Local governments will be able to make land use planning decisions that make economic and ecological sense, IF they have adequate autonomy; which goes to show that the consideration of market failures requires a solution to government failures.

**COLLECTIVE CHOICE AND COLLECTIVE VOICE**

There is no standard model of decentralization, as there are no ‘best’ models of decentralization. Every country has to draw its own appropriate version that defines how best to grant space and substance to localized political processes, depending on its specific history, conditions etc. There is no reason to exclude natural resource management from this space, or give the choices and decisions that emanate from it less substance as far as NREM is concerned. It IS important that councils make such decisions as part of an overall management framework that seeks to internalize externalities as much as possible. It is also important that such a framework is lubricated by sufficient coordination. Organizing this is an incremental and adaptive process.
It should also be clear that decentralized governance of natural resources could have impacts on resources that are not necessarily positive, if looked at from a conservation perspective. Such impact may reflect the structure of local trade-offs that are available. Rather than preventing people from weighing existing trade-offs, more attention should be paid to altering the structure of incentives so that local people are encouraged to conserve rather than convert. In this sense, it is important that the people who are on the front lines in coping with resource degradation – the rural poor – are not marginalized politically, and that local elites and vested interest groups do not manipulate the institutions and opportunities created by decentralization for their own benefit.
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Entitlements (-endowments)


Collective action - Como Property Resources


Property Rights


Environmental externalities

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**Subsidiarity and ‘nested structures’**


**Eco-systems**

Ecosystems and Human Well-Being: Synthesis (Millennium Ecosystem Assessment Series) http://www.millenniumassessment.org/en/Reports.aspx#
Chapter 13
“Decentralized Natural Resource Management Planning Process: Exploring the Success of Three Case Studies at the Commune Level”.

By: Nhem Sovanna

This chapter focuses on three case study examples of successes at the commune level to draw out lessons for improving the decentralized natural resource management (NRM) planning process. The study argues that decentralized NRM can work well when some crucial conditions are met, clear functions are identified, and resources have been transferred to enable Commune Councils (CCs) to perform their tasks. For example, the projects selected by Commune Councils as part of the Commune Development Plan and Investment Program (CDP/CIP) should represent the true needs of local communities. Furthermore, there should be support from the local authorities and the power should be given to the communities to make informed choices and decisions about how they want to manage the projects by themselves.

BACKGROUND AND SCOPE

The adoption and ratification of the Law on the Management and Administration of Communes/Sangkats (LAMC) in 2001 by the Royal Government of Cambodia presented opportunities to improve and strengthen natural resource management and livelihoods, in particular land, forest, and agriculture resources by including considerations for them in the decentralized planning and financing of rural development. CCs form the central focus of this decentralized planning which demands a responsive service provision to be provided. In addition, the CDP/CIP were also developed where resource management and livelihood priorities were discussed and integrated into their plan.

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2 This chapter is a summary of the author’s thesis research carried out as a part of the Master Programme in Development Studies of Royal University of Phnom Penh
Through the CDP/CIP planning process many projects including economic, social, natural resources management and livelihood (NRM&L) and administration / security related priorities have been discussed and prioritized. However, in most cases, mainly infrastructure projects were selected and funded for implementation. With the introduction of an NRM&L earmarked investment fund, some NRM&L focus has started. In general, there was a wide range of NRM&L projects including agriculture, forestry, fishery, tourism, income generation derived from NRM and other livelihoods related activities identified through CDP/CIP. Based on the district priorities matrix list, there were big gaps between demands and responses for NRM&L priorities. The demand for NRM&L is high compared with a low response indicating the big challenges for CCs to make the correct prioritization and to mobilize resources to support the implementation.

Although good progress has been made, there are still many challenges faced by the communes in implementing their tasks. The following are some of the key challenges:

- Legal mechanisms are too general to give enough support to CCs. There is no legal status of CCs in NRM, they feel no power or rights to enforce the law against illegal activities related to fishery and forestry issues. These issues include illegal fishing, illegal logging and exploitation of natural resources for construction materials, firewood, and charcoal. As a result it appears that they are not aware of what they can and cannot do regarding NRM.

- CCs and communities think of short-term needs rather than long term plans in order to address the fundamental problems faced by the commune, particularly on issues of NRM&L. Although investment funds could be used for a variety of purposes, experience so far shows that these funds are still predominantly being used to support investment in rural infrastructure such as roads, bridges, schools, irrigation etc. Unless earmarked funding is imposed, the CCs and communities will not have the ability to prioritize and select NRM&L related projects.

- Limited capacity and awareness of CCs and its members on decentralization and NREM, financial constraints, lack of technical skills, and legal knowledge.

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3 These key challenges are extracted from the outcome of the decentralization and NREM workshop help on 20th February, 2007 with selected NREM related Ministries, Commune Councilors and Civil Society Groups.
• Lack of genuine interest and service providers for demand-driven NRM&L related projects by both government institutions and CSOs at local levels.

• Lack of devolution of resources and power to local authorities especially CCs by the national level regarding NREM. Decision-making still continues to be made at the central level (Ninh and Henke 2005)

Although these issues were noted, procedures for including NRM&L in CDP/CIP were supported and investment for the province, district and commune levels was provided to enable CCs and local communities to address NRM&L related priorities to improve and enhance their livelihoods. It is also important to understand the role played by communities and civil society organizations (CSOs) in assisting CCs to implement NRM&L related projects with the aim of improving the people’s livelihoods using CDP/CIP planning processes at the commune level.

Severe limitations that restricted participation by communities were experienced in mainstreaming NRM&L in the government’s decentralization program. However, there were examples of successes. There were cases where communities were able to identify their real needs; they then – sometimes with the help of facilitators – identified solutions and implementation activities to address these needs. These communities clearly identified the benefits and as a result continue to implement the activities – even though funding has stopped - because the benefits justify the effort invested. Continued implementation by the community without outside support makes these types of projects sustainable. This paper focuses on these examples of successes to draw out lessons.

**METHODOLOGY AND SITE SELECTION**

The research study employed a qualitative data collection through case study approach. Focus group discussions follow by an in-depth individual interview were used to collect and analyze data. The study also draws on sources of information from case studies, a literature review and the author’s many years of extensive experience in this particular field of work and study in the area of decentralization and NRM&L.
Three case studies/projects have been chosen for study based on the following criteria:

- The projects are managed by the community themselves
- The projects used Commune Sangkat Funds through the CDP/CIP planning process
- The projects link directly to improvements in local poor people’s livelihoods and to sustainable natural resource management
- The experiences from these projects were shared with, and replicated within, other communities by the communities themselves partly facilitated by commune to commune cross visits.

In each of the communes, the focus group discussions were carried out with CC members, CSOs representatives, and village chiefs and project beneficiaries of both sexes. They were designed to identify broad perceptions of what made the NRM&L projects function well, how different organizations could access commune investment funds for implementing NRM&L priorities and in identifying key trends and emerging constraints including restrictions imposed by rigid government procedures for community and CSO participation. The number of participants in the discussions ranged from eight to twelve. In-depth individual interviews were used as a follow-up to focus groups to enable specific information to be probed in greater detail. In-depth interviews were used because they are flexible and can help to guide researchers. Since this research focused specifically on three projects, to give structure to the interviews and keep them focused on the topics, in-depth interviews were conducted with three NRM-PAs and nine PFTs/DFTs. Quotes were translated and edited for readability and to support both findings and analysis. In addition to the focus group discussions, survey questionnaires were also provided to NRM-PAs and PFTs/DFTs (three facilitators per province) to contribute to the data analysis.

Three communes were selected for this study namely: O’Tapong in Pursat province that successfully received funds for bat rearing and management, Sna Ansa in Pursat province that successfully received funding for mat weaving and reed management and Peam Krosoab in Koh Kong province that successfully received funding for community mangrove protection and eco-tourism management projects.
MAJOR FINDINGS: CASE STUDIES

Bat rearing and conservation in O’Tapong commune, Pursat province

Raising bats in the garden is a traditional practice in O’Tapong commune, Bakan district, Pursat province. Its flooded forest area is situated in the Tonle Sap flood plain and makes an ideal place for the growth of bat habitats. O’Tapong is comprised of 18 villages with a total population of 15,653 and 2905 families. About 95 percent of the total population are farmers. Bats build their nests in home gardens where there are plenty of palm trees and ponds, lakes or streams nearby where bats can feed on insects. However, the bat population declined due to the illegal cutting down of palm trees and shooting of bats.

“The bats in my garden are like my children. If someone harms my bats, it is like they harmed my children. I love the bats as much as I love my children because they bring good luck and money to my family the same as my children do”, says Kim Hieng, one of the bat farmers of O Tapong commune.

A bat rearing and conservation project was selected by O’Tapong commune in 2004. During the formulation of the CIP, decreasing soil fertility, and the increasing use of chemical fertilizers - as well as an increase in insects which destroyed rice crops leading to a decline of rice yield - were identified as the main problems affecting NRM. To address, in particular, problems caused by the use of chemical fertilizers, the idea to build awareness about the use of natural fertilizer was put forward. As a solution, in discussions both CCs/PBCs and farmers pointed out that they had a tradition of rearing bats and using their guano as fertilizer. Increasing the bat population will help to decrease the need for insecticides and provide manure for rice farming as well as income from selling bat manure. This tradition, however, was under threat due to an increase in the demand for bat meat. The CCs/PBCs and farmers then decided that they would start rearing bats and protecting them so that they could use the guano as fertilizer.
However, bat rearing and conservation as a priority was only raised in five of the 18 villages in the commune despite all the villagers recognizing the problem and effect of soil fertility decline, and the increase in insecticide use. As a result, based on the priorities raised by each village, bat rearing and conservation was not prioritized for mobilizing funding support during the DIW. However, after the DIW during the commune meeting to discuss the use of commune investment funds, bat rearing and conservation projects were brought up again. In addition, based on the criteria for NRM-earmarked funding, as well as a letter request from the five villages that raised the problem, CCs finally made a consensus decision to select this project for implementation. The Commune/Sangkat NRM-earmarked fund, supplied jointly by Danida, Dfid and Azaid, was used to provide assistance to group members to improve the sustainable management of bat nests in home gardens and drying and storage of the manure. The aim was to draft a community statute to stop bat-shooting, and with support from CSOs, to educate young people about the value of the bats and their habitats.

As a result, 25 volunteer farmers were selected to address the problems. The project aimed to provide support and incentives for families to build bat nests in their gardens and improve bat habitats. Bat manure can provide a sustainable income for the families, raise community awareness for the protection of bats, and bring a ban on shooting bats for bat meat.
consumption. Other farmers, observing the success, started building artificial nests in their own gardens.

Currently, in our palm garden, we have 20 bat nests. We earn about 9 million riel a year. Money earned from selling bat manure to neighboring villages provides some income for my family for food and to send my children to school. Keng Kimseng, member of bat-raising group, O’Tapong Village.

A community statute to manage and control bat shooting, including the sanctions to be applied against the law violators, has been developed and recognized by the commune by-law. Furthermore, to ensure the sustainability of bat raising activities, a membership group requires a monthly contribution of 500 riel. The fund will be kept in a savings box and managed by the group. The budget will be used to expand the project and include more families who are interested in participating in bat raising and conservation activities. Bat manure is sold for 25,000 riel per 40 kg sack and, once mixed with cow dung, is widely used as a natural fertilizer on paddy fields. Bat manure provides a sustainable income for families involved in bat raising projects, and these projects have built community awareness about the importance of bat rearing. This has resulted in the development of a ban on shooting bats for consumption. The link between income generation from bat manure, and improving the bat population through bat rearing using the CDP/CIP planning process, was crucial for decentralized NRM.

Although these projects were relatively successful - and many neighboring communes have started to plan and initiate similar activities - there is still a serious concern among bat farmers regarding the decline of bat populations due to illegal hunting. The success of the project will require more awareness-raising efforts not only in O’Tapong but also in other communes and provinces.
This community-based bat raising and conservation approach has the ability to create replicable positive impacts therefore creating an incentive for the families of neighboring villagers to participate in bat farming management activities. With appropriate legal support, illegal bat catching can be controlled.

**Mat weaving in Sna Ansa commune, Pursat province**

Sna Ansa commune is located adjacent to the Tonle Sap Lake that is rich in reed resources which grow naturally in flooded plains in some villages. However, in the past, local people did not take full advantage of this resource to support their livelihoods since they lacked the skills and techniques to process this resource in various ways. They were unable to make tools to serve the needs of people and to sell the resource for income in the market, although traditionally there were very few people who practised mat weaving techniques. These challenges limited the ability of local people to earn a supplementary income causing some to migrate out of the commune to obtain income while others used this resource in an unsustainable way. However, since many have come back to the commune returning from the refugee camp at the Thai border, they have brought the skills and awareness of the market for the mats from the border and have started the activity in Cambodia. In 2004, the need to support women’s mat-weaving groups and community reed planting and management was identified and prioritized by most villages in the commune during the CDP/CIP. During the planning process, CCs/PBCs and communities pointed out clearly that the project will help to protect and manage weed resources in a sustainable manner and secure long term access for local people over the resources. It will also provide jobs and additional income for women. In addition, the Provincial Department of Women’s Affairs (PDWAs), with financial support from the Executive Committee of the Provincial Rural Development Committee (PRDC/Excom) through the provincial investment fund (PIF) mechanism and technical support from local CSOs, provided training on mat waving and handicraft production to some selected women’s groups.
On top of the fact that mat weaving and reed protection projects were the priorities raised by most of the villages, the reasons why they were considered top priority was also justified in the CCs meeting. These reasons included: (1) the existence of an active market for the product in the commune (ie high demand compared with small production), (2) the ability to help reduce outward migration of women for job employment, (3) a reduction in domestic violence in the commune since all members of the family will need to work to help each other, (4) a reduction in the risk of being infected by HIV/AIDs, (5) a reduction in the need to borrow money or fall into debt which could lead to a loss of farmland” . Mouk Kor, Commune Chief Sna Ansa Commune, Krakor district, Pursat province.

With direct involvement and financial support from CCs this initiative was strengthened. They assisted in the formation of women’s groups and associations, in providing a revolving funds mechanism, and in the preparation of the groups’ and associations’ internal rules and community reed management statute etc. The project aims to improve the livelihoods of local communities, particularly women, through sustainable reed management. The initiative has been extended continuously and replicated by neighboring communes. Currently 600 families are involved in mat weaving, and community reed planting and management activities. While 109 obtained support through the CCs’ funds, others gained support from being involved in the activities themselves, and there was also support from other CSOs working in the commune.

The mat weaving project has given me a feeling of peace and strength and linked me to divinity. It has brought additional income for my family. With this income I am able to prepare food and make a contribution to the development of the pagoda in our village. I’ve Seth, a female returnee from refugee camp, one of the mat weaving members of Sna Ansa commune, Krokor district, Pursat province.
The price offered was substantial enough for these women to start and commit to this as an alternative livelihood activity. The men also started gathering reeds for the women and these families began to obtain greater income. Other women, observing this success, also started making mats and were trained by the original group. The village then began to make rules for management and began to plant more reeds in the area. Currently, mat making has become an important source of livelihood in the community and management of the resource is an important aspect of their lives. It has not only provided an economic but also social and environment benefits.

Up until 2007, instead of being burnt, 19 ha of reeds were planted and, as part of the commune plans, 90 more hectares will be planted. The commune has become the center for learning by receiving and organizing many visits for visitors from inside, and from neighboring provinces.

This project could not have been a success without responding to the true needs of local villagers. The financial and legal support from the CCs and the commitment and hard work of CCs in coordinating with relevant stakeholders to mobilize support were fundamental to the success. As remarked by the commune chief, “we need to think about the common benefits and care about people first, and we should not wait for the support to come, but look for it”. The role of CSOs in working closely with CCs and providing necessary support was also a factor contributing to the success of the project. Finally, the integration approach between livelihood improvements through income generation from selling mats, and the active participation of local community members themselves in managing reed resources to support sustainable income generation through a local planning process were crucial to decentralized NRM.
Although the project has been highly successful, there are still many challenges ahead. One of these is the need to increase capital funds for the association to be able to buy all the products from members, or to provide revolving funds to members during the rainy season. This would mean that they could supply mats to the association without having to borrow from a middle man at a high interest rate or sell mats at a lower price. It would also help to link with other markets and check with market prices.

**Community Based Mangrove Protection and Ecotourism Management (CBMP & EM) in Peam Krasoab, Koh Kong**

Peam Krasoab commune lies in a coastal area rich in mangrove forest and other coastal resources. The mangroves have long provided products and services to sustain the livelihoods of local communities. Almost all of the villagers' livelihoods depend on mangrove ecosystems being mainly involved with inshore fisheries and open sea fisheries, using different types of fishing gear. However, during the period 1980-1998, large areas of mangrove forests were severely degraded due to illegal cutting, clearing and encroachment by both outsiders and insiders for charcoal and shrimp production. Conversion of large areas of mangrove forests significantly affected the fisheries and livelihood of the local communities.

During that period the area could be described as a charcoal city where hundreds of charcoal kilns were constructed for charcoal production. Conversion of large areas of mangrove forest dramatically affected the fishery resources and livelihoods of local people. Mr. Chout Tik, Commune Chief and Chief of CMP&EM Committee, Peam Krasoab, Koh Kong province

As a result, in 2004, following the earlier support from CSOs to establish a Community Protected Area (CPA), the direct involvement of CCs, District Development Committee (DDC) and PRDC/Excom strengthened this initiative. They did this by assisting in financing, planning, and the establishment of CBMP&EM, statute preparation and monitoring, and implementation of the Community Protected Area management plan (CPAMP). They also helped with the incorporation of CPAMP into the CDP/CIP. Through this earlier initiative CCs/PBCs and communities were able to
understand and visualize that the project would help not only to protect and rehabilitate mangrove and fishery resources - which were vital for their livelihoods - but also to provide income through ecotourism development and fishing activities etc. The CCs, with support from DDC and PRDC/Excom and CSOs working in the area, were also instrumental in mobilizing community participation, resolving boundary demarcation conflicts and encroachment, and in fostering links with higher authorities, relevant institutions and other stakeholders. This enabled them to win both political and resource mobilization support for the initiative. Meetings and dissemination of information about mangrove forests, CC legislation, and locally-developed mangrove CPA and CBMP&EM by-laws and regulations also raised local awareness of rights and responsibilities among the villagers and has created trust and honesty between the CC and the communities. Although there were no base line data that could qualitatively or quantitatively justify the impact - as was reported by the focus group discussion - large areas of mangrove forest of almost 50 hectares and many artificial fish shelters and poles were replanted and installed around the border of the community fishing area to protect it from illegal fishing. This has enjoyed the active participation of communities.

In 2008, as part of the continuation of development in the area, the CC and DDC Committee decided to use their commune and district investment funds to enrich biodiversity through aquaculture development. They also decided to develop the area as an eco-tourism site by building a walking bridge, viewing tower, and cottages/huts for visitors to come to enjoy the view of the mangrove forests and fishing in the area. The outcome of mainstreaming community mangrove rehabilitation and protection needs into the D&D planning process has been a significant improvement and nurture the sustainable management of the mangrove forest.
Our villagers have indicated a sharp increase in fishery resources and in fish and crab catches after the project implementation. In addition in just a few months we have been able to generate and save 20 million riel from the visitors to our eco-tourism site. Our villagers are able to earn income from boat trips, selling food, soft drinks, and their fishing resources to the visitors. Mr. Cheng Sinath, Vice Chief of CPA and CBMEM Committees, Peam Krosoab, Koh Kong.

The success of this project has depended on many factors. The commitment and leadership of the CCs has been crucial as has the ability to build networking skills and mutual respect, and to obtain support from different levels of government institutions, authorities, and local communities. Community awareness and participation in the whole process has been essential. It should also be acknowledged that the success of this decentralized mangrove protection activity could not have been achieved without the integration of alternative income from ecotourism development, mangrove forest protection and the active involvement of local communities through CDP/CIP.
However, one big challenge has been raised by local communities among many others that may strip away these benefits. The area is becoming well known to outsiders and many tourists have already shown an interest in visiting the area. This will help to bring in more income in the near future. As a result, there is already competitive interest from a private actor who has submitted a proposal to have a concession over the area from the government which was once rejected by the Ministry of Environment (MoE).

**KEY LESSONS LEARNT: SUMMARY OF CORE FINDINGS AND CONCLUSIONS**

The core findings and conclusions of the study are as follows:

- **Responsive NRM&L priorities and needs identification:** There was a big gap between NRM&L demands and responses, which should be considered a normal trend; however, this illustrates the challenges the CCs face in selecting priorities that they think are most appropriate. In addition, although the five year development plan helped the commune to identify priorities, the annual activities were decided based on an annual budget indicating that there needs to be a very flexible approach to planning that complements this vagueness in the five year plan with more concrete activity planning annually. In addition the three case studies illustrated clearly that, in order to enhance an NRM&L needs identification process that is more responsive, CCs have to be able to understand and visualize how an activity will meet their needs, and what the expected benefits for community will be. It would also help CCs and communities by presenting a more precise rationalization for the projects and a means to compare with other projects before they can make a final decision.

- **Community based cost benefit analysis (CBCBA):** The three case studies clearly demonstrated that CCs had knowledge and understanding and were able to analyze the potential costs and benefits that could be derived from the projects they chose to invest in before making decisions. However, the NRM&L projects that were selected for implementation were mainly due to earmarked funding available to CCs rather than their own discretionary funding; a clear indication that if earmarked funds were not available the NRM&L projects may never have been funded through CDP/CIP. Therefore, a CBCBA may be introduced as a mechanism for increasing the CCs’ and community
understanding and for identifying the potential benefits and costs of a given investment project and the relative merits of different projects. This may also encourage CCs to shift their decision to invest more in NRM&L related projects.

- **Enhancing prioritization process**: There was no clear guidance on how to prioritize the proposed projects other than through continued discussions. This left the process open, allowing influence from CC/PBC and PFT/DFT on priorities regardless of villagers’ views or rational analysis. This is an issue indicating that planning guidelines need specific consideration and revision to include better tools for prioritizing projects and explaining how selected projects will address specific needs identified in CDP/CIP. However, in the three study communes, it is clear that CCs have the capacity to lobby and are capable of pushing their decisions and convincing their constituencies to support them if they feel that the project is important. Capacity building for CCs/PBCs just to be able to fill out forms and follow procedures is not enough: they require a more holistic and comprehensive capacity building training in order to understand issues and make the right choices. If the government is not able to provide this capacity building themselves they should seek assistance from CSOs - as can be seen from the experience in the three case studies.

- **Changing ways of working to enhance genuine participation**: There were strong relationships and interesting cooperation between CSOs, CCs and communities that brought about the success in these three cases. Cooperation and mutual respect with a broad minded approach by all involved was important to ensure that CCs and communities felt ownership of the projects. It can be argued that this aspect was vital to the overall success although may not have been the case in all parts of other NRM&L projects. Although participation from CSOs in the CDP/CIP planning process was weak, it may be better for them to build the capacity of communities to participate in CDP/CIP planning process instead - as shown in the three cases.

- **The need to make better informed choices for appropriate decision-making**: Experience from the three case studies indicated that most NRM&L related priorities discussed and included in the CDP/CIP seem to be mainly based on the overall expectation of improving livelihoods and well-being of the commune rather than on the proper assessment
of the real situations and needs that will lead to the achievement of these expectations. Furthermore, both CCs/PBCs and PFTs/DFTs lack the technical skills needed to help facilitate such an assessment and sometimes are influenced by facilitators who lack appropriate technical skills and an awareness of what options/choices are available. Therefore, packaged menus or model templates for typical and available NRM&L related service projects could be adapted by both CCs/PBCs and PFTs/DFTs for specific NRM&L projects. The development of these templates can help in making better and more informed choices for appropriate decisions.

- **Multiple service providers:** All three project contracts were separated and not single packaged contracts. However, the community and CCs had prior knowledge of the projects therefore were able to envision what was required to achieve the goal. Although they were separate contracts, these were clearly planned activities that the villagers understood and knew what was required for them to be implemented. However, this was not the case in other communes. Experience illustrated that there were many more capable service providers from outside the government, including CSOs, than was previously believed. Therefore, both CS’s and facilitators, including line agencies, should be strongly encouraged to incorporate this task in all project designs and implementation strategies to support effective service delivery to CS’s. This will help to open and encourage more active participation from CSOs not only in providing effective services but also in helping to increase the voice of different stakeholders in gradually building up local governance accountability.

- **Linkage between direct income and NRM:** Arrangements for sustainability have been put in place in all three communes through the establishment of internal rules and regulations, associations, and groups. An important aspect to be noted was the direct increase in income that occurred in all the three target communes. This result may have been a very strong incentive for the community to continue to manage the projects in its current form although some illegal activities still occur. The fact that the internal rules and regulations agreement was made by the community may be a factor contributing to their desire to want to continue to enforce them.
CONCLUSION

The decentralization planning process in Cambodia has certainly provided a space and an opportunity for CCs and community participation to discuss, integrate and address NRM&L issues and needs in CDP/CIP, although many challenges are still faced including institutional and legal aspects. However, as can be learned from the three case studies, decentralized NRM can work well when some critical conditions are met. One of the critical elements illustrated by the three case studies is that projects selected for implementation should represent the true need of local communities and that the power should be given to them to make an informed choice decision about how they want to manage the projects by themselves: local authorities, particularly the CCs should include these needs in the CDP/CIP and provide financial support for the implementation. This is critical to ensure ownership and motivate community participation in the CDP/CIP process.

Figure 1: Integrated framework for decentralized NRM

Another critical element of the success was the direct link of the projects to livelihoods improvements and sustainable NRM. In all the three case studies the direct increase in income was illustrated as one of the strong incentives for success and for the communities to continue to manage and implement the project in its current form. It was also an element that encourages and attracts other neighboring communes to adapt similar initiatives. This is a critical point for the success of sustainable decentralized NRM as normally ‘pure’ NRM means restriction of access to resources and leads to a decrease in livelihood opportunities. However, the three case studies clearly illustrated the success of decentralized implementation of NRM projects resulting from the application of an integration framework between NRM, livelihood improvement and good governance principles. This framework not only strengthens the sustainability and ownership of the process by local communities but also promotes a major change in local norms by using dialogue, open discussion, reflection and participatory decision-making in local development and NRM.
Another important element that should be stressed from the findings and analysis, which is crucial for success, is the leadership role played by CCs, the knowledge and ability of CCs to make correct decisions and lobbying to convince communities and relevant institutions including CSOs to support their decision making. This is not the case for many other communes. Therefore, it is important to ensure that CCs feel that the priority identification process is crucial and efforts need to be made to help build their capacity and confidence to make correct decisions and exert appropriate influence.

Shifting attitude from upwards to downwards accountability is difficult particularly in the Cambodian official working context, where accountability lines seem to go upwards rather than downward to clients. This makes decentralized NRM difficult. However, given time, and based on the experience from the case studies, plus the right approach, those with power can recognize the benefit of downward accountability. However, shifting attitude can only take place when partners understand and appreciate the approach. This shift of attitude should also apply to CSOs in order to strengthen their participation ie while working directly with communities is important, the local government structure cannot be bypassed. As can be learned from the three case studies, self participation by CSOs in the local governance process is crucial for the opportunities it brings to promote awareness of what can be expected from CCs and to enhance the voice of communities through the decentralized decision-making process. This can ultimately lead to an enhancement of investment opportunities to improve livelihood and sustainable NRM.

Currently, as indicated by the case studies, all NRM needs rely on earmarked funding. However, campaigns should also be conducted to eliminate confusion and misunderstanding among facilitators and CCs about the commune’s own discretionary funds for service related projects which is currently understood to be restricted for infrastructure projects only. This will help to balance and enhance NRM&L responsiveness in CDP/CIP.

Finally, as is evident from the three communes studied, decentralized NRM can work well when certain conditions are met, clear functions are identified, and resources have been transferred to enable CCs to perform their tasks, which at the moment are still challenged by many councilors.
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Danida NREM Program, 2005: Report on Village Associations, Rural People Livelihood, Local Governance and NRM


Fisheries have an important role in the livelihoods of over four million people in Cambodia and it is for this reason that fisheries policy, legal, and institutional frameworks require some attention. This paper provides a review of the existing fisheries legal and institutional frameworks particularly focusing on policy plans and practices in the field in an attempt to identify if there is a suitable and enabling environment for decentralization and de-concentration to take place. The paper seeks to review progress made since early 2000 in relation to the legislative and institutional changes in order to develop and consider options for implementing the newly adopted Organic Law. Discussion surrounds topics from Community Fishery (CFi) management, current engagement of commune/sangkat councils, to potential for inclusive and decentralized management. Following this discussion it is concluded that difficulties still remain over how these actions can be realized in the face of limited capacity at the local level to take up these new roles and responsibilities. Therefore, there is a strong need for clarity on roles and responsibilities and support to build local capacity in order to be able to implement them.

**INTRODUCTION**

In Cambodia, aquatic and wetland ecosystems, particularly inland ecosystems, play a crucial role in supporting fisheries production for the country. Fisheries are diverse and widespread in Cambodia, located in both rivers and their tributaries, and in lakes and flood plain systems. Due to the type and scale of fishing in the country, many people are involved in one way or another in fisheries related activities. Fisheries play an important role in the livelihoods of more than four million people, most of whom are very poor (FiA 2008) and who have few options to supplement their income. This includes significant
numbers of people living in floating villages who commonly fish all year round, and those from remote fishing communities living in the upland areas who mostly fish seasonally. Annually, total fish production from natural fishing grounds and from rice field fisheries has been estimated at 137,700 and 91,800 tonnes respectively (DoF 2006).

As fisheries dependent livelihoods came increasingly under threat because of problems associated with poorer access to fishing and the increasing number of fishing activities, conflicts over fishing aroused. These occurred in many different forms and involved many different parties. For instance, small-scale fishers were in conflict with each other or with operators who gained access to commercial fishing lots, or who had access to fishing in the public fishing grounds, and also with the fisheries officials. When the issue of access to fishing by small-scale fishers reached its peak, particularly in the Tonle Sap floodplain, a fisheries reform was announced in late 2000 by Prime Minister Hun Sen. This reform took shape when 8,000ha of inland commercial fishing lots was released (Ratner 2006) for community management and by February 2001 a total area of 540,000ha, or 56 percent of the total inland commercial fishing lots, had been agreed upon for release to local community management (Evans 2002 quoted by Tep et al. 2007). This marked the start of further comprehensive reform including replacing the leadership at the Department of Fisheries (DoF), temporarily recalling most fisheries ofﬁcers from the ﬁeld for retraining, establishing a Community Fisheries Development Ofﬁce (CFDO), and temporarily abolishing fees from fishing activities known in the law of the time as middle scale ﬁshing (Ratner 2006). The reform was later decreed through a series of legal instruments.

The fisheries reform takes place along with a comprehensive administrative and governance reform initiated by the Royal Government of Cambodia to decentralise, by means of devolution, powers and functions to commune level councils. The decentralisation reform aims to build participatory local democracy and to contribute to socio-economic development and overall efforts to reduce poverty. The reform is supported by an established National Committee for Management of Decentralisation and Deconcentration Reform. The linkage of sectoral reforms, fisheries in particular, is clearly articulated in the organic law on Sub-national Administration. The law also provides for the establishment of a National Committee for Sub-national Democratic Development (NCSDD) to review sectoral responsibilities and functions for their reallocation to appropriate sub-national councils.
This review of the existing fisheries sector legal and institutional framework focuses on existing fisheries related legislation and policies including plans and selected practices in the field to see if there is an enabling environment within the sector for strengthening decentralisation. It also seeks to review progress made in the legislative and institutional ramifications of the reforms that have taken place since 2000 in relation to the recently adopted organic law.

The review is not intended to provide a full reflection of the overall progress made and challenges faced by the sector, but it is written as an information piece to contribute towards initial discussion and documentation.

**POLICY PROCESSES AND INSTITUTIONAL REFORM**

Cambodian fisheries sector reform emerged in 2000/2001, starting with the release of 56 percent of the former inland commercial fishing lots that were formalised in subsequent decrees (a list of relevant legal instruments and policy documents is provided in Table 1).

**Table 1: List of selected and relevant policy documents and legal instruments**

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<thead>
<tr>
<th>No</th>
<th>Documents</th>
<th>Date of adoption/ Promulgation</th>
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<tbody>
<tr>
<td>1</td>
<td>RGC's Rectangular Strategy (Phase II)</td>
<td>26th September 2008</td>
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<tr>
<td>2</td>
<td>National Strategic Development Plan (2006-2010)</td>
<td>22nd December 2005</td>
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<td>3</td>
<td>National Fisheries Policy Statement</td>
<td>15th June 2005</td>
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<td>4</td>
<td>Government-donor agreement on Harmonisation and Alignment</td>
<td>2nd December 2004</td>
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<tr>
<td>6</td>
<td>Strategic Planning Framework for Fisheries Sector</td>
<td>Under development</td>
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<td>7</td>
<td>Fisheries Law</td>
<td>24th May 2006</td>
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<tr>
<td>8</td>
<td>Organic law on Sub-national Administration</td>
<td>22nd May 2008</td>
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<tr>
<td>9</td>
<td>Sub-decree on Community Fisheries Management</td>
<td>3rd June 2005 and 20th March 2007</td>
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<tr>
<td>10</td>
<td>Sub-Decree on the Transformation of the Department of Fisheries to the Fisheries Administration</td>
<td>11th August 2006</td>
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<td>11</td>
<td>MAFF’s prakas on Guidelines for Community Fisheries</td>
<td>13th July 2007</td>
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<tr>
<td>12</td>
<td>MAFF’s prakas on Organizational Structure and Operation of Entities of Fisheries Administration</td>
<td>11th September 2007</td>
</tr>
<tr>
<td>13</td>
<td>MAFF’s prakas on Appointment of Fisheries Officials at Inspectorate and Cantonment levels</td>
<td>14th and 31st January 2008</td>
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At the outset, there were no clear systems in place for local management. Instead local communities secured support from local authorities with the facilitation of different actors including NGOs and relevant departments of government agencies including the DoF. However, with the sub-decree on Community Fisheries Management and a prakas on Guidelines for Community Fisheries issued by the Ministry of Agriculture, Forestry and Fisheries (MAFF), rules and legal procedure for establishing and managing CFi are clarified. Unfortunately, some issues over registration remain, particularly with those CFi established within Protected Areas, with questions of whether to register with MAFF/Fisheries Administration (FiA) or the Ministry of Environment or both, unclear to some communities.

This reform also began with changes in policy formulation and institutional restructuring. Fisheries policy formulation is informed by three main sources: (1) technical evidence from the field and from implementation of divisional plans; (2) political policy statements such as the Rectangular Strategy and the central government’s National Strategic Development Plan (NSDP); and (3) other influences including international agreements, donor and NGO policies, wider societal demands, as well as the budgetary process and the influence from within the FiA itself (TWGF 2006).

In an effort to promote the Paris Declaration (endorsed in March 2005), on Harmonisation and Alignment, the Royal Government of Cambodia (RGC) and development partners agreed to harmonise their development efforts. In addition, under the NSDP (2006-2010) the FiA has conducted an institutional review through its Technical Working Group on Fisheries (TWGF) as part of the process for change in the management of the sector. As part of the overall MAFF policy framework and strategy, the FiA has also developed and improved policy and planning processes through adoption of a programmatic approach for the sector. An annual fisheries program is also developed with divisional and activity plans all interlinked through log-frames and a database system.

A National Fisheries Policy Statement was issued in June 2005 by the government, recognizing the potential of the sector in the provision of food and in supporting the national economy. It also highlighted the need for fisheries reforms as part

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2 A form of legal instrument or proclamation issued either by the national government or ministry. In this case, it is issued to provide elaboration on the content of the sub-decree on Community Fisheries Management.
of the Government’s Rectangular Strategy\(^3\). The policy sees, among others, the local communities and their awareness and participation in sustainable fisheries resource use and conservation as a strategy to help establish and maintain the sustainability of the sector. It also provides for devolution of authority within the sector as a means to strengthen activities at the sub-national levels in order to respond to the reforms undertaken since 2000.

The Fisheries Development and Action Plan (FDAP), 2005-2008 provides further reinforcement of provisions stated in the fisheries policy statement. It promotes a community based approach to fisheries management through devolution of authority within the sector alongside strengthened coordination with relevant sectors and agencies. Through these mechanisms it aims to support effective CFi in order to enhance fisheries management, improve coordination with relevant sectors, and strengthen human capacity and knowledge.

Since the reforms, significant efforts have been made to adopt a programmatic approach to the sector, through the development of the 10 year Strategic Planning Framework (SPF) and clearer guidance on strategies for the sector as outlined in the FDAP. The Plan which takes into account the RGC’s Action Plan for Harmonization and Alignment, defines six goals of the sector as well as a strategy for achieving its objectives and priority actions, with the first being a review, revision and improvement of the policy, plans, legislation, institution and capacity (human and physical) of the sector.

The SPF and FDAP were developed through a consultative process within the agency and consolidated with comments from donors and NGOs. Building on the FDAP annual fisheries programme, divisional and activity plans are also developed. The SPF and three year rolling FDAP for the new cycle are currently being developed. It is envisioned that the sector planning process will link with the commune planning and the CFi management processes.

For better coordination, harmonization and alignment, the FiA has developed and adopted a Cambodian Code of Conduct for Responsible Fisheries (CamCode) to promote improved cooperation, coordination and best practice.

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\(^3\) It is the “Socio-economic Policy Agenda” of the “Political Platform of the Royal Government of the Fourth Legislature of the National Assembly” aims at “ensuring sustainable economic growth at around 7% per annum on a broader and more competitive basis in the context of single-digit inflation” as well as “ensuring the achievement of poverty alleviation at more than 1% per annum”. The first phase of the strategy was launched by the Royal Government of Cambodia on 16th July, 2004. The Strategy has good governance as its core, and fisheries in one of the four pillars along with land and forestry reform.
The FiA has also developed a strategic framework for developing cooperation and management for the sector, adopted a common planning and harmonised budget and Monitoring and Evaluation (M&E) systems including joint monitoring indicators for sector development. Responding to the recognized need of sector-wide coordination, a TWGF was established in late 2004 consisting of representatives from relevant government agencies, donors, and international organizations to provide a platform for improved coordination within and across the sector.

To prepare itself for undertaking the reform, the DoF was restructured into what is now known as the Fisheries Administration (FiA) through a MAFF prakas dated 11th September, 2007. The prakas focused on the Organizational Structure and Operational of Entities of Fisheries Administration (sic.) and provided a new set of roles and responsibilities for the FiA, its divisions, and entities. Staff reassignments for different positions at cantonment and inspectorate levels were also made through a MAFF prakas on 14th and 31st January, 2008. Under the old structure, the vertical lines of administration were thought to be ineffective because of their poor representation at the sub-national levels. It is argued that this institutional reform will provide an opportunity to improve vertical integration for implementation of policy and law enforcement, and for representation independently from the provincial Department of Agriculture, Forestry and Fisheries (DAFF) at the sub-national levels. Capacity strengthening at the central level including policy and planning processes has now been carried out. The next step in the process is to target sub-national levels.

The restructuring of the FiA resulted in turning the CFDO into the Community Fisheries Development Division (CFDD), which has the role of facilitating the establishment of CFI throughout Cambodia and supporting their functioning as management partners with the FiA. While the policy and planning processes provide for an enabling environment towards a cohesive and coordinated mechanism for management of the sector, the restructuring is also seen to establish a platform for more effective engagement at the sub-national levels, particularly by broader civil society. Until recently the provincial fisheries had to work through DAFF and thus did not have a strong representation at the Provincial Rural Development Committee (PRDC), a body that guides and supervises the implementation of the decentralisation and deconcentration
process at the provincial level. With its independence from DAFF it is hoped that the sub-national fisheries entity would be able to interact directly with other sectoral agencies and civil society.

**COMMUNITY FISHERIES MANAGEMENT**

Within the new fisheries law, Chapter 11, articles 59-62 provides specifically for CFi. Article 59 recognizes the rights of all Cambodian citizens to form a CFi in their own area on a voluntary basis as a means to contribute to sustainable management, conservation, development, and use of fisheries resources. While article 60 tasks MAFF with responsibility to define areas for CFi, article 61 provides for a consultative process in defining CFi fishing areas and also sets a three year term for CFi agreement with MAFF that can be renewed based on CFi management performance (article 62).

Article 62 also defines the rights to managing the CFi areas. It states that sale, exchange, lease, donation, share of or transfer of the CFi areas is prohibited, with the exclusive right retained by MAFF to dissolve any CFi for public benefit (article 63). As stated in article 2, the state ensures traditional use of fisheries resources by local communities through support of CFi management, while the actual fishing grounds still remain the property of the state.

The commitment to fisheries reform that began in 2000 was further formalized through the issuance of a series of legal instruments guiding CFi (see Table 1 above), laying out the rules and procedure for establishing and managing CFi and reaffirms the three year term of agreement for resource management with the CFi. The new fisheries law (21st May, 2006) redefines the fishing grounds, gives more emphasis to conservation of fisheries resources, and provides the basis for management of CFi. MAFF’s prakas on Guidelines for CFi provides detailed guidelines on how to meet the requirements to secure the recognition of access rights and management interventions over their fishing grounds.

As discussed above, the reform of the sector led to the establishment of the CFDO and later turned to CFDD to facilitate the establishment of CFi. As of 2008, 468 CFi have been established nation wide; many of them are now in the process of strengthening and registering for formal recognition with the FiA.
CFi have already played a significant role in managing large areas of inland fishing grounds which form part of the former commercial fishing lots and are also present in coastal areas covering important aquatic habitats such as mangrove forests.

In pursuit of regional agreements committed to the participation of local communities in fisheries management, Cambodia signed up to undertake the goals determined by the Millennium Resolution and Millennium Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region. The Resolution, paragraph 5, declares that: "states should encourage effective management of fisheries through delegation of selected management functions to the local level". The Plan of Action, paragraph 1 of Fisheries Management, also emphasises that "states should establish and implement comprehensive policies for innovative fisheries management, such as the decentralisation of selected fisheries management functions to the local level".

In reference to the FAO's Code of Conduct for Responsible Fisheries, issues to address in fisheries include an increase in areas and/or production for family fishing, community-based fisheries management, community and household rural aquaculture development, and an improvement in the capacity of the poor to more effectively use fish through enhanced post-harvest fisheries development.

**CURRENT ENGAGEMENT OF COMMUNE/SANGKAT COUNCILS**

As earlier noted, the fishery reform is being conducted alongside other sectoral reforms including land management, forestry, and governance. Governance reforms will lay the foundations in which local Commune/Sangkat councils (C/S councils) along with the district and provincial councils will have the power to govern, coordinate, and provide oversight in resource management with the technical support of line departments at these various levels. It can be argued that the new FiA structure will support its direct representation at the provincial and lower levels and thus decisions to engage local council and authority directly. Such representation is considered essential to promote coordination and harmonisation at the sub-national level and is intended as an important component of the decentralisation framework being developed which is consistent with the provisions of the organic law.
However, while facilitating more direct administrative control within the fisheries sector, it is argued that this may make inter-sectoral coordination and planning at the provincial level even more challenging, which could also lead to more difficulties over inter-sectoral coordination at local level and an inhibition of the responsiveness of fisheries authorities to local needs (Mam et al. 2006). This is partly because the sub-national fisheries institutional reform has just taken place and the provincial fisheries cantonment has yet to get its representation at the PRDC. It is also because of the limited capacity within the provincial fisheries area itself.

The fisheries law recognises the role of the C/S council and other authorities in collaborating on law enforcement and provides a platform to ensure that sufficient authority is at the disposal of local police to ensure security and public order. For example the C/S council is also recognised in many articles of the fisheries law as the collaborating partner in designating CFi fishing grounds, and in addressing conflicts in CFi. The C/S council is encouraged in the sub-decree on Community Fisheries Management to collaborate in establishing CFi, in CFi conflict resolution, and in CFi committee elections. The CFi can make a complaint or provide information on any problem which affects the interest of CFi to the C/S council (article 13) or in the case of urgency and need, request assistance for law enforcement (article 11).

However, there is less clarity in many of the fisheries instruments on how sub-national levels including the C/S council should engage in fisheries management, particularly when referring to the provisions of the organic law. Article 20 of the prakas on Guideline for Community Fisheries requires CFi to secure a signature from the C/S chief on their agreement with the local authority as a witness only. In fact, the CFDD requires that any application for a CFi registration receive an endorsement from its local authority, the most appropriate being the C/S council. However, the provision in article 6 and 15 of the sub-decree on Community Fisheries Management does not create a clear organisational structure that encourages the CFi to operate under the overall guidance of the C/S council. It only supports collaboration with, or participation in, the establishment of CFi and CFi committees. In many cases the C/S council does not understand its role in fisheries management, and in others, the C/S council may have other interests taking precedence (Delaney 2006).
Furthermore, despite local community groups being responsible for CFi management actions, they ultimately report to the FiA, which can terminate its endorsement of a particular group if it finds that the group fails to comply with the rules for CFi. As the CFi organizations are not integrated within the local government structure, the C/S councils have no formal oversight authority and do not always share in the benefits generated from fisheries management by community groups (Kurien et al. 2006a). Nevertheless there is a strong need for CFi to operate within the sphere of the C/S council for them to be sustainable and effective. This is especially true since decentralised commune governance is considered to provide an environment for institutionalised local participation and to promote a culture of accountability.

Some successful examples where C/S councils are represented in CFi have been documented. In Koh Sneng, Stung Treng province, the C/S council has been involved in CFi management more than the provincial fisheries office in support for patrolling, monitoring fishing activities, and mediation in fisheries issues. In Peam Krasaop, Koh Kong province, the commune chief is the CFi committee head, who has the leadership and continued support of sectoral agencies, provincial authorities and international organisations. However, there is still a lack of clarity on how to coordinate these efforts with the sub-national fisheries agencies.

**POTENTIAL FOR INCLUSIVE AND DECENTRALISED MANAGEMENT OF FISHERIES**

Fishing grounds, as defined in articles 8 of the new fisheries law, are found in many different aquatic ecosystems. Large rivers, lakes, and floodplains (on which other sectors, eg transport, agriculture, tourism and industry are also dependent), are not the only fishing grounds. Small water channels, ponds, and waterholes are also places where small fish, frogs, and insects are harvested for household subsistence.

The productivity of these fisheries is interlinked with, and dependent upon, other systems and sectors. Land and water are used in a number of ways for a range of products and services. As a result, the FiA is not the only agency dealing with aquatic resources or even fisheries. A number of functions related to the production of fish are heavily impacted by activities carried out by agencies outside fisheries, eg irrigation schemes and dams for hydro-electricity; therefore a coordinated and multidisciplinary approach to addressing aquatic resources is essential.
Aquatic resource management is more than fishery management and involves the consideration of other sectoral aspects, for example pollution and the resultant quality. At the same time, fishery management is more than the management of fish production; it also includes the protection of ecosystems that form the basis for fish productivity and other economic and social benefits (Van Acker 2005). There is a need for integrated management to coordinate these multiple uses and concerns, for which fisheries may or may not be seen as a priority.

Fish are not the only aquatic resource that relies on the environment for its productivity and in fact article 4 of the new fisheries law defines fisheries resources as including both living and non-living organisms such as fish, molluscs, amphibians, insects, reptiles, mammals and other vertebrates including the plankton, algae, sea grasses, coral, and flooded and mangrove forests. Non-living components are not defined, though. The fishing grounds themselves also contain many small areas of less significance for commercial fisheries or for conservation and thus may not require supervision from the FiA. But these would still receive benefit from local management initiatives. The local resources in this case may be more effectively and appropriately managed by CFi.

Kurien et al. (2006b) illustrates the impacts of CFi on fishing, the floodplain environments, and fish migration that form important variables for fish production in the Tonle Sap Lake. Therefore decisions and management of fisheries at the local level can have strong implications for productivity and ultimately the sustainability of the fisheries resources. Intervening in the micro ecosystems will provide many new insights for both community and researchers and provide an opportunity of new learning for both (Kurien et al. 2006b). While fishing grounds are defined to include floodplains, part of them fall under the private domain including state private and private sector management regimes. Community management under these property regimes is not likely to be effective or even feasible in certain areas without the collaboration of these landholders.

C/S councils are mandated to manage natural resources within their geographical jurisdiction and the organic law provides the basis for a review of the existing policy and legislation to implement the decentralization agenda through decentralization of tasks, resources, and responsibility to the lowest levels possible. Where involvement of the C/S council is considered
beneficial and effective in managing resources in local areas, the current reform provides not only the basis for a reallocation of roles and responsibilities but also the financial resources necessary to undertake their allotted tasks.

The implementation of a Natural Resource and Environmental Management (NREM) sub-programme, under the past Seila and current Project to Support Democratic Development through Decentralisation and De-concentration (PSDD) to support C/S councils, has highlighted an increasing demand for funding to support the fisheries component which includes the CFi work within the larger commune planning process. The proposed activities relevant to CFi and fisheries overall, submitted in 2005 for funding through local planning process to the Seila program as reflected in Table 2, are substantial.

**Table 2: List of fisheries related proposals submitted in 2005 for support from C/S Investment Fund**

<table>
<thead>
<tr>
<th>Category of proposals</th>
<th>Number of proposals</th>
<th>Number of communes submitting the proposals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengthening CFi</td>
<td>415</td>
<td>134</td>
</tr>
<tr>
<td>Fisheries resource protection</td>
<td>6980</td>
<td>1043</td>
</tr>
<tr>
<td>Fish farming</td>
<td>14259</td>
<td>775</td>
</tr>
<tr>
<td>Other NREM projects that also include fisheries aspects</td>
<td>1079</td>
<td>266</td>
</tr>
<tr>
<td>Total NREM project proposals</td>
<td>22,733</td>
<td>2,218</td>
</tr>
</tbody>
</table>

Source: Adapted from Seila’s CDPD 2005

This increasing number of requests and the resultant engagement of players other than officials from the FiA in the provision of services are influenced by the shortage of funding available through the sector from the national level. In contrast, there has been an increasing allocation of resources directly through the decentralised channel to the commune investment plans and other local initiatives. As can be illustrated by the number of projects funded by Seila in 2004-06, 317 projects are directly relevant to the fisheries sector, 135 were implemented either by the C/S councils alone or in collaboration with community based organisations, and 182 were implemented by fisheries offices along with other provincial line departments.
In terms of funding, C/S councils have their budget, which helps in solving part of the financial capacity problem. A portion of this budget could be allocated to CFi as a part of their mandate to protect and conserve the environment and natural resources. In this regard, however, further capacity building (knowledge and communication) of C/S councils and CFi members is needed to educate them about this potential (Delaney 2006). Already the amount allocated has increased from USD 32,132 (all from C/S Investment Fund) in 2004 to USD 69,265 (USD 35,300 from C/S Investment Fund) in 2005 and USD 257,525 (USD 102,450 from C/S Investment Fund) in 2006.

**CONCLUSIONS AND RECOMMENDATIONS**

It is obvious that greater efforts have been made to prepare for delegation and devolution of authority through a vertical line from the FiA to local levels. A more comprehensive legal, planning and management framework of the sector has been put in place in recent years. This provides a basis for identifying links with other sectors and other actors who can play a role in the fisheries sector. However, local authorities and councils remain largely unaware of it. Awareness raising about the recently defined roles of relevant stakeholders, therefore, needs to be strengthened in more effective ways.

Although there is increasing recognition in the fisheries legal instrument of the role of sub-national authority in fisheries community management, for example district and commune authority in solving conflict in CFi, how these authorities will be engaged in the fisheries management overall remain unclear. Local authority involvement has now been encouraged mainly through a form of collaboration but not leadership role that may be needed to secure effective local resource planning and management. The effort currently to strengthen the fisheries institution down to the very local levels reinforces a vertical line of administration. However, this means that there is little need or incentive for local councils to play a role in fisheries management.

More clearly defined functions and responsibilities for local councils in fisheries management overall will be defined by NCSDD. It is too early to say how and what functions and responsibilities including resources would be reallocated to the sub-national level. As the organic law articulates, current functions of the
local FiA may be compromised if sub-national levels are found to be inefficient and ineffective. Yet, it is imperative for the reallocation procedures to take place as it is part of the nation wide reform process. It may be advantageous for the FiA to be prepared for such a review and reallocation of functions so that its capacity building effort now for the local level can be more focused. The FiAs should be prepared to take part in the NCSDD or one of its sub-committees to ensure that the issues related to functions and responsibilities reallocation to local levels are appropriately addressed.

By enhancing engagement in the existing mechanism in place at sub-national levels, such as the PRDC and commune planning process, an assessment can be made about what capacity is in place and readily available within the sub-national councils and authorities and what kind of functions and responsibilities they can take on and that should be decentralised. By doing this, there is also an opportunity to make use of the outcome from current efforts of devolution of authority within the sector and also secure visibility of the effort at the local levels. This will also strengthen cooperation with local authorities.

As Fisheries, along with other sectors, remain on a long road of reform, capacity at local levels, including technical and institutional capacity, remains a challenge. The current planning and management process appears centralised and top down, although it is argued that, as the reform process goes along and the local capacity is strengthened, this will even out. In fact, more attention has now been paid to strengthening capacity at local level through a joint effort by both government and donors by direct channelling of funding to appropriate levels. Institutional capacity takes a longer time and is more difficult to build.

The application of various models of devolution of authority and management of a particular resource to local level may cause confusion for local players in taking appropriate actions, at least at the present time. Difficulties remain over how these actions can be realized in the face of limited capacity at the local level to take up these new roles and responsibilities. Therefore, there is a strong need for clarity on roles and responsibilities in addition to support in building local capacity in order to be able to implement them. Nevertheless, it is critical that these capacity needs should not be seen as a barrier for moving decentralisation forward; rather the latter should provide an imperative for local capacity development.
Under the new decentralised regime, the local FiA may need to perform a role in service provision to the local councils in addition to its regulatory role in order to assist local councils with taking up the new functions and responsibilities. In all circumstances local councils’ capacity is expected to lag behind, as their members are normally elected for only a three year term. For the local FiA to be able to deliver such services, again its capacity building effort has to focus more on the areas that are less likely to be effectively played by, or available from, civil society. Tasks will have to be effectively and efficiently performed. The local FiA has to have a level playing field with other service providers if it is to be competitive. There is also a need for independent review of the performance of all players in fisheries resource management, particularly at local levels.
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Chapter 15
Decentralization in Wetlands Resource Management: Process, Experience and Lessons Learned by the Wetlands Alliance in Northeast Cambodia

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This paper presents a new approach of building local capacity of local partners by mainstreaming the supported activities within the local and sectoral planning initiatives. The paper describes a Wetlands Alliance (WA) intervention approach which aims to address wetlands and aquatic resources degradation in relation to cross sectoral issues including fisheries, riparian forest/vegetation, agriculture, land management, environment, livelihood development, and tourism. The results illustrate that overall this approach contributed to strengthening the decentralization process in Cambodia through capacity building, resources and technical support, and providing full ownership to local partners for implementation of their activities. The research highlights that the WA process is designed with an adaptive management approach that responds to the needs of local partners and the issues they face through consultation and implementation. In addition, the paper provides a number of recommendations to further enhance the approach such as establishing a monitoring and evaluation system for WA local partners as well as developing guidelines for improving the quality of reporting.

BACKGROUND

Four development partners have joined forces in an alliance to work towards a common approach to build the necessary skills to ensure that wetland ecosystems and aquatic resources are used in a more sustainable way for

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the benefit of the poor whose livelihoods and food security depend on them. These partners include the Asian Institute of Technology (AIT), the Coastal Resources Institute (CORIN) of the Prince of Songkla University, the World Fish Center, and the Living Mekong Programme of the WWF. The Wetlands Alliance (WA) brings together the strengths and expertise of these institutions collectively known for their work in conservation, development, education, training and research (Wetlands Alliance Brochure 2006).

The Alliance aims to help local governments, NGOs, community networks, and associations make and maintain changes in their practices that will improve the livelihoods and food security of the region’s rural and peri-urban poor through sustainable management of wetlands and aquatic resources. With urban growth, more and more people from rural areas come to find jobs in the city, but mostly end up living on the outskirts, frequently in slums, while others become part of the urban area as city expands. The Alliance works in some of the poorest areas in the Mekong Region including those with low human population densities and high biodiversity values that provide food, medicine, building materials and income, as well as spiritual, religious, aesthetic and recreational benefits (Wetlands Alliance Brochure 2006).

In NE Cambodia, the WA has been working in Kratie and Stung Treng provinces since 2006, aiming to strengthen capacity of local partners to improve sustainable management of

5 The project is implemented in four countries of the Lower Mekong, ie Lao, Cambodia, Thailand and Vietnam.
wetlands and livelihood for the poor living around wetlands. Key components of the programme include building local partners' capacity for supporting Community Fisheries, protecting riparian vegetation, improving agricultural yield while minimising the use of chemicals, and improving environmental impact assessments for activities affecting livelihoods of the people dependent on aquatic resources (Wetlands Alliance Work Plan for NE Cambodia 2006).

SCOPE, OBJECTIVES AND RESEARCH QUESTIONS

Although the WA project has a common bottom up and demand driven principle, the way it approaches implementation at each pilot site is different, even in the same country. Therefore, the paper focuses particularly on the processes that take place only in NE Cambodia. They include consultation in the planning and implementation, backstopping, and lessons learned. This paper illustrates a WA intervention approach aiming to address wetlands and aquatic resources degradation in relation to cross-sectoral issues including fisheries, riparian forest/vegetation, agriculture, land management, environment, livelihood development, and tourism. These issues are recognised by the WA as a way to address sustainable wetlands and aquatic resources management in the area.

The paper presents an approach to building capacity of local partners in NE Cambodia to support sustainable wetlands management through a decentralization process for the benefit of the poor. It is the intent of the paper to provide an answer to questions about the process and approach used by the WA in NE Cambodia, and how the approach and process contribute to the decentralization process in natural resources management, especially wetlands and water resources management in Cambodia. The paper does not provide depth analysis. The paper aims to explain the way the WA is working specifically in Kratie.

METHODOLOGIES

The paper is based on a review of existing information and observation made during consultation by the WA in respect of NE Cambodia, as well as on experiences gleaned through our engagement in most parts of the process. The key supporting references include WA launching documents, selected information collected during WA pilot activities, the WA consultation
framework for NE Cambodia, the memorandum of understanding (MoU) between the Wetlands Alliance and the Provincial Rural Development Committee (PRDC), the fisheries policy review and case study, WA reports, and meeting minutes.

**MAJOR FINDINGS**

There are two groups of findings for this paper. Both groups are presenting WA output and pinpointing the WA process.

**Establishing the consultation framework and planning for the WA in NE Cambodia**

After signing the contract between the Swedish International Development Cooperation Agency (Sida) and AIT in April 2006, and after a series of workshops and meetings among the regional partners and with key stakeholders at the national level in the four countries, pilot sites were identified. The initial scoping meetings with key stakeholders were then conducted in Kratie and Stung Treng provinces in May 2006. In the meantime, separate meetings were held with almost all relevant provincial line agencies (except the Department of Industry, Mines and Energy) and local NGOs. In these meetings, the WA was introduced, followed by a discussion focusing on the issues, concerns, and priorities for action of each stakeholder present.

This information was summarized and presented at the next WA Regional Partners meeting in Sihanoukville, when broad plans were agreed upon for implementation of pilot activities and for further consultation at all WA target sites in the four Lower Mekong Basin countries. Kratie and Stung Treng provinces were selected as key target areas for the WA in Cambodia.

As illustrated in figure 1 the WA process in identification of areas for intervention and the way it operates benefit from past experience and present initiatives undertaken by the four regional partners in the region. It also involves a series of consultations with stakeholders to gain a full picture of what has been undertaken by other key players in NE Cambodia. The process is also informed by two pilot activities including a participatory compilation of information on wetlands management and a fisheries sector policy review. Provincial and national stakeholder workshops provide for consolidation and validation of the information generated and as a result of this bottom-up approach a list
of activity groups and a framework plan for NE Cambodia was produced. The plan identifies capacity and resource constraints for which support from the WA is needed.

**Figure 1. NE Cambodia - the WA consultation process (WA consultation framework 2006).**

**Inputs from previous experience and from local partners**

Consultation with participants in past and on-going projects in Stung Treng and Kratie was conducted to gather information through a scoping mission that was completed on 6th May, 2006, to provide the basis for filling the gaps in existing interventions from the perspective of the active players on the ground in the two provinces.

**Participatory compilation of existing information related to wetlands in Kratie and Stung Treng provinces**

Two local partners were engaged to conduct pilot activities in Kratie and Stung Treng to generate information from the existing documented materials including reports and maps relevant to wetlands and aquatic resource management – both from local government agencies and local NGOs, as well as from Ministries and other offices in Phnom Penh, and from selected projects and development partners. The Department of Environment in Stung Treng was engaged to implement the pilot activity in Stung Treng, while in Kratie, Cambodia Rural Development Team (CRDT) a local NGO active
in the province, was engaged, This pilot activity was intended to help clarify key stakeholders’ views on wetland resources, key information about wetland resources, and bottle-necks for local change agents in obtaining necessary information related to wetland resources.

**Draft log frame discussions and interviews**

Building on initial scoping discussion, compilation of previous experiences, Sihanoukville meeting outputs, and initial results from pilot activities, ideas for WA interventions were drafted and circulated for comments. These were then gathered into a single matrix called ‘Issues and log frame analysis for WA NE Cambodia’. This was further discussed in a log-frame planning meeting of key WWF and World Fish staff (on 14th September, 2006, in Phnom Penh) and subsequently integrated into the overall WA Log frame and Work plan in a ‘write-shop’ in Vientiane on 28th and 29th September, 2006, before its submission to Sida on 30th September the same year.

**Reviewing policies and legal frameworks in the fisheries sector relevant to the conservation and wise use of wetlands in Cambodia**

This activity was conducted by the World Fish Center and the WWF in the context of a series of a broader sectoral reviews conducted by MWBP (Mekong Wetlands Biodiversity Programme). This activity provides a better understanding of capacity gaps in implementing policy and regulations related to fisheries. It also contributes to the consultation process for the planning process of the WA.

**Provincial Stakeholder Consultation Workshops**

A provincial stakeholder workshop was conducted in Kratie province on 24th October, 2006, co-hosted by Kratie Provincial Government, with the World Fish Center and WWF representing the WA. The intention of the workshop was to consult with local stakeholders in order to identify the important capacity building activities and to consolidate and provide additional input into the current Log frame and Work plan. The workshop forms part of the participatory, bottom-up approach in which the support from the WA is undertaken at the later stage. More specifically, the objectives of the workshop were (Wetlands Alliance Consultation workshop report in Kratie 2006).
• To share information and experience among different local stakeholders relating to wetlands/aquatic resource management and local livelihoods;
• To exchange ideas about priority issues, threats, and what could/should be done to address them;
• To agree on the important roles of different local stakeholders in the management of wetlands and aquatic resources, and the support that is required of each to play their role more effectively; and
• To discuss and seek comments on a draft log frame.

**National validation with key agencies**

Based on outputs of the workshop, a small team of WA partners conducted the follow-up visits to relevant organizations in order to 1) clarify relevance of workshop outcome to the local situation, and 2) further clarify details of on-going initiatives on which WA activities could build. Relevant organizations at the national level were also consulted in Phnom Penh. Based on the findings from the visits, WA partners discussed areas of intervention in NE Cambodia. As a result of this consultation process, five priority activity group areas were identified (Wetlands Alliance Work Plan and log frame for NE Cambodia 2006).

- Strengthening the capacity of fishery sector agencies and local planning institutions;
- Developing local capacity to conserve riparian, gallery, and island forest and vegetation conservation;
- Developing capacity of WA local partners to respond to changing environments;
- Developing the capacity of provincial departments of agriculture, and rural development NGOs for livelihood improvement
- Developing focal area communications among local partners.
Establishing the local implementation management structure

WA implementation is to support and to integrate within local partners' existing structures. This principle is important since the WA does not aim to create new management structures or other institutional arrangements which would, therefore, exist only for the duration of the project. Rather, the WA approach is to strengthen and make use of the capacity of existing institutional structures by working with, and supporting them. It is the WA’s intention that the process involves local partners taking the lead in overall planning, implementation and coordination, while WA regional partners act primarily to provide backstopping including arranging for appropriate technical inputs and expert advice, sharing lessons learned, and examples of best practice as requested by the local partners.
In the provinces, the WA foresees an important role for the Provincial Rural Development Committee (PRDC) to play in providing policy guidance to the programme during its implementation period. Therefore the WA tries to ensure that its work plan and activities in the province will be informed through PRDC quarterly meetings. At these, the project work plan and achievements will be presented to the PRDC and suggestions and recommendations by the PRDC will be harmonized in the WA work plan for further action.

After activity groups were identified for NE Cambodia, exploration of options for WA implementation was made through consultation with relevant stakeholders because the WA wanted to ensure that the management process was agreed by local partners. Since PRDC provides a platform for coordination at the provincial level, it was agreed that it also has a role to play in coordinating work plans by provincial sectoral agencies for WA support. As for provincial fisheries, it was felt that strengthened vertical line coordination is needed, as recent fisheries institutional reform has just been put in place. For local NGOs, a direct communication with WA regional partners can be made, provided that the information on their work plans is shared with the provincial coordination mechanism.

**Role of local partners**

Several key local partners have been involved with WA implementation in NE Cambodia. These local partners include: Kratie Provincial Rural Development Committee (PRDC), Kratie Department of Environment, Kratie Department of Agriculture, Kratie Department of Land Management, Urban Planning, Construction and Cadastre, Kratie Fishery Administration Cantonment, and local NGOs such as Cambodian Rural Development Team (CRDT), Community Economic Development (CED), and Culture and Environment Preservation Association (CEPA). Also, the national FiA and its selected divisions were engaged.

Each local partner playing a role in the implementation of the WA approach signed an agreement to conduct project implementation activities. In general they have the responsibility to:

- Assign a focal point person for coordination and facilitation of WA work;
• Develop a work plan and budget plan;
• Conduct activities and monitoring to ensure their respective plans are achieved;
• Report on activities and financial expenses; and
• Attend meetings conducted for the purpose of the WA activities in their respective provinces.

Planning process

Local partners develop their own work plan and budget plan and submit the plans to the provincial coordinator.

• The provincial coordinator reviews local partners’ work plans and works closely with all local partners until work plans are endorsed by the PRDC;
• Local partners update their respective work plans every six months; and
• WA regional partners provide backstopping upon request from local partners.

Grant agreement

After proposed work plans and budgets are endorsed by the PRDC, each local partner assigns a representative to sign the Grant Agreement with the WA secretary based at AIT. In order for the agreement to be realised, each local partner was advised to open an account with any bank in their province, and furnish the secretariat with their work and financial plans, the norm and standard for financial operation, and reporting format.

Financial disbursement and management

As stated earlier, local partners have to open their own bank accounts at one of their local banks to facilitate transfer of funds from AIT. While administration of financial expenses is conducted by the local partner following the local partner’s norm that forms part of the agreement above, management of funds must follow the rules as set forth in the specific grant agreement between AIT and the local partners.
**Reporting**

Reporting is required on a six monthly basis for both technical and financial expenses. The provincial coordinator has to ensure that a set of reports for all the relevant partners are made available to him for review and for further submission to PRDC for endorsement before they are submitted further to the WA regional partner, and the WA secretariat. These reports will also be sent by local partners to their central level superiors through their own line management reporting system. As for NGO partners, their reports are submitted directly to the WA regional partner, and the WA secretariat. All local partners are required to submit an audited financial report on an annual basis. WA partners will provide backstopping as requested by local partners to ensure that they meet minimum reporting requirements.

**Pinpointing the Wetlands Alliance process**

What has been observed and captured from the WA process in NE Cambodia includes creating a platform to combine the strengths of partners, locally driven processes, supporting existing local management processes, livelihoods focused approaches, and support for Cambodia’s Decentralization and Deconcentration process.

**Creating a platform to combine the strengths of partners**

The WA joins hands to create a platform for combining the strength and expertise of these institutions (conservation, development, education, training and research) to support local level capacity building. The knowledge, skill, and professional expertise of each of the WA regional partners have been utilized to provide backstopping support to WA local partners.

**A locally driven process**

The WA operation is an entirely locally driven process. Consultation, which developed the current activity groups, was facilitated by WA regional partners but the contents of the activity group areas reflect local partners’ perspectives. Based on the activity groups, local partners determine in which areas they will focus their work for every six months, and thus develop their respective work plans, and make requests for backstopping from the regional partners.
Supporting existing local management processes

The WA is building on past investment and local strengths. The WA encourages local partners to use existing local management processes and frameworks. This includes integrating WA activities into their overall planning processes, encouraging the application of their own cost norms for implementing WA supported activities, and decentralising financial management directly under local partners using their existing financial rules. Where capacity is weak in existing systems, WA supports the strengthening of management capacity.

Livelihoods focused approach

The WA also focuses on livelihood development through local partner initiatives. The main objective of the WA is improving local capacity for livelihoods improvement and wetland management. It complements many existing WA regional partners’ projects working with conservation goals.

Support for Cambodia’s Decentralization and Deconcentration process

The Royal Government of Cambodia has established a National Committee for Management of Decentralization and Deconcentration Reform (NCDD) to support the decentralization and deconcentration for empowerment, the transferral of responsibility, and for development at sub-national levels (provincial, district, commune/sangkat). The decentralization and deconcentration process is considered by the Cambodian Government to have three principle objectives: to promote democracy and good governance at local level, to promote participation in local social and economic development, and to contribute to the reduction of poverty.

In May 2008, the organic law on Sub-national Administration was adopted, providing more of an opportunity for sub-national governments to be more accountable and to participate in the whole management process of local levels, including natural resource management. In principle, the WA is trying to support local players who are working with local communities in addressing wetlands and aquatic resources issues. In Kratie, the WA mainstreams its supported activities under the Decentralization and Deconcentration system through the Provincial Rural Development Committee/ExCom (MoU between WA and PRDC/Excom Kratie of NCDD 2007). Currently, the WA is providing technical and financial support for
local governments and NGOs in Kratie to improving their capacity and to provide a better service for local communities.

Whatever the process of Decentralization and Deconcentration reform will be in the future, the WA will be able to adapt to the reform process because it works on, and with, the existing system.

**KEY LESSONS LEARNT**

**Extend and strengthen collaboration and develop links between partners**

The WA supports a process and mechanism for working together. Local and regional partners are working together in terms of coordination, communication, and backstopping. However, ‘joint management’ of programmes and establishing a mechanism for working together from the start can provide a relatively good opportunity for combining experience and expertise to support local partners. The WA approach was testing and exploring ways of working together. The WA process is also promoting the fact that learning and sharing activities is extremely useful for team building and for developing the staff capacity of WA’s partners.

**Change of perception towards local needs**

Very often development partners and project workers think they know what the best is for local partners and make assumptions; however these assumptions in many cases are untrue. The WA approach makes all regional partners change their way of working with their local partners (WWF Self-Assessment results for working with WA, 2008). Local partners must be provided with full ownership and responsibility to address their needs. Regional partners often play the role of facilitators.

**Promote sustainability by building on existing programmes and projects**

Building on past investment and local strength, WA implementation was made through existing structures within local partners. By using, and to certain extent influencing, the existing structure, it proved more likely that a more effective and sustainable system would emerge as a result. Moreover, this did not add additional agenda items or burdens to the already many mechanisms/committees in place.
However, the drawback could be that additional workload has to be shouldered by personnel in the roles they had that were relevant to WA support activities. This is because the WA wants to engage existing staff so they can learn from the process and remain there when its intervention is phased out. The other potential constraint lies more with the existing system in which the norm and payment rate apply. Since the current norm adopted by the NCDD is not flexible enough, this does not necessarily generate interest and sufficient satisfaction among those who apparently have to live up with it.

**CONCLUSION AND RECOMMENDATIONS**

**Conclusion**

The process of WA development and implementation amongst core partners draws on a variety of different experiences, skills, and approaches to wetlands management that helps improve the capacity of staff of the WA regional and local partners. The WA process is designed with an adaptive management approach that responds to the needs of local partners.

This approach contributed to strengthening the decentralization process in Cambodia through capacity building, resources and technical support, and providing full ownership to local partners for implementation of their activities. The WA process is designed with an adaptive management approach that responds to the needs of local partners and the issues they face through consultation and implementation.
**Recommendations**

In order to improve the existing WA approach a set of recommendations is hereby made:

- Coordination and communication among WA regional partners can be improved through, for example, joint planning and backstopping to strengthen information sharing and backstopping support services for WA local partners;

- The communication and learning process among WA local partners at each site should be promoted;

- Ownership of fishery cantonment planning and implementation with line management should be made, for example, through planning between Kratie fishery cantonment and the FiA at the national level;

- A Monitoring and Evaluation system should be established for WA local partners as an immediate action to track progress and see if there is a need for revision in the approach;

- Local partners should be assisted with guidelines for improving their reporting quality;

- Guidelines and criteria for reviewing local partners' work plans should be established and the approval of local partners' work plans should be accelerated;

- Local partners should be assisted in developing indicators and means to measure impacts on poverty reduction and other aspects.
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Chapter 16
How do Villagers Nurture Good Governance?
The Meaningful Contribution of Salaphoum at Local Level

By: Phan Sothea\(^1\) and Mark Dubois\(^2\)

This paper draws on the experience of local people conducting their own research according to their own agenda in Northeast Cambodia. It aims to extract experiences and lessons from locally-driven processes and to analyze how local knowledge could be considered, interpreted and applied in local governance.

INTRODUCTION

Democracy puts citizens at the center. The major promise of democratic governance is that by building civic engagement, people whose lives are affected by a decision are part of the process of arriving at that decision (Ismael E. Trasmonte 2004). For this reason, if people leave government officials to drive society, based on their own thinking, this will not always reflect the will and interest of people. Sometimes, this kind of governance may particularly not work for the poor. People must cry for attention – declaring grievances and demanding interventions. Otherwise their views on public issues will not be heard. Participation is the fundamental right of all people but it does not happen automatically. Although spaces for people participation have opened up, these opportunities are not fully used: catalysts and promoters are required.

Popular participation and interaction are essential if a citizen-centric view of democratic performance is to be generated and infused to foster a democratic process of governance and to put pressure on the government to be accountable to people’s needs and priorities. With people

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participation, commune councils (CCs) can develop and implement more effective solutions to governance and development issues since people will bring their knowledge, expertise and opinions into the process of local governance.

Unfortunately, local authorities seem not to realize that a lot of good lessons and experiences that they could learn, are available out there in the villages. There has been less interest than there could have been in how local people can use and develop their own knowledge as part of local governance practice, or of the implications of such a degree of ownership for the role of local decision-makers. When people search for governance models, lessons or best practice they always tend to put a premium on international experiences or to value high level practices and ignore the surrounding insights within the villages. Local wisdom and contributions are sometimes overlooked.

**BACKGROUND**

Salaphoum is a process of village-led action research initiated by local villagers in Stung Treng province, Northeast Cambodia, where villagers own and run the whole circle of its work. It is not a building or government administrative unit below the commune level, as may be understood in local language.
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It has been playing a critical role in running local activities through its research process that generates lessons. Since 2005, village researchers have been undertaking research activities at all stages of the process - from identifying research topics, carrying out field observation and collecting data, to documenting local knowledge, and presenting findings for validation and sharing. The initiative has been facilitated by the Cultural and Environmental Preservation Association (CEPA), a local NGO active in participatory resource conservation in the area. Research assistants (RAs) from CEPA provide logistical and facilitation support to villagers. In 2007, the Wetlands Alliance and the WorldFish Center provided backstopping support and facilitated financial assistance to reinvigorate the process, carrying on after the cessation of the Mekong Wetlands Biodiversity Conservation and Sustainable Use Programme (MWBP).

The research primarily focused on four villages - namely Koh Lngor, Voeun Sean, Koh Sneng and Koh Khorn Din – located in a Ramsar site along the Mekong River in Stung Treng province. This is an area endowed with diverse habitats such as deep pools, flooded forests, rocky outcrops, caves, and rapids serving as breeding and feeding grounds for highly valuable biodiversity such as birds and fish, particularly brood fish and plants that support human and animal life. Flourishing, thanks to the lessons learned and the experiences gained, the work has now been expanded to around ten villages along the same section of the river and some more villages downstream in the neighbouring province of Kratie and to the coastal area.

Salaphoum has now became a popular example of villagers dynamic in research on local issues who contribute to local governance. Experience and lessons ensuing from the Salaphoum process must be highlighted and disseminated to underline how the recognition of local knowledge enhances good governance.

**SCOPE, OBJECTIVES AND RESEARCH QUESTIONS**

The study will focus on experiences of Salaphoum in several villages in Stung Treng, Northeast Cambodia. Its intention is to strengthen, document and communicate findings and existing local knowledge about natural resources, research processes and lessons learnt among researchers, villagers, communities, service providers and relevant institutions. It also aims to show
how this forms the basis for decision-making related to local governance, livelihoods and development.

The research centred on fish ecology and diversity, aquatic habitats, local livelihoods and medicinal plants – areas in which, by consolidating their knowledge, people could learn from each other and express local needs. However, its impact and influence spreads beyond this. Its process has demonstrated excellent practice of good democratic governance. It develops and strengthens the capacity of local people in different villages to engage directly in governance issues and make a valuable contribution to the debate.

Generally, this paper will highlight experiences and lessons relating to how villagers nurture local governance through a research process and the communication of their knowledge. The discussion analyzes how this research process has generated lessons for local governance. Then the discourse moves on to how local knowledge can be interpreted and then used by local leaders and decision-makers. It will begin with an inquiry of what the special characteristics of Salaphoum are, why it is more special than others, how it empowers and engages people, and the potential local knowledge has to foster effective work within the commune councils to enhance local governance, the management of local resources and change. It will also examine how these processes and the harnessing of local capacity can contribute to successful decentralization.

**Methodologies**

The methods required a review of records, and interviews with village researchers and commune council members. Every step of the Salaphoum process was scrutinized, the key learning and influences were highlighted. The aim was to identify key elements of good governance practices throughout the process. The process of Salaphoum research itself draws much from the approach of cooperative enquiry. That is, people researching a topic through their own experience of it through a series of cycles where they move between seven major steps. In each step there are exercises of democratic governance principles which could be drawn out as lessons for CCs and other local decision-makers. The paper concludes with a discussion of the implications of local people taking ownership of their knowledge, its interpretation and application.
MAJOR FINDINGS

Special characteristics of Salaphoum

As villagers felt that it was hard to maintain benefits derived from local resources, this in itself was a motivating factor. They were willing to compile, construct and communicate local knowledge about the resources upon which their livelihoods depend, particularly given the widespread perception that many of these resources are in decline (Kosal Mam et al. 2008). The livelihoods of villagers had become impoverished and their social wellbeing had been affected by the degradation of natural resources and economic, social and environmental change. As a result, villagers undertook their own efforts to collate and present knowledge. ‘We think we ought to collate the information ourselves, as outsiders will not understand our way of life. We are the ones directly affected by change in local resources since they have been destroyed’ (Heng Thorn, a Salaphoum researcher of Koh Korndin).
Salaphoum is seen as the sole participatory approach in local resources governance in the Ramsar site of Northeast Cambodia. An important characteristic of this process is that it is initiated, led, and owned by local people on a voluntary basis. It promotes local leadership and representation with a clear process of democratic decision making. Villagers lead the process and make decisions based on a principle of consensus. They assign a thematic group leader to coordinate and lead all researchers in each small group for data collection and present findings to network meetings.

The process itself enables learning to be gained from many practical aspects of exercises including the measurement of environmental and biological parameters, facilitating and leading certain research activities and documenting research processes and their findings. People consider their work as a learning process because it provides an opportunity to exchange the knowledge that has emerged from the work they have done. They have strengthened their existing knowledge through learning new things including fish and their relationship with specific habitats, and environmental issues such as the prevalence of algae in small water channels or in waterlogged areas in many places on the Mekong river bed, particularly during the low water season.

This has really empowered villagers to take crucial roles in the process and to negotiate for better decision-making. They have, for instance, changed from being reluctant to grasp the microphone during meetings. People have embraced the process as part of their lives and actively communicate through livelihood activities and villages events. Villagers who have not yet participated in the process are convinced of the need to protect local resources and the environment. Aside from ordinary life, villagers have exercised a citizenship role.

This process could be understood as a whirlwind of change, through which willpower and appreciation of benefits have mobilized local contributions and efforts by villagers, local authorities and relevant agencies. It has direct influence on village chiefs, commune councilors, members of Community Fishery initiatives, and some other local authorities since they are involved as researchers in the process. Another good thing about Salaphoum is that it can harmonize technical support from a variety of institutions surrounding the villages including both government agencies and civil society organizations:
people use the two as channels for expressing their concerns and acquiring partnerships for solutions to facilitate better governance of resources and local affairs. The massive mobilization throughout the process and during the decision-making is seen as an exercise in direct democracy. This is the most desirable, high level democratic function of society, and is found in very few places in the world.

**How Salaphoum exercises good governance principles**

From this section onwards, the paper will discuss the relationship between Salaphoum practice and good governance principles. It will highlight how the actions taken by village researchers match or contribute towards the strengthening of the principles. A short description of each principle is also given to mirror the practice of Salaphoum.

**Figure 1. Characteristics of good governance**

Good governance has eight major characteristics. It is participatory, consensus oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive and follows the rule of law. It ensures that corruption is minimized, the views of minorities are taken into account and that the voices of the most vulnerable in society are heard in decision-making. It is also responsive to the present and future needs of society. (Definition by UN-ESCAP, www.unescap.org)

**Participation:** Participation by both men and women is a key cornerstone of good governance. It could be either direct or through legitimate intermediate institutions or representatives. Participation needs to be informed and organized. This means freedom of association and expression on the one hand and an organized civil society on the other.

A participatory approach is commonly seen in every step throughout the process of Salaphoum. It plays a pivotal role in mobilizing people participation around local issues and drives collective action among villagers. Participation
is a core value among all villagers. The participatory approach of this process happens not only within the villages but also at all levels where information generated by village researchers is brought to consult, verify, consolidate and disseminate.

It encourages local people to firmly take up their roles and responsibilities in the research agenda in participatory ways. For instance, villagers identified targeted villages, topics, types of information, research plans and research team leaders, and assigned thematic groups and conducted the research together. The consolidation and decision about research results is also made collectively. Even non-researchers were asked to provide opinions during discussion. Aside from the participation of local villagers, the involvement of officials from other agencies was attracted through district, provincial, regional and international seminars and forums. Through this, the contributions of relevant agencies are counted and collaboration is strengthened.

**Rule of law:** Good governance requires fair legal frameworks that are enforced impartially. It also requires full protection of human rights, particularly those of minorities. Impartial enforcement of laws requires an independent judiciary and an impartial and incorruptible police force. It requires both punishment and motivation approaches and people participation.

It is clear that Salaphoum helps to strengthen the rule of law. One of the most motivating factors of this initiative is the protection of local resources. Thus, this endeavor supports legally sustainable management and the use of resources but is opposed to illegal actions. Its campaigns are conducted to stop unlawful activities against local resources that undermine livelihoods and to compel all villagers and others to act in lawful ways that acknowledge the value of resources.

Salaphoum has succeeded in changing the behaviors and practice of local fisherman. Most people in the target villages - both researchers and non-researchers – have stopped committing illegal actions and turned to the use of traditional fishing gears that are less harmful to the resources. People who used to use dynamite in their fishing activities, and electro-fishing, have now become researchers and conservationists. The research itself has documented the customary rules and cultural practices, which have been
applied for generations, in order to remind people about, and persuade them to obey these good practices. Therefore, the process has supported not just the enforcement of laws imposed by national level government, but also local cultural norms.

The agenda of law enforcement is put on the table which researchers, villagers, commune councils, local police and river rangers, fisheries community members, the fishery administration and environment agencies sit around. This involves all people, regardless of their social status, and demonstrates an impartial respect for the law. Researchers are able to gain cooperation from local police and commune councils to crack down on illegal activity, and to join awareness campaigns in target villages. People have also proposed some fish habitats and deep pools for co-management. In this respect, researchers have started discussing and organizing themselves for patrolling and for mapping management plans for the preservation if their resources. Different approaches have been taken by Salaphoum to ensure the rule of law in this particular, highly relevant aspect.

**Transparency:** Transparency means that decisions taken and their enforcement are done in a manner that follows rules and regulations. It also means that information is freely available and directly accessible to the media and those who will be affected by such decisions and their enforcement. Enough information is provided in easy understandable forms.

It is really an open platform. There are no hidden agendas or secret actions behind the process. From the early planning to the end stages, all researchers are well informed about the processes and steps they have decided upon and planned. Then they take action and count the results together. Information and findings are widely shared among all researchers, villagers and officials of relevant agencies such as the fisheries administration, local authority, police and NGOs.

The research results are written and presented in easy-to-understand format to enable a larger population - villagers and even the illiterate - to understand, participate in, and be able to use the information. For example, a record is made in the local languages of Khmer and Lao with illustrations simple enough for comprehension by local people. Research results and information are
always brought to the table for open discussion and collective decision-making so that they are able to generate more interest and insight for an improved process and findings of the research. Village researchers are friendly, and willing to host visitors, scientists, media representatives and researchers from universities. They are frank in sharing information with them. The information-disclosed principles are well applied within the Salaphoum process. This is one of the most important aspects of transparency.

**Responsiveness:** Good governance requires that institutions and processes try to equally serve all stakeholders without discrimination and within a reasonable timeframe and with good quality. It promotes wellbeing of the citizenry in a manner that is equitable. It refers to actions taken to meet the needs and demands of people.

The research subjects and information that villagers generated were really relevant and matched local needs and livelihood requirements. While fish are the resource that most villagers depend on for their livelihoods, the research on medicinal plants was also important since villagers lacked knowledge about healthcare and sanitation and suffered from illness. There was, however, a lack of health services as the villages are located on a remote island. Furthermore, people could not afford to buy medicine or to send patients to hospital.

Through Salaphoum people felt that their knowledge about sanitation and hygiene improved, that they were able to prepare food safely and hygienically and that they were more knowledgeable about food and fish processing for long term consumption, including prahok, fermented fish, salted fish and smoked fish. They were also better informed about the use of sub-forest products including vegetables and medicinal plants. They understood the nutritional aspects of vegetables and fruits and how these can improve people’s health. Traditional treatment using medicinal plants can cut the cost of family health expenditure, and this has enabled villagers to generate income by selling the products to market in and outside the villages. This allows villagers, step-by-step, to move out of poverty. This learning process has helped to improve relationships between local communities and natural resources. This indicated that the commitment inspired by Salaphoum really responded to the basic needs and concerns of local people.
**Consensus oriented:** There are several actors and as many viewpoints in a given society. Good governance requires mediation of the differences to reach a broad consensus that fits the best interest of the whole community and a broad and long-term perspective on how to achieve the goals. This can only result from an understanding of the historical, cultural and social contexts of a given society or community.

Discussion about research findings sometimes generated disagreement among researchers or group members. When consensus was not reached, due to different opinions and experiences, issues were brought to all-villages network meetings. Ultimately, decisions were made by majority vote after they had been debated. All involved were encouraged to take part in discussions. But while the majority vote determined decision-making, minority opinion was also recorded. This democratic approach ensured effective mediation and an appreciation of differences.

Village elders who have substantial knowledge and experience were also invited to provide inputs to the discussion. Through communal work, villagers strengthened links within and across villages. The network connected citizens, public officials, NGOs, research assistants and specialized agencies (including fisheries and the environment), who were always invited to participate, and were consulted about the results of research. This means that Salaphoum is not just seeking consensus among researchers and villagers but also among a wide range of other stakeholders. The consensus in Salaphoum is drawn from various views and perspectives - practical, cultural, legal and scientific - so that processes and final decisions are based on the comments of diverse groups and institutions.

**Equity and inclusiveness:** A society’s well-being depends on ensuring that all have a stake in it and do not feel excluded from the mainstream of society. It requires all groups, but particularly the most vulnerable and minorities, have opportunities to participate, raise issues and needs, be involved in implementation, and obtain reasonable benefits to improve and maintain their wellbeing.

Salaphoum has encouraged women to take action, contribute inputs, discuss and present research findings. For example, in the first workshop to present preliminary findings, no women gave presentations, but in subsequent
workshops more and more women became active. Now, women dominate the meetings and more than 50 percent of meeting time is taken by women elaborating on findings and sharing their inputs. They also show their confidence and courage in expressing opinions.

There was trust and understanding among them, and good collaboration. This included encouragement among the members of the research group, particularly men, who were keen to provide the opportunity for women to take part in research activities as well as in decision making. Villagers, village chiefs and commune council members, fisheries community representatives and village elders were also included in the research team. The involvement of elders encouraged non-researchers to participate and share in the process. During fishing trips or traditional ceremonies, people from neighbouring villages were lobbied to become involved.

During networking meetings, aside from the discussions about research subjects and matters concerning natural resources, villagers shared their experiences in social issues, livelihood activities, and issues of social welfare, including the way they cope with health and illness problems.

They informed each other about the use of medicinal plants and treatment practitioners, where to go when facing illness etc. This stimulated people to become a social protection network among poor families. This local process has really empowered and changed the social status of women. For instance, Ms. Sy Chandon, a researcher from Koh Lngor village, was selected as village chief after she became involved with Salaphoum for a couple years. This is because commune councils observed that she had built her self-confidence and capacity through working with Salaphoum and she became vocal and popular among all.

**Effectiveness and efficiency:** Good governance means that processes and institutions produce high quality results, able to provide maximum benefits that meet the real needs of society while making the best use of resources at their disposal. The concept of efficiency in the context of good governance also covers the sustainable use of natural resources and the protection of the environment.
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It is also considered that an empowering process begins with people understanding their rights and responsibilities to demand responsive governance and insist that government officials act ethically. People are confident enough to organize and take part in the network meetings and group discussions by themselves. "... Salaphoum changed me from a shy person to village-based research instructor in the community", said Mr. Lim Sai, researcher in Koh Sneng.

Salaphoum progressed with a clear segregation of roles and responsibilities within assignments in accordance with the competency of its representatives. Researchers justified their strategy in order to make their work successful. Time flexibility meant that meetings took place mostly during lunch breaks or in the evening. Communication with Buddhist monks and school teachers has facilitated a broader contribution of opinions and knowledge to the research. Network building is a strategy to generate synergy to work together and to build strength to cope with issues and challenges. This has increased the efficacy of the opinions voiced in influencing local decision-makers to take local concerns into account. Researchers have developed their capacity in respect of meeting facilitation at village and commune levels.

**Accountability:** It is a key to good governance. Not only government but also the private sector and civil society must be accountable to the public and to their constituencies. It varies depending on whether decisions or actions taken are internal or external. Institutions are accountable to those who will be affected by their decisions or actions. These cannot be enforced without transparency and the rule of law.

Through Salaphoum, villagers have become more active in participating in and in initiating dialogue relating to development planning in villages and communes, with strong recognition from CCs. Researchers have a strong network with CCs and other sectors since some of the village chiefs, commune councilors, village development committee members, and members of Community Fisheries (CFi) are involved. This makes their contributions to the commune development plan more meaningful.

When villagers’ opinions and demands are considered, and are included as priorities in commune plans, it is clear that these will be more responsive and accountable to their actual needs. Village and commune chiefs take the
opportunity during network meetings to discuss and disseminate information about commune activities and to answer questions raised by researchers. The good relationship among villagers, CCs and sector agencies has enhanced the ability of citizens to move beyond protests towards a better informed, organized and constructive engagement that is more effective in eliciting a positive response from, and accountability among, CCs and other sector governance bodies, including those of fisheries, the environment and health.

**Taking local knowledge into account**

There is an increasing recognition that local knowledge “counts” in the results of the Salaphoum research. It is valued by villagers and local authority representatives, as well as by some fisheries managers at the national level as useful, particularly for CFi management. The research results indicate that local authorities and relevant agencies are now convinced that villagers can act effectively. For instance...

A total of 130 fish species have been identified in four original villages, with detailed information of names and current status included catch, migration, average size, feed, habitats, spawning period and habitats, the gear mostly used for targeting individual species, ways for processing certain species, and price. In addition to fish, 94 plant species were also recorded in Koh Sneng village. Among these, 77 species are used as traditional medicine, 32 species as food, and five species are used as both food and medicine. Furthermore, 23 types of fish habitats have been identified based on their geo-physiological characteristics for both dry and wet seasons. Livelihood practices in relation to farming, fishing, community organisation, population and taboo are documented and different traditions among the villages have been also studied for examples relating to spirit offerings and praying and some to key traditional rules for some fishing grounds including conflict resolution etc.

Villagers’ research results like these can demystify knowledge generation and representation processes that were previously only done for, and by, external researchers. This also affirmed that villagers are quite capable of performing tasks, until proved otherwise, that they can create opportunities for learning, and provide leverage for more informed decisions. This villager-
led movement has already convinced CCs and CFi to take account of the information generated by villagers during the commune development planning process and Community Fisheries management planning.

Oh Svay commune chief Mr. Man Lihor said that the Salaphoum project contributed substantially to developing capacity and awareness in the villages. Nowadays, all the findings from the research are communicated with the commune office and also considered in the commune planning. In fact Si Chandorn, a widow from Veun Sean who did not know much about the resources, has now strengthened her knowledge and personal capacity after joining in the Salaphoum research and in other local initiatives, and has been appointed village head.

KEY LESSONS LEARNT

**Positive changes happened to those involved:** when local people owned the agendas they really committed to solutions agreed among all. They completed the research circle, abandoned illegal practices and became resource-friendly users. Before the Salaphoum started, people were feeling shy in meetings and dared not express their opinions. But, over time, both learning and courage were generated. People became more courageous in articulating their views, and became familiar with basic research, facilitation and communication skills. They were able to discuss issues with commune councils and competent agencies.

Researchers changed their behaviour and perceptions and were able to give more informed consideration to decision-making. Their interest in protecting resources in their village was also developed. They were also willing to communicate knowledge with others within and outside of their villages. Confidence and trust were built among villagers and local authority representatives. They felt proud of their findings and believed that everyone has an equal opportunity to express arguments and to raise concerns.

**Appreciation of the process overcame thrust through the challenges:** there were challenges that obstructed the process including geographical locations, polarized opinions which hampered attempts to reach agreement, overlapping schedules, lack of means for communication and livelihood hardship etc. However, since the villagers appreciated the value of their
activities, they were determined to overcome these challenges. Local people were still committed to pursuing their research. When people value the common interest, they devote their strengths and resources voluntarily. They always give first priority to, and come to join, collective actions and discussions.

**CONCLUSION AND RECOMMENDATIONS**

Good governance can be achieved if the potential of local knowledge is acknowledged and absorbed into it. This is the reason why CCs provide opportunities for people to engage in meaningful participation. Opportunities should be given to local people to prove that they can do things on their own – that they can collate, document and interpret their own knowledge with only minor incentives. The local knowledge is owned and interpreted by local people but used widely.

Throughout years of experience, researchers have played very important roles through activities including recognizing and documenting local wisdom and best practice. They have created local networks and linked learning to planning structures including CFi and commune plans, and have contributed to popular education and event-based activities. This generates and mainstreams research results into CFi development plans and commune development plans, constituting a process of decentralized and deconcentrated decision-making. Every action is taken by local villagers acting as prime researchers, negotiators and decision makers, confident in presenting their findings to a broader audience.

The process has succeeded in documenting and recognizing local wisdom, the full value of participation, the sense of ownership and good local leadership. Local knowledge has manifested its potential to foster the success of the research process as well as local governance. This has indicated that local wisdom is being increasingly appreciated, recognized and referenced. It has nurtured local initiative, giving greater voice to ordinary citizens and villager groups and enhanced local capacity to engage in village-led action research. There is no doubt that the Salaphoum process has built local capacity to engage in, and be a role model for, good governance at local level.
Through support from the CEPA and the Wetlands Alliance people have empowered themselves to be able to speak out, communicate needs and aspirations with different agencies, and demand services. They have been strongly supported by local authorities and relevant institutions such as the Fisheries Administration, and the Department of Environment. The communication and integration of local knowledge with CCs and sector agencies may serve to harness understanding in both breadth and depth, thereby reinforcing one another, so that decentralized and bottom-up administrative reforms are achieved.

• As the villagers are at the stage of learning-by-doing they need further capacity strengthening in order for them to be able to undertake the research independently and expand activities in other communities. This will require further training for researchers and RAs and the development of awareness and training materials.

• Dissemination and the replication of the Salaphoum research process and method in other villages and among other relevant stakeholders would add to its value and recognition.

• More work is needed to strengthen the credibility and the influence of their research and to expand their research themes to broader, relevant sectors.

• Communication and participation by scientific researchers and resource managers is needed in order to support researchers and consequently to strengthen its potential for scientific exploration on issues identified under the Salaphoum.

• As target areas are located next to the Lao border, some Lao fishermen also fish here, and this may have a detrimental effect on fisheries resources. For example, fishing using Lichip that obstruct fish migration. As Lao is now starting to look at the possibility of developing fishery law, the sharing of knowledge between communities on both sides of the border may contribute significantly to the content of the legal instrument to be developed.
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Chapter 17

Mobilizing Villagers to Stop Illegal Fishing along the Srepok River in Ratanakiri Province

By: Gnui Nang Noy¹, Oeur Il², Hak Sochanny³, and John McAndrew⁴

This chapter is based on research conducted from March to July 2007 by the participants of the Cooperation Committee for Cambodia (CCC) Analyzing Development Issues (ADI) community course with the ADI and 3SPN (3 Rivers Protection Network) teams. Upon realizing that the use of illegal fishing techniques was endemic to the area, this paper describes a participatory action research (PAR) method to mobilize community members to take action against the destructive practices. The research focuses on (1) how can villages develop and implement community action plans to reduce destructive practices? And (2) how can villagers effectively coordinate with commune council and government officials to implement their plans? The research results conclude that villagers need to overcome fear, powerlessness, and confusion to act effectively, which requires ongoing support from each other as well as from outside stakeholder. The results also include the possibility of scaling up the approach within core areas of NGO programming.

BACKGROUND

From March to July 2007 the Cooperation Committee for Cambodia’s Analyzing Development Issues (ADI) Project conducted a community course in Ratanakiri province in partnership with 3SPN (3 Rivers Protection Network). 3SPN is a small Cambodian NGO which builds awareness about the impact of hydroelectric dams constructed upstream of local communities living along the Sesan, the Sekong and the Srepok rivers in northeast Cambodia. The purpose of the course was to build the capacity of NGO fieldworkers to mobilize

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villagers in response to emerging community issues. Acting as the lead NGO, 3SPN helped to coordinate the course fieldwork and to ensure that the community action plans arising from the PAR undertaken in study villages were supported after the training was completed.

During the initial visit to Ratanakiri in February 2007, the ADI team spent a considerable amount of time with the 3SPN staff to identify the key issues to be addressed in the course research. In line with this, the ADI team visited four villages in Chey Ouddom commune in Lumphat district along the Srepok river to learn first hand about issues related to the protection of the river resources. While the communities had suffered flashfloods attributed to the downstream effects of the hydroelectric dam built in Vietnam, the people had yet to link these effects directly to the construction of the dam or to mobilize themselves effectively against the actions of the Vietnamese officials responsible for these discharges. In the four villages visited, the 3SPN staff were in the process of building community awareness about the potential effects of the dam, monitoring water levels, and strengthening the flow of information throughout their networks from village groups to national and international advocacy associations and back down again.

As the ADI team spoke with village communities along the Srepok river, it became clear that protection of the river resources was a local issue as well as a cross-border one. The team learned that the use of illegal fishing techniques was endemic to the area and that this resulted in the decline of fish. If village communities were to meaningfully demand that Vietnamese and Cambodian authorities conserve the river resource then they would have to do the same themselves. Given the time constraints of the research it was decided to focus on the issue of illegal fishing while disseminating information about the dams and building local involvement in the 3SPN network.

**OBJECTIVES**

The participatory action research undertaken in this study focuses on two main questions:

1. How can villagers develop and implement community action plans to reduce destructive fishing practices?
2. How can villagers effectively coordinate with the commune council and government officials to implement their plans?
**RESEARCH METHODS**

The course participants employed PAR to mobilize residents in four villages of Chey Ouddom commune, Lumphat district to take action against destructive fishing practices. PAR is a cyclical method that moves from analysis to planning to action and then to more analysis, planning and action (Figure 1). PAR involves gathering information, identifying and analyzing issues, sharing analysis and ideas with the people, and encouraging the people to develop a community action plan on a specific issue that affects them.

**Figure 1. Participatory Action Research Cyclical Process**


In March 2007, after completing an initial week of classroom training in Banlung town, the community course participants traveled to Chey Ouddom commune along the Srepok river where 3SPN implements its program on information sharing and advocacy on the downstream effects of the hydropower dam built in Vietnam. The participants were divided into four groups, each led by a 3SPN participant and supervised by an ADI team member, and spent five days in one of the four villages of Deilor, Okan, Samkha or Sre Chhouk (Figure 2). The village of Sre Chhouk is primarily ethnic Lao while the others are mainly ethnic Khmer. During the five day visit in their respective villages the participants applied the PAR skills they had learned in the first week; identifying and analyzing key issues with the villagers leading to the development of community action plans for implementation.
Illegal fishing was identified in each of the four villages as an issue that undermined an important livelihood source. Illegal techniques involved the use of electrodes, explosives, poisons, and small mesh fish nets. The villagers were also concerned about floods like the one that had destroyed rice cultivation in the previous year and the possible links of these floods to the hydropower dam built upstream in Vietnam.

As part of the PAR undertaken in Deilor, Okan, Samkha and Sre Chhouk villages, the issue of illegal fishing was discussed and analyzed in individual households and in small informal groups. At the same time, awareness was raised about the number and potential effects of hydropower dams built and planned upstream of the Srepok river in Vietnam. Information fact sheets on the dams were likewise distributed as reference materials for further discussions. Towards the end of the five-day visit the researchers convened separate meetings in the four villages to help the people develop community action plans in response to the issue of illegal fishing.
In the past, fishery committees had been established in some of the villages under the Cambodian government Seila program to protect deep pools in the Srepok river that served as breeding grounds for fish. However since the end of that program the fishery committees had been dormant and the villagers had simply waited for the government authorities to take further action. During the village meetings the fishery committees were reconstituted to implement the action plans.

On the last day of the field research, a four-village level meeting was convened with fishery committee representatives and leaders from each of the four villages. This meeting was attended by the Chey Ouddom commune chief, a representative of the Lumphat District Department of the Environment, and the Executive Director of 3SPN. At the meeting, community action plans were consolidated to address illegal fishing practices across the four villages. One action was for the commune council to issue a deika or commune order serving as an official document that allowed members of the village fishery committees to take action against illegal fishers. The second action was to erect signboards prohibiting illegal fishing in each village. The third action was to complete the formation of the village fishery committees and to strengthen patrols along the Srepok river, village ponds, and streams. The fourth action was for the committees to build awareness on the fisheries law and rights of communities.

After the five days of fieldwork the participants returned to Banlung town and then dispersed for a three month course break. The three month interval allowed the villagers time to implement their actions plans and for the course participants to complete their PAR assignments. In Chey Ouddom commune, 3SPN participants followed up on the activities that had been delineated and consolidated in the action plans at the research sites. Likewise, ADI team members traveled to Ratanakiri to support the 3SPN participants in building the capacity of the villagers to implement their plans.
In early July 2007 all of the participants returned to Ratanakiri province for the final week of the course. Gathering first in Banlung town, the 3SPN participants reported on the progress made in the four study villages. All of the participants then traveled to Chey Ouddom commune and spent three more days in their respective villages with leaders and fishery committee members to reflect on the progress made on the action plans. The participant researchers asked: What was implemented? What was not implemented? And why? Community actions plans were revised on the basis of lessons learned. The follow up visit culminated in a second meeting of representatives from the four villages to review and coordinate the action plans. This meeting was attended by commune and district authorities and the police. The village representatives made reports on the progress of their community action plans to date and renewed their commitment to implement the action plans with 3SPN as the responsible organization in the area.

MAJOR FINDINGS

Pervasiveness of Illegal Fishing

As mentioned above, illegal fishing was endemic in the four study villages and involved the use of electrodes, explosives, poisons, and small mesh fish nets. Villagers were in general agreement that the use of destructive methods had led to a decline of fish stocks. In Okan village residents reported that since 2003 their yields from traditional net fishing were low and that at the time of the research in 2007 they could hardly catch one or two kilos of fish from a full day of fishing. Villagers were particularly concerned about the degradation of the deep pools in the Srepok river near Deilor village which served as a spawning ground for fish. Fishing in this rich habitat had reduced the depth of the deep pools to three or four metres in the dry season. Villagers maintained that the pools could return to their original depth if the areas were reserved and protected from fishing.

In addition to the decline of fish, illegal fishing methods had further consequences. In Samkha village, cows and buffaloes had died or become ill as a result of drinking water from the streams flowing into the river where poison had been used to kill fish.
While villagers acknowledged that illegal fishing was pervasive along their expanse of the Srepok river, many attributed illegal practices to outsiders. However, in Sre Chhouk village researchers ironically observed illegal fishing equipment in the homes of informants who pointed to outsiders as the primary persons culpable. Other residents in Sre Chhouk were more open about their own illegal fishing activities. One villager declared, ‘When I saw other people doing illegal fishing, I tried to do the same.’

In all four villages respondents admitted that by using illegal methods they were able to catch higher volumes of fish in less time than by using traditional methods. Village authorities, for their part, were reluctant to prohibit illegal fishing without a clear mandate from commune officials and the police. Meanwhile representatives from the District Department of Fisheries rarely visited the four villages and did little to enforce compliance with the fishery law. While some villagers reported that they had advised others to stop using illegal techniques, far greater numbers dared not speak out against offenders or report them to local authorities. Although people were generally concerned about the issue, they viewed it as something beyond their means to control.

**Previous Attempts to Stop Illegal Fishing**

In the late 1990s the District Department of Fisheries with support from the government’s Seila program established a fishery committee in Deilor village. The primary purpose of the committee was to protect the deep pools in the Srepok river in close proximity to the village. Constituted with a statute, the committee initially achieved some success in patrolling the area and protecting the deep pools from fishing activity. However, as financial assistance from the Seila program diminished and support from the Department of Fisheries waned, the fishery committee in Deilor village was unable to sustain its activities. Without support from the district fisheries team, the committee became inactive.
In large measure individual actions taken by villagers against illegal fishers in the study sites were ineffective because they lacked the full support of the local authorities. Villagers who challenged or complained against illegal fishers were unable to enact punitive measures and the offenders simply resumed their practices. In some instances local authorities and the police supported individual efforts, intervening to seize the equipment of those identified as illegal fishers. At the same time villagers became dismayed to learn that some officials had turned over the contraband equipment to their relatives for continued use in destructive fishing. To the extent that illegal fishing was linked to the abuse of power, a collective and concerted effort of villagers and authorities was required to stop it.

**Community Action Plan Implementation**

The four village meeting convened in March 2007 provided not only an opportunity to consolidate the various village action plans, it likewise served to build confidence and excitement among the village representatives that they indeed could take action to deter the practice of illegal fishing. However, when the representatives returned to their respective villages their initial enthusiasm abated. Gradually the villagers became paralyzed with feelings of confusion, fear and powerlessness. The sense of confusion resulted from the seemingly daunting task before them of trying to decipher what to do, when to do it, and who to follow when realizing the community action plans. While the execution of the plans appeared easy when the NGOs were present, implementation became more complicated and difficult once the NGOs were gone. For example, what proscriptions should the villagers write on the signboards now that the wood had been gathered? When faced with such questions they usually decided to wait for 3SPN to come and tell them what to do. Similarly the villagers became fearful as they began to consider the consequences of taking action against illegal fishers connected to the police and other influential people. Finally, the villagers began to question their right as ordinary people to take action against illegal fishing. Without recognition and support from the local authorities, they felt powerless to solve the problem on their own.

For their part, the 3SPN participants were also struggling, not knowing how to mobilize the villagers to implement the community action plans. In the weeks following the four village meeting the 3SPN fieldworkers made several
visits to the four villages of Deilor, Okan, Samkha and Sre Chhouk. However, in these scheduled trips they met almost exclusively with the members of their previously established network involved in documenting and reporting changes in the river water levels. Regrettably, the 3SPN participants did not take the opportunity during these visits to bring the village leaders and fishery committee members together to discuss the progress made against illegal fishing. Had the 3SPN participants come to the villages more prepared to convene the fishery committee members and review the implementation of the action plans then more would have been accomplished. While the 3SPN fieldworkers had the community action plans in their hands they did not have a clear idea of how to mobilize people around these plans. Not surprisingly, the 3SPN participants at the outset did not communicate and coordinate effectively with one another. This led to confusion in the villages about how to move forward and implement the action plans. Without coordinated and sustained support community mobilization efforts lost energy and direction. In retrospect, it was unrealistic to expect that anything meaningful would happen on its own without the dedicated follow up of the 3SPN and ADI teams.

**Review and Revision of Community Action Plans**

In early July 2007 during the final week of the course all the participants returned to Ratanakiri and then to the villages of their initial fieldwork to assess the progress made on the action points set down in the community plans. Prior to the course, 3SPN had been more engaged in Deilor than in the other three villages and these previous investments in community organization had translated into more sustained villager involvement against illegal fishing.
The fishery committee in Deilor was successfully reconstituted at an early stage. Under the leadership of the village chief the fishery committee mobilized the people to construct and erect signboards prohibiting illegal fishing at various village locations near the Srepok river. The fishery committee likewise organized Deilor villagers to actively patrol the river against illegal fishers. During the patrols a man from a nearby village was caught fishing in the river using illegal equipment. With assistance from the police the fishery committee seized the illegal fishing gear and effectively curtailed the illegal activity. The offender caught with the illegal equipment vowed not to engage in this destructive practice again. The successful intervention became a source of encouragement to the Deilor fishery committee which believed that knowledge of the incident spreading throughout the village would act as a deterrent to others tempted to use illegal fishing techniques.

In comparison with Deilor not much had happened in Okan, Samkha and Sre Chhouk villages. While fishery committees had been established in Okan and Samkha these committees had been unable to mobilize people in their villages to build and erect signboards against illegal fishing. Similarly the Okan and Samkha fishery committees had not organized patrols against illegal fishers but simply relied on villagers who fished to observe whether others were using illegal techniques or not. Generally, a wait and see attitude prevailed in Okan and Samkha as villagers looked to assess the outcomes in Deilor. Meanwhile, although representatives from Sre Chhouk had attended the four-village meeting in March 2007 the village had never formally established a fishery committee. The absence of an elected fishery committee in Sre Chhouk greatly impeded the implementation of the community action plan in that village.

At the end of the course in July 2007 a second four-village meeting was convened. At that time the commune order or deika for empowering village fishing committees to act against illegal fishers had yet to be issued for the entire commune due to the delays in forming the fishery committee in Sre Chhouk. The other three villages had already forwarded their requests for the deika and these had been recognized by the commune council. At the second four-village meeting, the village representatives were assured that these signed papers were already a strong basis for implementing their plans even without the formal deika. Generally, the villagers were reluctant to act against illegal fishers without the endorsement of the commune authorities.
At the second four-village meeting community action plans were revised and the fishery committees renewed their commitment to implement them. 3SPN promised to provide follow up support.

**Follow-up Activities after the Community Course**

While the PAR process in the four villages might have ended at the completion of the ADI community course in July 2007, the renewed commitment of the fishery committees and the dedicated support of the 3SPN participants and their Executive Director rekindled the enthusiasm of the villagers and helped them to overcome their feelings of confusion, fear, and powerlessness. Granted the process was slow and somewhat uneven. Still, by March 2008, a full year after the initial meetings had taken place, the major tasks outlined in the community action plans had been implemented in all four villages.

By March 2008 fishery committees were established in Deilor, Okan, Samkha and Sre Chhouk villages and all the committees, including the one in Sre Chhouk, were active. The fishery committees in the four villages successfully solicited money from residents to buy wood, paint and nails for the construction of signboards which broadcast the prohibition on illegal fishing. The signboards were erected at strategic locations in each of the four villages most recently in Sre Chhouk on the far side of the river. Fulfiling a key activity of the action plans the fishery committees received training on the fishery law from Provincial Department of Fisheries staff and were given copies of the law to enable them to build awareness within their communities. In addition 3SPN organized an exposure trip for the committee members to a fish sanctuary in Kratie province to help them learn more about the conservation of fishery resources.

While commune and district authorities were initially slow to respond to villager requests to act against illegal fishing they became more involved as time went on. In Sre Chhouk the fishery committee eventually submitted their request to the commune council for an order or deika banning illegal fishing, which was subsequently recognized by the commune authorities. In Samkha village the fishery committee went one step further developing internal regulations in consultation with community inhabitants which allowed them to fine and penalize those who used illegal fishing techniques. The regulations were submitted to the commune council for their information and acknowledgement.
In Okan village the fishery committee working with the police seized illegal fishing equipment from offenders and informed them of the fishing techniques that were prohibited in the river. In Deilor village the fishery committee successfully obtained assistance from district and provincial fishery officials who intervened to stop a company from Mondulkiri province from pumping and trucking sand from the river near the deep pools. In late 2008 the fishery committees from the four villages collectively approached the commune and district chiefs requesting boats to better patrol the river. 3SPN promised to provide engines for the boats. The authorities were receptive to the idea. Through the sustained efforts of the fishery committees, emboldened by the increased cooperation they received from the local authorities and the police and empowered by the support they enjoyed from 3SPN, the villagers were able to witness a dramatic reduction in illegal fishing in the Srepok river along the four villages.

**LESSONS LEARNED**

The results of the PAR undertaken in four villages of Lumphat district along the Srepok river reveal important lessons learned. While villagers were initially enthusiastic about taking steps to prevent illegal fishing in their areas they subsequently became paralyzed with feelings of confusion, fear and powerlessness. These feelings which inhibit villagers from responding creatively to emerging issues in their communities are deeply rooted in traditional culture and decades of living with conflict. Ironically, these very real though ultimately disempowering emotions are frequently reinforced by development efforts designed to overcome them. Too often development programs treat villagers as beneficiaries rather than as development actors in their own right. The tendency is to do things for villagers by providing goods and services rather than to do things with villagers by building their capacity to deal with change. A transformative approach needs to recognize the underlying feelings which incapacitate people from taking community action while providing them with the support they need to work through their fears and resistance (O’Leary and Meas 2001). The research underscores that development practitioners likewise need to address their inadequacies and insecurities to provide the quality of support that is required.

The study too provides useful insights into how NGOs can productively incorporate PAR into their regular programs. While the Deilor villagers had achieved some success against illegal fishing within the three month duration
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of the ADI course, the Okan, Samkha, and Sre Chhouk villagers had accomplished very little in the initial three month period. Had 3SPN not committed itself to a sustained follow-up program after the completion of the course, the outcomes eventually achieved in all four villages would surely have been different. As the 3SPN fieldworkers and their Executive Director became more engaged in the PAR process they came to appreciate more fully the commitment of the fishery communities in the four villages and the important role they played in conserving the river resources. Support for the community actions against illegal fishing was consistent with 3SPN’s mandate of augmenting river protection. Moreover, by expanding its community based network to include the fishery committees 3SPN was able to broaden and facilitate its primary work which focused on building awareness and promoting advocacy on the impact of the hydroelectric dams constructed upstream in Vietnam. By incorporating PAR into its regular programming, 3SPN was able to provide continuous support to the fishery committees which enabled them to accomplish a drastic reduction of illegal fishing in their communities in the space of about one year.

CONCLUSIONS

The findings of this study indicate that villagers can indeed develop and implement community action plans to reduce destructive fishing practices. Nonetheless, several factors need to be addressed to make the PAR process work. Initially a consensus has to be built within the village that the issue identified for collective action is a serious one, affecting a large part of the population. Similarly there needs to be a shared analysis within the community about the immediate cause of the problem and the steps required to solve it. In the four study villages of Chey Ouddum commune villagers experienced a decline of fish resources in the Srepok river and linked this to the widespread use of illegal fishing techniques. Public discussions revealed common points of view among the villagers about how to deal with the issue which served to build their confidence that they could do something about it.

While the development of community action plans generates excitement and enthusiasm early on, villagers often become paralyzed by feelings of confusion, fear, and powerlessness after the meetings disperse and the PAR practitioners leave for home. Implementation of community action plans becomes problematic once villagers confront the constraints of their everyday lives. As this research so clearly demonstrates, ongoing follow-up
and support are critical to enable villagers to overcome these debilitating sentiments and derive long-term benefits from the PAR process. By incorporating PAR against illegal fishing into its core program, 3SPN was able to provide sustained support to the fishery committees in the four villages, which over time enabled them to achieve a reduction in destructive fishing practices. Finally, the outcome was successful because the goal was something the fishery committees and villagers could attain on their own with minimal financial support from NGOs and minimal resistance from powerful outsiders.

The findings of the study likewise demonstrate that villagers can effectively coordinate with the commune council and government officials to implement their plans. Prior to the PAR activities in 2007 efforts to prohibit illegal fishing were reportedly ineffective because villagers acted on their own without support from the local authorities. Similarly when village groups first approached the commune authorities for assistance in preventing illegal fishing as part of the PAR process, they were largely ignored. It was though the persistence of the village leaders and fishery committees who continued to interact with the authorities - writing proposals, calling for meetings, coming to visit, and requesting deika, - that the commune council ultimately became convinced of their sincerity and commitment and issued documents to support their efforts. In a similar manner, the village groups gradually built up relationships with district and provincial officials.

The interplay between the four study villages and the Chey Ouddum commune council with regard to illegal fishing suggests that commune authorities become responsive to local initiatives when villagers take a proactive stance, relentlessly seek official support, and demonstrate their own commitment to action. It is perhaps unrealistic to expect local authorities to take action against illegal fishing on their own without a demand emanating from the villagers. In the present study support from the commune council provides a strong legal basis for villagers to take action with the police to patrol the river and confiscate illegal equipment from fishers. Collaboration with local authorities and the police, once considered unlikely, now emboldens the villagers to take action on an issue that directly affects their livelihood. Environmental governance which requires coordination between government and local people (see Van Acker 2009) is critical to the livelihoods of the villagers living along the Srepok river. The PAR process shows itself to be an effective method to mobilize communities for natural resource management.
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Section D: Governance: Decentralizations Policies and Practices

Emerging Trends, Challenges and Innovations for CBNRM in Cambodia
Chapter 18
Going along the river by the bend; entering the village by the country: A spatial planning perspective to enhance community-based natural resource management in Cambodia

By: Jean-Christophe Diepart\(^1\) and Sem Thol\(^2\)

This paper suggests that new decentralized and de-concentration reforms, which set out a framework to bring important governance functions to the sub-national level, have opened new spaces to explore complementary approaches for environmental governance. Using the Battambang spatial planning framework as a basis, the paper reviews some of the limitation of CBNRM implementation of the last ten years and then focuses on detailing the methodology used to develop and build the framework and how it can be beneficial to current CBNRM. The argument continually defended is that the integration of CBNRM initiatives into a comprehensive spatial planning framework at the provincial level can reinforce local actions and give communities stronger recognition. In a discussion of the three dimensions of the spatial planning framework which include land use planning, territorial policy, and territorial governance, the analysis does not negate the important contribution of local support to rural communities but tries to identify complementary (and not substitutive) approaches that might strengthen communities in their daily livelihood issues.

INTRODUCTION

In the last decade, community-based natural resource management (CBNRM) has been widely acknowledged for its contribution to biodiversity conservation and sustainable livelihoods in Cambodia (Ken Serey, 2005). It has received considerable attention from various actors as a tool to promote sustainable rural development. With substantial strategic support from international and national organizations, community-based approaches have become a mainstream tool for sustainable natural resource management.

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CBNRM has been implemented through approaches focusing primarily on local contexts. Strong emphasis has been placed on the support of local communities, on strengthening local governance, promoting local decision-making, and facilitating the implementation of locally designed natural resource management plans. The equation was: if participation by local people (especially the poor, women, and other marginalized groups) is facilitated, and support is provided locally to management committees to reinforce their skills in the protection and the management of the natural resources base, it will lead to improved security of community land tenure, improvement of resources assets and benefits for the community. Despite a clearer commitment to justice for rural people, this mainstream approach toward CBNRM primarily focused on local management has not been able to support rural development in a fully satisfactory way. Socio-economic diversity in labor allocation strategies between households has not been adequately captured to identify the different modalities by which rural household can play a key role in natural resources management (Diepart, 2008a). The role of rural households has not been explicitly captured in rural development policies as key actors in the natural resources management (IFSR, 2004 and Hobley, 2007). CBNRM has also failed to be integrated in a wider context of regional development in which natural resources is apprehended in a balanced way with the agricultural development, the demographic change, the industrialization and the increasing role of Markets (Li, 2002).

Yet, other approaches, not primarily focused on the direct support to communities, but that might reinforce them, have largely remained unexplored. New decentralized and de-concentration reforms, which set out a framework to bring important governance functions to the sub-national level, have opened new spaces to explore complementary approaches, in particular in spatial planning. The paper aims to address this vacuum using the Battambang spatial planning framework as a basis.

The paper details the methodology developed to build the provincial spatial planning framework and examines key outputs of this institutional innovation. It discusses how the integration of local natural resource management into a comprehensive spatial planning framework at the provincial level can be beneficial to community-based natural resource management and help
overcome the limitations of current CBNRM approaches in Cambodia. This perspective follows the Khmer proverb "going along the river by the bend; entering the village by the country", which suggests tackling a specific issue by first considering the general rules and norms governing it.

**METHODOLOGY**

**Conceptual Framework**

Sustainable land and natural resource management is, among other things, a key driver for sustainable development. As land resources are becoming scarce and used for a variety of reasons, land and its use should be planned in an integrated manner. This would ensure optimal use of the land and a socially just distribution of land-based resources, which carefully considers issues of environmental sustainability and respect for the cultural identity. This holistic goal aims ultimately to create an environment that enhances the quality of people’s lives by considering the diversity of their interests and needs (Magel, 2008). This includes the provision of labor opportunities, access to land-based resources for livelihood purposes, access to education and health infrastructure, access to recreation areas, and ease of transportation.

In its draft declaration on Land Policy, the Royal Government of Cambodia (RGC) sets out its overall vision for land management in Cambodia. This vision rests on three inter-dependent components of sustainable land and natural resource management: land administration, land distribution, and land management (Council of Land Policy, 2008). The conceptual framework of the paper rests largely on this vision. Land administration refers to the creation and implementation of the legal framework and the structuring of operation of a sustainable land registration system for both State and private land. It also targets the establishment of a multi-purpose cadastre as a basis for a National Spatial Data Infrastructure (NSDI). The land distribution encompasses the process of land inventory, the establishment of strategies and planning to allocate economic and social land concessions. As figure 1 illustrates, the third component is land management, which implies the design of a spatial planning system at various levels and a unified land classification system as well as the management and control of land use.
Focusing on this third component, the provincial spatial planning framework aims to provide provincial authorities with an evidence-based policy for spatially differentiated decision-making. This overall objective entails three important dimensions (figure 1):

- The spatial planning framework is intrinsically a land use planning document seeking to order and regulate the use of land in an efficient way. It rests on the differentiation of provincial territory into land zones characterized by specific interactions between natural and human factors.

- The spatial planning framework is also a territorial policy document as it represents a vision and course of action that the provincial government has adopted and decided to follow to promote sustainable land management. It has been designed following a process involving the drawing together of level and sector specific planning efforts which permits strategic decision-making and provides a synoptic view of resources and commitment (CEMAT, 2007).
The spatial planning framework is an expression of territorial governance echoed by the Decentralization and Deconcentration (D&D) reforms that envisions the creation of unified administration at provincial and district levels. Provincial councils will be elected by commune councils and will endorse responsibilities in the design and realization of provincial development plans. Among other things, these five-year development plans will include a framework that describes the basic principles for the use and management of land and natural resources (Article 39 of the organic law, RGC, 2008).

**Planning and consultation as a process**

The planning process has basically followed six main steps occurring over the course of 18 months. Participation and consultation have been critical in the planning process to ensure that a broad level of acceptance and ownership is achieved (Diepart, 2008b). Particular attention was given to rural community voices through extensive field surveys and investigations at village and household level. In depth surveys were conducted at the village and household level in order to capture the functioning of rural communities in different agro-ecological contexts. The contribution of households to land management is evaluated in terms of local knowledge and socio-economic rationality. A typology of rural production systems (at household level) is established to identify the diversity of household labor allocation strategies and their representativeness in the overall population. This is seen as a precondition to recognize the diversity existing within rural communities.

At district and commune levels, local authorities provided key input in the planning process as they have a mandate to coordinate the development efforts made on their territory and linking the local planning processes with private actors whose actions are usually influential to rural families (agricultural products trade, local agri-business). The technical departments were also consulted at provincial and district level. Though D&D reform aims to establish unified administration, it will not wipe out the top-down hierarchical relationships between each ministry and their sub-national agencies. Vertical integration and coherence is compulsory so that technical departments can be involved institutionally and financially in following up the recommendations of the planning framework.
Importantly, the planning process starts with the clarification of the statute and mandates of provincial committees for spatial planning and the terms of reference of the working group responsible for its design. Partnership strategies are also in place at the earliest stage of the process (step 1).

A relevant and accurate summary of geo-referenced information, figures, and facts is first assembled and analyzed. All geo-data are processed and assembled in topic geo-databases: administration, demography, technical and social infrastructures, agro-ecology and land tenure systems. On the basis of a land use change analysis and agro-ecological zoning, detailed field surveys are undertaken to critically examine land management challenges at commune/village and household level (table 1) (step 2).

Table 1: Field Surveys Design

<table>
<thead>
<tr>
<th>Agro-Ecological Zone</th>
<th>Commune</th>
<th>Number Villages with PRA</th>
<th>Number Households Investigated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood Plain (Tonle Sap) zone</td>
<td>Kampong Preah</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Agricultural zone (lower potential)</td>
<td>Thepdey</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>Agricultural zone (higher potential)</td>
<td>Takream</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>Agro-forest mosaic zone</td>
<td>Kampong Lpeu</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>Agro-industrial zone</td>
<td>Takrey</td>
<td>3</td>
<td>24</td>
</tr>
</tbody>
</table>

Source: Focus Group Discussion in Tum Nup Rolok, 9th April, 2007

The stakeholders (territorial authorities at provincial and district level as well as all technical line departments) then try to establish clear visions for the future development of the province. Visions represent a future ideal state of affairs that can or should be pursued within about a 20-year timeframe. Visions define how all stakeholders perceive the future (Schalle, 2005) and represent something which the communities are striving toward (step 3).

At the district level, dynamic analyses are undertaken in order to determine how the current land situation has been changing over time and is likely to change in the future (12 workshops gathering 160 participants). The analysis
leads to the definition of specific zones characterized by specific dynamics and challenges such as deforestation and urban development, etc. Due to their uniqueness, the zones serve as planning units (step 4).

On that basis, strategies are identified for each zone. An overall strategy is proposed for the zone and is broken up into sector strategies that define the contribution of each stakeholder in the collective efforts (step 5).

The sixth step is an on-going process that requires continuous data updates, amendment, and conflict resolution to support the implementation of activities in line with the overall policy proposed by the land management framework (step 6).

**Planning Partnerships**

The design of the planning framework was done by a working group hosted by the Provincial Department of Land Management, Urban Planning, Construction and Cadastre under the auspices of the regional planning committee chaired by the provincial governor. The initiative is supported by a number of German cooperation agencies including The Konrad Adenauer Foundation (KAS), a key partner of the RGC in the Decentralization and De-concentration reform process, and the German Development Service (DED). In Battambang province, the particular role of the DED is to provide spatial planning support at various levels (province, district, and commune) (Symann, 2008). The German Technical co-operation (GTZ) has also had a supportive role in acquiring updated satellite imageries and in providing strong institutional support at the ministry level.

**RESEARCH FINDINGS AND PLANNING OUTPUTS**

**Land use Dynamic**

The most striking feature of recent land use change in Battambang is the dramatic decrease of forest cover (Figure 2). In a little over 15 years, forest cover has decreased from 65.8 percent to 44.4 percent of the total provincial territory. The clearance has been particularly dramatic in the north-western uplands of the province where virtually all the forest resources have disappeared.
An interaction of a number of elements is responsible for the phenomenon (figure 3). Following the peace agreement in the late 1990s, new district administration centers were created in the north-western part of the province (Kamreang, Phnom Preuk and Sampuev Lun districts). Attracted by relatively cheap land prices (if compared with other provinces) and good soil conditions, a considerable number of families started to migrate from all across the country to permanently settle in the area and start new farming activities in the uplands (non-rice agriculture such as cassava, red corn or soybean...). While the annual demographic increase between 1998 and 2007 was 2.8 percent on average for Battambang province, the values reached 19.01 percent, 17.87 percent and 5.89 percent for Kamreang, Phnom Preuk and Sampeuv Lun district respectively (calculation based on Commune Data Base, DoP, 2008). The singular values of demographic increase observed in those districts are clearly the result of permanent migration. This sharp demographic increase has triggered the demand for both settlement and agricultural lands.
In conjunction with this, the RGC and its Ministry of Agriculture, Forestry and Fisheries (MAFF) have started to promote the production of annual and perennial cash crops (mainly red corn, cassava, green gram, sugar cane and rubber) for local processing and export. This policy has enabled national and international investors to establish agro-industries involved in the purchase, storage and processing of these crops. As illustrated by figure 3, the development of intensive upland agriculture still relies largely on human labor; the quick growth in the agricultural sector has in turn reinforced migration to those areas (figure 3). The whole dynamic of settlement expansion and the development of chamcar agriculture have contributed to the decline of forest cover. The figure provides an explanatory framework of deforestation which is identified in the center of the figure (Forest Cover). It differentiates between the causes and consequences of deforestation, respectively on the left and right side of that central box.

**Figure 3. Schematization of land use change dynamics in Battambang (1993–2008)**
In terms of land tenure relationships, the forest cover decrease associated with the development of cash-crop upland agriculture is an expression of what is in reality the privatization of public lands and a breakdown for the communal resources management.

In Cambodia, the challenge of increasing rice production at a pace at least consistent with the rate of population growth has been addressed by enlarging the cultivated area. However, nowadays due to the absence of available land, agrarian systems are at a crossroads (Dupuis, 2008). The challenge for the rural population to increase rice production implies intensifying agricultural production by cultivating twice a year on the same plot. This implies improved technical (ie drainage and irrigation) and social control of water. Community-based management, again, has a crucial role to play here.

**Figure 4.** Income distribution by class of wealth and by item (rural households)
Although agricultural development dynamics have enabled a considerable number of households to increase their income (farming incomes are the highest in these uplands), the decrease of forest cover has had prejudicial consequences for local communities. Deforestation threatens the conservation of biodiversity (fauna and flora) which affects the diversity of forest products that rural families can access. Deforestation has also a direct economic impact on those families who depend on forest resources as a safety net for their livelihood. According to data from the Cambodian Socio-Economic Survey 2004 computed for the whole province of Battambang (figure 4), the livelihoods of the poorest rural households depend more on common pool resources (principally forest resources) than others. On the other hand, deforestation is putting the sustainability of agricultural development at risk because of the impacts it has on the overall watershed. Deforestation decreases the groundwater content which inevitably impacts the nutrient and water intake of crops. It also increases the frequency of flood and drought events as well as erosion risks. Additionally, the loss of forest decreases the opportunity of economic development through eco-tourism (especially along the riverbanks), one key asset for the socio-economic development in Battambang.

Identification of spatially homogenous land units

The land zoning (figure 5) consists of dividing the provincial territory into spatially homogeneous land units with uniform land use characteristics. It aims to differentiate specific areas within Battambang territory according to: i) agro-ecological conditions, and ii) the recent land management dynamic that have been influential in explaining the recent land use changes. A multi-stakeholder discussion in each district has lead them to define the criteria to determine each zone, agree on their delimitation and define a diagnosis of their key land management issues by identifying the root causes and consequences of each issue. By generalization, the land zoning outputs conducted in each district are aggregated to constitute the provincial land zoning. Each zone is intended to be unique and, as such, to serve as a planning unit. For each of these zones, a shared diagnosis of the land management issues, on their roots and consequences, is first established. A cross-sector development strategy is defined accordingly, which includes the contribution of each institution involved in the planning process. A set of priority actions to tackle these challenges is then applied in a coherent and concerted way.
It would go beyond the scope of the paper to detail each land zone and the planning measures identified. A special focus will be put on the benefits that overall land zoning at the provincial level can provide to reinforce community-based approaches for natural resource management and help overcome the decrease of forest resources.

- In the agro-industrial and forestry mosaic areas, forest protection is desirable because they are an important source of timber and non-timber forest products for the livelihood of local communities. These are also important for watershed management services and represent a guarantee for the sustainable development of the agricultural sector. The process of designing the desired future management of this zone has provided the basis for the definition of a numerous areas with the potential for Community Forestry development. Potential areas for
Community Forestry were identified and integrated in a request to the Ministry of Agricultural, Forestry and Fisheries (MAFF). The objectives of this process are twofold. It aims to provide security of tenure to rural communities to manage the remaining pieces of forest but it also considers forest protection on a scale that can be beneficial for agriculture development and for water management downstream in the catchment basin.

- The protected landscape areas that aim to improve management of water and riverbanks provide an extraordinary opportunity for community-based eco-tourism. The process of designing the desired future management of this zone has provided the basis for the definition of eco-tourism areas (small environmental resorts) recognized as an integral pillar of the provincial tourism development strategy. A sector plan report has been produced in close consultation with local communities. The plan, which is approved by the provincial governor, foresees the protection of 16 eco-tourism zones for which the contribution of communities is clearly identified (Regional Planning Committee, 2008).

- The planning framework has also been instrumental in proposing the re-organization of the Roniem Doun Saum Protected Area in line with the new migration movement at stake in that area. The negative effects of deforestation on the development of cash crop agriculture and household economies means that forest protection and sustainable watershed management have great economic significance because they aim to preserve the potential for long-term agricultural development in the area. In order to find a new balance between the demands for residential and agriculture land on the one hand and the protection of forests on the other, the plan foresees the need to re-localize forest protection efforts in specific parts of the existing Protected Area, and to establish a social economic concession in another area.
DISCUSSION

The argument defended in this paper is that the integration of community-based natural resource management initiatives into a comprehensive spatial planning framework at the provincial level can reinforce local actions, give communities stronger recognition and overcome the current CBNRM limitations as highlighted above. We propose to discuss this core idea in line with the three dimensions of the spatial planning framework.

Land use planning

The interactions between the different resource components of any agro-eco-system determine its functioning and reproduction. Therefore evaluating the possible impacts of mismanagement in one area is extremely important in understanding the dynamic of the whole agro-eco-system. The scale in which this evaluation is conducted greatly matters. To properly weight the influence that resource units have on each other, these interactions are best understood over a large area. For instance, the effects of deforestation on the agricultural potential in a region, on the ground water level, on the water flows in the downstream parts of a catchment basin, or on the micro-climate are better evaluated over an area larger than a commune or a district (i.e., one province).

Additionally, addressing natural resource management in a provincial and comprehensive framework of social, economic, and environmental development allows the balance of short term needs in natural resources by communities with long term benefits and services that eco-systems provide. Provincial spatial planning captures this broad picture better than the simple aggregation of commune developments plans. The paper has showed for instance that the development of the agriculture sector associated with massive agro-industrial investment and in-migration can be better comprehended and analyzed at the level of the province. The scale is just more pertinent and allows tackling issues that can not be entirely addressed at a lower level (e.g., district or commune).
The aggregation of individual households’ actions (for instance clearing a small area of forest for livelihood purposes) might have consequences for the agro-eco-system that can have, in turn, irreversible effects on the local production systems of those individual households. The role of a provincial-level spatial plan is to determine the boundaries between what local-level management itself should be recommended to do, or prohibited from, in order to secure the long-term development of rural communities. For instance, the spatial planning process has been instrumental in identifying community entitlements as Community Forestry or community-based ecotourism lands.

Nevertheless, it should be emphasized that a provincial spatial planning framework is a necessary component but not sufficient in itself for sustainable land management. It should be embedded into a larger more comprehensive framework, ie a national spatial planning reference, although unfortunately this national framework does not exist at this time. On the other hand, the provincial spatial planning framework ought to be clipped and detailed into more specific district strategic spatial development plans and even further detailed into legally binding commune land use plan (pending the approval of the sub-decree on commune land use planning, which will provide this legal basis).

**Territorial Policy**

NRM in Cambodia is characterized by important gaps between the legal framework (the constitutional rules) and the operational rules that set the mechanisms for appropriation of resources on the ground (ie when, where and how to withdraw resources units, who should monitor the appropriation actions, what information should be exchanged, and what reward or sanction will be assigned by different combinations of actions and outcomes) (Ostrom, 2002). These gaps should be filled with the support of policies that define the collective choices necessary to address the inter-relations between the resource components and ones that promote sustainable development in step with what makes the territory singular and unique. The plethora of sector laws, strategies, decisions, and plans at various levels makes this exercise of going beyond the sector difficult.
It necessitates a shared analytical understanding among actors about the different land management challenges affecting territorial development. It also implies having a clear vision to make effective decision-making. The institutional innovation addressed in this paper has shown that the province is a suitable level to host this function, it is sufficiently decentralized to capture the local conditions and to address the inter-relations between the different components of the agro-eco-system. At the same time it is sufficiently focused to act as a qualified focal point for action given the new powers allocated to provincial agencies as part of the D&D reform.

During the visioning exercise, the stakeholders have agreed that the promotion of community-based rural development is one of the pillars of the Battambang territorial policy. It implies that the participation of local communities in natural resource management is not only an opportunity that some communities obtain because of the involvement of a given NGO, but it becomes a right for all communities. Participation of rural communities is not restricted to those with existing technical management committees (CF, CFi, CPA), they are all recognized as key partners for rural development.

**Territorial governance**

Territorial governance determines the way territorial policy is applied. The challenge is twofold and deals with the complete institutional re-engineering that is taking place in Cambodia in the frame of the Decentralization and Deconcentration reforms. At stake is the coordination between stakeholders at one given level (horizontal integration) and the distribution of functions and powers across levels (vertical integration).

Each component of the agro-eco-system is formally attached to one sector of the public administration for its management; in reality the flows and interactions between the components are poorly addressed by dialogue between those administrations. Additionally, it is widely recognized that the proliferation of donor-driven projects that are formulated and implemented without coordination with provincial department plans potentially distorts the accountability of the departments away from their core functions (Horng and Craig, 2008). The spatial planning framework proposes an innovative coordination platform for territorial governance. The initiative has opened
spaces of expression between all actors and has transformed this dialogue into real planning measures. The initiative anticipates one task that the provincial council will have to endorse, that is the design of basic principles for the sustainable management of land and natural resources. What is still not very clear is how the Public Investment Program (PIP) will be made consistent with the spatial planning framework in the future.

The benefits of this coordination are already tangible. The process has, for instance, facilitated access to and distribution of geo-data among relevant actors (public, private, and academic sectors). The cross-sector geo-database elaborated during the planning process constitutes the basis for Provincial Spatial Data Infrastructure and represents a real output of a territorial governance in the making.

Clearly, the provincial spatial planning framework is not a stand alone plan that will guarantee efficient land use management. It must be clipped and shaped into a more detailed spatial plan at the district level and eventually into legally binding land use plans at commune levels. Yet, the vertical integration that sets out the rules and mechanisms for coordination across levels is still properly addressed. The redistribution of powers and functions to be re-allocated between the provincial, district and commune levels is very complex. A subtle balance must be found between a principle of subsidiarity (a decision should be taken by the lowest level capable of doing so (Van Acker, 2009, in this volume) and the need to address the externalities associated with unintended effects of local actions on the whole agro-eco system or, downstream, in a catchment basin. This challenge is intricate but the design of an integrated set of spatial plans at different levels will become increasingly important as power devolution will be taking place, as explicitly supported by the Royal Government of Cambodia. The Battambang regional planning team will be engaging in this process in the near future.
CONCLUSIONS

In a little over 15 years, community-based approaches have become the mainstream for sustainable natural resource management in Cambodia (Ken Serey, 2005). In its 2008 World Development Report, the very influential World Bank is clearly reconsidering the role that communities can play in rural development (World Bank, 2007). Thus, it is very likely that CBNRM will continue to receive considerable attention in the future.

Local-level organization and action are necessary conditions towards sustainable natural resource management but the lessons learned from past experiences show that the benefits resulting from a quasi-exclusive focus on supporting local communities is somewhat limited when local conditions are isolated from the wider agro-ecological and socio-economic contexts. Our analysis does not negate the important contribution of local support to rural communities but tries to identify complementary (and not substitutive) approaches that might strengthen communities in their daily livelihood issues.

We argue that the scrutiny of the wider development context, (ie at the provincial level), is critical in order to more effectively address issues in natural resource management. The Battambang provincial spatial planning framework may be beneficial for communities because it integrates the community entitlements into larger land use patterns. It also recognizes all rural communities as key partners in rural development and provides concerted recognition of community entitlements. This institutional innovation promotes effective decentralization and deconcentration by clearly going beyond each individual sector. In that, it is a learning process for all actors involved in the planning of activities as well as in the monitoring and evaluation of the plan realization.
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Section E  Livelihoods: Equity and Benefit Sharing

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By: Sim Bunthoeun, Rachael Hannay and Heng Chinda

Chapter 20: A Journey from Forest to Market: Experiences in Securing Benefits from Community-based Initiatives on Sustainable Wild Honey Harvesting and Marketing in Cambodia
By: Amanda Bradley, Im Noeun, Khorn Sophoeun, Amalia Maling, Phy Bunthorn, Femy Pinto, Sam Ly and Srey Meas Neang

Chapter 21: Understanding Self-Help Groups for Credit in Community Fisheries in Cambodia
By: Ly Vuthy, Rebecca Rivera-Guibeb, Julie Tsatsaros, Tit Phearak, and Cheam Pe A

Chapter 22: The Impacts of Credit Use on Livelihoods and Natural Resources: A Case Study of Phnom Dek Village, Romani Commune, Rovieng District, Preah Vihear Province
By: Kim Sarin

Chapter 23: Lesson Learnt from Benefit Sharing: Case Study of Rattan Cultivation in Prek Thnout Community Protected Area, Bokor National Park, Kampot Province.
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Chapter 24: Community-Based Ecotourism and Rural Livelihood Diversification: Reframing the Approach
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Chapter 26: Gender Implications in CBNRM: Important Roles of Women in Community Fisheries
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Chapter 27: Understanding the complex realities of CBNRM: multiple perceptions of community fisheries practice
By: Emma Whittingham, Meng Kimsan and Tep Chansothea
Chapter 19
Livelihoods: Equity and Benefit Sharing
Related Theory and Practice

By: Sim Bunthoeun¹, Rachael Hannay² and Heng Chinda³

This chapter aims to explore some central ideas surrounding livelihoods in order to bridge theory and practice in the papers that follow. It will explore the concept of livelihoods and the sustainable livelihoods approach (SLA). In addition, it will discuss the links between rural livelihoods and natural resources as well the lessons learned and challenges involved in the implementation of livelihood activities with local communities. As this conceptual chapter seeks to build on the livelihoods chapter in the CBNRM Volume I publication “Selected Papers on Concepts and Experiences of CBNRM in Cambodia”, published in 2005, the authors here do not aim to provide a detailed explanation of the sustainable livelihoods approach and its framework, but rather to focus on experience and actual implementation of livelihoods activities at the community level.

OVERVIEW OF SUSTAINABLE LIVELIHOODS

What is a Sustainable Livelihood (SL)?

A livelihood can be defined as comprising the capabilities, assets (including both material and social resources) and activities required for a means of living. It is important to understand the concept and scope of the term ‘livelihoods’, since an understanding of people’s lives in all their richness and complexity lies at its heart. This is reflected in the principle of “starting where people are”.

The best-known definition of an SL comes from the work of Chambers and Conway (1992) and a modified version has been generally adopted, with minor differences between authors and organizations. Farrington et al. give a definition of sustainable livelihoods as:

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A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base (Farrington et al. 1999:1).

Livelihoods are typically associated with income generation, socio-economics, production, jobs and well-being. In addition, they often give rise to related questions such as: How do different people within communities understand their livelihoods? Do local people think about sustainability if their main concern is daily survival? How do local people analyze their own lives and what factors influence people in making livelihood choices?

**What is a Sustainable Livelihoods Approach (SLA)?**

The SLA framework was created by the Department for International Development (DFID) in the late 1990s, building on work by the Institute of Development Studies (IDS), Oxfam and others and has been adopted by different organizations to suit a variety of contexts, issues and applications. In addition to DFID and Oxfam, these include the United Nations Development Programme (UNDP) and the International Fund for Agricultural Development (IFAD).

The SLA evolved from a wide array of participatory and other grassroots approaches to working with the rural poor and in many ways it brings together past methods into a consolidated approach that is both comprehensive and easy to use and understand. Perhaps the most important feature of the approach is that it embraces the complexity of rural livelihoods and seeks to understand reality from the perspective of the poor. It places the poor at the centre of the development process because they are the ones who best understand their own needs and aspirations. Livelihood assets are important factors that are an integral part of the SLA framework and include human, social, natural, physical and financial assets.
Livelihoods and Natural Resources

In Cambodia, 60 percent of the land mass is covered in forests while the Mekong river runs the length of the country, both providing essential livelihoods for thousands of people. Natural resources are vitally important to the livelihoods of many rural people in Cambodia and around the world. There can be many obstacles to accessing these essential resources and in many developing countries issues of access, tenure security and competing interests can pose serious threats to livelihoods. In many countries, legal recognition of ownership or management of natural resources is now being assigned to local communities and indigenous peoples who in most cases have been using and preserving the particular forests or fishing grounds for many years. The decentralisation of natural resource management is spreading and can be observed across Latin America, Africa and Asia with hopes that increasing local ownership or control over natural resources will promote greater security of rural livelihoods. If legal tenure rights are indeed established, for example within a co-management approach, there remain issues regarding inequity and lack of benefit sharing within communities which can potentially limit peoples’ access to resources and therefore livelihoods. The very nature of forests or fishing areas as common-pool
resources or public goods means that problems can arise regarding the making of decisions surrounding terms of use and access and whether arrangements made are fair to all community members.

In Cambodia, due to the wealth of natural resources, many forests and fishing grounds have previously been open-access areas where no rules of access or use were applied. However, the increase in competing interests from the private sector, a growing population of both nationals and immigrants to the country and a diminishing natural resource base means that unrestrained access must quickly become a thing of the past. The decrease in open-access areas has disproportionately adverse consequences for the poor who depend upon natural resources for traditional income generating activities so there is a real need to manage natural resources sustainably to preserve the food security and livelihoods of subsistence-based communities. While local management over natural resources and more secure land tenure is a positive step it also holds the potential to increase the marginalisation of certain groups within communities based on gender, social status, caste or ethnicity. For example locals with more political power and higher social status may attempt to steer new rules and regulations in a way that benefits only themselves, potentially depriving others of their livelihoods.
Therefore the management of natural resources and the rural livelihoods constructed from it must be developed in a way that is sustainable and does not further social inequity.

Livelihoods based on natural resources can be based around purely subsistence needs although many people in rural areas utilize non-timber forest products (NTFPs) such as rattan, honey and wild fruits to generate income (see chapters 20 and 23 for more on NFPs). Despite the high dependence on NFPs among forest users, there are still many barriers inhibiting the generation of greater benefits from these resources. In Cambodia, such barriers include issues of tenure security, a lack of processing skills and limited market access. It is important that NGOs continue to work with communities to support NTFP livelihood development, assisting with skills development in processing NTFPs and accessing markets. NGOs have a central role to play in helping communities to increase their livelihoods potential through capacity building activities. Enhancing human capital through education and skills training means people will have the ability to diversify their livelihoods thereby building security and reducing vulnerability. Other forms of livelihood not directly related to natural resources are also important and skills training in areas such as hospitality, business and tourism are important in locations promoting the development of eco-tourism (see chapters 24 and 25 for more on eco-tourism).

Complexities of Livelihoods

As discussed earlier, the Sustainable Livelihoods Approach (SLA) is a useful ‘lens’ through which to examine poverty and socio-economic issues. It is an important tool which can provide a better understanding of the complexities

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\[\text{Human capital is defined by the Organisation for Economic Co-operation and Development (OECD) as the knowledge, skills and competences and other attributes embodied in individuals that are relevant to economic activity.} \]
involved in securing sustainable livelihoods and the wider issues affecting rural development. Often, in the past, efforts to promote 'alternative livelihoods' have focused almost exclusively on encouraging people to rapidly identify new income-generating activities and start 'producing' or earning money as quickly as possible which may be neither suitable nor sustainable in the longer-term. NGO involvement with livelihoods generation must be a fully participatory process which aims to empower local people to visualize their own aspirations, building on existing strengths and capacities. External support is still needed in areas of technical information, financial assistance, skills training and research into market access while other potential barriers to livelihood achievements such as lack of literacy should be addressed.

With many people deriving livelihoods from natural resources, occasionally livelihood strategies may clash and result in conflict. Conflict may arise when a number of people are pursuing the same livelihood strategy or alternatively when a number of people follow different or competing strategies. For example one person may choose to cut and sell local timber leaving others without their sources of livelihood such as resin, fruit and nuts. Livelihood generation must be established in harmony with other existing forms of livelihoods and of course ecologically destructive and unsustainable techniques such as blast fishing or unrestrained forest clearance should be actively discouraged and alternatives provided.

Emerging Livelihoods

In recent years farmers across Cambodia have been threatened by the increasing effects of climate change in the form of drought, floods and typhoons which have harmed crops, livestock and health. Ecological disruption is also impacting upon the delicate eco-systems of the forests and river systems potentially resulting in the decline of vital resources with serious impacts on livelihoods. Rural livelihoods need to be safeguarded against changing climatic conditions through the development of alternative sustainable livelihoods and improved agricultural strategies such as more resilient strains of rice and better irrigation systems.

Deforestation is a major driver of climate change and accounts for roughly 20 percent of all man-made greenhouse gas emissions. The clearance of forests has also had a devastating impact on indigenous communities who traditionally depend on forest resources for their livelihood strategies. It is
important to remember that forests are also sacred to many indigenous groups in Cambodia and when forests are lost, so, too, are many diverse cultures and traditions.

An emerging area with potential for rural communities is the creation of carbon markets which are designed to conserve the natural environment and reward communities for conserving and managing their forests. Central to this emerging area is the UN’s market-based forestry scheme REDD or Reduced emissions from deforestation and degradation, which issues carbon credits as a financial incentive to dissuade forest owners from logging. This could provide real benefits for forest-dwelling communities and create a new era in which forests are worth more standing than as timber; good news for rural livelihoods as well as for the preservation of biodiversity and the fight against climate change.

Recently the first REDD initiatives in Cambodia have begun to take shape. The chosen villages, 12 in total, are situated in the north western province of Oddar Meancheay, an area which has suffered from extensive deforestation in the last decade. The creation of REDD projects will potentially provide many benefits to the local communities. These benefits can include generation of income, helping to establish legal land tenure and management rights and protecting the forests and their inhabitants from the pressure of external interests such as private logging concessions. The villagers in the chosen Community Forestry (CF) sites will receive 50 percent of the net revenues in return for protecting over 60,000 hectares of forest land with the remaining 50 percent going to the Royal Government of Cambodia. These projects will help secure livelihoods for communities while at the same time cementing an agreement between the Government and communities to collaborate in conserving forest carbon over the next several decades. REDD certainly has the potential to significantly improve many rural livelihoods in the future and deliver global climate change benefits through reduced CO$_2$ emissions, yet the real benefits for forest communities are yet to be realized.

**Livelihoods lessons from practical experience in Cambodia**

In 2005, the sustainable livelihoods approach (SLA) was introduced to fisheries officers in Cambodia for use with local communities in Kampot and Koh Kong province (Campbell, et al., 2005). Through the experience of working with...
local communities, it was clear that the principle concept of sustainable livelihoods was not well recognized since many rural people considered survival only on a day-to-day basis. However, some households understood the concept of sustainable livelihoods even though they operated their own traditional way of making income. A vital part of the SLA is considering to what extent people have wealth or scarcity of the five assets or capitals that can influence sustainable livelihoods. As outlined above, these are human, physical, financial, natural, and social. Related specifically to Cambodia, these can be discussed as follows:

**Human**

Human assets are important for all people who wish to move out of poverty. Human resource development does not always require higher education to be able to make money: simply by learning from each other people can master the techniques of how to be a net mender, boat producer, driver, carpenter, etc. The acquisition of such knowledge can, therefore, help people to find a way to make a better income and thereby move out of poverty. In an existing project run by the CBNRM Learning Institute to reduce poverty in the Tonle Sap Great Lake region, capacity building has been provided for local communities, commune councilors, government extension staff, and other local NGOs to build knowledge about community organizing, networking, partnership building, project management, planning, and especially resource management to ensure sustainability for the next generation. So in order to manage and preserve the natural resource base local people need to have this kind of basic understanding.

Most rural people have limited knowledge when it comes to conducting their own individual household based planning (IHBP). IHBP is an important tool to guide each household in thinking about improving potential assets they have. For example, how much land do they have? How can the land be improved? What other crops could they plant? Can they dig a pond for aquaculture? Do they have enough plowing tools? And do they have knowledge about agricultural techniques? Another important human asset is family size and how many family members are able to support the family in terms of labour or generating cash income. In reality, most people do not have IHBP and they cultivate rice simply using their own cultural and traditional techniques.
The IHBP is one of the key factors to help people (farmers) to think about how they can potentially improve their products if they have land, enough plowing materials, sufficient labour, and external technical support.

**Physical**

From personal experience of working with local communities around the Tonle Sap Great Lake, along the Mekong River, in coastal areas, and across the region, it has been found that many people have migrated in search of work. Those who migrate from one place to another are always seen as very poor. In some cases they migrate with the whole family, but in others they migrate alone leaving their families behind so that they can send money to them when they secure a job. Migration for better livelihood happens all over the world. In Cambodia, there are many cases of people migrating to discover alternative livelihood options, diversification, and livelihoods enhancement.

One of the major reasons for this is the dramatic increase in the number of people looking for work. For instance, the labour force in Cambodia is growing by as many as 300,000 per year and the figure may increase to 400,000 in the near future (Catalla and Sothorn 2009). In the last couple of years the global economic downturn has had a real impact on people’s livelihoods. Most goods, especially food, both local and international, have been rising in price which has had a big impact on labourers who work and earn a living on a daily basis with nothing to fall back on. From 2002 to the present, many Cambodians have migrated to Thailand to find work as labourers harvesting cassava, working on plantations, transplanting, and harvesting rice.

In Kampong Cham province the labourers are being employed for harvesting cassava and rubber. The benefit from this type of work is not very high but will allow them to survive on a day-to-day basis and at least by staying in Cambodia they avoid the potential violence and insecurity that migrant workers face.

Migration also applies to many fish workers who travel from different provinces to work on and around the Tonle Sap Great Lake. This is hard work for women, who have to spend nights on fishing boats with male workers. Furthermore, the fact that they can visit their homes only during the close
season – from July to October – puts a strain on both male and female employees. An additional disadvantage is that the wages paid for this kind of work are not high. Slightly more is paid, however, to fish workers permanently employed within the coastal fisheries. This is because their work is constant throughout the year, and fishing boats on the open sea face more danger. Other fish workers are employed part-time or just at certain times during the year, and many people in Koh Kong and Kampot provinces are now employed by fisheries in Thailand. The latter group have little time to visit their homes as fishing activities take place both day and night.

The growth of the garment factories has proved a further draw to workers. These have had a positive impact in reducing poverty, particularly as young women have left their families in the provinces to take factory jobs in Phnom Penh, although opportunities have also been developing in some provincial areas. Thus, support for garment factories has been one of the RGC’s most successful projects in terms of poverty reduction.

Financial

Some rural communities are facing difficulties in accessing microcredit/finance since the microfinance organizations are working primarily with inland villagers rather than those living in floating villages. In many cases, too, the microfinance organizations are working with middle-poor rather than very poor families, so the very poor families still have no chance to access loans. This means that the poor families are still poor and are forced to borrow from their neighbours or local money lenders at high rates of interest. In the coastal and even in fresh water areas, fishermen are in debt because it is difficult for them to return the advances they have acquired from local money lenders or from their neighbours. This cycle of permanent debt can compel poor families to migrate in search of alternative livelihoods.
In Cambodia, 80 to 85 percent of the total population are farmers who live in rural areas, dependent on agriculture and natural resources for their livelihoods. In February 2009, the rice price was very high - up to 60 percent higher than in January 2008. A joint document of the Council for Agriculture and Rural Development (CARD), the United Nations World Food Programme (WFP), and the World Bank (WB) published during the National Forum on Food Security which was held in July 2009, states that most rural people spend 60 to 70 percent of their income on food and that 40 to 50 percent of that is for rice. So why do rural people have to buy rice when they are already farmers? Based on personal experiences of working with farmers for more than six years in Battambang, Banteay Meanchey, Siem Reap, Pursat, Kampong Chhnang, and Kampong Thom provinces it has been found that most farmers rely on their rice production for a range of necessities throughout the year. For example, people will sell some of their paddy rice for clothes, for social events, wedding parties and motorbikes. Some remaining rice will be kept for seedlings, and some will be kept for exchange for chemical fertilizer and for food during the next rainy season. Unfortunately, during the rainy season their children, husband or wife might get sick so they have to sell the remaining paddy rice for medical treatment. Then they have to buy chemical fertilizer from middle men at a very high price or they may have to borrow some milled rice/ paddy rice from their neighbours. So people remain in poverty.

Water is very important for daily life including drinking, washing, cooking, and cleaning. In Cambodia, water is not yet a big issue for humans and animals since there is access to reservoirs, waterfalls, lakes, ponds, rivers, streams, open wells and pumping wells. Also, water has not been privatized. Due to climate change and global warming (floods and drought), water is increasingly an issue for the Royal Government of Cambodia (RGC) to address and to consider how to manage it better, especially the water supply for agriculture. In response to this agenda, the Ministry of Water Resources and Meteorology (MoWRAM), the Ministry of Rural Development (MoRD) and the Ministry of Agriculture, Forestry and Fisheries (MAFF) are becoming active as leading agencies to provide technical assistance to line departments to operate many irrigation systems in the country, especially for agriculture and the agro-industrial sector. Therefore, the ADB currently provides grants and
loans of around USD 23 million to the MoRD to run the Tonle Sap Rural Water Supply and Sanitation Project. The project aims to strengthen the awareness of local people about accessing safe drinking water and the need for personal hygiene in order to contribute to poverty reduction and water efficiency in the Tonle Sap region.

Social

The SLA makes it clear that social assets are important. Social assets refer to the relationships between people in the same community or area. In the case of Community Fisheries management there is a good mechanism for coordinating livelihood practitioners and supporters such as microfinance organizations or other interested donors. For example, the Community Fisheries in Phneah Koh Pong Sat, Banteay Meanchey province, are well organized in supporting each other. The monks in particular are important key players in terms of the conservation of the fish sanctuaries. Through the success of fisheries management in that community, the facilitator from the national level fisheries administration staff has discussed alternative ways of generating income with the community committee members and community members. The idea was to have a brainstorming session with the local people about their dependency on fishing and whether they had any ideas about how to reduce the pressure on the fishing grounds. Finally the community members were provided with a small amount of credit for improving their livelihood activities - for instance, to invest in livestock and dry season rice production (for more on microfinance please see chapter 21 and 22). The success of the project and the experiences gained from it, have been widely shared with other communities within the country as well as across the Asian region as a whole.
REFERENCES


Campbell, J. et al., 2005. Understanding the factors that support or inhibit livelihood diversification in coastal Cambodia. Imm Ltd, UK.


Many of the forest-dependent communities rely on NTFP collection, specifically of wild forest honey or a combination of NTFPs, to meet their subsistence and cash needs. However, these sources of income are becoming increasingly more vulnerable due to the declining availability and threatened condition of forest lands and natural resources in Cambodia. It is in this context that pilot projects were established in Koh Kong and Mondulkiri with the aim that these projects can be used to support other community based enterprises. The paper provides specific details of the projects highlighting that the interventions are cross cutting to address environmental, socio-cultural, economic, and policy oriented issues. The project results indicate that there are many similarities and differences among the two sites and although they have proven relatively successful, there are still many challenges including the need to improve the delivery and recording system, need to further understand the demand and absorptive capacity of the market, and the need to define a promotional and marketing strategy.
INTRODUCTION

This paper is jointly authored by staff of the project: “Establishment of a Cambodia Forest Honey Network and Strengthening of Community-based Initiatives on Sustainable Honey Harvesting and Marketing,” which is supported by the Ecosystems Grants Programme of the Netherlands Committee of International Union for Conservation of Nature (IUCN) and other project contributors. The authors are staff of the three founding members of the Cambodia NTFP Working Group (CNWG): NTFP Exchange Programme for South and Southeast Asia (NTFP-EP); WWF Cambodia; and Community Forestry International (now the Community Forestry Partnership Programme of PACT Cambodia). These organizations are collaborating to help improve the livelihood of forest-dependent communities in Mondulkiri and Koh Kong provinces in Cambodia through a community-based livelihood project on sustainable harvesting and collective marketing of wild honey.

The case studies aim to share the strategies and initial challenges and lessons learned by the authors and their community partners to respond to the current situation faced by many forest-dependent communities in Cambodia today. The authors reflect that collaborative and community-based initiatives that integrate forest conservation and protection, sustainable resource management, and economic strategies can help to secure the livelihood of forest dependent communities. Such initiatives can bring about meaningful social, economic and environmental benefits. In the process, however, the community and their project partners encounter considerable hurdles. The direct engagement of communities in overcoming these hurdles is key to securing these benefits.

BACKGROUND TO THE WILD HONEY PROJECT

The lives of forest-dependent communities in Cambodia are becoming increasingly vulnerable due to the declining availability and threatened condition of forest lands and natural resources in the country. Many of the forest-dependent communities rely on NTFPs collection, specifically of wild forest honey or a combination of NTFPs, to meet their subsistence and

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9 Referred to as CFP (short for Community Forestry Partnership Programme) in the rest of the paper.
Chapter 20: A Journey from Forest to Market: Experiences in Securing Benefits from Community-based Initiatives on Sustainable Wild Honey Harvesting and Marketing in Cambodia

Learning Symposiums and the Development of Selected Papers

Cash needs. For example, in the project areas, up to 40 percent of forest dependent communities’ income is sourced from wild honey or collection of other NTFPs. WWF, NTFP-EP and CFP decided to collaborate on an NTFP-based livelihood project given the demand from their community partners for concrete improvements in their household income and to have access to markets for forest products such as wild honey. It has been these organizations’ experience that conservation or environment protection projects cannot easily engage local communities to participate in forest protection and rehabilitation activities unless they result in economic improvements. They believed that through livelihood project assistance to communities and any gains from this will help to improve forest protection and management. Prior to the project, the WWF and CFP already had partnerships with communities, local authorities and line agencies of the Forest Administration and Ministry of Environment in Mondulkiri and Koh Kong provinces. The two organizations also have a mandate in conservation, Community Forestry, livelihood improvement and community capacity-building. NTFP-EP complemented the WWF and CFP in terms of its regional experience, technical linkages and its community-based approach in NTFP livelihood development and conservation.

The case studies from Mondulkiri and Koh Kong will describe the initial project outcomes and challenges and what has been learned from these. The project interventions in the two provinces are designed to cultivate incentives and benefits in four general areas of concern: environmental, socio-cultural, economic and policy-related. The most fundamental intervention is at the community level, whereby the traditional honey hunters and collector groups are encouraged and assisted to form community-based honey enterprises (as livelihood and NTFP user groups), and build their capacity. Two community based honey enterprises were formed in Mondulkiri and one in Koh Kong. The wild honey project provides the structure and resources to support the community-based enterprises through the following project activities:

**Environmental/Resource Management component**, eg resource mapping, forest resource protection and monitoring, honey harvesting/collection improvements through awareness raising, training, exposure and demonstration of sustainable harvesting and processing techniques.

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10 NTFPs or non-timber forest products are “all biological materials other than timber which are extracted from forests for human use. These include foods, medicines, spices, essential oils, resins, gums, latex, tannins, dyes, ornamental plants, wildlife (products and live animals), fuel wood and raw materials, notably rattan, bamboo, small wood and fibers” (Jenne de Beer and McDermott, M. 1996. The Economic Value of NTFPs in Southeast Asia).
Social-cultural component, eg organizational development, leadership training and confidence building, community to community networking through sharing of knowledge, techniques and practices in honey harvesting/collection and cross-visits, documentation of honey harvesting/collection practices and techniques, information dissemination at village level.

Economic component, eg formation and strengthening of community-based honey enterprises including membership development and expansion, business planning and business training. Marketing and promotions support, financing linkages and capital build-up.

Policy-related component, eg public awareness raising about links of forest bees to forest conservation and sustainable livelihoods, development and promotion of market standards for wild honey, research and dissemination in respect of land and resource conflict issues especially in the project areas.

NTFP-EP, CFP and the WWF proactively use the project experience to broaden the support for community-based forest enterprises and livelihood-focused interventions in Community Forestry in Cambodia. Additionally, the project partners also use this pilot experience to stimulate greater community-to-community networking for purposes of information sharing, capacity-building and market entry facilitation.
**PROJECT AREA CASE STUDIES**

**Mondulkiri Project Case Study**

**Figure 1.** Map showing the Mondulkiri project area

Mondulkiri province is one of the provinces in Cambodia that still host a vast tract of natural forest ecosystem reaching an estimate of 1.2 million hectares. It has unique vegetation, which comprise a mix of evergreen, semi-evergreen and savannah forests. These rich ecosystems support species of large mammals including populations of gaur, banteng, wild Asian elephant, Asian tiger and cloud leopard. Most, if not all, of the wildlife species in Mondulkiri are now considered endangered under the IUCN CITES list. Because of its rich biodiversity, Mondulkiri is important to its inhabitants in terms of the various resources it offers.
The Bunong (commonly referred to as Phnong) indigenous group comprises the majority population in Mondulkiri province. There are approximately 50,000 people living in the province. The Bunong lead a traditional way of life with high dependence on the forest resources surrounding them. In addition to their practice of shifting cultivation, they collect vegetables, fruits, and root crops from the forest to supplement their food requirements. The diverse NTFPs found in their forests provide them with a reasonable source of cash income to meet other needs.

However, the province has been developing rapidly in the last three years as seen in an increase of economic activities mostly out of natural resources extraction and land use changes. If these activities are not considered carefully, the province’s rich ecosystem may ultimately lessen its capacity to support the people who are depending on these valuable natural resources.

It is in this context that the WWF, in 2004, expanded its conservation intervention in the area to include community-based natural resource management (CBNRM) – a strategy aimed at involving the local communities in caring for, and ensuring proper utilization of, their natural resources. Since then, the WWF has been instrumental in forming NRM resource-based and livelihood-based groups in villages surrounding the two large Protected Areas in the province – the Mondulkiri Protected Forest and the Phnom Prich Wildlife Sanctuary.

WWF supports two honey and two resin livelihood groups in Pu Chrey and Krang Teh communes in Pech Chenda district. These communes, comprising eight villages, have a total population of 8,377, 83 percent of which are Bunong. In the socio-economic and livelihood assessment conducted by the WWF in these two areas, it was noted that honey and resin constitute 12 percent of the average income of the community. A more focused study among the resin and honey collectors conducted in 2007, even reported that more than 50 percent of their income comes from collection and trade of these two NTFPs.

The Krang Teh and Bu Chri communities proposed a honey enterprise project. They believed it is a project that is both socially and culturally acceptable, and it is also compatible with forest conservation. Honey collection is a traditional household based activity mainly for food and medicinal purposes. Since 2003, it has flourished into a more commercial based economic
activity because of increasing demand from other villagers and local tourists visiting Mondulkiri. This has since led to unsustainable collection and decline in the quality of honey coming from these communes. To increase volume, they would dilute their honey by adding water and sugar. The collectors also suffered from unfair trade practices with their produce being bought at a very low price.

WWF in partnership with NTFP–EP and CFP initiated a series of training and organizational development activities with the community to help them hurdle the problems with market price. The training activities introduced techniques to improve the volume and quality of their honey collection. Table 1 below shows a snapshot of the major activities conducted in the Krang Teh and Bu Chri communities.

**Table 1.** Timeline of the honey enterprise development intervention in Krang Teh and Bu Chri communes, Pech Chenda district, Mondulkiri province

<table>
<thead>
<tr>
<th>Feb.–Mar. 07</th>
<th>May-Dec. 07</th>
<th>July-Dec. 08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training in sustainable honey harvesting and proper honey handling</td>
<td>Harvesting, labeling, brand development, Set up procurement process in the village</td>
<td></td>
</tr>
<tr>
<td>Feasibility study of honey production in Krangties and Pu chrey</td>
<td>Awareness raising and organizing of honey groups</td>
<td>Test marketing, Improvement of the enterprise project through development of business plan and internal control systems of the groups</td>
</tr>
<tr>
<td></td>
<td>By December 2007, the two honey livelihood groups were formed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The intervention framework

The guiding framework of the project was an adaptation of the experiences and learning from similar community-based NTFP enterprises in the Southeast Asia region. The framework was modified to suit the Bunong and Cambodian contexts - that is to form a product-based enterprise group and provide the necessary financial and technical assistance revolving around resource management, sustainable collection methods and quality control, marketing and business support and networking and linking with resource institutions. These interventions were undertaken at different levels – community, project staff and sub-contractor for marketing. However, the project gave emphasis at the community level particularly to improvements in the sustainable harvesting methods, quality control and product development through labeling, packaging and branding.

The Mondulkiri honey product was test marketed in 2008 starting with a minimal volume (400 litres). Because the community members were not yet completely ready to take on some of the production processes, a sub-contractor was hired to assist in packaging and marketing of honey. Experience from this test period served to improve the enterprise operation which includes emphasising quality control and monitoring, grading system, and improved packaging. All the learning was incorporated in the development of their 2009-2011 business plan, which now serves as their blueprint for business and marketing, subject to annual reviews.

After the successful result of the test period, the community was eager to take on the whole production flow – from harvesting to marketing in 2009. However a capacity assessment that was facilitated as part of the business planning process showed that the group was not fully equipped to manage the enterprise operation fully. The members themselves concluded that they were not yet ready but were willing to learn hands-on the skills and responsibilities for running an enterprise. They realized that this might take
some time. So in 2009, 89 percent of the group’s honey harvest was earmarked for a negotiated purchase agreement and 11 percent of the group’s collection was packaged and marketed directly by the enterprise group with technical support in marketing and financial systems from NTFP-EP.

**Initial Successes**

Two years after the establishment of the honey enterprise project, the community members started to gain initial benefits from the project, socially, economically and culturally. By pooling their products and cooperating with technical service providers, they could dictate the price of their product. From a gate price of 10,000 riel (USD 2.50) per litre before the project it is now sold at 20,000 riel (USD 5.00) per litre.

With the improved harvesting methods, members reported that they were able to increase the volume of honey harvested last year. They were able to harvest two to three times from the same bee colony.

Solidarity among the community members was also increased. The increased community activity encouraged them to revive their traditional groups locally, called salapak. They also now brought back the spiritual aspect of honey harvesting by reviving the rituals that had been traditionally practiced before harvesting wild honey. More cooperation and a sense of mutual help have been observed among the community members. Community leaders seem now to be more proactive and motivated to perform their duties.

Resource management wise, with the collection area mapping exercise, the members have a more concrete basis to tell the people to protect the collection areas and not to cut the bee nesting trees. They have worked with the village leaders to inform people not to cut the trees that are tagged. A recent proof of the ability of this project to move the community to protect their natural resources is demonstrated by their advocacy to the local and provincial authorities to stop clearing activities by rubber companies in the collection area. While the negotiation is still ongoing over this claim, the proactive decision of the community to raise their concern to local authorities is already a testimony of some changes emerging in terms of community confidence, a collective sense of resource ownership, and to some extent a greater sense of hope for the future.
Challenges and solutions

While the necessary ingredients of a good enterprise are present, the project did not go without any of the usual hurdles of community organizing and enterprise development. Some of the challenges - and the actions taken by the project to overcome these - are discussed below. The solutions are still considered a work-in-progress.

Communication and information sharing

Villagers are still short of awareness and information. As a result, they do not fully join the association. Only a few members are actively participating in the group activities so are not getting the information. The weak information sharing has led to a misunderstanding about benefit sharing and caused other members to become inactive.

Solutions:

- To work closely with local authorities and committee members so that they will be more fully informed and active in disseminating information to all members and continue exploring the best way of sharing information to members in a timely manner. Encourage the group leaders to have more personal communication with the members by visiting their homes to share information.

- To encourage members to be more active: their benefit was linked to their performance in the group (ie members who are not active can get only a portion of the enterprise income).

Compliance with sustainable techniques in honey harvesting

Because the internal control system is not yet properly in place, compliance with sustainable harvesting methods by members is still partial.
Solutions:

- To map collection areas by taking the Universal Transverse Mercator (UTM) readings and tagging the trees where honeybees nest. This will allow for monitoring if members are collecting immature beehives and if they are collecting all brood combs. Tagging trees also minimizes stealing.

- To designate bee trees that will serve as a gene pool.

- To increase community participation in patrolling and monitoring harvesting activities.

- To improve the internal control system by giving higher prices to sustainably collected honey coupled with improving skills of buyers in quality monitoring. And increasing community participation in the control of the harvest. See Table 2 for the grading system and corresponding price for honey that has been developed and agreed for implementation in 2009.

**Table 2.** Grading system which will be effective in 2009 in procurement and pricing of honey product from members

<table>
<thead>
<tr>
<th>Criteria/Grading</th>
<th>Grade A</th>
<th>Grade B</th>
<th>Grade C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture content</td>
<td>20 percent and not more than 22 percent</td>
<td>22 percent and not more than 23 percent</td>
<td>23 percent to 24 percent</td>
</tr>
<tr>
<td>Filtering process done</td>
<td>no dust, no ants, ash, lava, clean container</td>
<td>filtered, some pollen, some dust, clean containers</td>
<td>clean containers</td>
</tr>
<tr>
<td>Completeness of information</td>
<td>Tree tag number, number of comb, number of member, date</td>
<td>Some of information</td>
<td>No information</td>
</tr>
<tr>
<td>Price for members</td>
<td>10 percent more than the agreed buying price</td>
<td>Agreed price – which is 10 percent higher than traders’ buying price</td>
<td>10 percent less than agreed buying price</td>
</tr>
<tr>
<td>Price for non-member</td>
<td>The same as the agreed buying price</td>
<td>10 percent more than the agreed buying price</td>
<td>Less than 10 percent from local price</td>
</tr>
</tbody>
</table>
In the above problems, the benefit sharing mechanism was seen as an important incentive for members to comply with the sustainable harvesting methods, proper honey handling and more responsible resource management (i.e. ensuring that they do not cause fires while they are in the forest, nor hunt, and participate in monitoring and patrolling illegal activities in the forests. See Box A for the benefits sharing mechanism).

**Box A: Benefit Sharing Mechanism for the Honey Project in Mondulkiri**

**Type of benefits which can be achieved from this project**

**Social Benefits:** Through this project, the livelihoods of honey collectors will be improved, their income will be increased. This will also help to reduce poverty in rural areas as set forth in the strategy of the Royal Government of Cambodia, especially along the south-eastern part of the nation where indigenous Bunong people live. Honey consumers will also increase their awareness about the qualities of wild honey, their natural benefits and how to determine quality honey products.

**Cultural Benefits:** Bunong indigenous people will be able to nurture their culture, tradition and customs. Community members will have better techniques for collecting honey, and better ways of going into forest for collecting NTFPs. Bunong indigenous people will develop the habit of sharing what they can earn in their community.

**Environmental and Economic Benefits:** This project also includes educational activities for the community through dissemination activities about the advantages and impacts of forest protection and sustainable resource management. By providing increased awareness about the natural links of forest bees and the environment, forest laws and other related sub-decrees, and direct engagement in forest-based livelihood initiatives, community members will be more motivated to protect the natural resources.
Profit sharing as stipulated in the groups’ by-laws:

- Capital expansion 50%
- Administration Cost 20%
- Resource Management 10%
- Members’ Shares 30%

Detailed expenses which will be covered by the 20 percent administration fund:

a. Only when deemed necessary;
b. For strengthening the capacity of the management committee;
c. For administrative affairs;
d. For contribution to social activities.

Detailed rules in sharing profit among members:

a. According to his or her capital shares
b. Active members will get 3 percent share from profit while non-active members will not receive any cash share.

Profit sharing will be conducted during the annual meeting of the association.

Forest conversion and weak tenure system

A portion of the Protected Forest was excised to accommodate an economic land concession. The conversion of some areas into rubber plantations has seriously affected beehive preparation and forest resources. Some of the honey collection areas have been cleared by private companies for re-planting large scale agro-industrial trees;
Solutions:

- Work more closely with local authorities, expert institutions, and the forest community committees. Hold discussions to find ways to protect the forest where villagers collect honey, and request private companies, who receive the economic concessionary lands, to preserve parts of the forest where honey bees live. This request has been the least successful so far.

The community-based honey enterprise development project in Bu Chri and Krang Teh, young as it is, is replete with lessons that are useful for those who are planning to engage in a similar path. It underscores the need for the different stakeholders, from community to local, national and international institutions, private sector and academe, to work together to make conservation and poverty reduction efforts successful.

LESSONS LEARNED

1. Resource protection and enforcement alone will not mobilize communities to become better resource managers. We need to provide enough incentives for them to be involved such as providing livelihood support. This is based on the observation that the groups organized by the WWF who are currently not yet engaged in profitable income-generating projects are less active and motivated. The honey groups on the other hand, seem to be more active and cohesive compared with the other groups and committees who are currently engaged so far only in forest protection and wildlife monitoring.

2. Related to the above, economic benefits serve as a highly potent incentive for community participation and other voluntary investments in livelihood and conservation initiatives. As the benefits are demonstrated more concretely, systems and strategies for compliance to rules and standards become more acceptable to community members. These rules and standards become more feasible to enforce.
3. Conducting a market study at the early stage of the project and testing the market with a small volume was crucial to the project. It helped for all project participants to gain a better understanding of the market and to manage an enterprise not only in theory but through actual practice. Testing the market with a small volume also limited the risk exposure of communities.

- To ensure quality of the honey product, we still need to improve the process of honey management. In order to sell a large volume of honey on the market, there must be a method for long-term storage. If the honey is not properly controlled, its quality might be affected;
- Quality control is very important for all steps, starting from honey collecting in the forest until packaging;
- Transportation and recording systems should be improved;
- There should be a quality control mechanism in the community;
- At the beginning of the project, staff should observe the project implementation very closely;
- There should be a clear understanding about the demand and capacity of the market place.
- There should be a strategy for advertising products so that clients will know more about honey products;
- The market analysis results will be used for improvements such as labeling, packaging, and branding.

4. Support from local authorities is important in order to ensure the success of the project, especially the effort to protect beehive areas. When this support was absent, this led to the conversion of some of beehive areas to economic land concessions, which to date have been mainly allocated for commercial agricultural plantation uses. If local authorities knew that the honey business project would help to improve the livelihoods and the economy of their community members, then they would preserve those beehive areas. There is a need for an agreement between honey collectors and local authorities for the protection of honey collection areas, potentially as part of the forest management plan development process.
5. Working collaboratively with other support organizations like NTFP-EP, CFP and Bethany Cares in respect to technical expertise, market linkaging and backstopping at market locations (eg Phnom Penh), facilitated project implementation. Communication flow was also made easier and funding resources were also used much more efficiently with the division of labor particularly in the technical areas. For example, the WWF focused more on resource management and organizing and production aspects of the wild honey project; NTFP-EP in capacity building for enterprise development, ie business planning and marketing, CFP assisted in financial management training inputs and Bethany Cares in packaging and direct marketing during the test marketing period.

**Koh Kong Project Case Study**

The site of this project, Prang Community Protected Area of Dong Peng Multiple Use area, is located approximately 20km from Sre Ambel town in Koh Kong Province, Cambodia.

The Prang community initiated the development of a Community Protected Area (CPA) in 2007 and is composed of two villages: Chamkar Krom and Prang village. There are 151 Khmer families registered as members of the CPA. With guidance and support from American Friends Service Committee (AFSC) and Khmer Ahingsa, Prang community has relatively strong relations with local authorities, the district governor and the CPA officer. CPA by-laws, rules and regulations and a map have been developed already. The Prang CPA was recognized by the Ministry of Environment in 2008, covering an area of over 859 hectares within the Dong Peng Multiple Use area (see Figure 3).
Livelihoods in this village are based on farming, fishing, honey collection, hired labor and animal husbandry (cows, buffaloes, pigs, chickens, ducks etc). Chicken, duck and pig raising provide only enough for food, not for selling, whereas, cow and buffalo raising is for farming. Not many livelihood opportunities – such as planting other crops - are available to the people because the available water resources are mainly saltwater. Villagers earn cash income mainly from fishing and farming, while honey collection and hired labor are secondary sources.

The Honey Group Initiative

A dominant tree of smach deng (*Malaleuca cajeputi*) and other flowers which are important sources of pollen and nectar for wild bees especially, *Malaleuca cajeputi* is an important species from a beekeeping standpoint. This species is not only an excellent honey producer but its bloom appears to be the “trigger” for bees to migrate from the escarpment to the flatlands in
the area. It is among the wood species named as construction materials for bee rafters. The honey collected in the area in the rainy season has an attractive and distinct taste very similar to the scent of the melaleuca flower.

In 2008, the CFP project team delivered training on sustainable honey harvesting in Prang village. 27 villagers attended. The project team showed an audio slideshow on sustainable honey production and enterprise development. A number of participants were interested in this training, especially in the honey slideshow and the main points for honey collection technique.

Soon after, the Prang community initiated the development of a Prang honey group with the facilitation of the CFP team and cooperation of the local authorities. Currently, 44 families are registered as members of the honey group among the entire population of the two villages (153 families). The procedure to establish this group was to conduct a meeting and training on sustainable collection techniques and data collection of honey resources with key villagers (collectors) and local authorities.

Figure 4. Prang Honey Group Management Structure

The Prang Honey Group is not officially part of the CPA management structure, but is created under the facilitation of CFP staff through elections at the village level. The management group together with the local authorities, CPA officer, commune council, and relevant NGOs lead in the resource management process in the area. Figure 4 shows the current management structure of the Prang Honey Group.
Honey Group Strengthening and Development

CFP and NTFP-EP have played an important role in supporting the capacity building of the honey group through training, coaching, and facilitating community exchange visits. In August 2008, CFP conducted training and coaching on financial and bookkeeping systems in the village. During the training, CFP staff discovered that a majority of the participants were unclear about their responsibilities, had poor capacity for bookkeeping and calculation, and lacked the ability to identify good and bad invoices. CFP staff assisted the honey group to set up a bookkeeping form in the cash book and coached them on how to record transactions into this.

Besides villager’s traditional practice for attracting bees through a rafter method, the CFP team provided training to improve their existing technique. CFP’s training is based on a rafter technique, called “tikung”, developed by an NTFP-EP Indonesian partner. The technique is based on the design and installation of stronger wooden rafters which can attract more bees. Furthermore, the rafters last longer (see photo below). These rafters are installed in April or May before the honey wet-season period that begins in June and lasts until November. A villager who installs a rafter has ownership of the honey collected from these rafters.

To ensure quality of the honey product and the honey group management, CFP and NTFP-EP delivered training on internal control systems (ICS) to the honey group in Prang village, attended by 17 villagers. ICS is a set of agreed standards and regulations, procedures, roles and responsibilities, resources and inputs that ensure quality accountability and proper documentation of the flow of the honey business. Below is a sample of the ICS installed by the honey group in Prang village.
Table 3. Internal Control System of Honey Group in Prang village

<table>
<thead>
<tr>
<th>Description of Tasks</th>
<th>Standard/Rules &amp; Regulations</th>
<th>Procedure</th>
<th>Roles and Responsibilities</th>
<th>When</th>
</tr>
</thead>
</table>
| 1- Resource Management | - Set up Community Forestry or Community Protected Area  
- Identify honey area  
- Each colony managed by each collector to be numbered. | - UTM collection of honey area  
- Put tree tags | - Honey group leader, villagers, and CFP | - Honey season in June |
| 2- Honey Collection | - Do not use pesticides  
- Follow the regulations for honey collection  
1. Only 80 percent of the honey head should be harvested  
2. Harvest in daytime  
3. Honey must be pure  
4. Kbal Tuk should not be stored for more than three days. | - Meeting with honey members and promote honey collection regulation | - Honey hunters  
- Group leader  
- Honey group committee | - May |
<table>
<thead>
<tr>
<th></th>
<th>Honey inspection and procurement</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3-</td>
<td>Honey must be bought from members only</td>
<td>- Provide guidance in how to package honey head (container labeled)</td>
<td>- Honey group committee</td>
</tr>
<tr>
<td></td>
<td>Fill out buying form</td>
<td>- Encourage villagers to register as honey members</td>
<td>- Honey group committee</td>
</tr>
<tr>
<td></td>
<td>Check moisture content in honey</td>
<td>- Prepare buying form for buyers</td>
<td>- Honey season (May-Sept)</td>
</tr>
<tr>
<td></td>
<td>Containers must be clean and properly labeled (weight, name of collector, location of nesting site, and date of collection)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ownership of rafters must be respected</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reduce moisture content</td>
<td></td>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th></th>
<th>Honey group committee</th>
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</thead>
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<thead>
<tr>
<th></th>
<th>Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-</td>
<td>Do not squeeze honey head</td>
</tr>
<tr>
<td></td>
<td>Cut honey comb in small pieces in length and size and filter with filtering can</td>
</tr>
<tr>
<td></td>
<td>Process in a clean place</td>
</tr>
<tr>
<td></td>
<td>Process immediately after buying from members</td>
</tr>
<tr>
<td></td>
<td>Guarantee of purity</td>
</tr>
<tr>
<td></td>
<td>Clean filter can and room before processing</td>
</tr>
<tr>
<td></td>
<td>Prepare material that is needed before processing (jerry can, knife etc)</td>
</tr>
<tr>
<td></td>
<td>Honey group committee</td>
</tr>
<tr>
<td></td>
<td>Honey season (May-Sept)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Selling and marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-</td>
<td>Have an agreement with the buyer</td>
</tr>
<tr>
<td></td>
<td>Guarantee purity</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
</tr>
<tr>
<td></td>
<td>Price</td>
</tr>
<tr>
<td></td>
<td>Arrange delivery schedule</td>
</tr>
<tr>
<td></td>
<td>Contact buyer</td>
</tr>
<tr>
<td></td>
<td>Check roles and responsibilities of the members</td>
</tr>
<tr>
<td></td>
<td>Honey group committee and members</td>
</tr>
<tr>
<td></td>
<td>Apr</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Revenue earning and sharing</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-</td>
<td>Prepare buying and selling record</td>
</tr>
<tr>
<td></td>
<td>Prepare revenue earning and announce to all members</td>
</tr>
<tr>
<td></td>
<td>Sharing benefit based on regulations</td>
</tr>
<tr>
<td></td>
<td>Collect all buying and selling records to summarize</td>
</tr>
<tr>
<td></td>
<td>Meeting with all members &amp; committee to inform them about benefit sharing and the volume of honey.</td>
</tr>
<tr>
<td></td>
<td>Honey group committee and members</td>
</tr>
<tr>
<td></td>
<td>Nov</td>
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</tbody>
</table>
Community exchange activities and information sharing have also been crucial for strengthening the honey group. CFP always invite the committee from Phnom Toub Cheang community (another community partner of CFP that is engaged in collective honey marketing) to share their experience in rafter installing, management, and harvesting technique etc whenever CFP conducts training/coaching or facilitates project meetings. There have also been opportunities for representatives from the Prang honey group to visit Mondulkiri province for exposure to the ongoing honey project experience there. Likewise, some members have also participated in learning activities designed for both Mondulkiri and Koh Kong project participants in Phnom Penh such as a) the visit of the NTFP-EP resource person from Vietnam for orientation and information sharing about honey processing techniques (eg filtering, drying / moisture reduction), and b) marketing exposure to CEDAC, other buyers and other honey brands available in the Phnom Penh market.

**Benefit Sharing**

Benefit sharing is facilitated according to the regulations (see Table 2 – Internal Control System) that was created by the honey group. The honey members who collect honey heads and sell to the honey group will get direct benefits through the honey payments. The management committee benefits through service fees for honey buying from members, honey processing and delivery to buyers. In 2008, the honey group management committee reported that they did not get full benefits from the honey project. The reasons were mainly because they were only able to buy a small amount of honey head (70.60kg) from their members as it was nearly the end of the season. During this first time the CFP team and the committee also miscalculated the cost per litre of honey. They assumed that one litre of honey equalled 1.36 kilograms of honey head only to realize later during the actual honey processing that 1 litre of honey is actually equivalent to 1.58 kg of honey head. A fraction of the honey group working capital was lost in over-payment to members. While a lesson learned, this was not seen as a major loss since the extra payment meant a bonus to the members.
Issues and Challenges

Regarding the progress of the project in Prang village, the following key issues have been observed:

• **Communication:** Lack of communication between CFP and the honey group, and between the honey group and members at the beginning of the project. CFP took a lot of time to prepare the honey group and communicate with the buyer (CEDAC). Hence, it made the honey group wait for a long time to get information on buying and selling honey. The majority of the villagers were disappointed with the honey group. Due to the seasonal availability of honey and the lateness of the honey group preparation activities, the honey group missed the opportunity to sell a larger volume of honey in 2008.

• **Participation:** It has been difficult to mobilize the villagers to attend meetings or training. Since the honey group started only recently, and some of the honey group committee members are not so active, the villagers go out of the village to sell labor in Angkor Sugar Cane Farm instead of participating in the honey project activities.
• **Livelihood Opportunities**: There are not many livelihood opportunities in the village except for rice farming, fishing, and honey collection. These activities, especially agricultural work, are hampered because of limited water resources in the area. Because of this, many of the villagers sell their labor outside of the village especially to the Angkor Sugar Cane Farm.

• **Stealing Honey and Unripe Harvests**: In addition to the delayed honey buying in 2008, there were other main problems faced by the honey group including incidents of honey head theft and harvesting of unripe or immature honey. This was believed to be instigated when the honey head price was set, which was a lot better than the prevailing market price. Honey colonies are regarded as common property. Currently, the honey collectors make small signs and mark the honey trees to establish ownership of the bee colonies. Rafter owners now also make sure their rafters are guarded. However, overall, the management of the honey group is still weak even though they have clear regulations, structure and roles. Sustainable harvesting techniques are not fully promoted nor widely practiced.

• **Rafter “Tikung”**: The CFP team provided information on an Indonesian rafter technique called “Tikung” for the honey group but the honey hunters did not want to apply it because it would take a long time, and there was not enough good wood in their area. Therefore they only tested one “tikung” in their area.

• **Quality and Purity**: Honey in Prang is collected during the wet-season so the moisture content is very high. It is difficult for the honey group committee to identify the water inside while they buy honey head from their members. They have a refractometer to check moisture content but based on experience in 2008 the moisture content was over the maximum reading. (See Table 4 for solution and lesson learned).
Table 4. Solutions and Lessons Learned

<table>
<thead>
<tr>
<th>Key Issues</th>
<th>Solutions and Lessons Learned</th>
</tr>
</thead>
</table>
| • Communication and Participation              | - Even though at the beginning we lacked communication with each other, it provided a good opportunity to focus on the honey group building and strengthening for next year.  
  - Relationship building and cooperation are the best ways to build a honey group’s capacity. CFP pays attention to building relationships, and to seek support and cooperation from local authorities and stakeholders in order to push this group forward.  
  - Without regulation and a definite role for the honey group, it is difficult for the honey group committee to mobilize the members to join the honey group activities. |
| • Livelihood Opportunities                      | - It is better for us to seek other livelihood opportunities for the villagers so that they do not have to go out of the village to sell their labor.                                                                                       |
| • Stealing honey and unripe harvests and        | - To minimize problems, enforcing the regulations for honey collection is crucial. It is also important to form honey collector groups with monitoring, and to make agreements with collectors.                                                |
| Sustainable Harvesting Techniques               |                                                                                                                                                                                                                            |
| • Rafter “Tikung”                               | - There is a need to improve the installation of “Tikungs” and to demonstrate successful models. We can assign someone to monitor the results and compare these with traditional rafters.                                                     |
| • Quality and Purity                            | - It helps to set up a simple drying technique at village level with a responsible person to assist in the drying/moisture reduction process with available technical advice.                                                             |

KEY REFLECTIONS FROM THE PROJECT CASE STUDIES

The two case studies, while occurring in different locations, are linked in terms of a common goal for community livelihood improvement integrated with forest protection and sustainable natural resource management. They are also linked in terms of the implementing actors who maintain close communication and operate a feedback loop, and who collaborate in the technical and organizational aspects of field implementation. The WWF, NTFP-EP and CFP also ensure that field implementation is concurrently linked to the market and other resources.
The case studies presented the project at its different stages of implementation in the two locations. Neither case study went into detail about the results of the interventions and the lessons learned but they did offer important reflections about securing benefits from community based livelihood initiatives. In both project locations, it was clear that the benefits from the wild honey enterprise initiative did not surface immediately, and to this day, these are not yet fully secured. However, indications of progress in the two locations show that securing meaningful benefits (socio-cultural, economic, environmental and political) is achievable in tangible increments that also serve as incentives for further improvements in the project such as greater community participation, stronger community cohesion, systematization of enterprise operations, etc. Through the initial results – in terms of both achievements and challenges faced – we realized that economic benefits (eg increased income, increased business skills and capacity, food security and capacity to access other basic services) serve as the strongest incentive for community participation. If demonstrated within a reasonable period of time, the livelihood initiative can cultivate a greater sense of community ownership, personal investment, and a more holistic outlook. By a more holistic outlook, we mean, for example, a community’s and individual’s greater sense of interest and stake in protecting the forest and natural resources and in cultivating other resources (eg social and cultural capital) that ultimately will redound to greater economic benefits for them.

Below, we reflect upon the key strategies and initial challenges and solutions based on the project experience in Mondulkiri and Koh Kong:

**Strategies**

**Community Preparation and Data Collection:** In Mondulkiri it took about a year for preparatory activities, including conducting livelihood analysis and feasibility/market study on honey, community awareness raising activities about sustainable honey harvesting, and honey enterprise group formation. Procurement of honey (which was initially a small volume for test marketing in 2008) through the community enterprise group did not happen until a year after preparation. While the preparatory work was ongoing, individual members were collecting and selling honey as has been the practice (status quo), ie direct to traders at low prices with no particular attention to quality (eg moisture, cleanliness and purity) and sustainable collection standards.
The project process was, overall, paced with a progressive build-up of activities and community involvement. Meanwhile, in Koh Kong, the process has been relatively rapid in terms of implementing honey enterprise promotion, awareness raising about sustainable honey collection techniques and the honey group formation. There were communication issues between the honey group and the CFP around the “timing” of the activities and expectations about process and the tangible benefits that community members can gain from the project. For example, the honey group was anxious from early on to buy and sell honey and was less keen to participate in project meetings and trainings. They wanted to be clear about the monetary gain from honey collection in comparison to selling labor which is a current alternative source of livelihood second to farming and fishing. In contrast to the community livelihood context in Koh Kong, honey collection contributes a considerable proportion of cash income to the Bunong households in Mondulkiri. It seemed that the level of livelihood dependence on honey collection affected the participation and attitude towards process and sequencing of project activities in the two areas. It is critical to keep a momentum of tangible progress in order to maintain the motivation and trust of community participants in the project process as well as the relationships being developed between community and the supporting organizations.

**Community Organization and Field Support**: Both case studies underscore the importance of support to community organizing and strengthening. It is in fact the core piece in the project. Without an empowered community organization, there is little chance that the honey enterprise will flourish or other benefits will be achieved such as forest protection. Based on our initial experience, it is critical that the interventions in respect to organizational development touch on different dimensions such as leadership, motivation and confidence, technical skills and relationship building both at individual and group level. We also learned that effective methodologies for organizational development are those that combine various tools – training, coaching, learning by demonstration, exposure visits and informal exchanges. Finally, it is critical that field support for community organizing and organizational development must be steady for a certain period of time (a minimum of two years as has been shown in the WWF’s case in Mondulkiri).
Enterprise Development: Related to the above, building capacity, systems and concrete strategies and plans specific to enterprise development is an essential element of the achievement of economic benefits to communities in the two locations. In the context of forest development and management in Cambodia, this is a fairly new experience. Based on the initial experiences in the two provinces, our strategies for community-based honey enterprise development consider multiple bottom lines – sustainable resource management, cultural promotion or protection, income/profit, and community empowerment. The wild honey project in both locations draws strong attention to the practice of sustainable honey harvesting and raises the awareness of honey collectors and of consumers about the intrinsic benefits and contributions of forest bees to forest conservation. The project also explicitly values indigenous knowledge and practices with respect to honey harvesting and has been supporting improvements in traditional techniques and practices rather than altering them. Other technical support commonly provided in the two locations relates to business planning, financial management and marketing – including packaging, branding and promotions.

Collaboration and Networking: While not a unique project strategy, collaboration and networking have been very significant to the project and have been explicitly woven into the project design and actual implementation. This has been in terms of delineation of project roles (especially between the WWF, NTFP-EP and CFP) along the lines of expertise, organizational mandate, geographic location and existing relationships and contacts. The collaboration among the three has not precluded additional networking and bringing in other project collaborators as deemed strategic to the achievement of the project goals and targets. For example, resource persons from Vietnam and the US were brought in to provide technical input in honey collection, processing and bee ecology. Additionally, for marketing and business support, Bethany Cares was sub-contracted to support the test marketing of Mondulkiri honey. Buying agreements have also been negotiated with CEDAC and a private company. Finally, one of the vital strategies employed in the project is to facilitate community to community networking for purposes of learning from each other, exposure to working enterprise examples and also to catalyze joint marketing strategies (particularly in the case of Mondulkiri between Krang Teh and Bu Chri honey enterprises).
Challenges and Solutions

Communication: Lack of communication or weak information sharing systems have been cited as challenges in both case studies. This has resulted in misunderstandings, poor compliance of agreed regulations, and weak community participation. Both case studies present practical solutions to these – constant field presence (“being there”), personal communication and investment in relationship building by all project participants. Links should be strengthened between community leaders and members, members and members, NGO partners and the honey enterprise groups, and between the NGO staff.

Participation vs. Compliance: The challenge of lack of community participation and lack of compliance with regulations are related to communication and how well-developed the relationships and sense of trust are within the project. Experience in Mondulkiri and Koh Kong have shown that compliance with standards and regulations cannot be expected unless participation and a sense of vested interest in the project have first been cultivated. Internal control systems cannot effectively be enforced until a certain level of trust and buy-in to the enterprise has been achieved, eg communities receive some economic benefits from the honey enterprise however partial these benefits are or how rudimentary the enterprise operations. Participation moving to compliance and additional personal investment, is cultivated through time, regular communication and demonstration of commitment among enterprise peers and the observation, or actually receiving, of tangible benefits.

Product Quality: The success of the community-based honey enterprises also rests substantially on the quality of the honey products and whether or not this can be maintained. Honey is widely available in Cambodia – both local and imported, branded or unbranded. To be competitive and to market from a position of strength, some lessons coming from the project are that quality must be observed from collection all the way to packaging and delivery of the honey products to the market. It also appears that a quality guarantee provided to consumers can enhance the marketability of the product. This is an area that is largely still a work-in-progress. A well-functioning internal control system at the community enterprise level and strong marketing support will be critical as a way forward.
External Threats and Alternative Livelihood: There are considerable external threats and trends occurring in the communities particularly the threat of forest conversion mainly for commercial crop plantations (in the case of Mondulkiri), and an increasing trend of off-farm labor (in the case of Koh Kong). This is widespread in rural Cambodia, more so in the last remaining forests in the country. It would be naive to think that the honey project has been or will be able to curb these threats and trends given that these are largely driven by strong political factors that are beyond the project to address. At least the project has been, in the case of Mondulkiri, able to catalyze dialogue opportunities between the community enterprise groups and local and provincial authorities about forest clearing activities of rubber companies in the honey collection areas. While decisive action in favor of community interests is still forthcoming we believe that it will be important moving forward to build upon this emerging sense of confidence and collective spirit to advocate for community rights and livelihood entitlement.

CONCLUSION

This paper presents only an initial account of the authors’ experiences in facilitating community-based livelihood initiatives (focused on wild honey harvesting and marketing) in order that meaningful benefits, especially to communities and the environment, can be achieved. The assumptions we had at the outset of the project and in writing this case study were that collaborative and community-based initiatives that integrate forest conservation and protection, sustainable resource management, and economic strategies can help to secure the livelihood of forest dependent communities. We have yet to see the full realization of the goal of this project. However the initial outcomes and lessons learned reveal positive linkages.

Cultivating economic benefits from the community-based honey enterprises serve as potent incentives for community participation and changes in attitudes, capacity and resource management practices (particularly in the case of honey harvesting/collection and protection of bee trees). Cultivating the economic value of NTFPs like wild honey, provided that there are tangible benefits that communities receive, help to encourage villagers to be more
active in forest protection and also to cooperate with other villagers in this effort. As tangible benefits build up, slowly we are seeing changes in attitudes among the honey group members about participation in the enterprise activities, compliance with agreed rules and regulations, information sharing and a sense of mutual help and cooperation. Additionally in the case of Mondulkiri, cultivating cultural capital such as the revival of traditional rituals and customs associated with honey harvesting has also resulted through the course of the project. A sense of stronger leadership and followership is also emerging although still needs to be encouraged. There are many challenges encountered along the process but the most important thing is that communities themselves, while external and technical support is provided, must be directly engaged in overcoming these.
Chapter 21
Understanding Self-Help Groups for Credit in Community Fisheries in Cambodia

By: Ly Vuthy¹, Rebecca Rivera-Guieb², Julie Tsatsaros³, Tit Phearak⁴, and Cheam Pe A⁵

Credit provision is a popular intervention in fishing communities because cash income can be low and irregular and there is often a lack of reliable financial support services. By selecting two contrasting case studies on credit experiences in Community Fisheries (CFi), this paper aims to analyze the experiences of SHGs as a workable livelihood strategy in CFi development in an effort to provide recommendations for continued sustainability of these community groups. Through the review and analysis of secondary materials many lessons are derived including the need to understand the poor and vulnerable sectors and to consider them when setting up the criteria for loan recipients. Furthermore it is suggested that credit provisions are not a stand alone strategy but they should be included and contribute to a more comprehensive community development support plan within CFi.

BACKGROUND

Supporting livelihoods development is a major intervention used to help the poor, particularly those in rural communities. Livelihood strategies are varied; some focus on specific issues including technical skills development, infrastructure or investment assistance. Other efforts provide a range of connected strategies to include skills enhancement, credit provision and market support. Increasingly, livelihood strategies have also evolved beyond income generation. Developing social assets, interpersonal relationships and markets are now viewed to be part of livelihoods development practices.

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³ Julie Tsatsaros, Senior Water Resources Consultant to Tetra Tech, Inc.
⁴ Tit Phearak, Staff, Community Fisheries Development Division/ Fisheries Administration (CFDD/FiA)
⁵ Cheam Pe A, Staff, Community Fisheries Development Division/ Fisheries Administration (CFDD/FiA)
In 2001, the Cambodian Government introduced new fisheries reforms in support of local community management and access. In Cambodia, one or more villages can form a CFi organization. Cambodian CFi have been given mandates and obligations to manage fisheries resources within specific area boundaries in proximity to their villages. CFi management allows fisheries resources to be managed sustainably and equitably while reducing poverty (Gätke 2008). CFi management objectives and legal frameworks are described in the Sub-Decree on Community Fisheries Management (SDCFM), approved in 2005 (Gätke 2008).

A CFi is composed of a group of Cambodian citizens living in or near a fishing area. Citizens must be 18 years or older to become members of a CFi. A CFi establishment is a cooperative effort between the Fisheries Administration (FiA), provincial and municipal fisheries offices, provincial and municipal departments of agriculture, and local authorities or commune councils. CFi have by-laws, internal regulations, management plans, maps of their community fishing areas and agreements, in accordance with provisions of the Sub-Decree (SDCFM, Article 7) (Gätke 2008). CFi are usually not engaged in fishing activities full-time all year around. CFi also rely on a variety of livelihood strategies that are not fisheries related, such as vegetable farming, livestock raising, and trading.

Microfinance is a common livelihood intervention among rural communities in Cambodia (ARCM 2004). In the 1990s, early experiments on microfinance were focused on credit to jumpstart new business activities but without a working banking system, organizations such as Groupe de Recherche et d’Echanges Technologiques (GRET) (1991), World Relief (1992), The ACLEDA Bank Plc. (ACLEDA), and Catholic Relief Services (CRS) (1993) had to implement their microcredit projects by physically handling cash transfers themselves. With the international recognition of a new Cambodian government after 1993, aid started to flow into the country and in the succeeding years, the microfinance industry flourished to provide financing services to many communities in Cambodia. Today, the microfinance industry in the country is composed of various constituents such as commercial banks, microfinance institutions, and credit unions which continue public outreach and increased diversity of services such as subsidized loans, credit with a savings component, and village banking (ARCM 2004).
To a large extent, microfinance in Cambodia is still very much credit-driven and donor-funded, with the exception of a few organizations such as ACLEDA and Amret (formerly called Ennati Moulethan Tchonnebat (EMT). Credit portfolios are still financed by external donors or investors, and the interest rate is excessive due to high operational costs and low cost efficiency (ARCM 2004). Therefore, only those who are literate and have an ability to pay or to provide collateral are able to access credit from financing institutions. There is also still a huge gap in credit provisions; the formation of self-help groups (SHGs), with credit provisions as a common approach, is envisioned to reach out to those who cannot access formal banking and microfinance services.

According to Cambodian Vision in Development (CVD 2008), an SHG is an association formed on the principles of self-help. In this context, SHGs focus on savings and credit activities for mutual help. Saving is not from surplus, but from whatever CFi members can put aside. Group members collectively decide the size of the amount saved and the frequency of saving. Many SHGs have initially developed as a far-reaching strategy to address poverty and food security issues while providing economic benefits to its members.

SCOPE, OBJECTIVES AND RESEARCH QUESTIONS

This paper focuses on the creation of SHGs for credit, a specific livelihoods strategy that has wide acceptance in CFi in Cambodia. Some of the long standing SHGs focused on credit in fishing communities include the Anlong Raing CFi in Pursat province, Krom Aphivat Phum ((Village Development Group),(KAWP)) and Aphivat Strey Organization in Battambang (CFDD 2005b).

Credit provision is a popular intervention in fishing communities because cash income is low and irregular, and there is often a lack of reliable financial support services. Fishers acquire credit from neighbors, relatives, village stores and fish traders/dealers for fishing and food requirements (Hap Navy 2006; Campbell et.al 2005). Credit for economic activities such as home gardening, fish trading, animal-raising, among others, is usually supported from NGOs or local money lenders. For example, approximately 80 percent of the villages in fishing communities within Takeo and Siem Reap provinces borrow money from NGOs, neighbors, and local money lenders for various reasons including payment for the treatment of sick household members or accidents, to finance weddings, or to buy food (Israel et. al. 2005). It is because of this role that money lenders can be considered as secondary stakeholders for
aquatic resource management in fishing communities or villages. Information from fishing villages in Siem Reap, Takeo and Stung Treng provinces indicates that local money lenders help livelihoods development by providing fishers with the capital needed to purchase fishing materials (Israel et. al. 2005). However, this positive measure can be diminished if interest rates are set too high, making it difficult for poorer fishers to pay back their loans. Overall, there is still a need for credit in many fishing communities to use in fishing and other livelihoods activities to help compensate for the low and sporadic incomes from fishing.

This paper aims to analyze the experiences of SHGs for credit as a workable livelihoods strategy in CFi development, and to provide recommendations for continued sustainability of these community groups in the future.

The research questions include:

• What are the factors that support or inhibit the effectiveness of SHGs focused on credit as a livelihoods strategy in CFi development?
• What benefits result from the creation of these groups?
• Who benefits from SHGs for credit? Who do not benefit from them?
• How do credit programs encourage people’s participation in CFi management?
• What is the typical timeline to organize and successfully implement SHGs in CFi?

This paper selects two case studies that offer contrasting credit experiences. One is Kampong Krasang CFi in Takeo province, while the other is Anlong Raing CFi in Pursat province. These case studies were selected for the following reasons:

• Both CFi are fishing dependent communities, but Anlong Raing families are more dependent on fishing for their daily survival; farming and fishing complement each other in Kampong Krasang CFi.
• Repayment in Kampong Krasang CFi is more successful compared with Anlong Raing CFi for varied reasons such as the criteria used for selecting the loan beneficiaries, the selected livelihoods activities, etc.
• The Kampong Krasang credit program is part of a research project while the Anlong Raing program is integrated in a more comprehensive community development approach.
**METHODOLOGIES**

The primary methods used in this research were the review and analysis of secondary materials, including published documents, project progress reports and evaluation studies. Project documents and proceedings from workshop consultations on credit organized by the Cambodia Post Harvest Fisheries Livelihoods Project (CPHFLP), under the Post-Harvest Office of the Fisheries Administration/Community Fisheries Development Division (FiA/CFDD) were particularly useful in developing this paper. Interviews with key informants were also conducted as needed.

**DATA SUMMARY**

This paper selected one Community Fisheries SHG case study in the Mekong and one in the Tonle Sap region of Cambodia (See Figure 1 for the location of the selected CFi). The results of each of the case studies are presented in this section.

**Figure 1. Location of the Two Selected CFi with SHGs for Credit**

![Map of Cambodia showing the location of two selected CFi with SHGs for credit](image)
CASE STUDY 1: KAMPONG KRASANG COMMUNITY FISHERIES, TAKEO PROVINCE (MEKONG REGION) 6

Brief Description of the CFi and the SHG for Credit

The Kampong Krasang CFi was established on 6th September, 2001 with support from the Provincial Fisheries Office (PFO). The CFi involves three villages: Borei Chol Sa, Kampong Krasang and Kdol Chhrum. These villages have a total of 404 families.

In late 2004, a Canadian Government International Development Research Centre (IDRC) project committed a seed capital of USD 2,000 for a self-help credit project for this CFi, based upon agreed criteria. The SHGs were formed in this CFi to help diversify livelihoods options for CFi members (including women and disadvantaged groups), and improve local natural resource conditions (including a reduction in illegal activities).

Fishing and farming are the main sources of income and livelihoods for the local people. Farming is practiced during the six month dry season, and then a shift to fishing is made during the remaining months of the wet season. Approximately 90 percent of local people are farmers and fishers, and only 10 percent are fulltime fishers. Declining resources is a major problem in the CFi which can be attributed to the persistent occurrence of illegal activities by fishers from Vietnam and neighbouring communes. High floods during the rainy season also affect the lives of local people. For farming and planting, the CFi faces a lot of problems including poor water conditions in the channels, lack of proper agricultural technology, lack of capital, and lack of markets to sell their products.

Forty families were chosen as loan recipients, to be divided into six savings groups. Two savings groups of six to seven families were selected in each of the three villages of the CFi. A chief for each group was selected who acted as the overall leader and the person responsible for monitoring payments. However, the responsibility to pay was shared among all members of the saving groups in case a member of a borrowing group was unable to do so.

6 Sources of data: CFDD 2006; Tit Phearak et.al. 2006; CFDD 2005c
A total of 200,000 Riel (USD 50) was given to each member as loan. The repayment period during the first cycle of the loan was six months and then this was increased to one year for the next cycle. The interest rate was 2 percent per month. Each member also had to save 500-1,000 riel per month, although not everyone was able to comply with this amount, or some paid less than this amount. The CFi was stricter in enforcing the payment of interest compared with savings which eventually became more of a voluntary act. The interest and savings from each member was collected monthly by the chief and then turned over to the CFi accountant. Half of the income from the interest went to a revolving fund, 15 percent went to the CFi for patrolling, 5 percent to the village and commune councils, and the rest was provided as payment to the chief of the CFi, the accountant and savings group leaders for their services.

Community-based revolving funds help CFi meet their social and economic goals. These objectives are achieved by making funds available for community projects, using a percentage of income from the loan interest at below-market interest rates. This type of fund is called "revolving" because as the original loans are paid back, the money is used to make further loans to additional borrowing groups. In this way, the money in the fund can be made available indefinitely.

Most CFi members used the loan money for raising pigs, chicken and ducks. These activities are popular in Kampong Krasang, particularly among women because they are usually at home and all members of the family can help maintain them. A market is also not a problem for these animals because they could easily be sold in the community or at the border. With a USD 50 loan, a family can raise one to two pigs or 20 to 50 chickens or ducks.

**Factors that Supported or Inhibited the Effectiveness of SHG for Credit as a Livelihoods Strategy in CFi Development**

**Facilitating Factors:**

- The amount of money provided to the CFi was manageable.
- Animal-raising was not capital-intensive, so the USD 50 loan was more than enough to cover the expenses for buying the animals, putting up cages, and food for the animals, if necessary.
- Another important consideration was the option to sell the animals in the commune, so marketing expenses were minimal.
Inhibiting Factors:
- Animal disease – livelihoods training was not provided by the IDRC project as this was already being provided by NGOs supporting the CFi such as Oxfam GB.
- Natural disasters such as high flood water.

Benefits from the Creation of SHG for Credit

- When the other members of the CFi saw how the families who received the loan obtained an extra income, they became more interested in supporting the work of the CFi.

- Four occupations were practised by the savings group members. These occupations included pig raising, rice farming, chicken or duck-raising and fish-raising. Among these occupations, pig-raising was the most profitable. For example, one family first bought a piglet at 15 kg with 12,000 riel (USD 30). After six months, the pig grew to 100 kg, and the family could sell the pig at a price of 8,000 riel (USD 2) per kg. After paying the initial loan of USD 50, this family was left with a net profit of USD 100 after six months. In the case of duck-raising, a small duck costs a family USD 0.35, so the family could buy 20 to 50 ducks, and after six months the ducks grew to an average of 1.2 kg/duck, and the family could sell them at USD 2 each. As an estimation, the family could profit USD 80 from the USD 50 of microcredit used for duck-raising.
Chapter 21: Understanding Self-Help Groups for Credit in Community Fisheries in Cambodia

The CFi Committee organized and led support training for the SHGs on project management and planning. Photo by: Research Team

- The success of the credit program promoted confidence and solidarity among CFi members. The CFi leaders became encouraged with the positive results of the program and the knowledge they have on project management and planning. They have become bolder in seeking out assistance from other NGOs to expand their credit program.

Beneficiaries of SHG for Credit/Groups or Sectors not benefiting from SHG

The beneficiaries were chosen based on criteria decided by the CFi committee in consultation with the CFi members. The loans were given to those who “had the ability to pay” and this was understandable as projects usually contain a certain level of risk, and CFi committees are unlikely to invest in initiatives that will not yield positive results. However, there needs to be mechanisms to include more vulnerable groups like widows and female-headed households as beneficiaries.

How the Credit Program Encourages People’s Participation in CFi Management

CFi members are encouraged to participate in CFi activities because of the positive experiences from the credit program. There was a 100 percent repayment due to the simple and manageable interest and immediate incomes resulting from raising animals.
Typical timeline to organize and successfully implement SHGs in CFi

It takes approximately three and a half months to organize and successfully implement SHGs in CFi, according to the experience of Kampong Krasang CFi. This timeline includes the process of organizing the SHG, up to releasing the funds. Figure 2 shows the different steps in this process. Every month, group leaders collects the loan interest from their members and gives this to the cashier of the savings group to distribute based on the regulations. During the first cycle of the credit implementation, the repayment period was six months, and then this was increased to one year for the succeeding cycle. The IDRC research team interacted with the CFi Committee and the group leaders of the SHGs to review the progress of the work.

Figure 2. The Different Steps and Timeline in Organizing the SHG and Implementing the Credit Program in Kampong Krasang CFi, Takeo Province
CASE STUDY 2: ANLONG RAING COMMUNITY FISHERIES, PURSAT PROVINCE (TONLE SAP REGION) 

Brief Description of the CFi and the SHG for Credit

Anlong Raing is a floating village within the inundated forest of the Tonle Sap Great Lake. Villagers live in floating houses, which normally move according to the water level. The village is located in Kampong Por commune, Krar Kor district; Pursat province, and has a total area of 1,587 ha of which 46 percent is covered by the flooded forest, and 54 percent is the water surface (Tonle Sap Lake). The village has 91 households, which consist of 55 Khmer families, and 36 Vietnamese families. One family provides a battery charging service and two families operate small grocery stores. The other 88 families depend mostly on fishing as well as some other complementary activities such as raising pigs, raising fish (in a cage), and buying/selling and repairing fishing tools.

From 1987 to 2001, influential people used illegal fishing gear, and villagers cut the flooded forest to use timber to meet their family’s daily needs. These activities led to a decline in fishery resources.

Fish-raising was one of the chosen livelihood projects in Anlong Raing CFi.
Photo by: Research Team

Source of data: Ken Sopheap et.al., 2004; CFDD 2005b
In 2002, the Cambodian Family Development Service (CFDS), a local NGO, consulted with the provincial fishery office and facilitated discussions with CFi members. CFDS’ focus was to improve the livelihoods of CFi members and conserve natural resources.

The community assistance of CFDS to Anlong Raing began in 1994, but the community credit program was established only in 2002. The program was conceived as a loan provision to people to help them start or expand complementary income generation activities such as raising fish, raising pigs, buying/selling and repairing fishing tools, and small grocery stores. In order to use the credit effectively and to increase sustainability, CFDS provided technical expertise on fish and pig-raising before extending the loans.

Two strategies were used to develop a small-scale credit program in the community:

- The poorest villagers were supported and provided with educational training by an Agricultural Technical Officer in cooperation with CFDS before being provided credit;
- Villagers with less ability and smaller resources to set up secondary business activities were provided with credit by CFDS through the CFi.

Individual loans were provided through small groups that consisted of three to five families. The starting capital provided to the CFi for credit provision was 300,000 riel (USD 75 per group), and the payment period was 10 months. CFDS implemented this program with 67 families. Members of each group were responsible for paying back the money if there was any default by other group members. The maximum amount of credit allowed was 300,000 riel (USD 75), for a period of ten months, with 3 percent interest per month.

The community used the interest collected for the following purposes:

- 10 percent as an incentive for the credit committee;
- 10 percent for the village social development savings program;
- 40 percent as capital for CFi; and
- 40 percent was used to deal with the fluctuating exchange rate.

The fluctuating exchange rate was the difference in the exchange rate between riel and US dollars. In Anlong Raing CFi, riel were commonly used; therefore 40 percent of the interest collected was used to account for the currency exchange rate differences between riel and US dollars over time.
The credit borrowers had a loan agreement with the organization. Once the previous loan agreement was completed, the next stage of credit was provided. By 2004, the credit program entered its third cycle and total capital of the CFi reached 11 million riel (USD 2,750).

The credit scheme was modified in 2005 by implementing a forced savings component to the credit program. The scheme stated that 10 percent of the loan from CFDS was set aside for savings. The borrower could take advantage of a higher loan for the next term if he/she had complied with the savings requirement. In addition, a group loan to two to five individuals was also made available in addition to the individual loans. To receive credit, collateral was not required, but an endorsement from the Village or Commune Chief was needed.

**Factors that Supported or Inhibited the Effectiveness of SHG for Credit as a Livelihoods Strategy in CFi Development**

**Facilitating Factors:**
- Fishing was the only economic livelihood option of almost all families in Anlong Raing, so the provision of loans to improve their livelihoods was very important. The loan program was designed to increase the income of the poor to help in their daily survival.
- CFDS also promoted the loan program as a strategy to turn people away from illegal activities. The cutting of the flooded forest for firewood, burning of forest to catch wild animals and illegal fishing such as the use of electricity were very rampant in Anlong Raing CFi.

**Inhibiting Factors:**
- The lack of knowledge and skills in livelihoods techniques inhibited the effectiveness of the credit program. There were reports on loss of incomes and some people were not able to pay back their loans.
- Illiteracy rate is high at 79 percent as there is no competent institution, particularly an education office, or any organization facilitating or providing extension training for adults and children. Therefore, CFDS also implemented a literacy project in the village.
- Some people did not pay back the interest which led to jealousy among members. The program was easy to implement in the beginning but repayment became a problem towards the latter part of program implementation.
Benefits from the Creation of SHGs for Credit

Visible and immediate results include having additional money for daily food consumption. Some families shifted completely from fishing to fish-raising, grocery shops or battery charging businesses.

Beneficiaries of SHG for Credit/Groups or Sectors not benefiting from SHG

The target beneficiaries are the poor and fishery-dependent families. These families usually borrow money from their neighbors or fish traders for food or fishing needs. Traders’ loans do not have interest, but they require their borrowers to sell their catch to them at a price that they dictate. Therefore, the poor borrowers sell their catch at a low price that results in lower incomes leading them to be trapped in a cycle of debt. Also, as fishing income is low and there are no other sources of income, local people are encouraged to engage in illegal activities.

How the Credit Program Encourages Peoples’ Participation in CFi Management

CFDS’ approach is community development not just CFi development, so its strategies include providing literacy, education, health and hospitalization programs, livelihoods improvement, and fishery management. Training and capacity building (including and understanding of gender issues) was also a core strategy. By participating in the credit program, more people became interested not only in CFi activities but also in the program of CFDS.

Typical timeline to organize and successfully implement SHGs in CFi

The typical timeline to organize and successfully implement SHGs in Along Raing CFi was between one and two months. Figure 3 shows the steps for organizing these SHGs.
MAJOR FINDINGS

(a) SHGs help to initiate additional livelihoods activities that will generate income. The aim is that these longer term livelihoods opportunities will help ease the burden of borrowing money from other sources. Usually, money is borrowed from fish traders and money lenders simply to invest in current fishing practices, particularly in times of low catch yields. Fish traders will also advance money to fishers to make up for day-to-day cash shortfalls needed to purchase daily family provisions. In some cases, fish traders also provide loans for a family’s emergency medical needs. This money lending activity makes fishers dependent on fish traders. Neighbors and relatives also usually provide loans to CFi members for daily short-term needs. Rich relatives may also provide loans for short-term medical emergencies.
(b) SHG members in Takeo and Pursat provinces may find loan provisions through SHGs more advantageous than those available through fish traders or relatives for various reasons. For example, loans meant for livelihoods projects do not carry a social label suggesting that the borrower is “in debt” as the loan is perceived as being for a specific project that the borrower can benefit from. Secondly, there may be a sense of owning the process of loan provisions among SHG members, as they have agreed on the procedures and interest rates of the loans. This sense of ownership may be a positive stimulus for members to commit to loan repayments, as shown in the Takeo case study.

(c) The target beneficiaries of credit programs are not always the poor sectors of the community. In Kampong Krasang CFi, the beneficiaries are the CFi members who have the ability to pay. This approach automatically excludes the poorer and more vulnerable sectors in the community. In contrast, the CFDS credit program in Anlong Raing CFi was more directed to low-income groups that are inclined to commit illegal activities, or women who are illiterate. What was common in both case study sites was the manner by which the beneficiaries were selected ie the CFi agreed on the criteria for selecting beneficiaries based on consultation with its members. Even the design and mechanisms of the credit program were decided collectively.

(d) Lack of knowledge and skills is an inhibiting factor. In the case of Anlong Raing CFi, literacy and numeracy support was provided, which people needed for business. The literacy classes were partly financed by the interest gained from the credit program. CFDS also provided support for fish-raising techniques. In Kampong Krasang CFi, the IDRC team of the CFDD provided training support for project management and planning, while other NGOs like Oxfam GB supported the CFi with training in agricultural techniques.

(e) The success factors that allow for easier payment of credit by beneficiaries include:

- Kampong Krasang CFi had a payback period of eight months to one year, while Anlong Raing CFi fixed the repayment period to eight months. Providing a longer pay back period of one to two years seems to be more realistic.
Interest rates varied from two to three percent, but a one to two percent monthly interest rate appears to be more affordable to borrowers.

The financial amount made available for each family should be sufficient just for small-scale economic activities - like animal-raising - costing from 100,000 to 300,000 riel (USD 25 to USD 75).

An understanding of the market factors eg pricing, distribution, etc, and how these might affect economic activities, is a requirement. Market studies were not sufficient in both sites. However, market concerns became more problematic in Anlong Raing CFi as many people chose to set up grocery stores that competed with each other. The market (ie village) was small with only 91 households. The stores were also not diversified and tended to sell the same products eg soap, condiments, etc. The animals raised in Kampong Krasang CFi did not have a similar market problem as the provisions were not enough for the needs of the community and nearby border villages.

Based on the experience of the two CFi included in this paper, it takes about one and a half to three and a half months to organize and implement a credit program with SHGs. Although that seems only a short time, it should be noted that both CFDD and CFDS had already spent time and given support to the two CFi before the SHGs for credit were established.

**KEY LESSONS LEARNT**

There needs to be a clear understanding of the poor and vulnerable sectors (including women, widows, and female-headed households) in the community, and to consider them when setting up criteria for loan recipients. There needs to be acknowledgement of these sectors of society in order to help identify strategies that will not exclude them. Studies from other parts of the world indicate that women from different social and economic levels are joining SHGs, including the poor and very poor. However, the barriers for entry to SHGs are high, as these people usually have lower and variable incomes. In order to reduce the barriers prohibiting the poor from joining SHGs, more flexibility might be required in respect of varying and seasonal cash flows (EDA 2006).
(b) Market studies are needed to understand the complete market chain. For example, better information on pricing and distribution and how these might affect economic activities is a basic requirement.

(c) The sustainability objectives of SHGs need to be clearly developed and identified – this was not explicit in either CFi case study and this is also the case in most SHGs. However, clear guidance and record keeping for microfinance is essential to maintain SHGs and ensure their sustainability. This objective needs to be part of the initial focus over a period of several years (EDA 2006).

(d) Credit provisions are not a stand-alone strategy, but are part of a more comprehensive community development support to the CFi. It is necessary to think about how the SHGs for credit connect with CFi development work by identifying interconnected goals and strategies.

CONCLUSIONS AND RECOMMENDATIONS

Often people living within CFi organizations depend almost entirely on fisheries resources for their livelihoods. Capacity building and credit support can help improve people’s living conditions. This gives community members an opportunity to improve and diversity their livelihoods skills and their ability to manage their own communities and natural resources. Furthermore, people may also become more aware of the importance of natural resources conservation. In addition, the creation of SHGs and the provision of loans with low interest rates have created other livelihoods opportunities including animal-raising, fish culture, and has also enabled them to buy seeds and materials that can improve their living standards. This kind of support for the local people helps to alleviate poverty and to sustain natural resources.

In the case of Kampong Krasang CFi, when CFi members saw how the families who received loans obtained extra income opportunities, they became more interested in supporting the work of the CFi. Livelihoods practices that were not fisheries related, were also implemented by the savings group members and helped raise living standards and sustain natural resources. The success of the credit program in this CFi promoted confidence and solidarity among CFi members. CFi leaders became bolder in seeking out additional assistance from other NGOs to expand their credit program.
In the case of Anlong Raing CFi, some CFi members completely shifted their fisheries based livelihoods to new opportunities including fish-raising, battery charging businesses, or new grocery shops. Training and capacity building (including an awareness of gender issues) was also a core SHG strategy. By participating in the credit program, more CFi members became interested in CFi activities.

The experience of these two SHGs in Cambodian CFi demonstrates that it takes one and a half to three and a half months to organize and implement a credit project for SHGs in CFi. The timeline from organizing the SHG to releasing the funds takes several steps from consulting local officials to releasing the capital to CFi members, and reporting the progress of the SHG in a timely manner.

The effectiveness of SHGs as a livelihoods strategy in CFi depends on several factors including:

- Targeting all sectors in a CFi;
- A realistic payback period;
- Low interest rates;
- A manageable dollar amount per family;
- Technical assistance and literacy training and;
- Understanding key market factors.

Benefits resulting from the creation of SHGs may include:

- Expanded and diversified livelihoods strategies for CFi members;
- Sustainable income improvements for CFi members;
- Benefits for all constituents in a CFi;
- Improved technical assistance and literacy in CFi;
- Improved management and conditions of natural resources in CFi;
- Potential to access improved nutrition and basic health care;
- A model for other CFi in Cambodia;
- An increase in the number of individuals participating in SHGs;
- Greater support for CFi activities;
- Improved confidence and solidarity among CFi members.
A lot more work needs to be done to improve the livelihood conditions of local people in CFi organizations. External groups and government agencies can help to provide infrastructure support and skills development to CFi. However, CFi members need to further develop their knowledge and skills for SHG management and monitoring in order to foster self sufficiency.

The following are recommended next steps:

- Institutions and NGOs should continue to help sponsor training courses including animal-raising, seed selection, fish-raising, and ways to increase agricultural production without using chemicals.
- Government agencies and NGOs should continue to work together with local CFi organizations to promote SHGs for credit, and to include the more vulnerable, disadvantaged and poorest members of the community such as female-headed households. Often credit is given to community members who “have the ability to pay”. However, the purpose of the credit initiative is to also help the poorest, most disadvantaged members of the community.
- CFi leaders and members need to ensure SHGs in their communities continue to be sustainable in order to strengthen people’s commitment and motivation, as external organizations can only provide funding and technical assistance to CFi. Instituting the saving component of the SHG is one good strengthening mechanism; however, it is the commitment of local people that will ensure the success of SHGs in the future.
- SHG promotion, and the money to pay for it, needs to be strategic, adaptive and for the long term.
- SHGs should consider increasing the amount of money available to CFi members who are borrowing money in order to expand their business activities and continue improving living conditions.
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Chapter 22
The Impacts of Credit Use on Livelihoods and Natural Resources: A Case Study of Phnom Dek Village, Romani Commune, Rovieng District, Preah Vihear Province.

By: Kim Sarin

This chapter is based on a case study conducted by Project on Livelihoods in Protected Areas (LiPA) which has been implemented by the Department of Nature Protection and Conservation of Ministry of Environment (MoE) under support by the International Development Research Center (IDRC). The research focused on local credit use and aims to investigate how it contributes and affects local livelihoods and natural resources in that area. The research has been conducted in Phnom Dek village, Romani commune, Rovieng district, Preah Vihear province. Four credit providers namely: ACLEDA Bank Plc., (ACLEDA), Vision Funds (VS), Ankor Microfinance Kampuchea (AMK) and Adventist Development and Relief Agency (ADRA) were investigated, including the amount of loan provided, condition of loan and process of borrowing, and so on. Moreover, this research came up with information for community decision-making on the appropriate use of credit to enhance local community livelihoods. In addition, it provides an example of best practice for credit providers in similar local communities in order to avoid offering the use of credit which could adversely affect local natural resources and consequently local livelihoods.

INTRODUCTION

Daily livelihoods of the local communities are fundamentally dependent on the types of jobs available that are appropriate to their living conditions, knowledge and technology. Jobs are the sources of income for their daily needs such as food, clothes, shelter, and other necessities including materials and medicines. Capital is the basis of job creation or other businesses which support local livelihoods.

1 Kim Sarin, Field Coordinator for Project on Livelihoods in Protected Areas (LiPA), Ministry of Environment (MoE), this paper was written with co-support from the LiPA team.
At present, the Cambodian government is encouraging the private sector and non-governmental organizations (NGOs) to expand and strengthen the credit offering in rural areas. Credit offering is part of the poverty alleviation strategies for local communities and a mechanism to improve local economic growth.

The Project on Livelihoods in Protected Areas (LiPA), which has been implemented by the Department of Nature Protection and Conservation of the Ministry of Environment and supported by the International Development Research Center (IDRC), conducted a research project in Boeung Per Wildlife Sanctuary. The research focused on local credit use, how credit use has contributed to local livelihoods in Protected Areas, and whether credit use has affected natural resources. To answer these questions, a study on the impacts of credit use was conducted in Phnom Dek village, Romani commune, Rovieng district, Preah Vihear province.

This case study provides information for community decision-making on the appropriate use of credit to enhance local community livelihoods. In addition, it provides an example of best practice for credit providers in similar local communities in order to avoid offering the use of credit which could adversely affect local natural resources and consequently local livelihoods.

**OBJECTIVE OF THE RESEARCH**

This case study was conducted to find out the advantages and disadvantages of credit use in the local community, as well as the impacts of credit offering and use on local livelihoods and natural resources. Moreover, the information received will be documented to share with stakeholders, particularly members of the local community, to assist them in using credits appropriately as a means to improve their livelihoods.

**RESEARCH METHODS**

The research study employed the following methods:

- Secondary data related to rural credit use.
- Participatory Rural Appraisal (PRA) was employed to gather information focusing mainly on analyzing the issues within the community, classifying the local properties, and analyzing community perceptions about
credit use and its impacts on their community. To gather such information, the Ten Seed Technique was employed for a focus group discussion with 15 villagers, 10 of whom were female.

- Stakeholder interviews with the commune council, village chiefs, village bank agents and credit providers in the village.
- Interviews with families using credit (which represents 14 percent of families in the village), including both the families that have improved their businesses and those that have not. Interviews with some families that do not use credit were also included in order to understand more about local perceptions about credit use.
**RESULTS**

**Location and Background of Site**

The research was conducted in Phnom Dek village, Romani commune, Rovieng district, Preah Vihear province, located along National Road 64 on the intersection toward Rovieng district, approximately 232 km and 62 km from Phnom Penh and Preah Vihear town, respectively. Phnom Dek village shares borders with:

- Bang Koeun Phal village, Rom Tom commune on the north;
- Srer Thnong village, Romani commune on the east;
- Romchek village, Romani commune on the south; and
- Forest areas of Svaydomnak Chas village, Rom Tom commune on the west.

According to villagers, this is an old village located in the forest since ancient times, but there is no document recording its actual history. Prior to 1970, the majority of villagers were ethnic Kouy, living on forest by-products such as resin, vine rattan and shifting (slash and burn) agriculture. After 1979, Khmer people from other provinces such as Takeo and Kampong Cham moved to live in this village. People from these provinces used to do business in Phnom Dek village.

Phnom Dek village consists of 224 families comprising 940 people, 466 of whom are women. Before 2000, there were no credit providers in the village, only the local merchants were lending villagers their own money or rice and then they purchased forest products from the villagers, who took loans from them, and paid prices they set themselves. In addition, a few families who ran small businesses used to play Tong Tin as a means of saving money. They created a group and collected money to help each other, especially in times of urgent need.

**Credit Sources in the Village**

In Phnom Dek village, Romani commune, Rovieng district, Preah Vihear province, there are four main sources of credit:
ACLEDA: ACLEDA started offering credit in Rovieng district on 25th April, 2005, and in November 2005 it established a temporary branch center in this district. On 1st August, 2007, ACLEDA opened its official branch office.

According to Mr. Thay Pheaktra, Executive Director of the ACLEDA office in Rovieng district, there are two types of credit offered: credit offered to people in groups (the minority) and to individuals (the majority). Pheaktra added that bank agents meet all the families that borrow money and assess their ability to repay the loan before letting them take it. Conditions of ACLEDA include that the person who takes the loan must:

- be the head of the family, father or mother
- have a permanent residence
- have a permanent job
- be committed to paying back
- have the own capital at least 20 percent contribute to their current business
- have confirmation letters from the village and commune chiefs
- mortgage their immovable properties

In addition, loans cannot be given for some inappropriate businesses such as logging, drug trafficking, and real estate

ACLEDA can provide a minimum loan of 200,000 riels (USD 50.00) and the interest rate changes according to the size of the loan. For Cambodian currency (riels), if the loan is less than 6,000,000 riels, the interest rate is 3 percent per month. If the loan exceeds 6,000,000 riels, the interest rate is 2.5 percent per month. For US dollars, if the amount of loan is less than USD 1,600, the interest rate is 3 percent per month. If the amount of loan is more than USD 1,600, the interest rate is 2 percent per month, but if the amount of loan exceeds USD 10,000, the interest rate is 1.8 percent per month.

In Phnom Dek village, there were 60 families who received loans, 16 of whom took loans from ACLEDA amounting to 21,268,000 riels and 44 families took loans in US dollars amounting to USD 165,325 in total. With regard to credit offering, Thay Pheaktra commented that the bank never lost large amounts of money, but there were problems with collecting loans. That is, the loan collection was based on the due date, and if the debtors paid the loan
later than this, they would be fined 4 percent of the monthly loan rate (started on the fourth day of the month). He also reported other challenges in terms of explaining to people about the bank principles and of receiving insufficient documents (ie property titles, family books, etc) from a majority of the families that took loans.

Besides offering credit, ACLEDA used to provide office equipment for commune councils and some scholarships for female students to further their studies. Some of these scholarship holders were employed to work with ACLEDA after graduation. The direction and strategies of micro credit of ACLEDA are to reduce interest rates.

**Angkor Microfinance Kampuchea (AMK):** AMK started offering credit in Phnom Dek village in May 2007. According to Mr. Khem Savo, AMK Credit Agent and Village Chief, AMK requires the villagers who take loans to meet the following conditions:

- They have to create a group of four to six families
- Group members have to be responsible when any member of the group does not repay the loans.

As the first step, the bank provides loans worth 100,000 riels to 500,000 riels with a 3 percent interest rate per month.

Savo added that AMK had been offering credit for nine months and by January 2008, there were 12 groups comprising 43 families taking loans worth 15,000,000 riels. So far, there had been no difficulties related to loan repayment.

**Vision Funds (VF):** VF is an organization that provides credit to improve local community livelihoods. VF is the partner of World Vision Cambodia and has been providing credit activities in Rovieng district since 2004. According to Mr. Prom Chansiphan, a VF staff member based in Romani commune, there are three options:

- The first group, called a community bank, with two to five members could take loans totaling from 4,000 riels to 1,000,000 riels for three to 12 months with an interest rate of 3.5 percent per month.
• The second group, Samaki or solidarity group, with at least two members could take loans from 1,000,000 riels to 4,100,000 riels for three to 18 months with an interest rate of 3.25 percent per month.
• The third group, individual, could take loans from 4,100,000 riels to 20,000,000 riels for three to 18 months with an interest rate of 3 percent per month.

Those entitled to take a loan must be a villager (based on the family book) and loans are available to only one person in the family, either the husband or wife. The individual who takes a loan also has to mortgage a land title. For community group-taking loans, the loan was canceled if any member died and VF would contribute 50,000 riels to 80,000 riels as additional money for the funeral. If any member of the family died, VF would only contribute money to the funeral. In addition, 60 percent of the loan would be deducted if the individual debtor died.

Mr. Prom Chansiphan added that there were a small number of individual loan takers, the most common type being group loan takers. Until January 2008, there were 30 groups with 60 families who took loans worth USD 45,000. There were no significant problems related to the loan payment, although some debtors in groups did not pay the other group members their share of the loan.

**ADRA:** ADRA is a non-profit organization, whose activities are related to local community development. ADRA has offered credit in Phnom Dek village since August 2002. From 2007 onward, ADRA has only played the role of facilitator, letting the community credit committees take action. According to Ms. Em Kemhouy, credit offering agent of ADRA based in Romani commune, ADRA requires the loan takers to form a group of four to 10 members, aged 18 to 25, and does not offer loans to individuals. ADRA provides three stages of loans: in the first stage, the group can take between 50,000 riels and 200,000 riels; in the second stage the group can take up to 400,000 riels; and the last stage between 50,000 riels and 600,000 riels. Each group can take these three stages, but they have to pay the first one before taking another. The interest rate is 4 percent per month. ADRA collects only initial capital, while the interest rates are kept for the commune to use in accordance with the following sharing principles: 50 percent for the committee, 35 percent for capital saving, 8 percent for purchasing administrative equipment and 7 percent for contributing to community members who are facing problems. In 2008, the community
paid 2,600,000 riels back to ADRA and, as planned, the community is to repay 2,600,000 riels in 2009 for the remainder of the loan. Currently, the community has 20,000,000 riels as working capital, and 16,000,000 riels belong to Phnom Dek village with five groups comprising 36 families.

Ms. Em Kemhouy reported that the community used the capital in the following ways:

- Buying land 50m x 200m in size for building a community office
- Buying timber for building an office
- Buying a motorbike for community use
- Buying a tank for storing rainwater to help 16 families
- Contributing to building a fence for Phnom Dek Primary School
- Digging a pond with measuring 11m x 8m x 3m (depth)
- Contributing to funerals (50,000 riels per funeral)
- Helping victims whose house was destroyed by fire.

**Taking and Using Loans/Credits**

Based on information from the Ten Seed Technique (TST), about 80 percent of the families in the village took loans to improve their livelihood activities. Yet, according to credit providers (ACLEDA, Vision Funds, AMK and ADRA) in Phnom Dek, 201 families (90 percent of the total families in the village) took loans. Moreover, the results of the interviews with the villagers showed that some families took loans from two or three sources, which supported the result of the TST and demonstrated that 80 percent of the families took loans.

**Table 1. Information on the percentage of loan-receiving families in Phnom Dek village**

<table>
<thead>
<tr>
<th>Percentage of families taking loans</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Families taking loans: 80 percent</td>
<td>• Extending business, treating illness of family members, family needs, hiring workers to clear forests for fields, raising animals (cows, pigs, chickens, ducks)</td>
</tr>
<tr>
<td>Families did not take loans: 20 percent</td>
<td>• Having own money, unable to pay back, no business (did not know what to do with the loans)</td>
</tr>
</tbody>
</table>

26th January, 2008, 15 participants, 10 of whom were females.
Overall, the majority of the families in the village, regardless of their economic status, took loans for various purposes including:

- Approximately 24 percent of the families used loans to hire labor to clear forest and grass for farming
- Approximately 6 percent of the families used loans to purchase agricultural or farm lands
- Approximately 6 percent of the families used loans to produce wooden handicrafts and furniture
- Approximately 26 percent of the families used loans to raise animals (cows, pigs, chickens and ducks)
- Approximately 12 percent of the families used loans to pay for medical treatment for their family members
- Approximately 26 percent of the families used loans to run small businesses such as grocery selling, rice businesses and blacksmithing and to buy used products, produce wine, repay Tong Tin, buy hairdressing chairs, etc.

The families that did not take loans had their own capital to support their living, and some families did not know what business to start up if they did take a loan and were concerned that they would be unable to repay it.

Villagers could get information about loan taking and the conditions of loan taking and repayment from the credit agents. Moreover, the decision about taking a loan had to be made by both husband and wife - or parents responsible for the family - to avoid any conflict within the family when there was not enough money to repay the loan.

By the end of January 2008, the total loans taken by people in Phnom Dek village from different banks was USD 224,392. With 950 villagers in total, this amount is equal to a loan of USD 238 per villager.
Figure 1. Information about the use of credit

![Pie chart showing the use of credit](chart.png)

Table 2. List of loan/credit taking in Phnom Dek village by the end of January, 2008

<table>
<thead>
<tr>
<th>No</th>
<th>Loan Sources</th>
<th>Number of Families Taking Loan</th>
<th>Amount of Loan</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nº</td>
<td></td>
<td>Rels</td>
<td>Dollars</td>
</tr>
<tr>
<td>1</td>
<td>ACLEDA</td>
<td>60</td>
<td>21,268,000</td>
<td>166,325</td>
</tr>
<tr>
<td>2</td>
<td>Vision Funds</td>
<td>60</td>
<td>45,000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>AMK</td>
<td>43</td>
<td>15,000,000</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>ADRA</td>
<td>36</td>
<td>16,000,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>16,000,000</td>
<td>211,325</td>
<td></td>
</tr>
</tbody>
</table>

Advantages and Disadvantages of Credit Use

The results from interviewing villagers showed that NGOs or banks offering credit were having a positive impact, because this could help address the needs of villagers to pay for the treatment of illness among family members, or to start a business, as they did not know where they could borrow the money and they were poor. They could take loans from merchants but the interest rate was high or, sometimes, the merchants did not allow them to borrow because they did not trust those villagers. The villagers revealed that their abilities to tackle livelihood problems were improved following the presence of NGOs and banks offering credit in their village. However, any type of loan or credit could not help the villagers to deal with all of their current problems, including poverty, illness and lack of knowledge and jobs.
Based on the result of the focus group discussions by using the TST, 30 percent of families taking loans had improved their living conditions (increased the size of their property) because they had used the loans on planned businesses and had some of their own capital. They also worked hard with their businesses.

About 30 percent of loan takers did not improve their living conditions just keep the same before taking loan. They could not save money for their business or even support their daily living because they spent all of the money on treating illnesses among family members.

About 40 percent of loan takers did not improve their living conditions. Rather, they were worse off because they were very poor and illiterate. They had unclear plans about how to use the loans, for instance, they used them for hiring workers to clear forest and grass for farming, while the farming produced low yield. Other families used the loans for raising pigs, chickens and ducks, but they faced losing capital because their animals got sick and died.
Table 3. The impacts of and reasons for credit use

<table>
<thead>
<tr>
<th>Livelihood Improvement of the Families Taking Loans/Credits</th>
<th>Reasons of using loans/credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 percent improved living conditions</td>
<td>• Having business and own capital</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>30 percent living conditions did not improve</td>
<td>• Having business, but family members got sick</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>40 percent living conditions worsened</td>
<td>• Having unclear business, taking loans to pay debt, treatment of illness</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

January 26, 2008, 15 participants, 10 of whom were women.

These problems forced those families to take loans from other sources to pay their current debts, which made their lives worse because they could not earn sufficient income to support their family’s needs.

Some families decided to illegally log the trees within Boeung Per Wildlife Sanctuary to sell for the payment of increased debts. Furthermore, five or six families decided to sell their residence land along National Road 65 to pay the debts, and they cleared the forest behind the village to build their new residence.

Thus, credit did not always provide advantages. Instead, it resulted in disadvantages if it was used in the wrong way and if people had taken much more than they could pay back. The negative result of the credit was related to such factors as knowledge, lack of hard work and illness.
Chapter 22: The Impacts of Credit Use on Livelihoods and Natural Resources: A Case Study of Phnom Dek Village, Romani Commune, Rovieng District, Preah Vihear Province.

Location of new residence

Mrs. Sam Leam, aged 48, said “When there were no organizations or banks offering credit, there were no people in debt, and no people lost land.”

Intervention of Local Authority

Until now, no serious problems have been caused by credit use in Phnom Dek village for the local authority. Mr. Seng Cheang, Chief of Romani commune, said that when ACLEDA Bank first started to offer credit in the village in 2005, a number of villagers misunderstood, thinking that ACLEDA was a non-profit organization. Such misunderstanding disappointed some families when they took loans and then discovered ACLEDA is a profit-making company. Seng Chheang added that, so far, two families had asked commune councils for permission to sell their residence land to pay the debts, and commune councils facilitated the procedure and contributed new residence land of 20m x 70m to each family.

Mr. Khem Savo, Chief of Phnom Dek village, said that currently, some families took loans from two or three banks and were concerned that they were unable to pay the debts because the majority of the families in the village did not have large businesses. Also, the farming produced low yields, so they could not earn enough money to pay back. He reported that when he

Mr. SegChheang, Romani commune chief, said “Illegal logging was quite common before 2005, and some people took loans to buy sophisticated cutting machines. At present, these families’ living conditions are worse than those who are farmers because when police arrest them, all their properties are seized.”
saw villagers take loans, he asked them “What will you do with this money?” and some replied “Do not interfere, it is my family business.” As the village chief, he requested the officers of the banks and NGOs offering credit to examine the families to ascertain whether or not they were able to pay the money back in order to avoid using it in the wrong way, and to consult with the village chief before lending them the money to avoid any problems.

**CONCLUSION**

Credit offering to local communities is crucial because it can help people with their daily living expenses, when they urgently need it to pay for health treatment for their family members and for opening small businesses. In addition, credit offering is contributing to the strengthening of skills by allowing villagers to practice business and gain more income to support their families.

There are two types of credit offering in Phnom Dek village. The first type is credit offering by non-profit organization such as ADRA, and the amount of interest collected from loans is kept for local development. The second type is offered by for-profit organizations such as ACLEDA, Vision Funds and AMK. Though credit offer provides advantages, there are some concerns that the families in the village might take so much money in loans that they are unable to pay it back, which could lead to disadvantages in the future.

In Phnom Dek village, for instance, there were 224 families comprising 940 people taking USD 224,392 as loans (by the end of January, 2008), meaning that each person owed around USD 238.

Because this area consists of forest (Boeung Per Wildlife Sanctuary) some families earn money by means of logging trees for other people or for themselves. Illegally logged trees are sold to repay the loans. Furthermore, they sometimes sell their residence lands or farming lands and they consequently clear the forest for their new residences. These activities affect the forest, and are detrimental to the villagers’ livelihoods.
In short, if the loan takers fail to use the loans in a proper way, the loan providers will also face difficulties. Hence, loan providers should set criteria that match the level of knowledge and type of business conducted by the people so that they can use the loans effectively, contributing to the improvement of their living conditions.

**Suggestions and Recommendations**

To enhance the effectiveness of credit use, we have some suggestions and recommendations as follows:

- Each family should think thoroughly before deciding to take loans;
- All local credit providing agents should collaborate and strengthen their relationship with each other to avoid people taking large loans beyond their repayment abilities;
- All credit providing agents have to carefully examine the condition of people before letting them take loans;
- Credit offering should have some conditions which can help vulnerable families avoid problems with repayment; and
- There should be appropriate mechanisms to monitor the effects of credit use on natural resources.
Chapter 23
Lesson Learnt from Benefit Sharing: Case Study of Rattan Cultivation in Prek Thnout Community Protected Area, Bokor National Park, Kampot Province.

By: Lav Bunrithy¹, Chhoeng Soviriya², Thibault Ledecq³, Ou Ratanak⁴

This paper explores the benefit sharing results of a community-based rattan management and production model by investigating three key questions: (1) who obtains the benefits?, (2) what are the benefits?, and (3) how are the benefits shared? The model was developed with the aim to emphasize the link between the importance of sustainable rattan harvesting and management of forest resources in addition to linking these factors with market demands and added value product opportunities. In addition to highlighting the positive contributions of this pilot project in the forms of monetary and non-monetary benefits, the current and future challenges are also acknowledged accompanied with recommendations.

BACKGROUND

Prek Thnout Community Protected Area (Prek Thnout CPA) covers four villages (Tropeng Ropov, Prek Kreng, Prek Thnout and Changhaon villages) in Prek Thnout Commune, Kampot district, Kampot province (the location of the community is shown in the figure 1). Up until June, 2008, 822 households had registered as members in this CPA. The CPA was established under the Prakas (declaration) of the Ministry of Environment Number 100 dated 17th March, 2003, which allows the community to form a CPA to manage and use natural resources in their area. A total of 2,006 hectares in the Sustainable Use Zone of the Bokor National Park (BNP) has been set aside for this purpose. Save Cambodia’s Wildlife (SCW) started to support the set-up and management

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² Chhoeng Soviriya, Senior Project Officer of Save Cambodia’s Wildlife (SCW)
³ Thibault Ledecq, Regional Rattan Programme Manager (WWF)
⁴ Ou Ratanak, Rattan Project Manager (WWF)
plan of the CPA in Prek Thnout Commune in July 2003. SCW’s main roles were to facilitate the CPA committee elections and development of regulations, which were acknowledged by the commune councils, Director of Bokor National Park, Provincial Governor and Department of Nature Conservation and Protection, Ministry of Environment in February, 2004.

SCW has supported the CPA committee to develop their Management Plan. At the beginning of 2007 the WWF’s Sustainable Rattan Harvest and Production Project and the SCW carried out a participatory rural appraisal, which highlighted the following main problems within the CPA:

- Forest fire affecting the wood and non timber forest products (NTFPs) resources
- Decrease of the rattan resources due also to over-harvesting
- Lack of knowledge regarding management of rattan resources and sustainable harvesting
- No real organization within the community on how to manage the rattan resources and no law enforcement
- No value-added element to production and marketing of the rattan resources, limited knowledge regarding rattan handicraft production and access to market.

Within this context, WWF agreed to pilot a community based sustainable rattan management approach in Prek Thnout CPA with SCW. This pilot project was developed with the aim of sustaining rattan supply and to conserve the forest ecosystem as well as to support local livelihoods.

**Figure 1. Location of Bokor National Park and map of Prek Thnout CPA**
Chapter 23: Lesson Learnt from Benefit Sharing: Case Study of Rattan Cultivation in Prek Thnout Community Protected Area, Bokor National Park, Kampot Province.

SUSTAINABLE RATTAN HARVEST AND PRODUCTION

Based on existing experience from the region in sustainable rattan management and production, WWF developed a community-based model approach that focused on making the link between the importance of sustainable rattan harvesting and the effective management of forest resources. In addition the model was developed to link these factors with market demand and product added-value opportunities. The villagers have been engaged in a learning process that provides them with confidence and a vision of how to sustain the natural resources within the CPA. The model is based on the fact that sustainable rattan harvesting functions as a safeguard against forest degradation. It provides a long-term livelihood security to local people and adds value to natural forests, thus making local people good stewards and guards of their forest land. The model is described in more details in the diagram (figure 2) below.

Figure 2. Model of sustainable rattan management

<table>
<thead>
<tr>
<th>Collect seeds</th>
<th>Grow seeds in the nursery</th>
<th>Selling rattan seedlings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rattan harvest</td>
<td>Plant seedlings in Forest</td>
<td>Rattan management by rattan group</td>
</tr>
<tr>
<td></td>
<td>Rattan handicraft and sell to markets</td>
<td>Overall management and forest monitoring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Revenue from sales goes to group and maintenance of nursery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% of sale goes to group and plantation in the forest</td>
</tr>
</tbody>
</table>
The model is simply describing that when communities extract rattan and other forest resources it is also important to plant and improve harvesting in order to sustain the resources and ecosystems. In the case of the project site, through the construction of a nursery, the community has the opportunity to plant back rattan seedlings in the forest (enrichment planting) as well as the opportunity to sell to other people and obtain some revenue. Simple forest management practices need to be carried out to improve growth of rattan resources. After harvesting, instead of selling all raw rattan materials the communities have an opportunity to process the product and get additional value for it. With an increase of revenue the rattan harvesters and producers have more incentive to conserve rattan resources. In the meantime, from the sales of rattan, rattan harvesters/producers are paying a small fee to the rattan committee that compensates them for the loss of rattan resources and assists in the rattan plantation as well as the overall community management. The fees paid by the rattan harvesters/producers are used by the rattan committee to maintain the rattan nursery and increase production of seedlings. The committee is also assisting in finding market opportunities for rattan products. The loss of the rattan resources is mainly due to over-harvesting practices as well as forest fire and deforestation (land grabbing).

Within the Prek Thnout CPA in order to earn the maximum benefit while still attempting to conserve the rattan resource in their area, the project has focused on the following activities:

- **Establishment of the rattan management committee:**

  The rattan management committee is a subcommittee of the CPA management committee and is comprised of eight members. They were elected by the rattan collectors at the beginning of the project. To be selected for committee membership, a person must: (1) be involved in rattan collection, processing or trade, and (2) have expressed an interest in investing their own time in developing a rattan community-based approach. Twice a year the committee presents reports about finance, achievement, progress and difficulties to all members and if members by majority vote are not pleased with the achievements and/or if there are major conflicts within the committee, they can propose to have a new election. The head of the committee during the two years of the project has changed twice. Figure 3 below indicates the structure of the committee.
- **Establishment of rattan permanent sample plots (research)**

Permanent sample plots (PSP) have been set-up with the aim of researching the growth and ecology of the rattan in the area. Data and information about the growth are used to develop the forest management plan and allow the application of better management practices. The research is conducted with the communities under the auspices of the Faculty of Forestry, Royal University of Agriculture. The PSP area covers a forest area of 2,400 m² and is divided into nine plots (each plot is 50 m by 10 m in size). The data collection is carried out every quarter.

- **Capacity building for the rattan management committee and its members**

Training sessions and a study tour were conducted with the rattan committee. These included a visit to look at rattan marketing in Sihanoukville, Koh Kong, Kandal, Kampong Thom, Siem Reap and Phnom Penh. This participatory study tour showed villagers the rattan market chain and main factors influencing the market for rattan products. It was a very useful exercise. Various types of training included financial management, business plan creation, non violent communication and rattan harvesting techniques. All training and activities were aimed at building the capacity and confidence of the communities to manage the natural resources on their own.
- Building of a rattan nursery
The rattan nursery (the first in Cambodia), measuring 25m by 9m, was set up in Prek Thnout village in order to germinate and plant the rattan seedlings through sustainable techniques. These included advice that rattan seedlings should be under 30 cm high when they are planted and that they should be placed close to trees so that when they grow, they will have access to support (because rattan need supporting trees to climb). The nursery has a production capacity of 40,000 seedlings per year, and has produced a total of 15,000 seedlings so far. It took some time for the communities to master the techniques and management.

- Development of a management and action plan
The rattan forest management plan was drafted by the rattan management committee facilitated by the WWF and SCW team. The draft management plan was then presented to members for their comments, and finally sent to BNP management for their approval. The management plan was developed to promote the sustainable management of rattan harvesting activities. The plan covers five years from 2008 to 2012 and is reviewed every year with all stakeholders; from this management plan the annual action plan is developed to guide implementation.

- Livelihood promotion and benefit sharing scheme
The rattan committee members have gained benefits not only in terms of capacity building and knowledge but also in terms of monetary income. Some of the members have started to produce rattan handicraft goods and earned money from these as well as from selling the rattan seedlings.

- Rattan enrichment planting and sustainable harvesting system
The project and local communities carried out a trial to enrich 10 ha of degraded forest with rattan seedlings coming from the nursery. A forest area of 78 ha has been inventoried by the communities who have been trained in basic inventory methods. Based on the density of rattan, trees, and other non timber forest products, the community and project team developed a management and harvesting plan. It is still in the early stage: so far the community has started to harvest and manage the forest area. It is important that the community participate in, and understand some of the best practices of, rattan harvesting and management of resources.
OBJECTIVES AND QUESTIONS OF PROJECT MONITORING AND REVIEW

The project started only in January 2007 and will continue until 2011. The villagers in Prek Thnout CPA started to receive benefits from the approach developed right from the beginning of the project. The WWF and SCW set up community monitoring tools and conducted regular monitoring reviews on the benefits the community receives. The project also plans to carry out a more complete monitoring review during 2009 that will not only provide clear insight for the project, but also provide an opportunity for reflection by the villagers themselves to learn how they have benefited. In order to accomplish this, three main questions should be taken into consideration:

1- Who benefits from the set up?
2- What are the benefits they get?
3- How do they share these benefits?

METHODOLOGIES

This preliminary review is conducted for the first six months of 2008 and is based on quarterly field monitoring and reporting from the rattan project team. Each quarter, a joint SCW-WWF team together with the rattan management committee conducts field visits and record data on a monitoring sheet. Since the number of direct beneficiaries is small (35 persons), the team meets with all of them to collect data about rattan harvesting, production and income. The data is analyzed using MS Excel.

MAJOR FINDINGS

Result 1: Who benefits from the set up?
There are two kinds of beneficiaries from this project.

The direct beneficiaries are those people involved with the project and getting income and capacity building. They are:
- 29 persons who are trained in rattan handicraft production to sell for income
- one person who works as a middleman and gets paid
- three people who work as rattan site rangers and get paid
- two people who look after the rattan nursery and get paid
Figure 4. Graphs indicate different propositions of direct beneficiaries

The indirect beneficiaries are 163 households who live in the four villages of Prek Thnout commune. They collect rattan from the wild when they are free from their main livelihood activities for sale as raw material or for household use. Furthermore, by conserving rattan, the surrounding forest is also conserved. Therefore, other NTFPs benefit and can be harvested by the local people living around the area.

Result 2: What are the benefits they get?
The community gets many benefits from rattan management which includes: Benefits from natural resource use (or direct use value):

- Monetary income:
  - from selling rattan seedlings and products
  - from participation in rattan management activities
- 58 percent of monetary income from rattan management is obtained from the sale of rattan seedlings and products.
- 42 percent of monetary income is obtained from project activities such as support for patrol activity, nursery caring, and so on.
- Non-monetary value:
  - Rattan is used to create household items (such as baskets and chicken cages and as food.

Benefits from indirect use (These are the ecological functions and services of natural resources that indirectly provide support and protection to people and economic activity.):

- **Environmental services**: the rattan site rangers have conducted regular patrolling activities which have also reduced wildfire cases dramatically.
- **Social values**: in all project activities, participatory decision-making has taken place. This introduced a certain level of the concept of democracy to the local villagers who used to listen solely to those with a higher social status. By being able to make decisions by themselves, the villagers have acquired a feeling of stewardship towards their forest and rattan resources.

**Result 3: How do they share these benefits?**

The benefits are shared among the following actors:

- The Head of Prek Thnout CPA Management Committee receives 20,000 riel a month.
- The rattan site ranger receives 40,000 riel a month for monitoring the PSP (permanent sample plots).
- The rattan nursery manager receives 15,000 riel a month.
- The members harvest and produce rattan handicraft products according to the plan. They can sell the products only to the management committee or to approved traders and factories.
- Rattan collectors and handicraft producers must pay tax equal to 14 percent of the sales to the management committee. This income tax is used as follows: 50 percent to cover management committee fees, 25 percent for rattan nursing and replanting, 10 percent for the administration work of the management committee, and 15 percent for the community cash box.
KEY LESSONS LEARNT

- The majority of villagers involved in rattan management activities and obtaining direct benefits from it are men (97 percent men compared with 3 percent women). The main reason for this gender imbalance is the fact that harvesting requires some physical strength (to cut and carry the rattan canes) and also takes time (women are busy with housework and other activities and do not have the time to spare). Even at the processing level, it is mainly men who express an interest and become actively involved. Meanwhile, the WWF and SCW will ensure involvement of more women in the handicraft and management activities during the next three years’ follow-up support.

- The community based model set-up appears to be suitable for people who are poor or of medium wealth since both groups benefit (54 percent poor and 46 percent of medium wealth). This showed that poor and medium wealth people are those who are most dependent on natural resources.

- Older people prefer the project more than younger one (63 percent of them are older than 35 years) since the project allows them to work close to their family. In contrast, younger ones seem to prefer working on different jobs and often in cities to get more income. When, in following years, handicraft production is strengthened and scaled-up by the project, perhaps the younger generation will be more interested to become involved, and to develop it into more of a “village enterprise”.

- Almost half of the monetary income (42 percent) is acquired from rattan management activities, which are supported by the project.

- By comparing the average income (from handicraft production) of each direct beneficiary, the poor have a greater revenue than those of medium wealth; 98,000 riel compared with 39,000 riel, respectively. This shows that the poor are more involved in the project in terms of both management and production activities. Meanwhile, the expenses incurred by the poor are slightly more than those incurred by people of medium wealth - 18,900 riel compared with 14,900 riel. This is because
the poor need to buy equipment such as a hammer and nails whereas those of medium wealth already own such equipment. Nevertheless, the poor still get more profit than those of medium wealth - 77,000 riel compared with 23,800 riel.

- Non-monetary value (use of rattan to make household items and as food) and indirect-use value (environmental services and social value) are difficult to measure for this review but the local community appears to have benefited as much from the non-monetary value of rattan as they have from its monetary value. People reported (during interviews) that they have gained knowledge, understanding, and vision about how the sustainable management of the forest ecosystem can bring more to them.

- In the project external assessment carried out by the NTFP Exchange Programme Consultant, the following statement appears: “Through this project, people improve their skills on managing rattan stocks (nursery establishment and replanting) and on making furniture using rattan. They see this project as a great potential for increased income for their family and a source of alternative livelihood. As a community-group, the project has created opportunity for them to
access and use a combination of livelihood capitals: human, social, natural, financial and economic capitals, to implement a rattan-based enterprise. These resources are made available to the people; they have access to these and already starting utilizing the rattan materials. A rattan nursery is established and serves as a facility or capital that is used to increase production and generate revenue. Accumulation of these capitals, or generating more capital through the use of these resources, is likely to manifest next as the project continues” (Arlynn, 2008)

Challenges faced by the project:

- **Enforcement**: Some members have not yet paid the tax to the rattan committee regardless of its importance for the sustainability of the system set-up. Access to market is not completely secure yet and it seems that people are not 100 percent confident about the model developed and so have difficulties justifying payment. The project is continuously supporting the community and promoting transparency in the money flow. Thus for the next three years, the sustainability of the system put in place relies mainly on the people and the social and organisational structure set-up.

- **Land use**: Land speculation in the area is a new threat not only to the rattan forest and plantation field but also the interests of the community. Through increased benefit from rattan and other NTFPs, such as cinnamon, the project is expecting to illustrate to local communities (and convince them about) the benefit of keeping and conserving the forest ecosystem. A study focusing on the economic value of the resources available to people will be carried out by the project in 2009.

- **Long term view**: Local communities, especially the poorest, need and want immediate benefits and are not used to planning mid to long term strategies. Through handicraft production the project tried to provide extra income that was able to immediately help people and also gave them confidence and an incentive for long term planning.
- **Other challenges** - How people are engaged with marketing and understanding threats and benefits. Capacities of local communities in terms of marketing and business are still weak; even after participating in study tours, training sessions, and meetings with local traders and rattan processors, the people still exhibited some difficulties calculating production costs as well as understanding that they cannot sell low quality products at the highest market price. As mentioned above, the project will continue to train them in business planning and marketing techniques. Increasing knowledge, building leadership skills and creating confidence will be the key factors that the project will focus on in the forthcoming years.

- **Other challenges** - How to find a community leader who will drive and sustain activities especially in respect of forest management and marketing. The selection of rattan committee members and the head of committee was not properly done and the committee changed head twice. What was lacking in the first two heads of committee was leadership skills. The current head is confident about the future, better at planning and able to convince and bring people together.

**CONCLUSION AND RECOMMENDATIONS**

- The project model, even a pilot project, has already proven that, after only two years, natural resource based enterprise or village producing groups can work and provide benefits for the local community at the same time conserving the resources. The original benefit sharing mechanism set-up had to be adapted in the village context. Lessons learnt from this project are that benefit sharing has to take into account the gender, socio-economic and vulnerable factors of the members. The following years and future projects will take these factors into account at the beginning of the project development during the Participatory Rural Appraisal (PRA). An essential aspect is that benefit sharing schemes must be agreed upon in advance in order to ensure transparency and equity. Leaders of the groups would need to be carefully chosen by communities and possess the qualities and criteria
established by the community members. It is also important to have regular reporting from the committee to its members and to have all reports and leaflets printed and distributed to all members. Most of the activities were led by the committee, and did not always include all the members. The project team realized that the committee did not successfully relay the information and knowledge to all members and this sometimes led to a lack of clarity and miscommunication.

- The profit from rattan management is still very low (77,300 riel for the poor and 23,800 riel for the medium wealthy beneficiaries) for six months. This can cause some participants to lose interest with the project. The project should strengthen the rattan producers to improve efficiency of rattan handicraft products and access to more local markets. A business plan has currently been developed and additional handicraft training will be carried out during the following two years. The project will also increase production of rattan seedlings and sales of these seedlings. Also, markets for other NTFPs collected in the CPA will be found (eg Cinnamomum) as a way to increase the income. Integration of all actions supporting the sustainable management of the natural resources of the CPA will be a priority to ensure that all villagers relying on them will gain something.

- Other benefits beside monetary income (non-monetary and non-use value) should be monitored and assessed as well in order to convince the community of the greater, more holistic benefit they receive from rattan management.

REFERENCES


Soviriya, C and Ra, K. July 2007. Role and Responsibility of Rattan Management Committee in Prek Thnout CPA, Kampot district, Kampot province. SCW and WWF.

## ANNEX: WEALTH RANKING OF RATTAN COLLECTORS

<table>
<thead>
<tr>
<th>Household classification</th>
<th>Local indicators</th>
<th>Number of rattan collectors’ household</th>
</tr>
</thead>
</table>
| Better-off               | • Have rice field more than 1 ha.  
                           | • Have chamkar (other agricultural fields besides rice field) about 0.5 ha.  
                           | • Have cows and buffaloes  
                           | • Have food available for seven to eight months. Eat two times a day with two or three courses per meal  
                           | • Have three children on average. They all go to secondary school  
                           | • Have a bicycle, motorbike, engine boat, tape player, mobile phone, VCD player  
                           | • House made from wood high above the ground with zinc or tiled roof  
                           | • Spend about 15,000 riel a day  
                           | • Look healthy and clean  
                           | • Are able to travel for holidays  
                           | • Have additional occupations such as vending or fishing  
                           | • Have nice clothes  
                           | Trapeang Ropov village = 0 households  
                           | Prek Thnaot = 0 households  
                           | Prek Kreng = 0 households  
                           | Chonghaon = 0 households |
| Medium                   | • Have a rice field of about 0.30-0.50 ha.  
                           | • Have no chamkar  
                           | • Have one or two cows  
                           | • Have food available for four to five months. Eat two times a day with a course per meal, sometimes two courses  
                           | Trapeang Ropov = 15 households  
                           | Prek Thnaot = 15 households  
                           | Prek Kreng = 25 households  
                           | Chonghaon = 10 households |
### Section E: Livelihoods: Equity and Benefit Sharing

#### Emerging Trends, Challenges and Innovations for CBNRM in Cambodia

- Have four or five children on average, one or two of them go to secondary school and others just primary school
- Have a bicycle, rowboat, mobile phone, and tape player
- House is high above the ground with tree skin wall and zinc roof
- Spend about 7,000-8,000 riel a day
- Lack of hygiene and go to public health center when they are sick.
- Cannot afford to visit out of area on holidays
- Secondary job is fishing boat workers
- Use second-hand clothes

#### Difficult

- Have rice field about 0.20 ha.
- Have no chamkar at all
- Have food available for two to three months. Eat two times a day with a course per each meal
- Have six or seven children on average. Only a few of them go to primary school
- Have a radio
- Have a ground house with leaves or thatched roof
- Spend about 3,000 riel a day
- No hygiene, drink water without boiling. Receive traditional healing or go to the public health center when they are sick
- Extra occupation is labor selling
- Use second-hand clothes

<table>
<thead>
<tr>
<th>Trapeang Ropov</th>
<th>40 households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prek Thnaot</td>
<td>32 households</td>
</tr>
<tr>
<td>Prek Kreg</td>
<td>50 households</td>
</tr>
<tr>
<td>Chonghaon</td>
<td>10 households</td>
</tr>
<tr>
<td>Needy</td>
<td>Trappeang Ropov = 15 households</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>• Have no rice-field at all</td>
<td></td>
</tr>
<tr>
<td>• Have no chamkar</td>
<td></td>
</tr>
<tr>
<td>• Have to buy rice every day. Eat two times a day but often porridge.</td>
<td></td>
</tr>
<tr>
<td>• Have eight children in average. They can only attend literacy class</td>
<td></td>
</tr>
<tr>
<td>• No equipment in the house</td>
<td></td>
</tr>
<tr>
<td>• Have small hut or stay with neighbors</td>
<td></td>
</tr>
<tr>
<td>• Spend less than 2 000 riel a day</td>
<td></td>
</tr>
<tr>
<td>• No hygiene, often have illness and are treated by the traditional healer</td>
<td></td>
</tr>
<tr>
<td>• Use second hand, old clothes often received from donations</td>
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</tbody>
</table>
In an attempt to identify a more appropriate approach to achieve twin goals of conservation and livelihood diversification, this paper examines the current community based ecotourism (CBET) development process and practices in Cambodia. Two case studies with different processes are used to examine and evaluate the strengths and weaknesses of each approach in order to develop an alternative to more effectively fulfill the twin goals.

INTRODUCTION

Community-based ecotourism (CBET) is a popular tool for integrated conservation and development projects, especially in developing countries. It is a part of the tactical response to the ongoing global challenge of sustainability (Duffy 2006). In Cambodia, the establishment of such CBET initiatives started in the late 1990s and emerged from the combined efforts of the government and civil society along with a strong backing from the international community (Yin 2003; Rith 2004). CBET is now used as a tool to provide additional economic activities to local communities in and adjacent to Protected Areas where traditional livelihoods (e.g., logging, hunting and swidden farming, etc.) have been condemned as destructive and illegal. CBET tactics are also employed to supplement and reinforce the local governance of natural resources associated with community-based natural resource management (CBNRM) systems.

The CBET phenomenon is becoming one of the most popular approaches to community development and conservation practices in Cambodia. Currently, there are around 30 projects that claim to be CBET initiatives. They are linked to initiatives supported by such agencies as the Ministry of...
Tourism (MoT) and Ministry of Environment (MoE), etc. Increasingly, external partners such as the World Tourism Organization (WTO), German International Cooperation (GTZ), the Netherlands Development Agency (SNV), and Conservation International (CI) are providing structural and funding support for various forms of CBET (MoT, SNV, UNWTO 2008). Both conservation and development agencies support these initiatives, though each has its own approach. A common goal behind these initiatives is to encourage and strengthen local communities so that they can participate in natural resource management programs which help to diversify and strengthen local economies.

However, achieving this goal in practice is easier said than done. The use of CBET as an effective tool for integrated conservation and livelihood diversification requires a certain approach combined with specific forms of support from associated agencies and stakeholders. This can be particularly challenging when moderating and funding agencies have their own policy and planning orientations that must be followed. Reviews of several CBET programs suggest that three major challenges constrain the effectiveness of many of these initiatives. The challenges include: (1) the community’s capacity to develop and manage CBET; (2) uncoordinated structural development; and (3) networking and marketing strategies focused on the priorities of the set agenda (Butcher 2007; Duffy 2006; Blackstock 2005).

This paper examines CBET development processes and practices in Cambodia to determine the extent to which management issues cited in the literature are manifested in a Cambodian context. Specifically, it assesses the appropriateness of current CBET development approaches with respect to their impact on rural livelihood diversification. It also offers an approach for shaping CBET initiatives in ways that facilitate the achievement of the twin goals of conservation and livelihood diversification.

**STUDY METHODS**

This discussion paper employs a qualitative desk review method. First, we define what constitutes a CBET project and which suits the purpose of this study. Most CBET projects are typically classified as either an ecotourism project or community-based tourism (CBT) without acknowledging that there can be hybrids or variations of these models. CBET as a subset of ecotourism
prioritizes conservation while considering the support of community well-being goals to be a means of gaining additional support for the protection of environmental values. Conversely, CBET is derived from CBT concepts and is structured to ensure that the economic and social effects of tourism are addressed. This is primarily facilitated by a significant level of community participation in decision making and management of the tourism operations (Murphy and Murphy 2004; Hall 1994). This paper argues that the most effective forms of CBET involve a convergence of the preceding two concepts. It advocates that there is a need to incorporate critical components of each model. For the purpose of this paper, we define CBET as ‘tourism taking place in natural areas where local communities take an equitable role with other stakeholders in the planning and management of its activities. It balances the community’s social needs and values with conservation goals and supports a more sustainable form of tourism’. This CBET approach was developed based on two underlying models (Figure 1):

(1) A Conservation /NGO Model (Butcher 2007; Gimmire and Pimberts 1997). In this model, project funding from international biodiversity donors, eg Global Environmental Facilities (GEF), is transferred either to an international conservation NGO who then contracts a national conservation NGO, or directly to a national conservation NGO (Butcher 2007; Duffy 2006; Gimmire and Pimberts 1997). The national NGO has expertise in local conservation issues but may not have experience with community development or CBET, so it hires consultants or partners with a national community development NGO to implement the project.

(2) A Government Agency/Industry Association Model (Schilcher 2007; Duffy 2006; Blackstock 2005). In this model, project money, typically in the form of a loan, originates from an international development donor, who then partners with a national tourism organization (NTO). The NTO hires local or foreign community development consultants or NGOs, who in turn partner with communities to implement projects.
The number of CBET projects has rapidly increased from a few in the early 2000s to around 30 in 2008 (MoT, SNV, UNWTO 2008). Most of these projects starting in the latter half of this decade are still in the development phase. About 12 projects are well established and/or completed. All of the funded projects employ forms of the previously described delivery models (Lash et al. 2003). Table 1 provides the list of CBET projects, adapted from the inventory conducted by MoT, SNV and UNWTO 2008, according to their underlying model.
### Table 1. List of current CBET project in Cambodia

<table>
<thead>
<tr>
<th>CBET Applying NGO Conservation Model</th>
<th>CBET Applying A Government Agency/Industry Association Model</th>
<th>CBET Applying Combination of Both Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Virachey National Park (Ratanakiri)</td>
<td>1. Yeak Loam (Ratanakiri)</td>
<td>1. Orusey Kandal (Stung Treng)</td>
</tr>
<tr>
<td>2. Chambok (Kampong Speu)</td>
<td>2. Koh Trong (Kratie)</td>
<td>2. Preah Rumkel (Stung Treng)</td>
</tr>
<tr>
<td>3. Ang Trapeang Thmar (Takeo)</td>
<td>3. Koh Pdao (Kratie)</td>
<td>3. Osvay (Stung Treng)</td>
</tr>
<tr>
<td>4. Tmat Boey (Preah Vihear)</td>
<td>4. Koh Khner (Kratie)</td>
<td>4. Prek Toal and Prek Kantel (Battambang)</td>
</tr>
<tr>
<td>5. Prek Thnout (Kampot)</td>
<td>5. Sameakki (Stung Treng)</td>
<td>5. Kampong Pluk (Siem Reap)</td>
</tr>
<tr>
<td>6. Chi Phat (Koh Kong)</td>
<td>6. Koh Sampeay (Stung Treng)</td>
<td>6. Kok Daung (Battambang)</td>
</tr>
<tr>
<td>7. Trapeang Rounc (Koh Kong)</td>
<td>7. Sambo PreiKuh (Kampong Thom)</td>
<td></td>
</tr>
<tr>
<td>8. Thmar Bang (Koh Kong)</td>
<td>8. Pursat (Pursat)</td>
<td></td>
</tr>
<tr>
<td>9. Peam Krasoap (Koh Kong)</td>
<td>9. Pailin (Pailin City)</td>
<td></td>
</tr>
<tr>
<td>10. Oral (Kampong Speu)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Cardamon (Koh Kong)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Srepok (Mondulkiri)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Beong Tonle Chmar (Kampong Thom)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Stung Sen (Kampong Thom)</td>
<td></td>
<td></td>
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</tbody>
</table>

Sources: Adapted from Lash et al. 2003
This paper uses a case study of two of Cambodia’s longest running CBET projects (Chambok and Yeak Loam) to reach its goals. Besides being Cambodia’s oldest and most comprehensive cases, each has its own funding agencies and separate approaches to development. These differences offer a convenient basis for illustrating the advantages and limitations such strategies create, as well as provide the foundation for an alternative model of CBET development that capitalizes on the best of both approaches. This paper reviews relevant research conducted in the two sites. Particularly, the arguments are based on the comprehensive work done in Chambok 2004 by Rith, one of the authors of this paper, and in Yeak Loam by Yin 2003 (see reference for full title).

COMMUNITY-BASED ECOTOURISM CONTEXT IN CAMBODIA

In Cambodia, CBET is primarily viewed by donors and environmental agencies as a mechanism for use in support of a form of natural resources management commonly known as CBNRM. The term CBNRM refers to a diversity of co-management approaches that strive to empower local communities to participate actively in the conservation and sustainable management of natural resources (Carson et al. 2002). CBET fits nicely into this framework as it aims to enable the local communities to conserve the natural resources and develop their community through tourism (Rith 2004; Yin 2003). After the UN-supported national election in 1993, the Royal Government of Cambodian (RGC) adopted a more participatory approach to governance and commenced employing more decentralized planning and management concepts. This involved the sharing of power between national, provincial and local communities in order to improve governance structures. As a result, commune councils and local communities now have the opportunity and responsibility to participate in natural resource management and to prepare their own commune development plans (Knowles 2008; Nhem 2005). These policy and legal instruments, along with the recent RGC’s Rectangular Strategy and Organic Laws, are contributing to the creation of a management framework for applying CBNRM approaches.

Cambodia has an urgent need for more effective natural resource management systems –including those associated with Protected Areas. While heavily protection-oriented management areas and regimes exist, more community-based strategies are gaining popularity (Carson et al. 2005). This trend is associated with a shift away from the traditional conservation
paradigm - moving from practices that were exclusionary and focused on maintaining pristine areas - to tactics that are more inclusive of human beings within the conservation framework (Berkes 2004; Brown 2002). In response to growing concerns about resource depletion and resource dependency amongst many of Cambodia’s poor rural population, multiple efforts have been initiated to support greater levels of community organization and development.

CBNRM projects, including CBET, frequently occur in and around Protected Areas where local communities are significantly dependent on the use of natural resources for their livelihoods (MoT, UNWTO, SNV 2008). However, their emergence in such areas typically creates challenges about how to address potential conflict between conservation and poverty alleviation goals. Alternative strategies for diversifying or reshaping local economies are urgently needed. One of these strategies has involved the introduction of ecotourism. It is increasingly being adapted as an alternative livelihood strategy and sustainable development tool. However, it is necessary to distinguish between mainstream ecotourism approaches and more community development oriented techniques. In addition, there is a growing concern that ecotourism approaches indirectly induce the adoption of more classical conservation techniques that tend to keep pristine wilderness areas removed from people, particularly local poor stakeholders (Berkes 2004). In the more inclusive, people-oriented and community-based approach the focus is on ensuring that local social and economic priorities are integrated into conservation strategies. Thus the CBET technique is adopted.

In Cambodia, an emphasis on community values and priorities is currently advocated by NGOs working with local villagers on community livelihood and/or natural resources management issues (Ken et al. 2005). They seek to nurture more democratic, participatory, and bottom-up approaches to resource and environmental management as well as improving livelihoods (Ken et al. 2005; Leksakundilok 2004). In Cambodia, economic growth is a priority while environmental conservation is a commitment they must perform. NGO involvement in CBET is appreciated by the RGC for many reasons. Civil society groups involved with environmental activities help increase the prospects of Cambodia receiving global investments and external aid for conservation (ADB 2001). They also significantly reduce government burdens associated with Protected Areas management, while helping to enhance the government’s strategy for poverty alleviation (Socio-economic development
strategies I & II). Major objectives for CBET development in Cambodia include poverty reduction, rural community development, environmental education and biodiversity conservation.

**APPROACHES TO COMMUNITY-BASED ECOTOURISM IN CAMBODIA**

Existing Cambodian CBET research suggests that CBET development involves the following sequence of phases:

- **Recognition of Resource Management Issues**: CBNRM projects and their CBET complements typically take place in many conflict areas where there is a dilemma between meeting sustainable natural resources management requirements and fulfilling rural livelihood needs (Rith 2004). Often there are problems of illegal activities such as logging and hunting in these and decisions are shaped by the power of large scale commercial investors (Yin 2003). CBET processes are frequently employed as a means of coping with such situations. Local communities and authorities are empowered to take charge of their own fate through participation in conservation and endogenous development.

- **Collaboration and Legal Recognition**: Two types of agencies are involved in developing CBET projects in Cambodia. They are environmental NGOs (WWF, Mlup Baitong, CI, etc.) or Development Agencies (such as GTZ or SNV). In combination with local communities they identify resource management and economic diversification issues to be addressed. They also collaborate with each other to gain governmental (eg MoE or MoT) support and legal recognition of specific Community Protected Areas (CPA).

- **Development of CBET**: Once formal CPA designation is granted by the relevant Ministry, NGOs or Development Agencies begin assisting communities in the development of CBET initiatives. There are four major dimensions or foci for CBET development that local communities and the supporting agencies typically address. They are structural development, capacity building, stakeholder networking, as well as marketing and promotion (Rith 2004, 2006; Men 2004; Yin et al. 2005; Yin 2003).
• **Structural Development** involves both external and internal structures. Externally, it is about lobbying the government and stakeholders to support the proposed CBET programs and activities, and integrating them into the broader legal framework (Yin et al. 2005; Rith 2004). Internally, it is associated with either infrastructure development or rules and regulations (by-laws) for CBET implementation. Small scale infrastructure construction, such as hiking trails, information centers or community halls, water supply and latrine systems are normally required to prepare the area for receiving tourists. In addition, the mediating agencies pay particular attention to assisting communities in formulating community rules that ensure process accountability and transparency. These processes include facilitating discussions related to public participation, conservation strategy, revenue management and future planning.

• **Capacity building** is a component that is directly related to the structural plans. It is primarily concerned with capacity building activities that enable local communities and authorities to handle conservation strategies and enhance their ability to operate and manage CBET programs.

• **Stakeholder networking** is about integrating the local community as well as the CBET project into the greater picture of CBNRM and tourism networks. CBET is more than a conservation mechanism; for it to be a success it has to be part of the wider tourism system and supported by relevant stakeholders in the resource management field. This aspect is concerned with capacity building, as well as fostering cooperation with key stakeholders and encouraging advocacy activities with influential government agencies.

• **Marketing and promotion** involves implementing activities that enhance the recognition and knowledge of CBET projects and their communities, so that more frequent and consistent visitation will happen in a coordinated fashion. It involves the effective and targeted use of communication channels such as websites, brochures, posters, study tours, etc.
COMMUNITY-BASED ECOTOURISM IN CAMBODIA AND LIVELIHOOD DIVERSIFICATION

The Connection

It is widely purported that current forms of CBET contribute to either conservation or rural livelihood diversification (Butcher 2007; Blackstock 2005; Ken et al. 2005). Most existing research extols the natural resource management benefits that CBET can bring. However, in this paper we focus mainly on how CBET can contribute to rural livelihood diversification. In this context, it is important to understand the concept of rural livelihood approaches before exploring CBET’s potential to diversify the economies of such places.
Rural populations depend heavily on natural resources for their livelihoods because these resources are both the assets and capital for the generation of income. Historically, local peoples employed farm-based or extractive methods including farming, logging, hunting, and harvesting of non-timber forest products for their livelihoods. The diversity of these activities was highly dependent on the geographic and socio-political context of the area (e.g., availability of resources, micro and macroeconomic atmospheres, and the political environment) (Carney 1998). Besides, it was influenced by the degree of dependency and extent of intervention exerted by external stakeholders (Goodwin and Roe 2001). In many cases, rural communities shaped their livelihood strategies according to these factors. Depending on their circumstances, they continued with their extractive methods, opted for alternative non-extractive approaches, or migrated to urban areas. In response, CBET development was lauded by mediating agencies as a means of more effectively diversifying local economies and encouraging them to engage in less extractive oriented ways of maintaining rural livelihoods (Goodwin and Roe 2001; Carlisle 2007).

CBET was promoted by external organizations as a means of enabling rural communities to diversify their livelihood options through the implementation of the four previously mentioned major development activities. For example, the development of formal and informal structures for CBET empowers the community to have greater control of local resources or assets (which are extremely important in the maintenance of their livelihoods). It also has the potential to increase rural livelihood capabilities. Furthermore, the capacity building activities can serve as mechanisms to enhance the community’s ability to carry out new livelihood options. The networking and marketing strategies also help increase external resource access from targeted stakeholders and tourists, as well as assist in increasing the recognition of CBET and community rights and capabilities (Jones 2005; Gibb 2005). Figure 3 illustrates this connection.
The main challenges in using CBET as a tool for rural livelihood diversification emerge from within the planning and management approach itself.

- First, most often the supporting agencies emphasize the development of formal structures - such as physical infrastructure, rules and regulations - as opposed to concentrating on building informal community structures. Cambodian people are extremely social and communication is highly based on social networks and relationships. The term community has been recently introduced in the Cambodian context and is sometimes mismatched with the existing informal networks in the community. Some people do not clearly understand its meaning, which refers to a group of people who share mutual interests and purposes as well as common goals, and often do not feel part of the CBET ‘community’. This lack of inclusion constrains participation in CBET activities, which in turn limits the possibility for effective rural livelihood diversification.
Second, capacity building provided by facilitators cannot be applied in the same way for everyone in the community. Most CBET emphasis focuses on people who are immediately involved in CBET projects. They are often the more elite community members or those with a medium standard of living. This marginalizes poorer community groups and creates issues of benefit sharing – in many instances projects are organized in ways that benefit a select few. Consequently, excluded groups miss out on possibilities for learning, sharing, and exchanging information which reduces their capacity to carry out newly available livelihood options.

Third, CBET approaches encourage networking with strategically selected groups often aligned with the priorities of the funding agencies and facilitating NGOs. In many cases only two types of agencies support CBET projects. They are either NGO and government agencies, or development and government agencies. There is rarely any recognition or contact with the private sector stakeholders, thereby dismissing the important role that the private sector entrepreneurs can have in livelihood diversification options.

Marketing and promotion is typically organized by the facilitating agency in the CBET process. Typically it has limited resources for such activities, and focuses primarily on its own agendas and development priorities, to the exclusion of partnership and leveraging possibilities with others (eg conservation vs. development agency).

CAMBODIAN CASE STUDIES

Yak Loam Community-based Ecotourism, Cambodia

Yak Loam CBET is located in a provincially Protected Area in Ratanakiri province. It is situated in the Northeastern part of Cambodia – an area designated by the government as the core priority zone for ecotourism (MoT 2001). The CBET project was established under the government’s decentralization SEILA program. The agency in charge was called the Partnership for Local Governance (PLG). It worked in cooperation with NGOs, and the International Development Research Center (IDRC). These institutions leased Yeak Loam from the provincial authorities for a period of 25 years.
for CPA and CBET initiatives. The main objectives of the project were to conserve the watershed ecosystem, promote indigenous land tenure and cultures, and to provide additional livelihoods to indigenous communities.

The current management authority is divided into three major groups: the elder group, the environmental group, and the education CBET group. The environment or Lake Committee group consists of 13 members from five villages. They are elected to their positions and are primarily focused on protecting the core area of the lake region. It is understood that this group receives most of the profit from its programs. They get strong support from PLG and SEILA in technical capacity building and are responsible for managing the income generated by Yeak Loam Lake. The core zone’s assets include the village and commune’s common resources. The committee sometimes turns to the elders for advice, but they mostly plan among themselves and seek approval for their actions from higher level formal authorities (Yin 2003).

The elder group consists of respected and traditional leaders in the five villages. They are selected to ensure that development and conservation programs do not violate indigenous traditions and culture. However, they do not have a specific role in site management and do not receive any support from external actors.

The education and tourism group is supported by NGOs, Developing Remote Indigenous Village Education (DRIVE) and IDRC. Its major role is to develop local fluency in English and tourism entrepreneurial skills. The NGOs supporters encourage local participation in CBET development. They established women’s groups for handicraft production, English education and tour guide groups, as well as dancing groups. It helped facilitate the creation of a Cultural Center, and established brochures and websites designed to promote and market the site.

Over the years, functional literacy has slowly increased among the indigenous people, but their entrepreneur skills are still severely lacking. The government and its supporting institutions have failed to provide the substantial arrangements needed to address this issue. Basic infrastructure, such as water supply, sewage systems or electricity is nonexistent. The sanitation system is underdeveloped. The health care situation is improving through an intervention initiated by the government across the province but it still remains inadequate to meet
the community’s needs. This aspect affects the success of CBET significantly. Visitors who are aware of conditions in this community do not stay overnight nor purchase food from locals. As a consequence, they contribute little in monetary terms besides the basic entrance or parking fee.

**Chambok Community-based Ecotourism, Cambodia**

The Chambok CBET is located in Kampong Speu province, southwestern Cambodia. It has a geographic advantage because of its close proximity to Kirirum National Park, which has been a prime recreational site for urban elites since the 1950s (Rith 2004). In Chambok the natural resources have been heavily degraded by illegal logging, wildlife trade, and local livelihood activities carried out by both the locals and the outside commercial investors.

There are several NGOs currently working in Chambok commune. Some assist the community in building local infrastructure, as well as organizing education, and health care groups. Some initiated micro-credit projects for entrepreneurial activities. Mlup Baitong (MB), a local environmental NGO, assists in conservation efforts. The CBET project is an economic development strategy to support resource management strategies. CBET uses the park land under a 10 year lease term with the MoE. MB employs a participatory approach to CBET development, working in partnership with the MoE to assist locals in developing and managing the CBET project. There is a set of local groups that assist tourists in enjoying their visit. Management committee members are elected from all villages in the commune, and their aim is to work closely with MB and seek advice and approval for their activities from the related higher level authorities. In addition, this committee works closely with other existing groups in the communities. MB recognizes the importance of linking groups within and beyond the community.

A considerably holistic marketing system was developed with MB assistance. This includes website design, posters, brochures, and CBET study trip funding and hosting. A tourist information center and various tourist infrastructures have also been built. Arrangements for partnership have been negotiated with tour operators as well as other related NGOs. MB realizes the importance of supporting the community’s related priorities despite having its own spheres of works. MB also encourages local participation as much as possible ensuring that community members have ownership of tourism activities, and uses local
resources for most of the initiatives. Loans are also made available for physical infrastructures that are required to start up business initiatives.

Chambok communities have a basic level of functional literacy, but their entrepreneurial skills are still limited. MB focuses much attention on trying to increase and build the capacity of leading committees. It either facilitates or arranges various on-the-job training sessions, study trips, and technical training workshops in management skills. Training attendees are encouraged to share their skills and knowledge with the broader communities. Recently, the CBET committee succeeded in requesting from the national park more land to be included in the CPA, for additional attractions. Villagers avoid destructive activities within the CPA boundary. The majority of the communities take part in and approve of CBET; however the minor groups that disagree appear to have illegal occupations and have anonymous backup from the urban militia.

**DISCUSSION**

Overall, this study acknowledges that CBET can be a useful tool for conservation and has the potential to contribute considerably to overall community development. Subsequently, we are examining factors influencing success and limiting the positive effects of the two case studies. Specific attention is placed on the approach to developing CBET projects so that the strengths and weaknesses of each approach can be identified and a better method (if one is identified) can be recommended.

The success of conservation, in terms of decreased logging and hunting as well as the existence of mechanisms to cope with environmental problems, is found in the two case studies. In Yeak Loam, both DRIVE and IDRC are highly committed to raising awareness regarding environmental problems and management. The CBET intervention was developed to enable the community to control land management practices in the commune. In Chambok, conservation is successful because of the development of semi-formal policies (by-laws) related to resource use restrictions, sanctions, and incentives. In both cases, hunting, and logging is clearly prohibited and is clearly stated in CPA by-laws. In addition to these rules there is a clear description of the penalties that will result from non-compliance. Nearly half of the revenue generated from tourism in Chambok is devoted to forest management. Villagers in general comply with the CPA management guidelines.
However, the study found that the livelihood diversification aspect of the projects, in terms of the community participating in and benefiting from CBET business activities, differs between the two case studies. It appears to be more successful in Chambok. The reasons for this difference evolve largely around the limited coordination and integration of activities in the respective CBET developments.

In Yak Loam, the relationship between the environment committee and the outsiders appears strong with relevant government agencies but weak with previous mediating NGOs. The reviewed literature fails to acknowledge any effort from the mediating agencies to integrate the CBET project into the broader tourism system. It appears that the Lake committee consider themselves as conservationists rather than CBET managers and developers. For instance, they do not work collaboratively with tour operators or transportation stakeholders. The relationship between the CBET group and the environmental group is also weak. The literature does not assess the extent to which different groups in the communities work together or how the benefits are distributed. For instance, it is not clear how the revenue from tourism is divided between indigenous education priorities and Tum Puon ethnic development activities.

In contrast, in Chambok the relevant stakeholders were invited to a meeting in the provincial town in order to reach a consensus and final agreement on community by-laws, development programs, and activities. Revenue is divided into fair percentages for conservation activities (40 percent of the total revenue), community development (contribution to commune council) and emergency rescues. The profits are deposited into a Community Fund to be spent on key priorities identified by the community. Progress and challenges are noted and reported to MB and villagers, and development initiatives are discussed in the monthly meeting among committee members and facilitators. In addition, besides integrating Chambok CBET into the CBNRM network, MB also facilitated various connections with wider stakeholders including universities, media, travel agencies as well as other components of the tourism industry.

However, in both case studies social opportunity (ie the provision of facilities and access to education and health care) is not emphasized. The prospect for human development and capacity building is only focused on management
and working committees. These people appear to benefit most from the projects since most of the projects’ capacity building budget is concentrated on developing their skills. Secondary beneficiary groups are working groups, such as guides, artists and women’s groups, who also need training for their team operations. Overall, the education and health of the wider more marginalized communities are not addressed despite low levels of education and severe health problems in the commune. Besides verbal encouragement, there are few enabling structures to facilitate the transfer of knowledge and information among the communities. There is no mechanism to ensure that the broader communities know of the opportunity provided by NGOs or if economic opportunity occurs. The uneven flow of information and lack of knowledge transfer and exchange among members has been known to negatively impact democratic elections and project sustainability. There is uncertainty regarding the effectiveness and functionality of the new committee because facilitators focused and spent most of the funds training the previous one.

Economic development and economic opportunities are also problematic. The right to control economic resources that are in the CPA are under lease term only. There is no guarantee that the government will not change its perspectives when CBETs become more successful, or when private companies show an interest. Currently, participation in benefit sharing is very minimal; MB’s policy to promote local ownership through utilization of local resources leaves destitute members of communities helpless and unable to be incorporated into the larger scheme. In Yeak Loam, the targeted indigenous people have neither the resources nor capacity to run a tourism enterprise alone. Furthermore, they fear competition and confrontation with encroaching immigrants. Indigenous elders are still unprepared to address real management issues, and are vulnerable to the potential subversive tactics of the outsiders. Land encroachment issues and rapid tourism development in Ratanakiri critically challenge the sustainability of CBET in Yeak Loam.

**CONCLUSION AND RECOMMENDATION**

In summation, CBET was developed as a tool for supporting shifts in broader global policy and planning system priorities. The necessary funding and support from NGOs and donors does not come without certain agendas attached. On the one hand, NGOs and donors who place CBET on the agenda feel that CBET development should be oriented toward environmental
conservation; the needs and wishes of the local people are secondary. On the other, from the perspective of the government, the priority is on economic growth which is derived from financial aid (in terms of conservation and infrastructure development for tourism) and international recognition and investments. In both cases, the criteria that do not receive serious attention are livelihood needs.

Researchers strongly agree that sustainability of ecological resources provides a long term foundation for sustainable development, and CBET is able to benefit certain people and the commune in general. It is anticipated that the effects will be long lasting if the immediate livelihood needs of the destitute people and their struggle to climb the social ladder is seriously considered. It is illustrated in the case studies that CBET projects make an essential contribution to the environment and the communities. An unsettled issue however is how to distribute benefits more equitably and broadly in order to reach the people most in need. The central challenge will be to find ways of allocating limited resources so as to obtain widespread replication of community initiatives. This paper proposes a more context based, integrated, and socially oriented approach to CBET development in order to meet conservation and livelihood diversification needs in Cambodian CBET context. Figure 4 illustrates such an approach which will be explained subsequently:

♦ From the initial phase, setting up a good connection between the three major institutions including relevant government agencies, conservation NGOs, and development agencies is very important. This good connection and collaboration provides a forum and opportunity for discussion regarding achieving a balance between political macroeconomic needs, community economic development needs, and conservation requirements.

♦ Following the establishment of open dialogue, in the process of development, facilitators have to prioritize the need to build the community (reactivate the informal networks or social capital) as well as tourism management skills. A community that is capable, strongly connected, and well-structured formally and informally provides a concrete and consensual foundation for development.
Resources needed for building community capability and capacity are more than economic. They should include adequate information, expertise (external and local-based), spiritual support, political lobbying, etc. People need enough access to both economic and social opportunities to build up their capability and prepare themselves for tourism development and management. Ensure that the opportunities are well distributed in the broader communities.

Once all necessary foundations are provided, and people have enough access to resources and freedom of choice, they can proceed to diversify their livelihoods and develop their community in a more sustainable manner. At the end, CBET communities and stakeholders need to recognize that CBET is more than just a conservation project. If it also aims to diversify the local economy, it has to be integrated into the wider tourism system. For tourism destinations to be successful, the manager and developer have to be well related to the other actors in the tourism system and become competent entrepreneurs. This integration is beneficial for both the operation and management of CBET in terms of either marketing or competitive aspects.
REFERENCES


Rith, S., 2004: Community-Based Tourism development in Rural Protected Area: A Case Study of Chambok CBET, Phnom Penh, RUPP-HBF.


Website Resources

Chambok CBET official website http://www.geocities.com/chambokcbet/;

Ministry of Environment of Cambodia http://www.moe.org.kh;

Ministry of Planning of Cambodia http://www.mop.org.kh;

Ministry of Tourism of Cambodia http://www.mot.org.kh;

Yeak Loam CBET official website http://www.geocities.com/yeak_laom/;

Cambodian Community-Based Ecotourism Network http://www.ccben.org
This paper explores the potential of ecotourism in Mondulkiri Province by establishing tourist profiles using descriptive data and applying a latent segment model to evaluate the marginal willingness to pay for different attractions and services. The objective of the research is to better understand the tourist market in order to design and establish more attractive package tours.

INTRODUCTION

Tourism is one of the fastest growing industries in the world in terms of economic power. It accounts for many jobs and contributes to over 10 percent of Gross Domestic Product (GDP) worldwide. In 2006 there were 842 million tourists globally with the Asia-Pacific region ranking as the second most-visited region after Europe (WTTC 2007). Ecotourism is the fastest-growing segment of the tourism industry with an annual growth rate of approximately 20 percent, which is much higher than that of the industry as a whole (TIES, 2007).

Cambodia, with an area of 181,035 km², is located at the heart of Indochina. Cambodians are very proud of their rich natural, cultural, and historic resources, especially Angkor Wat Temple. Through intensive promotion and foreign aid, visitor numbers to Cambodia are currently growing at a rate of 20–30 percent per year (MOT et al. 2006; Anucha 2004). In 2005, Cambodia attracted around 1.4 million international arrivals, and in 2008, Cambodia’s Ministry of Tourism predicted that the country would receive 2.2 million. By 2010, the figure is expected to rise to 3.1 million, with national income from tourism reaching USD1.5 billion (MOT 2005).

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Mondulkiri, one of two provinces located in northeastern Cambodia, has a high potential for ecotourism development because of its rich natural diversity, minority cultures, and beautiful landscapes. Phnom Prich Wildlife Sanctuary (PPWS) in Mondulkiri Province, which is considered the center of ecotourism, has been declared a wildlife sanctuary and is recognized as open forest habitat. It contains a variety of habitats, wildlife, cultures, and has landscapes suitable for recreational activities including hiking, rafting, bird-watching and sport fishing. Due to the growing interest in ecotourism, some operators have already started providing hiking tours into the surrounding countryside which usually combines nature-based activities with cultural experiences and trekking (Bauld 2007; Schellhorn and Simmons 2003). Despite these attractions, package tours and other tour activities are not yet available in this sanctuary.

The ecotourism sector urgently requires the development of proper guidelines aligned with international standards in order to absorb and to sustain the expansion of PPWS. The negative impacts of poorly-planned, implemented, and regulated tourism activity will destroy environmental and cultural assets in the local community. Potential problems include illegal wildlife trade, habitat loss, pollution, and damage to the physical environment through traffic and road construction. There could also be an overuse of natural resources, land encroachment, hunting and fishing, and economic exploitation of vulnerable communities by unethical tourism operators, especially in indigenous communities where people are not accustomed to a cash economy. These indigenous communities could also see damage to cultural traditions through the destruction of spirit forests.

It is therefore essential that policy makers and tour operators properly design the size and content of package tours for tourists wanting to enjoy activities in PPWS. Sustainable and responsible tourism initiatives also need to be prepared with the aim of alleviating some of the poverty presently found in local communities within and around the sanctuary. In order to accomplish these goals it is necessary to determine not only the characteristics of domestic and international tourists, but also what activities would make package tours attractive and what they would be willing to pay for such package tours.

**Survey Sites**

Mondulkiri Province in Eastern Cambodia is a relatively remote and unpopulated area, with large tracts of forest still remaining. Two thirds of this forested land...
is dry deciduous forest, and one quarter consists of dense and semi-dense forests. The remainder is either grassland or agricultural land. Phnom Prich Wildlife Sanctuary (PPWS) is located in Cambodia’s north-eastern Mondulkiri Province, covering an area of 2,225 km². PPWS lies within Mondulkiri Province and includes land belonging to two districts, Keo Seima and Koh Nhek, with a third district, Pichreada, adjoining the eastern boundary. Many major streams lie within the park including Chba stream in the east, Te, Pong Tou and Khtong streams in the south, and Chhoung in the west.

Saen Monourom, the main capital of Mondulkiri province, is located about 450km from Phnom Penh. The city is located in Saen Monourom district, with four communes and 14 villages. Saen Monourom currently has 18 guest houses with 247 bedrooms and two hotels with 64 bedrooms, but these numbers are rapidly increasing. The main tourist attractions are indigenous villages, elephant trekking, waterfalls, traditional dancing by ethnic minorities, and the beautiful countryside. Bousra Waterfall, the major tourist attraction in Mondulkiri Province, is a three-level waterfall 20–40 meters in height. It is located in Pech Chenda district about 38km east of Saen Monourom, and there are seven villages nearby.

PPWS was one of 23 Protected Areas declared as wildlife sanctuaries and was established under the Royal Decree concerning the creation and designation of Protected Areas in 1993. Since 2002 it has been supported technically and financially by the WWF because of both the range of wildlife, including many endangered species, and for the variety of habitats such as semi-evergreen forest, deciduous dipterocarp forest, grassland, rivers, swamps and ponds. WWF has included these dry forest landscapes in its list of Global 200 ecoregions; that is, regions that contain the most outstanding and representative terrestrial and aquatic habitats of the world. Banteng (Bos sauveli), an Asian forest ox, is particularly widespread throughout the sanctuary (Lacerda et al. 2004; Timmins and Ou 2001) In addition, Claassen and Ou (2006) have noted that PPWS has been previously identified as a potentially important habitat for large water birds, including the giant ibis (Thaumatibis gigantea), the white-shouldered ibis (Pseudibis davisoni), the sarus crane (Grus antigone), the woolly-necked stork (Ciconia episcopus), and the lesser adjutant (Leptoptilos javanicus). (See figure 1 location study area)
About 8,500 people live in local communities inside and adjacent to PPWS; most are indigenous people who generally lack a formal education and are burdened with some significant health problems (Seila 2006). Ecotourism in PPWS, if properly designed and implemented, has the potential to play an important role in poverty alleviation efforts for local people around the sanctuary, and Maxwell (2005) indicates that besides ecotourism the alternative revenues in PPWS are mining, non-timber forest products, and wildlife ranching.

THE LATENT SEGMENT MODEL

The one-on-one interview survey took place at two sites and was conducted between February and March of 2007 with 216 tourist participants. At first, respondents received general information about the characteristics of PPWS with posters, maps, and photos of large water birds and mammals captured by camera-traps in the sanctuary. Following this, the second part of the survey included choice modeling questions.

A latent segment model was developed to test for underlying heterogeneity in model choice situations. It recently drew considerable attention among many researchers as a segment of useful tools for capturing heterogeneity across different segments in targeted markets (Boxill and Adamowicz 2002; Greene
and Hensher 2002). The resulting statistical model predicts choice behavior as a function of the attributes and level that identify the different choice set. This is based on the notion that choice experiment involves the selection of a substitute policy from several alternatives on the basis of the random utility model (Hu et al. 2004; Boxall and Adamowicz 2002; Swait 1994) it can be expressed in equations.3

**Survey Design**

Face-to-face interviews were conducted with 216 tourist participants at two sites in February and March of 2007. As mentioned above, at first, respondents received general information about the characteristics of PPWS, with posters, maps, and photos of large water birds and mammals that were captured with camera-traps in the sanctuary. Respondents were then given a choice of ‘yes’ or ‘no’ to payment for conserving wildlife and its habitat in PPWS in the form of an entrance fee.

The second part involved choice experiment questions where respondents were given information on hypothetical package tours within PPWS. It should be noted that some operators had already started personally providing hiking tours into the surrounding countryside since package tours and other tour activities under proper guidelines were not yet officially organized at the time the survey was conducted.

In this part of the survey there could have been an endless list of activities, cultural experiences, specific guides, local meals, accommodation, and duration of stay as attributes of the package tour. However, in order to prepare simple and useful questionnaires, we assumed that this hypothetical package tour lasted three days and two nights, and was offered by travel agents or undertaken by individuals when tourists were in PPWS. We also assumed that the package did not include an entrance fee. We chose five attributes based on the concept that (1) they had typical characteristics of package tours of PPWS; and that (2) they contained useful information for development and investment in this area. Respondents were informed about attributes of package tours and their differences:

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3 For more detail on the latent segment model please refer to author’s thesis on Analyzing Decision-Making by Tourists for Ecotourism Development in Cambodia: Using Latent Segment Model in Phnom Prich Wildlife Sanctuary
Wildlife Observation View: PPWS has great potential for wildlife viewing. There are many species of mammals and birds that tourists can enjoy such as Asian elephants, banteng (*Bos javanicus*), gaur (*Bos gaurus*) and Eld’s deer (*Cervus eldii*). Approximately 212 species of birds have been recorded including significant populations of several Global Threatened Species (IUCN, 2001). These include the sarus crane (*Grus antigone*), the green peafowl (*Pavo muticus*), the giant ibis (*Thaumatibis gigantea*), the vulture and the woolly-necked stork (*Ciconia episcopus*). There are also many other small mammals, reptiles, and birds in the wildlife sanctuary.

Respondents were asked to choose between:
1) Five large water bird species,
2) Five large water bird species, deer and wild cattle
3) Five large water bird species, deer, wild cattle and elephant riding.

Cultural Resources: The ethnic minority groups in Mondulkiri have many traditional practices and villages within the area. These villages offer many interesting experiences to tourists including the opportunity to observe specific customs and traditional practices, daily village activities and traditional building styles, as well as local tools and farming practices. There are also many local community attractions including ceremonial activities, dances, songs, and local craft making.

Respondents were asked to choose between:
1) No visit,
2) Visit and communication,
3) Visit, communication and dancing.

Water-based Activities: This category refers to recreational water-based activities such as kayaking, canoeing, swimming and fishing which have been found to be attractive to tourists. Traveling on a river by boat is also one of the best ways of viewing abundant wildlife, including water monitors, crocodiles, certain deer species, grey-headed fish eagles (*Ichthyopaha ichthyaetus*), hornbill species, and woolly-necked storks (*Ciconia episcopus*). There is also the opportunity to encounter many other small mammals, reptiles and birds along the river.
Respondents were asked to choose between:
1) No activities,
2) Canoeing,
3) Canoeing and fishing.

**Accommodation:** This refers to the type, quality, and price of campsites, lodges and homestays. A village-based homestay includes a fan, hot shower, meals and a twin room. The safari camp includes a fan, hot shower, meals, a single room and a beautiful view.

Respondents were asked to choose between:
1) Homestay and bike,
2) Homestay and car,
3) Safari camp and bike,
4) Safari camp and car.

**Price:** This represents the total amount of money that a visitor would have to spend for the package tour:

Respondents were asked to choose between:
- **Domestic tourists:** 1) USD 40,
  2) USD 60,
  3) USD 80,
  4) USD 100
- **International tourists:** 1) USD 200,
  2) USD 250,
  3) USD 300,
  4) USD 350.
Table 1: Attributes and Levels Used in the Choice Experiments

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Definition</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wildlife Observation</td>
<td>Different species of animals to be viewed</td>
<td>1) Observing five species of large water birds</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Observing five species of large water birds and wild cattle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3) Observing five species of large water birds, wild cattle and riding elephants</td>
</tr>
<tr>
<td>Cultural Resources</td>
<td>Different types of performance</td>
<td>1) No visit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Visit and communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3) Visit, communication and dancing</td>
</tr>
<tr>
<td>Water-based Activities</td>
<td>Different types of water-based activities</td>
<td>1) No activities</td>
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<tr>
<td></td>
<td></td>
<td>2) Canoeing</td>
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<tr>
<td></td>
<td></td>
<td>3) Canoeing and fishing</td>
</tr>
<tr>
<td>Accommodation and Transportation</td>
<td>Different types of accommodation and transportation</td>
<td>1) Homestay and bike</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Homestay and car</td>
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<tr>
<td></td>
<td></td>
<td>3) Safari camp and bike</td>
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<tr>
<td></td>
<td></td>
<td>4) Safari camp and car</td>
</tr>
<tr>
<td>Price</td>
<td>Amount that tourists would pay for their package tour</td>
<td>Domestic: 1) USD 40, 2) USD 60, 3) USD 80, 4) USD 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>International: 1) USD 200, 2) USD 250, 3) USD 300, 4) USD 350</td>
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</tbody>
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For the choice experiment questions, we prepared two versions, one for domestic and one for international tourists. For domestic tourists, option A is the package with guide and option B is the package without guide. For international tourists, option A is with an English-speaking guide package and option B is without. For both domestic and international tourists Option C is opt-out and “I would not choose any of these packages”. Table 2 illustrates a sample choice set for domestic tourists and demonstrates in detail the three attributes with three levels and the two attributes with four levels. Thirty-six choice sets were produced using a 33 x 42 orthogonal main effects design (Louviere et al. 2000). We prepared six versions of the questionnaire, each of which contained six choice experiment sets. For domestic tourists, questionnaires were translated into Cambodian.
Table 2: Sample of Choice Set for Domestic Tourists

<table>
<thead>
<tr>
<th>Package</th>
<th>A (With Guide)</th>
<th>B (Without Guide)</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wildlife Observation View</td>
<td>5 large water birds</td>
<td>5 large water bird species</td>
<td>I would not choose any of these</td>
</tr>
<tr>
<td></td>
<td>species</td>
<td></td>
<td>packages</td>
</tr>
<tr>
<td>Cultural Resources</td>
<td>No visit</td>
<td>Visit + communication + dancing</td>
<td></td>
</tr>
<tr>
<td>Water-based Activities</td>
<td>Canoeing</td>
<td>Canoeing + fishing</td>
<td></td>
</tr>
<tr>
<td>Accommodation &amp; Transportation</td>
<td>Safari camp + bike</td>
<td>Home stay + car</td>
<td></td>
</tr>
<tr>
<td>Price</td>
<td>USD 40</td>
<td>USD 100</td>
<td></td>
</tr>
<tr>
<td>I would choose... (√ Check Only One)</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

DATA

The survey interviews were conducted at Senmonorom and Bousra waterfalls with 216 visitors, including 111 national and 105 international tourists. Table 3 presents the tourist profiles of Mondulkiri province. About 62 percent of international tourists are European with other smaller groups included Australian, American, Canadian and Japanese visitors. Males accounted for almost 73 percent of the domestic tourists and about 56 percent of foreign visitors.
Table 3: Tourist Profiles in Mondulkiri Province

<table>
<thead>
<tr>
<th>Category</th>
<th>Domestic</th>
<th></th>
<th>International</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>81</td>
<td>73.0</td>
<td>59</td>
<td>56.2</td>
</tr>
<tr>
<td>Female</td>
<td>30</td>
<td>27.0</td>
<td>46</td>
<td>43.8</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 25</td>
<td>27</td>
<td>24.3</td>
<td>39</td>
<td>37.1</td>
</tr>
<tr>
<td>26-30</td>
<td>45</td>
<td>40.5</td>
<td>30</td>
<td>28.6</td>
</tr>
<tr>
<td>31-40</td>
<td>28</td>
<td>25.2</td>
<td>24</td>
<td>22.9</td>
</tr>
<tr>
<td>&gt; 41</td>
<td>11</td>
<td>9.9</td>
<td>12</td>
<td>11.5</td>
</tr>
<tr>
<td>Nationality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cambodian</td>
<td>111</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>European</td>
<td>0</td>
<td>0</td>
<td>65</td>
<td>61.9</td>
</tr>
<tr>
<td>Australian</td>
<td>0</td>
<td>0</td>
<td>16</td>
<td>15.2</td>
</tr>
<tr>
<td>American</td>
<td>0</td>
<td>0</td>
<td>13</td>
<td>12.3</td>
</tr>
<tr>
<td>Canadian</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>9.5</td>
</tr>
<tr>
<td>Japanese</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td>Edu. Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ High School</td>
<td>56</td>
<td>50.5</td>
<td>23</td>
<td>21.9</td>
</tr>
<tr>
<td>Bachelor's Degree</td>
<td>42</td>
<td>37.8</td>
<td>47</td>
<td>44.8</td>
</tr>
<tr>
<td>Master's Degree</td>
<td>11</td>
<td>9.9</td>
<td>26</td>
<td>24.8</td>
</tr>
<tr>
<td>≥ PhD</td>
<td>2</td>
<td>1.8</td>
<td>9</td>
<td>8.6</td>
</tr>
</tbody>
</table>

Source: Survey Data 2007

Nearly 41 percent of domestic tourists were between the ages of 26–30 years, while about 37 percent of international tourists were younger than 25 years of age. Twenty-seven percent of domestic interviewees worked for a private company, while government staff made up 22 percent and non-government organizations 21 percent. Nearly 23 percent of international tourists worked in engineering and research. The next largest group of interviewees worked for a private company while students made up the smallest group.

The educational level of respondents was country-dependent. Among the domestic tourists, about 50 percent had either finished their education at high school level (or did not attend at all), and almost 38 percent held a Bachelor’s degree. Only 9.9 percent of respondents held a Master’s degree, while 1.8 percent held a PhD or post-PhD qualification. Among the international tourists, almost 22 percent of foreigners had finished their education at high school level, while approximately 45 percent of interviewees held a Bachelor’s degree, and nearly 25 percent were pursuing Master’s degrees. Only 8.6
percent held a PhD or post-PhD qualification. These results indicate that domestic and international tourists visiting PPWS are relatively highly-educated people. It can be extrapolated from the data that international tourists stay longer (4.04 days on average) than domestic tourists (3.68 days on average) with higher expenditures (USD 33.95 on average) than that of domestic tourists (USD 25.34 on average). Table 4 illustrates the current pattern of length of stay and expenditure by domestic and international visitors in Mondulkiri Province. There was no statistical difference in duration of stay between domestic and international visitor. However, there was statistically significant difference between the daily spending of tourists because the z-test exceeds the critical value of 1.96.

**Table 4: Duration of Stay and Daily Spending of Tourists**

<table>
<thead>
<tr>
<th>Tourist</th>
<th>Mean During of stay (days)</th>
<th>Daily spending (US$)</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>3.68</td>
<td>25.34</td>
<td>111</td>
</tr>
<tr>
<td>International</td>
<td>4.04</td>
<td>33.95</td>
<td>105</td>
</tr>
<tr>
<td>Average/Total</td>
<td>3.87</td>
<td>29.65</td>
<td>216</td>
</tr>
<tr>
<td>Z-test</td>
<td>0.251</td>
<td>6.279</td>
<td></td>
</tr>
</tbody>
</table>

Source: Data survey, 2007

Entrance and user fees are widely used by Protected Areas to obtain revenue from domestic and international tourists; these funds can then be used to promote responsible tourism and to ensure conservation and protection efforts are being maintained (UNEP, 2005). Protected Areas not only provide visitors with recreational opportunities but also with the ecological, educational, and cultural benefits derived from seeing the natural environment and wildlife (Eagles et al. 2002).

In Protected Areas in Cambodia, the Ministry of Environment charges a park entry fee of 20,000 riel (USD 4.90) per foreign visitor, 5,000 riel (USD 1.22) per car and 500 riel (USD 0.122) per person for domestic tourists (IUCN 2001).

Table 5 shows that over 96 percent of domestic visitors and over 94 percent of foreign visitors are willing to pay an entrance fee to conserve biodiversity in the sanctuary. About 12 percent of national tourists are willing to pay the
actual entrance fee of 500 riel, while approximately 88 percent are willing to pay (WTP) more than this. The entrance fee for foreign visitors is almost USD 5 but approximately 39 percent have a WTP that is higher than the present entrance fee. Since the z-test 4.282 exceeds the critical value of 1.96, there is a statistically significant difference between the willingness to pay the entrance fee to the wildlife sanctuary between domestic and international tourists.

**Table 5: Willingness to Pay for Entrance Fee in PPWS**

<table>
<thead>
<tr>
<th>Category</th>
<th>Domestic</th>
<th></th>
<th>International</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>WTP for entrance fee</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>107</td>
<td>96.4</td>
<td>99</td>
<td>94.3</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>3.6</td>
<td>6</td>
<td>5.7</td>
</tr>
<tr>
<td>Amount of WTP for Entrance fee</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>500 riel</td>
<td>13</td>
<td>12.2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1000 riel</td>
<td>21</td>
<td>19.6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1500 riel</td>
<td>26</td>
<td>24.3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000 riel</td>
<td>12</td>
<td>11.2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3000 riel</td>
<td>27</td>
<td>25.2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>&gt;5000 riel</td>
<td>8</td>
<td>7.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>USD 1</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>11.1</td>
</tr>
<tr>
<td>USD 3</td>
<td>0</td>
<td>0</td>
<td>28</td>
<td>28.3</td>
</tr>
<tr>
<td>USD 5</td>
<td>0</td>
<td>0</td>
<td>22</td>
<td>22.2</td>
</tr>
<tr>
<td>USD 7-10</td>
<td>0</td>
<td>0</td>
<td>24</td>
<td>24.3</td>
</tr>
<tr>
<td>USD 15-20</td>
<td>0</td>
<td>0</td>
<td>14</td>
<td>14.2</td>
</tr>
<tr>
<td>Mean</td>
<td>USD 0.56</td>
<td></td>
<td>USD 6.64</td>
<td></td>
</tr>
<tr>
<td>Z-test</td>
<td>4.282</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: USD 1=4083 riel (rate on September, 12 2007)
Source: Survey data, 2007

**EMPIRICAL RESULTS**

**Coding Variables**

The next step is to estimate the marginal willingness to pay for activities in the sanctuary using the choice experiment. As illustrated in Table 6, data was coded according to the level of the attributes. Two attributes with four levels and three attributes with three levels were used by the latent segment model. For example, ASC is alternative specific constant. If option A or option B were selected, ASC=1. Otherwise, ASC=0. Option A is “with guide” for domestic...
tourists and “with English-speaking guide” for international tourists. Option B is “without guide” for domestic tourists and “without English-speaking guide” for international tourists. If Option A is selected, the variable is GUIDE=1. Otherwise GUIDE is equal to zero. The other variable follow as similar coding.

Table 6: Willingness to Pay for Entrance Fee in PPWS

<table>
<thead>
<tr>
<th>Variables</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASC</td>
<td>Alternative Specific Constant</td>
</tr>
<tr>
<td>GUIDE</td>
<td>1=With guide, 0=Without guide</td>
</tr>
<tr>
<td>CATILE</td>
<td>1=Observing large water birds and wild cattle, 0=Water birds</td>
</tr>
<tr>
<td>ELEPHANT</td>
<td>1=Observing large water birds, wild cattle and riding elephant, 0=water birds</td>
</tr>
<tr>
<td>SEEING</td>
<td>1=Seeing and commutating, 0=No seeing</td>
</tr>
<tr>
<td>DANCE</td>
<td>1=Seeing, communicating and dancing, 0=No seeing</td>
</tr>
<tr>
<td>CANOE</td>
<td>1=Canoeing, 0=No activities</td>
</tr>
<tr>
<td>FISH</td>
<td>1=Canoeing and Fishing, 0=No activities</td>
</tr>
<tr>
<td>HCAR</td>
<td>1=Home stay and car, 0=Home stay and bike</td>
</tr>
<tr>
<td>SBike</td>
<td>1=Safari camp and bike, 0=Home stay and bike</td>
</tr>
<tr>
<td>SCAR</td>
<td>1=Safari camp and car, 0=Home stay and bike</td>
</tr>
<tr>
<td>PRICE</td>
<td>Offered price (100US$)</td>
</tr>
</tbody>
</table>

Boxall and Adamowicz (2002) describes that an application investigating the choice of outdoor recreation use factor analysis to provide estimates of motivational determinants of recreational trip to the wildlife sanctuary. It was then use in the specification of the segment membership likelihood function. The factor analysis was carried out on nine statements by using principle component analysis with varimax rotation and then the components were extracted until eigenvalues less than or equal to 1.0 were found. The factor analysis identified three components and these components were determined based on the factor loadings using SPSS 11.5 (see Table 7).
**Table 7: Results for factor analysis**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Appreciation</th>
<th>Security</th>
<th>Depreciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>It has a rich cultural life</td>
<td>0.789</td>
<td>0.098</td>
<td>0.002</td>
</tr>
<tr>
<td>There are a lot of places to visit</td>
<td>0.683</td>
<td>0.217</td>
<td>-0.103</td>
</tr>
<tr>
<td>Good variety of visitor attractions</td>
<td>0.643</td>
<td>0.239</td>
<td>0.047</td>
</tr>
<tr>
<td>Pleasant weather for sightseeing</td>
<td>0.350</td>
<td>0.054</td>
<td>0.243</td>
</tr>
<tr>
<td>It’s a safe place to visit</td>
<td>-0.099</td>
<td>0.845</td>
<td>0.060</td>
</tr>
<tr>
<td>People are friendly and hospitable</td>
<td>-0.243</td>
<td>0.805</td>
<td>-0.097</td>
</tr>
<tr>
<td>It’s too crowded for sightseeing</td>
<td>0.172</td>
<td>-0.104</td>
<td>0.712</td>
</tr>
<tr>
<td>Prices are too expensive</td>
<td>0.266</td>
<td>-0.081</td>
<td>0.622</td>
</tr>
<tr>
<td>It is a dirty city</td>
<td>-0.406</td>
<td>0.339</td>
<td>0.525</td>
</tr>
</tbody>
</table>

**Eigenvalues**

|                  | 2.253 | 1.623 | 1.321 |

**Estimation of the number of latent segments**

The latent segment models were estimated from one segment to five segments using LIMDEP 9.0 NLOGIT 4.0. We used the Akaike Information Criterion (AIC) to determine the suitable number of segments by increasing the number of segments until the criterion is minimised (Boxall and Adamowicz, 2002).

As demonstrated in Table 8 the values of log livelihood at convergence and pseudo-R2 show the improvement of model fitness when the number of parameters increased indicating that the results support the existence of heterogeneity, but do not determine the number of segments. From the measure of AIC, we can see that all values decrease from one segment to three segments and start to increase from segment 4, indicating that the three segments would be the best fit.
Table 8: Criteria for determining best fit number of segments

<table>
<thead>
<tr>
<th>Number of Segments</th>
<th>Number of Parameters (P)</th>
<th>Log Likelihood at Convergence (LL)</th>
<th>Pseudo-R2</th>
<th>AIC</th>
<th>BIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12</td>
<td>-1184.347</td>
<td>0.168</td>
<td>2392.694</td>
<td>1216.599</td>
</tr>
<tr>
<td>2</td>
<td>32</td>
<td>-1141.737</td>
<td>0.198</td>
<td>2347.474</td>
<td>1227.741</td>
</tr>
<tr>
<td>3</td>
<td>52</td>
<td>-1088.705</td>
<td>0.235</td>
<td>2281.410</td>
<td>1228.462</td>
</tr>
<tr>
<td>4</td>
<td>72</td>
<td>-1073.642</td>
<td>0.246</td>
<td>2291.284</td>
<td>1267.152</td>
</tr>
<tr>
<td>5</td>
<td>92</td>
<td>-1053.571</td>
<td>0.260</td>
<td>2291.142</td>
<td>1300.834</td>
</tr>
</tbody>
</table>

Sample size is 1296 choices from 216 individual (N)
Pseudo-R2 is calculated using $1-LL/LL(0)$
AIC (Akaike Information Criterion) is calculated using $AIC = 2P - 2LL$
BIC (Bayesian Information Criterion) is calculated using $BIC = \frac{P}{2}\ln(N)-LL$

Characterizing the segment members

The parameter estimates of the segment are presented in Table 9. The first segment was made up predominantly of male and high education with a positive sign and being deemed statistically significant, so segment1 was named high educated male tourists (HEMT). While segment2 was labelled high educated domestic tourists (HEDT) because the attributes of education, nationality, and appreciation of the trip are found to be statistically significant with positive value. The attribute of education are statistically significant for both segment1 and segment2, so that segment3 was named low education tourists (LET).

Table 9: Estimation results for the Latent Class Model

<table>
<thead>
<tr>
<th>Variables</th>
<th>Segment1</th>
<th>Segment2</th>
<th>Segment3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASC</td>
<td>-1.7359</td>
<td>(-1.161)</td>
<td>-2.1390</td>
</tr>
<tr>
<td>Age</td>
<td>0.6815</td>
<td>(0.716)</td>
<td>0.8712</td>
</tr>
<tr>
<td>Education (University=1)</td>
<td>0.3247***</td>
<td>(2.594)</td>
<td>0.2229*</td>
</tr>
<tr>
<td>Sex (Male=1)</td>
<td>0.3912*</td>
<td>(0.579)</td>
<td>-0.1666</td>
</tr>
<tr>
<td>Nationality (Cambodian=1)</td>
<td>-0.0814</td>
<td>(-0.286)</td>
<td>1.1622***</td>
</tr>
<tr>
<td>Appreciation</td>
<td>0.1434</td>
<td>(1.253)</td>
<td>0.2863***</td>
</tr>
<tr>
<td>Security</td>
<td>-0.1892</td>
<td>(-1.291)</td>
<td>0.0213</td>
</tr>
<tr>
<td>Depreciation</td>
<td>0.0630</td>
<td>(0.526)</td>
<td>-0.0777</td>
</tr>
</tbody>
</table>

Note: ****, ** and * indicate statistically significant at 1%, 5% &10% levels, respectively and standard errors are in parentheses
Source: Survey data, 2007
**Estimation results of three segment model**

We can see that the results in Table 10 present the utility coefficient of HEMT; most attributes are statistically significant at the 1 percent and 5 percent level with positive values. In HEDT, most attributes are also found to be statistically significant. The coefficients of guide, observing large water birds and wild cattle, observing large water bird, wild cattle with riding elephant, seeing communicating and dancing, canoeing, canoeing and fishing, home stay with car, safari camp with motorbike and price are found statistically significant at the 1 percent level with positive and negative signs. The results of LET reveal that all attributes are found statistically significant at the 1 percent level except for the SBIKE attribute.

Alternative specific constant of segment three are found statistically significant at 1 percent, while segment1 and segment2 are not. The attribute of guide are statistically significant at 1 percent level for all segments with positive sign except segment3. The coefficients of CATTLE and ELEPHANT for HEMT and LET are statistically significant with a positive value, while LET of these attributes are also statistically significant at 1% level. All segments of parameter SEEING are statistically significant with a positive sign. HEMT of attribute DANCE are found statistically significant with a positive value, while negative values in other segments. The attributes of CANOE and, FISH are found statistically significant in all segments. The parameters of HCAR of all segments are statistically significant and the attributes of SBIKE and SCAR are found positive sign except SBIKE of LET.
Table 10: Estimation results for the third segment model

<table>
<thead>
<tr>
<th>Variables</th>
<th>Segment 1 (HEMT)</th>
<th>Segment 2 (HEDT)</th>
<th>Segment 3 (LET)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASC</td>
<td>-0.6546 (-0.527)</td>
<td>-0.8517* (-1.895)</td>
<td>5.8228*** 5.8228***</td>
</tr>
<tr>
<td>GUIDE</td>
<td>1.0689*** (2.841)</td>
<td>5.8946*** (10.279)</td>
<td>-8.8186*** (-8.038)</td>
</tr>
<tr>
<td>CATILE</td>
<td>1.8338** (2.293)</td>
<td>-1.5448*** (-4.143)</td>
<td>5.0025*** (5.372)</td>
</tr>
<tr>
<td>ELEPHANT</td>
<td>5.4502*** (4.491)</td>
<td>-3.1934*** (-8.319)</td>
<td>3.9793*** (5.168)</td>
</tr>
<tr>
<td>SEEING</td>
<td>1.8471*** (3.080)</td>
<td>0.5283* (1.790)</td>
<td>3.7298*** (5.438)</td>
</tr>
<tr>
<td>DANCE</td>
<td>3.8995*** (3.669)</td>
<td>-1.5203*** (-4.716)</td>
<td>-3.4053*** (-5.657)</td>
</tr>
<tr>
<td>CANOE</td>
<td>2.6460*** (3.861)</td>
<td>-1.6073*** (-4.629)</td>
<td>1.6441*** (3.397)</td>
</tr>
<tr>
<td>FISH</td>
<td>4.8774*** (4.288)</td>
<td>-1.7417*** (-4.784)</td>
<td>-2.1487*** (-4.248)</td>
</tr>
<tr>
<td>HCAR</td>
<td>1.0888** (1.971)</td>
<td>1.8504*** (5.147)</td>
<td>-7.6514*** (-7.522)</td>
</tr>
<tr>
<td>SBIKE</td>
<td>1.8978 (0.989)</td>
<td>3.9815*** (7.536)</td>
<td>-1.264 (7.536)</td>
</tr>
<tr>
<td>SCAR</td>
<td>0.173 (0.327)</td>
<td>0.7240** (2.237)</td>
<td>9.7456*** (6.187)</td>
</tr>
<tr>
<td>PRICE</td>
<td>-0.9754 (2.155)</td>
<td>-1.0594*** (-7.798)</td>
<td>-1.0302*** (-5.327)</td>
</tr>
</tbody>
</table>

Note: ***, ** and * indicate statistically significant at 1 percent, 5 percent and 10 percent levels, respectively and standard errors are in parentheses.
Source: Survey data, 2007

The marginal values are the ratio between the attribute and the price coefficients, which are presented in Table11 using equation 8. The results reveal that almost half of the visitors (41.70 percent) belong to HEMT. HEMT seem interested in all activities and they prefer the most for ELEPHANT with marginal willingness to pay USD 558.77, followed by FISH, and DANCE. HEDT consists of 29.90 percent of the sample population and they are interested in SEEING, HCAR, SBIKE and SCAR. This group have a willingness to pay the most for a guide with marginal value USD 556.41. LET comprises of 28.40 percent of the total sample and they prefer SCAR the most, followed by CATILE and ELEPHANT. They do not prefer the guide or DANCE, FISH, HCAR, and SBIKE because of large negative values. The positive values of CATILE, ELEPHANT and CANOE for both HEMT and LET indicate that they do prefer these activities, while HEDT do not. All tourists seem interested in SEEING because this attribute in all segments are found to have positive values, and only HEMT prefer FISH. The coefficient of the attributes of HCAR and SBIKE are found to have positive signs in HEMT and HEDT.
Table 11: Marginal willingness to pay of tourists (USD)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Segment 1 HEMT</th>
<th>Segment 1 HEMT</th>
<th>Segment 2 HEDT</th>
</tr>
</thead>
<tbody>
<tr>
<td>GUIDE</td>
<td>109.59</td>
<td>556.41</td>
<td>-856.01</td>
</tr>
<tr>
<td>CATTLE</td>
<td>188.00</td>
<td>-145.82</td>
<td>485.59</td>
</tr>
<tr>
<td>ELEPHANT</td>
<td>558.77</td>
<td>-301.43</td>
<td>386.26</td>
</tr>
<tr>
<td>SEEING</td>
<td>189.37</td>
<td>49.87</td>
<td>362.05</td>
</tr>
<tr>
<td>DANCE</td>
<td>399.78</td>
<td>-143.51</td>
<td>-330.55</td>
</tr>
<tr>
<td>CANOE</td>
<td>271.27</td>
<td>-151.72</td>
<td>159.59</td>
</tr>
<tr>
<td>FISH</td>
<td>500.04</td>
<td>-164.40</td>
<td>-208.57</td>
</tr>
<tr>
<td>HCAR</td>
<td>111.63</td>
<td>174.66</td>
<td>-742.71</td>
</tr>
<tr>
<td>SBIKE</td>
<td>194.57</td>
<td>375.83</td>
<td>-122.72</td>
</tr>
<tr>
<td>SCAR</td>
<td>17.80</td>
<td>68.34</td>
<td>945.99</td>
</tr>
<tr>
<td>Segment size (%)</td>
<td>41.70</td>
<td>29.90</td>
<td>28.40</td>
</tr>
</tbody>
</table>

Source: Survey data, 2007

The ranking score of each attribute represents a measure of the relative importance of the variation in each attribute over the variation of all other attributes. The formula used for these calculations was followed by Kontoleon and Yabe, 2006. We can see from Table 12 that the majority of the choices for HEMT are ELEPHANT, FISH and DANCE, while the low percentages of attributes are SCAR, HCAR and SBIKE. The attributes of SBIKE, ELEPHANT and PRICE in HEDT received higher scores than other attributes. Finally, the top three choices of attributes in LET are SCAR, HCAR and CATTLE.

Table 12: Ranking score of attributes

<table>
<thead>
<tr>
<th>Variables</th>
<th>Segment 1 HEMT</th>
<th>Segment 2 HEDT</th>
<th>Segment 3 LET</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Rank</td>
<td>% Rank</td>
<td>% Rank</td>
<td></td>
</tr>
<tr>
<td>CATTLE</td>
<td>6.90 7</td>
<td>7.99 7</td>
<td>12.44 3</td>
</tr>
<tr>
<td>ELEPHANT</td>
<td>20.84 1</td>
<td>16.78 2</td>
<td>10.06 4</td>
</tr>
<tr>
<td>SEEING</td>
<td>7.17 6</td>
<td>2.82 10</td>
<td>9.56 5</td>
</tr>
<tr>
<td>DANCE</td>
<td>14.67 3</td>
<td>7.86 8</td>
<td>8.47 6</td>
</tr>
<tr>
<td>CANOE</td>
<td>10.10 5</td>
<td>8.43 6</td>
<td>4.15 9</td>
</tr>
<tr>
<td>FISH</td>
<td>18.70 2</td>
<td>9.18 4</td>
<td>5.45 8</td>
</tr>
<tr>
<td>HCAR</td>
<td>3.75 9</td>
<td>8.76 5</td>
<td>17.43 2</td>
</tr>
<tr>
<td>SBIKE</td>
<td>6.45 8</td>
<td>18.61 1</td>
<td>2.84 10</td>
</tr>
<tr>
<td>SCAR</td>
<td>0.59 10</td>
<td>3.40 9</td>
<td>22.04 1</td>
</tr>
<tr>
<td>PRICE</td>
<td>10.83 4</td>
<td>16.17 3</td>
<td>7.56 7</td>
</tr>
</tbody>
</table>

Source: Survey data, 2007
CONCLUSIONS AND RECOMMENDATIONS

To examine different ways of developing ecotourism in PPWS many methods can be employed. This study used a choice experiment aimed at identifying potential activities for new package tours in the wildlife sanctuary. Each activity has the potential to draw in a variety of tourists with varying tastes, all of whom have an appreciation for a nature-based experience. Additionally, the results show that almost 88 percent of the domestic visitors were willing to pay an entrance fee to the sanctuary much higher than the 500 riel (USD 0.122) currently set by the Ministry of Environment. At the same time, about 38 percent of foreign visitors were willing to pay more than the current USD 5 for their entrance fee. Thus, the government can increase the entrance fee in Protected Areas to better conserve them if a high WTP for entrance fees is found for tourists who visit other Protected Areas.

In managerial terms, several implications for planning and developing new package tours can be drawn from the results obtained in this study. First, it was observed that highly educated tourists are willing to pay for a guide, while those with a lower standard of education are not. So the availability of a tour guide plays an important role for educated tourists.

Second, it was also deduced that HEMT were interested in wildlife observation, water-based activities, and cultural resources. LET mostly preferred the safari camp with car and wildlife observation, while HEDT preferred the safari camp with motorbike and home stay with car. The results indicate that these activities could act as a suitable foundation for establishing new package tours.

Third, the majority of both domestic and international visitors are under 30 years of age with very few older visitors in PPWS. In addition, young tourists seem more interested in visiting remote areas and taking part in the activities listed above than do older visitors. A wide range of affordable basic foodstuffs and other essential daily items, as well as plenty of inexpensive food and accommodation would be required for young tourists.

Fourth, as was expected, it was observed that tourists often want to combine several different activities in their packages. This information reveals that many combinations should be designed in order to meet the needs of all the tourists visiting PPWS. The government can cooperate with tour operators or NGOs to
set up priority areas, design activities, and promote package tours for small and medium-sized tourist groups. This recommendation of smaller groups is derived from both the nature of activities (which are not easily undertaken by larger groups) as well as from a commitment to sustainability and to maintain the vitality of the area.

Fifth, it was observed that most of the international respondents are highly-educated visitors from European countries or other Western countries including Australia, America or Canada. The study indicates that they appear to spend more time and money than domestic visitors. Based on this information it would be a good investment to obtain both English- and French-speaking guides to cater for the diverse range of visitors. In addition, domestic tourists have also demonstrated a high WTP for guides. Therefore the training of professional guides for domestic visitors is also an important part of establishing sustainable ecotourism in PPWS.

Finally, our study provides policy makers with a range of useful information concerning the level of the entrance fee payable by tourists in Protected Areas; a fee which could be used for conserving biodiversity in this area. The study also outlines preferences in respect of typical packages for both domestic and international tourists.

This information is very important for ecotourism in PPWS, and the implementation of policy is now urgently required. The implementation should, however, focus on the negative impacts of tourism on the environment, while taking into account the well-being of the local community. This is because poorly-regulated tourism and economic exploitation of vulnerable communities will destroy both the environment and their cultural assets. These issues therefore need to be discussed in the next stage of our research.
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Chapter 26
Gender Implications in CBNRM: Important Roles of Women in Community Fisheries

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Through primary and secondary data collection, this paper highlights the challenges faced by women, their aspirations for the future, and the opportunities they have to contribute to improving Community Fisheries (CFi) in Cambodia. Using six case studies, the research identifies meaningful participation of women, recognizes the challenges of this participation, describes key entry points for interventions, as well as provides recommendations and practical strategies for increasing women’s participation in CFi planning and implementation.

BACKGROUND

“Srey bangvel changkran minchum” or “women are not capable of doing anything but housework” is an old Khmer saying that still permeates most of Cambodia’s present life and culture. To this day, women cannot sufficiently access health care and education and continue to have lower literacy rates than men. Yet while facing the apparent disadvantages in basic conditions, women are increasingly taking responsibility for earning an income to support the family. Women are agricultural farm hands, fish traders and processors, gatherers of forest and aquatic products and take on a lot more odd economic tasks in order to contribute to the family’s income.

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5 Thach Phannady, Deputy Director of the Administrative Unit of the Fisheries Administration of MAFF.
6 Yumiko Kura, Regional Program Manager for the WorldFish Center Greater Mekong Subregion.
7 Nop Sokhai, Capacity Building Officer of the CBNRM Learning Institute.
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9 Keam Han, CBNRM symposium and Volume 2 Manager of the CBNRM Learning Institute.
Many studies have described women’s roles in every aspect of rural livelihoods in Cambodia, including some documentation on the traditional division of labor between men and women in agriculture. However, women’s contribution to fisheries and related livelihoods is not yet well examined. Understanding women’s role in fisheries is imperative especially in the light of their growing involvement and visibility in CFi, which is increasingly viewed as a way to provide assistance to vulnerable groups, including women, and a main vehicle to engender community participation in fisheries management. The level of meaningful participation by women in the management of CFi is yet to be assessed. In addition, there is also limited information analyzing the needs and aspirations of women related to CFi management. Therefore, this research initiative tries to explain those above concerns.

**OBJECTIVE**

To explain the concerns raised above, this research is trying to:

- describe the roles of women and men in fisheries and CFi at the household and community levels;
- describe the needs and aspirations of women associated with CFi; and,
- recommend practical strategies and opportunities for increasing women’s participation in CFi planning and implementation.

**RESEARCH QUESTIONS**

1. What are the roles of women and men in fisheries at the household level?
2. In what ways are women and men involved in decision-making on fisheries at the household level?
3. What are the roles of women and men related to CFi?
4. In what ways are women and men involved in decision-making in CFi?
5. What are the incentives and constraints for women’s participation in CFi?
6. What are the needs of women related to CFi?
7. What are the aspirations of women related to CFi?
8. What are potential / possible practical recommendations to improve women’s participation in CFi activities?
METHODOLOGIES

The results of the study are based on the information compiled through the following processes:

• **Secondary data review and synthesis**
  The team conducted a literature review in order to gain a picture of the general situation of women in Cambodia covering key social, economic, cultural and political factors. More specifically, the review compiled existing information on the situation, roles, needs and aspirations of women in CFi management. The information was compiled from both published and grey literature available from the internet, libraries of NGOs and government, and magazines, including donor project reports. The result of the secondary data collection and synthesis was used to identify information gaps that guided the field study design and the primary data collection.

• **Primary data collection at six case study sites**
  Case studies were conducted at selected communities that are engaged in CFi in six provinces (Kampot, Kep, Battambang, Kampong Chhnang, Takeo, and Stung Treng), using the following PRA tools: 1) Gender Specific Resource Mapping, 2) Seasonal Calendar, 3) Daily Activity by Clock, 4) Decision Making Matrix, 5) Semi-structured interview with key informants. The participants who were chosen for the research study were 16 people from each CFi.

• **Provincial feedback workshops**
  The result of the study in each province has been presented in the provincial reflection workshops which were organized at three different regions including Mekong, Tonle Sap and Coastal.

• **Final feedback workshop**
  The final check on the study findings was done throughout a final feedback workshop which was organized in Kampong Cham province attended by all stakeholders in six study sites.

The desk study and field research, through focus group discussions and key informant interviews, were conducted over two months, with an average of seven days spent at each study site.
SCOPE OF THE STUDY

The study is not meant to provide a comprehensive overview of women’s participation in fisheries and CFi activities all around Cambodia. Rather, it aims to highlight the challenges women face, their aspirations for the future, and the opportunities for women to contribute to improving CFi and fisheries resource management in Cambodia. In this way, we hope to help identify examples of meaningful participation by women in fisheries management, key entry points for interventions, and practical strategies for further donor support and NGO assistance on gender mainstreaming in fisheries.

MAJOR FINDINGS

The main differences between the productive/reproductive roles of women and men in a fishing household

In Cambodian society, managing the house and the family is a woman’s responsibility. Women’s housework includes cooking, washing, carrying water, collecting firewood, keeping and managing money, and taking care of the children and family. Some men participate in these household chores e.g. collecting firewood and water. A majority of women are also involved in productive work, in addition to reproductive work, often creating competing demands on their time. For example, in a family where both the wife and husband go fishing to generate income, the wife is still expected to cook food for the family after fishing while the husband spends his free time chatting with neighbors, watching TV or listening to the radio (Khim et al. 2002).

All six case studies confirm this general observation that men have more recreational time - including time for sleep - than women do. However, there are varying reasons in each site for the difference in recreational time for women and men. For example, the women in the Stung Treng study site have an average of only six and a half hours of recreational time per 24 hours while men have 10 hours. The women in this study site spend long hours doing productive work such as farming and animal-raising in addition to their full responsibility for doing reproductive work. In Kampot, men have over 13 hours of recreational time while women have about nine hours. According to the study, men in Kampot spend much of their productive time engaged in physically hard labor such as fishing offshore during the nighttime while...
women are sleeping at home. Men come home to sleep and recover during the day and spend very little time doing housework. Women in this study site prefer their husbands to take a full rest during the day so that they regain the strength to fish again in the evening rather than to help with the housework. In the Takeo study site, the women in fishing-dependent households spend slightly longer hours than men doing productive work because besides joining the men in collecting aquatic resources, they also spend time processing and selling fish. The hours women spend on reproductive work is reported to be one and a half hours only because household work is delegated to female and male children. This daily cycle of sharing productive and reproductive work among husband, wife and children happens during September to December when fishing activities are intensive.

Overall, the traditional gender division of labor in all the study sites is still the dominant situation. This means that a woman’s main role and responsibility is in the home doing housework and caring for children while men are in charge of generating an income for the family. However, the way women and men allocate their day-to-day hours is different from site to site, and the economic rationale seems to be the dominant factor influencing their behavior. When practical concerns about bringing food to the table and making ends meet day to day come into play, the need for women to take on more responsibilities in productive work seem to override the traditional biases.
Consistent with the literature review (Khim et al. 2002; Oxfam-GB 2006), the women in the six study sites take primary responsibility for managing household finances and thus tend to have a say in household decisions. This does not mean that women have the right to spend the money freely on what they want; women can decide on the small daily expenses such as food and other household needs but bigger decisions are generally shared between husband and wife. In making decisions, however, it is not usual for a wife to give priority to the husband as the ultimate decision maker.

**The main roles of women in fisheries-related livelihood activities**

The results from most of the case studies are consistent with the general understanding from the literature review that women are engaged in a variety of fisheries-related livelihood activities including their own small-scale capture fisheries, gathering of aquatic plants and animals, and aquaculture. They also play a supportive role in the fishing activities of their husbands. The main responsibility of women in fisheries-related livelihoods is in the post-harvest sector, including processing and trading of fish (Keang Seng 2001; Khim et al. 2002; IFM 2007).

In the case of the coastal region and the Tonle Sap Lake region, women in fishing households generally do not go fishing with their husbands. This is primarily because the main fishing grounds are far away from home and the women cannot leave the house for a long period of time as the housework demands their attention throughout the day. This reflects the traditional norms.
regarding the roles of men and women in the household. However, the case study in Battambang shows that, although most women do not accompany their husband to remote fishing grounds on the Tonle Sap Lake, they do go fishing on their own throughout the year if they have easy access to fishing grounds in nearby streams. Similarly, women at the study sites in Kampot and Kep go to collect crabs and other coastal aquatic resources nearby. Thus, in the study sites in these two regions, women’s role in fisheries-related livelihoods activities is as prominent as in post-harvest activities such as processing and trading.

However, in the Mekong river floodplain region, the study site in Takeo shows that women join their husbands in actual fishing and collection of aquatic resources although playing a more supportive role such as operating boats, taking fish out of the nets, sorting and cleaning fish. Fishing activities are concentrated in a short time period between September and December when the floodplain forms and fishing grounds become accessible to the community. So it is important for each household to maximize income from fishing. On the other hand, women in Stung Treng do not go fishing with their husbands since fishing is not the primary occupation of the villagers in this study site and also, fishing activities take place during the night.

As supported by the literature (Keang Seng 2001, IFM 2007, McKenney and Tola 2002), women in all study sites are viewed as more competent than men in marketing fish and take more responsibility in the post-harvest stage of the fisheries livelihoods. In some cases, men immediately sell the fish to collectors at landing sites. Women think of this as a disadvantage because men do not usually negotiate prices or look for the best buyer and thus may not get a good price for their catch.
When I catch fish from the lake or canal, I want to sell them immediately because there is no time to bring them back home and discuss with my wife where to sell them and how much they should be sold for. There is a middleman who is waiting to buy fish caught from us all the time.

(Fisher in Tahean community, Takeo province).

The main roles of women in Community Fisheries

In general, women play increasingly more central / more important / larger roles in community development work. They are increasingly visible in meetings, and they participate in projects on water, savings and micro credit, and home gardening. Women are also encouraged to attend training or even to take up leadership roles. Oxfam-GB’s gender impact assessment study (2006) points out that women’s participation in projects and gender support work in the village resulted in some changes in gender roles in communities. In particular, sharing gender roles between husbands and wives increased the amount of respect they have for each other, creating a better atmosphere in the family and society.

However, the participation of women in the village is still dependent on a number of factors such as location of an activity. For example, women cannot participate in activities that are far away from home (UNIFEM et al 2004) or they act as representatives of husbands ie women participate if their husbands are busy or away (Khim et.al. 2002). Women also participate when an activity is labeled as “gender” as the general perception is that gender work is for women only (Oxfam-GB 2006).

In Cambodia, while more women are presently participating in Community Fisheries, they are less represented than men in the CFi committees (Khim et al 2002). There are observations that the opinions of men and women are valued equally, but most decisions are still made by men.
In the study sites, only one or two women are represented on the CFi committee. In the study site in Takeo, the Provincial Fishery Office set the quota for women in the CFi committee to two seats, which seems to have encouraged more women to run for the CFi committee election. However, some women committee members within the study sites as a whole feel that they are only token members and do not have a significant role in the CFi committee. A typical role for women is that of an accountant or a disseminator of CFi information. In Kep and Kampot, there is a perception among community members that women are not qualified to take leadership roles and that it is inappropriate for a woman to be a CFi leader because men are more knowledgeable about the CFi. When women run for the CFi committee membership, they do not get enough votes because most of them are illiterate. Even if women do take up seats in the CFi committee, some of them do not stay on because of the demands of household work as shown in the Kep study.

“I am happy to have leadership roles in CFi but I need support from men in the community especially my husband. Otherwise, I am not brave enough to lead the community” (Woman in Stung Treng)

Savings groups: Women are visible and prominent in establishing and managing a savings group because of the traditional norm that financial management is the responsibility of women in the household. It is also generally acknowledged that women are more competent at managing financial matters than men. It has also been observed that women are better at collecting money for the savings group from the CFi members because they are more patient and can negotiate with people.

Information dissemination: Women’s skills in dissemination and communication are well recognized in all six sites, and this is consistent with the literature review (IFM 2007; Chem Pe A et al 2006). Women play an important role in disseminating CFi information to other community members in a variety of ways - through formal meetings supported by NGOs, and more commonly through informal one-to-one conversations at community events, while working in rice fields, drinking, gambling, and such like.

Patrolling: Although women typically do not participate in patrolling illegal fishing, on the rare occasions when they did participate, it was found that women are better at convincing the illegal fishers to give up their fishing
gear, and sign the agreement to stop illegal operations. The CFi in the study sites have not been able to take advantage of these skills of women members, because the patrolling generally takes place at night, and thus it is often considered socially inappropriate for women to participate in this activity.

The case studies confirm that there are some clear benefits to encouraging women to participate in CFi activities in order to improve the CFi operations in general. Besides the activities highlighted above, there are numerous other CFi activities, including decision-making, which women participate in and contribute to, with varying degrees of effectiveness depending on the context of each CFi. In addition, as documented by a study conducted by Oxfam-GB (Yin Dara 2007), through participation in CFi activities some women become more active in joining training and workshops, more confident in public speaking, and have improved their access to income generating activities.

The needs and aspirations of women related to fisheries livelihoods and CFi

Existing literature about women in fisheries does not say very much about women’s short-term needs and long-term aspirations or what motivates them to participate in CFi activities. The case studies tried to identify the needs and future aspirations of women, with as much detail as possible; however, it was often difficult for the women to articulate those in more specific ways because they are usually thinking only about daily needs and concerns; long-term planning or thinking is often not done.

Needs for ongoing CFi activities

Across all case studies, women CFi members share similar concerns. Their responses in almost all cases indicated that they need their capacity improved with regard to existing CFi activities. For example, they want to learn more about the Fisheries Law, agricultural production techniques, and gender concepts. Women in Kep and Kampot voiced the need for some very basic capacity building - literacy program (training or workshops) - to boost their confidence. Meanwhile, in Kampong Chhnang and Takeo, women need their husbands to encourage and support their CFi involvement; for example, they want their husbands to share some of the reproductive work with them while they participate in CFi activities.
Needs for new CFi activities

Some women made suggestions for additional activities or support through CFi to improve living conditions in general. People in Kampong Chhnang voiced the need for a healthcare centre and toilets for the community. Needless to say, many also suggested additional livelihood support activities. Women in the Stung Treng site, for example, emphasized the need for alternative livelihoods to fishing because fisheries resources are no longer sufficient to support the community as a whole.

Aspirations

Women in all the case study sites aspire to have better livelihoods based on improved fisheries resources through the CFi and other external assistance for capacity building and alternative job creation. Better education in terms of both literacy and knowledge was also aspired to in all regions; it can help women to avoid domestic violence and access different information as voiced in Takeo and Kep, respectively. On the other hand, women’s aspiration in the three regions also emphasized gender balance. This means that women do not want to be looked down on or be criticized in society. Women also want their husbands to be more understanding and to share housework. Many women said they need encouragement to be leaders like men.

The motivating factors and obstacles for women’s participation in CFi

The six case studies indicate that there are three main reasons why women participate in CFi activities despite many constraints:

• Some CFi activities bring economic benefits, through providing support for livelihoods improvement;
• Some CFi activities empower women, through improving their skills, knowledge, and confidence;
• Women believe that CFi activities can improve fisheries resources and that the future generation will benefit from them.

What is clear from these results is that many women view CFi as a mechanism to deliver services that would address the needs and aspirations that are described above. All the CFi in the study sites provide a variety of programs that support livelihood diversification and women’s empowerment through
training, workshops, and savings groups. Access to this support seems to create significant incentives for women to join the CFi and also to participate in activities that deal with fisheries management issues more directly.

Social norms are the main constraint for women in participating in CFi activities, especially for patrolling at nighttime. However, in the case of the study site in Stung Treng some women join CFi patrolling activities at nighttime because the encouragement of the CFi committee and NGO support has led to a high level of awareness on the importance of CFi among community members. On the other hand, the Kep case study shows that even though women participate in CFi meetings, they are afraid that men will interrupt when they speak up.

A low level of literacy among women poses a major constraint to them in many aspects of their livelihoods, whether it is in gaining access to credit, running a business, or participating in CFi activities (Khim et.al. 2002; Oxfam-GB 2006; UNIFEM et al. 2004). Women generally feel less confident in participating in community activities and become more dependent on men if they are illiterate (Oxfam-GB 2006).

Across all case study sites, lack of confidence, shyness, and reluctance to express their opinion limit women’s participation in the CFi during meetings and other events. Lack of support from husbands for women’s involvement in CFi activities sometimes leads to domestic violence as mentioned in the Takeo and Kep case studies. Thus, even if women have a strong interest in being part of CFi activities, they often don’t participate, so they do not displease their husband.

Time constraint is another major impediment for women in participating in CFi. Women usually have to manage multiple responsibilities in both productive and reproductive work. A case in Battambang, in particular, emphasized that time constraint is the main factor keeping women from joining different CFi activities; time spent on CFi participation is sometimes considered as a loss of productive time.

While limited education (especially illiteracy), traditional or social norms, and time constraints are broadly mentioned as major obstacles both at household level and community level, other more specific problems were also identified as factors limiting women’s participation. People in Takeo, for example,
showed that the limited collaboration between the provincial fisheries office and NGOs and the lack of funding support were obstacles because almost all CFi activities need external financial and technical support, eg establishing savings groups, organizing patrols, and conducting formal meetings. Likewise, people in Stung Treng also indicated that limited guidelines and lack of support for capacity building were the main constraints with respect to women’s participation.

Other more practical constraints were also identified. When women are able to attend CFi meetings, they sometimes have to bring their babies or small children with them. It was also pointed out in the literature (IFM 2007; UNIFEM et al. 2004) that women benefit less from extension services because training events typically take place in district centers to which women cannot always travel. These constraints can be removed with relatively little effort, such as through organizing child care during the meetings or holding training events at venues more accessible to women.

**Practical recommendations to improve women’s participation in CFi activities**

Both the literature review and the case studies confirm that women play increasingly important roles in both fisheries-related livelihood activities at household level, and in CFi activities that are directly concerned with fisheries management at the community level. Some of the case studies demonstrate that women can bring direct benefits with their participation in the CFi activities such as effective information dissemination and better management of the savings group. Women can also potentially expand their participation in other activities such as in apprehending and educating illegal fishers.

At the same time, the case studies illustrate that CFi face significant challenges in encouraging more women to contribute to their activities. Some constraints are created by underlying cultural and traditional norms which are difficult to remove. Other constraints are caused by poverty, also a difficult problem to solve. However, the case study in Stung Treng indicates that the long-term presence of NGO support in the community to build awareness on gender issues and the importance of the CFi for sustaining fisheries resources can slowly but steadily change the community’s perception of women’s roles in the household and in the community, and can contribute to creating a social environment that enables women to take advantage of their skills and qualities for improving CFi in Cambodia.
As shown in some of the case studies, empowering women by supporting income generating activities through CFi - savings groups, gender groups, agriculture extension groups, that are not directly about fisheries management - seems to be an effective way to create incentives for women to join CFi. These initiatives help build the confidence of women to express their opinions and make decisions, and gain recognition within the household and the community.

To summarize, practical field strategies to increase women’s participation in CFi activities should consider the following factors:

- It is unrealistic to expect women to participate in all CFi activities because of their multiple reproductive and productive responsibilities. Therefore, women should be engaged in some activities in CFi that could benefit them.
- Lack of support from husbands and other men in the family is a major obstacle to women’s participation. There is a need to provide some awareness activities and knowledge on gender and development concepts to all men and women in the CFi.
- Promoting and providing other alternative livelihoods can provide a direct benefit to women by introducing some technologies of fish culture and processing products.
- Capacity building for women in CFi should be done based on the real need of women and in effective ways by using very simple visual aids.
- The CFi should have a clearly defined quota for women representatives on the community committee, based on the national (FiA) policy. It could vary from 30 to 50 percent representation by women as community committee members.
- Promoting collaboration and networking between other agencies and donors who provide financial and technical support to CFi.
- Organizing the women’s association network in the CFi.
- CFi activities could include those that are not directly about fisheries management like savings groups, in order to create incentives for women’s participation.
- The CFi should provide direct support to help women though providing literacy, health care and family planning programs, which are a concern not only for women but for their whole families.
- Venues for training and other CFi events need to be accessible and available to women in order to encourage them to participate in the CFi activities.
- Child care needs to be organized during CFi meetings.
CONCLUSION

Overall, the traditional gender division of labor is still the dominant situation, but the daily concerns of making a living push women to take more responsibility for productive work that seem to override the traditional biases. In terms of livelihood, women are engaged in a variety of fisheries-related livelihood activities on their own and also play a supportive role in the fishing activities of their husbands. Nevertheless, the main responsibility of women is in the post-harvest sector. Looking at their participation, most women cannot travel far from home or at nighttime. However, they are actively involved in savings groups and information dissemination in CFi. This participation is motivated by economic benefits from CFi, being empowered by CFi, and their belief that CFi increase fisheries resources. Meanwhile, women continue to face some major constraints both at household and community level such as limited education, traditional or social norms, and time constraints. Even so, women aspire to have better livelihoods, more education, and capacity building through alternative occupations, literacy programs, and training courses on fisheries law, agricultural techniques, and gender concepts through external assistance.
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Chapter 27

Understanding the complex realities of CBNRM: multiple perceptions of community fisheries practice

By: Emma Whittingham¹, Meng Kimsan², Tep Chansothea³

Using a case study from Stung Treng and one from Koh Kong, this paper attempts to further understand the complex realities of CBNRM using multiple perceptions of various stakeholders involved. The research intends to not only contribute to increasing the dialogue and learning among CBNRM partners but to also increase awareness and recognition of the diversity of interests and interpretations. The research findings uncover critical issues relevant to the wider debates about CBNRM policy and practice in Cambodia and explore these perceptions through three issues: (1) diversity of local livelihoods, (2) tension between personal and societal values, and (3) influence of hierarchical relations.

BACKGROUND

Over the last decade community based natural resource management (CBNRM) has become a popular and widespread approach in Cambodia. It is supported by a range of government policies, including fisheries and forestry reforms, the government’s rectangular strategy and decentralisation agendas, and is implemented by a number of different public and civil agencies. Following a National Workshop in 2002, a common definition of CBNRM in the context of Cambodia was agreed as:

“A diversity of co-management approaches that strive to empower local communities to actively participate in the conservation and sustainable management of natural resources through different strategies including community forestry, community fisheries, participatory land use planning, and community protected area management”


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Therefore CBNRM represents an approach to co-management linked to a number of core concepts, including: community, conservation, sustainability, participation, and empowerment. As Leach et al (1997a) conclude, these concepts are generally underpinned by a number of fundamental and related assumptions: that, (1) there exist homogenous communities with shared values or interests in the environment and its conservation, and (2) a collective willingness and capability to be empowered and participate in its management. Yet a growing literature documenting CBNRM experiences suggests that such assumptions may have little basis in reality (see Leach et al 1997b for a collection of examples). Instead we are encouraged to recognize (as illustrated in Box 1) that CBNRM works within communities of varied and often conflicting interests and motivations (Agrawal and Gibson 1999). This occurs because of a diversity of identities, histories and capabilities which give rise to distinct and changing relations to the environment (Leach et al 1997a; Borrini-Feyerabend et al 2004). Moreover, the diversity of people often results in different levels of access, of participation and influence in the direction of CBNRM such that CBNRM may come to represent a place of exclusion as well as inclusion. Indeed, critics have suggested that participation in CBNRM is most commonly used to gain local support for preconceived conservation priorities and strategies rather than as a means to empower local people to identify their own priorities (Campbell and Vainio-Mattila 2003).

**Box 1: Recognising the diversity of perspectives associated with CBNRM**

In the Philippines, the ‘Linking People to Policy’ project recognised that:

“Community Forestry seems to be like beauty, very much in the eye of the beholder; to a forester it may be about trees and techniques, for an environmentalist it may be about biodiversity and protection, for an NGO worker it may be about community organising and awareness raising, for community members it may be about secure user rights”.

Significantly, the project was also aware that certain people’s perspectives may be more powerful in influencing policy than others. Indeed, it was often the opinions of community members which were never truly heard in conventional participatory projects, where the agendas and objectives had already been decided by external professionals.

(IIRR 2005)
Given the diversity of interests associated with CBNRM, it is not surprising that Thay Somony (2002) revealed confusion, lack of clarity and limited understanding among fishers, technical institutions and associations at local levels about the meaning of CBNRM in Cambodia. Similarly, Van Acker (2004) suggests that among line ministries and projects there are differing and contested views of CBNRM. It is noted that local communities’ needs and roles in decision making are often marginalised by government stakeholders who view local people as deficient of technical expertise and capacity (ibid.). Indeed, a survey conducted on knowledge, attitudes, practices and beliefs on good governance indicates there remains confusion and limited understanding of key concepts such as participation among different level government officials and communities (Holloway, Chom Sok 2004).

What becomes clear is that while there are often assumptions of shared values and consensus towards collective action underlying CBNRM, in reality the situation is much more complex. Indeed, in reality, people’s interests in natural resources and CBNRM are very different and even opposing, while their ability to be involved and influence CBNRM are often unequal. These differences seriously compromise the process and outcomes of CBNRM, undermining its ability and the goals of sustainability, conservation and empowerment it seeks to deliver. This is a significant implication considering the strategic role of CBNRM in development and poverty reduction in rural Cambodia, where high dependence on a declining natural resources base is increasingly leading to conflicts and underemployment.

It is based on this background understanding that the following research was carried out to further understand the complex realities of CBNRM through the different perceptions of the many people involved. It was hoped that such an understanding would not only contribute to dialogue and learning among CBNRM partners, but would also strengthen the transparency of the CBNRM process as a whole, increasing awareness and recognition of the diversity of interests and interpretations and the ways in which they are negotiated.
OBJECTIVE AND RESEARCH QUESTIONS

The research aimed to understand how different people perceive CBNRM and what impact CBNRM has on local livelihoods. Within the context of Community Fisheries (CFi), the following key questions were addressed:

- What are fisheries-based livelihoods currently like and how have they changed?
- How are different people involved in CFi?
- What interests and expectations do different people have about CFi?
- What impact have CFi had on people’s livelihoods?

Box 2: What do we mean by perceptions?

- Perceptions are simply our own ideas, views and opinions or judgments - they are not ‘right’ or ‘wrong’
- Our perceptions form through our own experiences and relationships with the world around us
- We have multiple perceptions that change over time, occur in different places and depend on who we are talking to
- The research was interested in different people’s perceptions about the value of natural resources, the purpose of Community Fisheries and their experiences in practice

METHODOLOGIES

The research was based on a qualitative case study approach. As highlighted in Box 3, such an approach allowed us to obtain an in-depth understanding of the diversity of people’s experiences and interpretations. This method was chosen to decrease the challenges that would have accompanied a more traditional quantitative methodology.
Box 3: Characteristics of qualitative research

- Qualitative research makes use of less structured research tools (e.g., semi-structured interviews instead of questionnaires).
- Qualitative research makes use of open questions giving an in-depth understanding.
- Qualitative research is often interested in people’s behaviour, attitudes and motivations (e.g., what people think and why).
- Qualitative research is generally based on a small sample size, which is not statistically representative, but gives a deeper understanding.

The research focused on two case studies of CFi: 1) Culture and Environment Preservation Association (CEPA) Community Fishery project in Stung Treng; and 2) Ministry of Environment’s Participatory Management of Coastal Resources (PMCR) project in Koh Kong. At each study site, in-depth semi-structured interviews were conducted with a wide range of people who were involved in, or affected by, each project at national, provincial, local, and village levels. This also included a sample of households from two research villages involving both CFi members and non-members. An indication of the numbers of different stakeholders interviewed at each case study site is shown in Table 1 below. For many of the national, provincial, local and sample households, initial interviews were followed up with additional interviews and informal conversation. This allowed for the development of...
trust between the research team and those being researched and also allowed for a greater depth of understanding to be developed as initial open questions were followed up with probing questions to expand, clarify and make initial analysis of issues with the interviewees.

For local level interviews a number of different participatory tools (e.g., seasonal calendars, time lines, daily activity diagrams, etc.) were used to encourage a greater level of engagement with the interviewees. Observations were also carried out by all members of the researcher team during interviews and during the period in the field. The focus of observations was on the general livelihood status, assets and activities of households, as well impressions of the disposition, atmosphere and behaviour of the interviewees, which were the subject of on-going reflection among the research team. This was viewed as an important strategy not only for gaining a more detailed understanding of local livelihoods, but also to compare between what people say and what they do. This strategy also allowed for interviewees, to reflect on the influences of the research process itself regarding the information collected during interviews.

Table 1: An indication of the interview sampling strategy at two study sites

<table>
<thead>
<tr>
<th>Case study stakeholders</th>
<th>Numbers of stakeholders interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CEPA’s Community Fishery Project, Stung Treng</td>
</tr>
<tr>
<td>National level institutions</td>
<td>3</td>
</tr>
<tr>
<td>Provincial level institutions</td>
<td>6</td>
</tr>
<tr>
<td>Local authorities and village community fishery committees</td>
<td>6</td>
</tr>
<tr>
<td>Households</td>
<td>20 (20 percent of households)</td>
</tr>
</tbody>
</table>

4 In this way repeated and flexible questioning of qualitative approaches allows the researcher to gain greater insights that the more rigid and closed questioning formats of qualitative approaches do not permit.
Interview and observation notes were translated from Khmer into English through a lengthy process involving detailed discussion within the research team to establish the ‘best’ interpretation of information collected. A qualitative software package known as NVivo7 was then used to sort the information within English interview transcripts into key themes relating to the research questions and to aid in the identification of patterns of similarity and difference in stakeholders’ perceptions.

**MAJOR FINDINGS**

The research revealed some interesting and important insights about two case studies and the varied perceptions of the many people involved, raising some critical issues relevant to wider debates about CBNRM policy and practice in Cambodia. In the following section, we begin by reviewing the research’s main findings in relation to people’s diverse perceptions of the purpose and practices of CFi, showing how CFi are sometimes supported, but often contested. We relate this complex reality to what appear to be three critical and interrelated issues: firstly, the diversity of local livelihoods; secondly, the tension between personal and societal values; and thirdly, the pervasive influence of hierarchical relations of authority.

**Community Fishery expectations**

When different stakeholders were asked to consider what the purpose of the CFi are, or what they expect the CFi will achieve in the future, many stakeholders expressed a series of positive and mutually reinforcing expectations as shown in the figure below. These positive and reinforcing expectations typically followed a logical sequence whereby stopping illegal fishing would protect the fishery resources, such that it might increase and be sustained into the future resulting in people’s living standards improving.

**Figure 1. Positive and reinforcing expectations of CFi**

- **Illegal fishing stopped**
- **Fishery resources protected**
- **Fishery resources sustainable & increase**
- **Living standards improve**
- **Alternative Livelihoods**
- **Collaboration**
- **Empowerment**
Institutional stakeholders such as project and government fishery staff, local authorities and CFi committees involved in implementing CFi, and many local people envisioned that the CFi would protect fishery resources; they expected that this would be achieved by stopping illegal fishing activities. They also hoped that once the fishery resources were protected from illegal fishing, the number of fish would increase, the standard of living would improve, and that this would occur for now and for the future. In Koh Kong there was also the expectation that the CFi would help stop conflicts between fishers using illegal and legal gear. However, while many people held positive expectations for the CFi, based on an interest in protecting the fishery and improving livelihoods, it was also clear that these interests were not unanimously shared, or commonly understood. Indeed, in both Stung Treng and Koh Kong there were many households who did not understand, or were uncertain of, the purpose of the CFi therefore having no clear expectations.

"The work will be achieved as long as there is participation from people and local authorities... One chopstick is broken down but one bundle of chopsticks is not broken down.

Village management committee chief, Koh Kong"
... if people are empowered by the CFi it can also help them to be empowered to tackle other problems. If people understand and have access to information they can participate to solve problems and help society and development. Empowerment is linked to wider social development.

CEPA Director, Phnom Penh

For project stakeholders, the CFi was also expected to empower local people both by supporting access to their rights to participate and manage natural resources, and by generating economic improvements in their livelihoods. This was particularly emphasised by CEPA who envisioned the CFi contributing to local people’s sense of freedom within society. However, perceptions from provincial and local government in both Stung Treng and Koh Kong differed; they expected the CFi to follow the roles provided by the government and which were set out in the law. For government stakeholders, empowerment goes outside of the official hierarchy of power and is not a popular goal. Moreover, as the district vice chief in Koh Kong expressed, the CFi was considered as the government’s “eyes and nose” to manage natural resources. In other words the CFi is an extension of the government, serving their interests.

To say empowerment is not right. Empowerment should be that the people implement the power that is provided in the law.

Provincial government officer, Stung Treng

Perceptions of Community Fishery practice

In spite of many people’s positive expectations for the CFi, when we considered how different people perceived the CFi in practice, what emerged was a much more complex picture. In practice, achieving collaboration in the CFi and stopping illegal fishing in particular was perceived as unclear and not straightforward. Participation in the CFi in both Koh Kong and Stung Treng was very often an uneven process; some people participated actively, others only passively, and some people did not participate at all. Furthermore, while some people attempted to stop illegal fishing others continued to fish this way even when they were aware of the law and of the impact on the fishery. Despite most stakeholders agreeing that illegal fishing had declined, there was no consensus as to whether the fishery had improved, or whether living standards had improved. Most institutional stakeholders perceived that the fishery had
improved and consequently living standards had also improved as a result of the establishment of the CFi and decline in illegal fishing. However, in comparison, among local people using the fishery resources on a daily basis there was no consensus on how the fishery had changed; some people thought it had increased, others that it continued to decline, or that there had been no change at all.

"Even I know that the Khouv net will break my cooking jar but I still do it because I always use it and my job is only like this. It means that although they realize Khouv net destroys fisheries resources they rely on every day, they still use it as they have no choice.

Household, Koh Kong"

Local people also expressed varied perceptions of changes to their living standards. In Stung Treng the majority of households perceived that their living standards had improved, but this was linked primarily to the ability to gain access to land for rice and crop farming. In contrast, the perceived improvements to living standards expressed in Koh Kong were less widespread; many households said that they had experienced a decline in their standard of living often as the result of increasing restrictions to natural resource access. Indeed, for some households a decline in living standards was associated with declining access to the fishery. This relationship was linked to an increase in the number of people fishing, the impact of illegal fishing on the fishery resources, and for some households the fact that they had stopped using more productive illegal gear. Moreover, restricted access to land and forest resources resulting from the strict protection of the adjacent Botum Sakor National Park was also perceived to be negatively affecting living standards by limiting the opportunities for alternative farming activities. For some households the combined restrictions on fishing and farming left a very bleak future.

"... now it’s so difficult I feel I can’t do anything, as the old word says ‘go to water there is the crocodile and go to the mountain and there is the tiger.

Household, Koh Kong"
Understanding the complex reality

Stakeholders’ perceptions of the expectations and practices of CFi reveal a diversity of experiences. Certain perceptions are shared among different stakeholders, but many more opinions differ and even conflict. In attempting to make sense of this complex reality, we consider the effect of three critical and interrelated issues:

The diversity of local livelihoods:

The complex reality of CFi in both case studies is related to the wide diversity of local livelihoods and capabilities to support the positive expectations of the CFi. Some households have the choice and capability within their livelihood to support the CFi – for example, they have the advantages of a large and healthy family to provide adequate labor, combined with access to land and productive equipment to engage in a range of farming and fishing activities, such that they have the choice to stop illegal fishing activities and concentrate on other activities, as well as the time for a household member to attend CFi meetings. For other households, however, their choice and capability to participate in the CFi is constrained. For these households, participation in the CFi was often not an option simply because they were too busy making their living, too busy with rice farming and fishing, or other jobs. From the perspective of these households, it was more important to concentrate on the immediate demands of living than to spend time involved in the CFi, which as highlighted in Box 4 may be perceived to only bring benefits for the future. Thus, in spite of being aware of the CFi’s objectives, some households felt no incentive to participate because they did not perceive any immediate or direct benefit and were unable or unwilling to commit to the promise of potential longer term benefits.

In other cases, households chose not to participate because their livelihoods currently benefited from using illegal fishing gear and they lacked either the incentive, or the capability to stop. From the perspective of many institutional stakeholders, the households who chose to continue using illegal fishing gear simply did not understand or care about the importance of sustainably extracting natural resources. Rather they are fishers, who the village chief in
Stung Treng claims, “want to be rich quickly”, or who, the CFi committee chief in Stung Treng explains, use illegal fishing gear because “they can catch a lot of fish”. This problem is exacerbated by the demand from foreign markets which provides incentive to continue this practice. The village management committee chief in Koh Kong also suggests that the illegal fishers are simply “obstinate” or perhaps, as suggested by members of the commune council in Stung Treng, “don’t love natural resources and fish” and “don’t understand or respect the law”, because they are “illiterate and they don’t know how to listen and read ... (they) don’t want to join the meetings and don’t want to listen to other people”.

People need to do the electro-fishing to have fish to sell. If they don’t sell the fish they’ll have no money. I don’t know why they would stop illegal fishing if they need the money.

CFi committee member, Stung Treng
At the same time, local realities of poverty were also frequently invoked by local institutional stakeholders to explain why some people continued to fish illegally. Poverty was used to explain why local people were unable to stop using illegal fishing gear, because they depend on the activity for food and income and often have no other choice. In this way, realities of poverty were understood variously as lack of income and food security, as well as the lack of capability, or freedom, to choose alternatives as a result of the absence of critical assets, such as healthy labour, land or productive equipment.

Illegal fishing gear was widely recognised as being more productive than traditional legal gear. It caught more fish and required less time and effort. It was observed that in both Stung Treng and Koh Kong there is a high market demand for fish, so that selling prices were high, leaving fishers with little incentive to find an alternative job to fishing. Similarly, because of the

Box 4: The complex reality of stopping the use of illegal fishing gear

Like others using illegal fishing gear, Tola initially complained of the difficulties of stopping fishing with his illegal “khouv” net, questioning what would they eat with the loss of their most important source of income? Tola even benefited from relations with the district governor, who pitied him and allowed him to continue illegal fishing. But ultimately he chose to stop illegal fishing, afraid to break the law and to oppose the government. Instead Tola attempted to do other jobs; working as a fishing and farm labourer, or as a construction labourer for different projects managed by the village management committee. But he found it difficult to earn enough money to support his family and he struggled to make a living. He lamented the fact that he had no land for farming and no influence to bypass the strict regulations which protected the nearby forest and stopped him from clearing it for farmland. Perhaps his only option was to return to his homeland, or even start to use his illegal “khouv” net further away from the CFi area. For Tola understood the purpose of the CFi and agreed that it was important to help protect the natural resources on which people depend. But he also began to feel that the community only provided help to their relatives and friends and that the agenda for the future brought little benefits for him now.

(Household, Koh Kong)
effectiveness of illegal gear, and no compromise or subsidy in place, there was no logical reason for fishers to reduce their catch by switching to traditional and legal gears. But as the story in Box 4 illustrates, it was common that some households simply had limited access to alternatives, lacking access to land or in other cases lacking the financial resources needed to buy legal gear to replace their illegal gear. Such constraints were encountered most frequently in Koh Kong, leading some households to feel they had no choice but to break the law and continue the only job they knew and had access to. This perception was observed more than once - as a household Koh Kong expressed “...we cannot follow the law, we will even do these activities (illegal fishing) and we will be punished but we are not afraid because we have nothing to eat”.

**The tension between personal and societal values:**

Another important and associated aspect of the complexities surrounding CFi concerns the tension which exists between personal and societal values, the extent to which these reinforce the interests of the CFi.

In general, there was universal support for an improved fishery; everyone would like to see fish become more abundant, like they were in the past. Moreover, an abundant and sustainable fishery was recognized as being important not only in bringing benefits to individuals and society today, but for people’s children and future generations. Some people also believed that protecting the fishery was important for the development of Cambodian society as a whole, and because it was an important part of the country’s national heritage.

"Fish is national property, so if we help to maintain it ... our nation will also progress.

Household, Stung Treng"

For these reasons, it was common for people to consider that CFi were the ‘right’ thing to do for the environment and for society. In addition, those people supporting the CFi were often considered ‘good’, by local institutional stakeholders, while others who did not give their support and continued to fish illegally were considered ‘bad’ and lacking care for the environment or society. As the CFi committee in Stung Treng commented: “I have heard people say the CFi will make the fish and natural resources sustainable ... all these people are good people because they want to increase the fish for the future”.
The CFi has provided knowledge and the fish have increased and the people benefit from the CFi because when the fish increase it’s easy to catch fish and their livelihoods also improve.

Commune council, Stung Treng

However, the CFi was not supported just because it was regarded as important for society. It was also supported because it directly benefited personal interests. As previously mentioned, local institutions in both Stung Treng and Koh Kong were convinced that people’s livelihoods had already benefited from the CFi. In contrast, among households there was considerably more uncertainty, and it was common instead for local people to highlight the benefit of having access to information and knowing what was going on with respect to the fishery.

What also became clear was that many institutional stakeholders hoped to benefit personally in other ways, beyond the explicit intentions of the CFi. So as the district authority in Koh Kong revealed, another reason to be involved in the project is for the “honour ... reputation ... votes ... if they have achievement”. This attitude was echoed by the commune council in Stung Treng: “The first reason (to protect the natural resources) is related to the living standard of the people, we want their living standard to be better. The second reason is that if people’s lives get better then the leader of the district will be famous throughout the country”. Thus, if the project expectations are realized, this may
improve the public status and popularity of local institutional stakeholders, a prospect which clearly motivates their support. Local institutional stakeholders also recognize that there are direct incentives for supporting the projects including fines raised from illegal fishers which are partly reinvested into the CFi, allowances and free travel for attending meetings or training workshops outside of the village, or refreshments provided during village meetings and CFi patrols.

But at the same time, it also appeared that CFi conflicted with what people believed to be important for them as individuals, or their personal values. Therefore for some households (as described in Box 4), the CFi was for the future, it could not help them now. Likewise, for others the Community was about the natural environment not about their lives. And while there were perceived to be no immediate, or uncertain, benefits, it was more important to focus the demands of living, of finding enough food and income to support the family, even if this involved using illegal fishing gear.

Among institutional stakeholders, it was also recognized that supporting the collective expectations might even threaten personal interests, leading to a lack of support, or even opposition. In Stung Treng, for example, the village chief suggested that the commune council and commune police do not participate because “participating in the CFi does not bring them any money”. Moreover, the commune council in Stung Treng suggested that if “power men” were to adhere to the project expectations of stopping illegal fishing, they would lose benefits, or bribes.

“We should protect the fish to keep them for the next generation. But now we also need fish to eat.”

Household, Stung Treng

In other cases, enforcing the ban on illegal fishing confronts political interests. In the months leading up to the commune council elections in early 2007 in both Stung Treng and Koh Kong, it was not in the interests of the dominant political party for local institutions to stop illegal fishers as this could potentially lose votes. This was particularly problematic in Koh Kong where many of the members of the village management committee were also part of the party that dominated the commune council. This overlap meant that law enforcement relating to illegal fishing virtually ceased.
The village management committee can’t stop (the illegal fishers) because the election nearly arrives so they don’t allow me to stop .... the political problem is difficult because the upper level should not do the work of stopping the illegal fishing and mix it with the political work of the election ... I regret so much that I can’t stop the illegal fishing activity following the people’s purpose because they don’t allow me to arrest the illegal fisher .... because they need the election vote.

Village management committee, Koh Kong

But enforcing the ban on illegal fishing was not just contested by political commitments; it was also challenged by personal obligations to family, especially when that meant arresting a relative for using illegal fishing gear. In Stung Treng, for example, the village chief revealed how legal measures are sometimes delayed or avoided altogether when they come into conflict with family obligations, “(when) the CFi member has a family obligation with the illegal fisher, then if we arrest them the first time we educate them rather than send them to prison”. However, this is not always the case. Indeed, some members of the CFi committee in Stung Treng were proud to assert that they did not uphold such obligations. This mentality of favoring the CFi over kinship obligations or dedication to friends and neighbors highly contrasts with the expectations of the local people. It risks losing the benefits that those social networks bring and what is more, it may even expose institutional stakeholders to threats or acts of violence from local people. So despite asserting a commitment to stop illegal fishers, CFi committee members in Stung Treng also expressed fear of acting in support of these values.

I will stop people (from illegal fishing) even if I know them, or they are my relatives.

I feel afraid patrolling, but I have to try to stop illegal fishing. I try to be committed and not fear (illegal fishers), but actually I still fear ... I worry about the (patrol) boat sinking in the water and about people coming to destroy my house and about my safety going around the village, maybe people will kill me.

Community Fishery committee, Stung Treng
The influence of hierarchical relations:
A third characteristic of the complexity of CFi relates to the influence of hierarchical relations. In other words, people’s perceptions of their own capabilities are influenced by their position in society. We refer here then to the way in which people conduct themselves in society and how this is ordered by cultural norms which demand deference, or obedience, to those with status. These are social expectations informed in multiple ways and in part by religious beliefs, language, by histories of relations shaped by individual and collective experiences in addition to past conflicts and authoritarian regimes. These factors have a strong influence on what people perceive their capabilities to be, which in some cases works to support, but in others to undermine or disrupt, the positive expectations of CFi as outlined in Table 2.

Table 1: The influence of hierarchical relations on CFi expectations

<table>
<thead>
<tr>
<th>Hierarchies supporting CFi expectations</th>
<th>Hierarchies undermining CFi expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Oblige people to join out of duty to follow and listen to authority</td>
<td>• Prevent people from speaking because of feelings of lack of status and knowledge</td>
</tr>
<tr>
<td>• Oblige people to join out of duty as elder or expert</td>
<td>• Reduce authority of local levels because depend on support and ‘expertise’ of higher levels</td>
</tr>
<tr>
<td>• Oblige people to support out of fear of high ranking officers</td>
<td>• Prevent enforcement of illegal fishing because of protection by higher levels</td>
</tr>
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In both Stung Treng and Koh Kong, local people are often compelled to participate in the CFi out of respect and a sense of duty to those above them in the social hierarchy and to those with official status within local institutions. Indeed, local institutions recognise the power of their own, or higher authority to help ensure participation. As the CFi chief in Stung Treng states, “villagers will come to meetings if the village chief invites them”, or if higher authorities are seen to support the CFi. Similarly, in Koh Kong the commune council suggests it simply requires the commune council’s presence and local people will follow.

“\nWe can tell them when we disseminate that the CFi is supported even by the prime minister and the high ranking officer even lose their rank because of illegal fishing, so this makes the illegal fishers afraid to continue.\n
Community Fishery chief, Stung Treng”
Meanwhile, for those people in positions of respect, such as members of the local authority, or village elders, there is a sense that their position obliges them to participate in the CFi and provide their ‘expert’ advice, or recommendations. Conversely, as previously mentioned, for many local people lacking position or status in the village this prevents them from having confidence to engage actively during CFi meetings.

It is also the case that the absence of authority in relation to other sources of power constrains CFi committees. In spite of the fact that village management committee members in Koh Kong are themselves influential villagers and members of the commune council, they remain constrained by upper levels, as the committee chief explains: “... the work will be achieved as long as there is participation from people and local authorities, but if the upper level don’t allow arresting, we can’t do”. As already highlighted, in some cases upper levels are unwilling to provide their support when it means it could jeopardize losing the personal benefits they obtain. In addition, there is also reluctance among higher levels of authority to concede power to village committees, which as the commune council in Stung Treng has noted, “seems to be out of the hierarchy”.

**CONCLUSION AND RECOMMENDATIONS**

What we hope the research has been able to indicate is that CFi intervention projects are not simple; they contain a diverse range of perspectives and multiple perceptions on any given aspect of the project. The recognition of this complexity and diverse range of perceptions is derived from different interests and experiences of local people which are simultaneously both reinforcing and contradicting the positive goals associated with CFi. So it is that while experiences of declining access to fishery resources reinforce hopes of fisheries protection and sustainability, these same expectations are at the same time challenged by the realities of daily livelihood demands of many households. Similarly, while personal interests and hierarchical relations may support participation and collaboration, they also complicate and undermine them. Therefore, despite the positive expectations often associated with CFi, in practice the reality is much more complex, as expectations are disrupted by diverse local interests, by the conflicts of personal and societal values and hierarchical relations. By accepting this complexity it may become more realistic to consider CFi and CBNRM as a process of conflict and opposition.
rather than a process of consensus and collaboration. Such an outlook is not to remove the potential for consensus or collaboration as an ultimate goal of CFi or CBNRM, but rather to acknowledge and provide space for the diversity of interests which exist in practice, and to emphasise the need to manage and even resolve those interests.

Two key recommendations emerge from this understanding:

1. Practitioners of CBNRM should not assume that CBNRM represents a shared interest, or provides a common benefit. Rather it is important to acknowledge, better understand and respond to the many differences which exist between different stakeholders in terms of their interests, incentives and capabilities to get involved in CBNRM in practice.

2. If we are to realise the full potential of CBNRM then a greater emphasis should be placed on supporting a better dialogue between the diverse interests that exist in order to better address the many conflicts which characterise CBNRM in practice. Such an emphasis demands a more central role for processes of conflict management, or deliberative participation.
REFERENCES


The Future of Community Based Natural Resource Management (CBNRM) in Cambodia

Photo by: Research Team, PMCR - 2006
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Despite the current perceptions of citizen engagement in Cambodia, this paper argues that the new spaces of citizen engagement are often characterized by inequalities in participation, where marginal groups in society may be excluded, silenced, or co-opted through processes which reinforce existing power relations and the interests of those with the greatest influence. This observation led the research to focus on (1) what are the spaces of engagement associated with CBNRM actually like in practice, and (2) how are spaces of engagement contributing to local empowerment through participatory governance? With the use of two case studies of community fisheries, three main factors limiting participation were identified including the legal current legal framework, cultural norms and dispositions, and the realities of poverty. This paper would also suggest that conflict, though an unintended consequence, should not necessarily be interpreted negatively but rather seen as an opportunity to expand existing spaces of critical engagement.

INTRODUCTION

As part of Cambodia’s decentralization reforms, community-based approaches represent a key strategy for reconfiguring responsibilities and powers towards local levels in natural resource management. Initially introduced through donor and NGO led projects, CBNRM has subsequently been mainstreamed through the early phases of the government’s decentralization programme (Sovanna 2004) and has since been supported through a range of legislative reforms across different sectors (Obendorf 2004). Through these changes a new era of participatory governance has been institutionalized, giving rise to new spaces of citizen engagement, or new opportunities for local involvement in natural resource management decision making.

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2 Tep Chansothea, Research Officer of the CBNRM Learning Institute
3 Meng Kim San, Research Assistant of the CBNRM Learning Institute
The following paper seeks to explore what the spaces of citizen engagement associated with CBNRM in Cambodia are actually like in practice. In particular we wish to consider how such spaces are currently contributing to a new era of participatory governance, whereby local people are empowered to engage in decision making, and how this might be enhanced in the future.

**BACKGROUND**

Cambodia has not been alone in instituting governance reforms and the decentralization of natural resources management. Since the 1990s governments of most developing countries around the world have been encouraged by lending agencies and donors to undertake processes of decentralization (Cornwall and Coelho 2007). For many, this has involved decentralizing some aspect of natural resource management through the scaling up of project-based CBNRM efforts (Ribot 2002). As a result a “profusion of new spaces for citizen engagement” have emerged, spaces in which citizens are directly involved in processes of governance (Cornwall and Coelho 2007; see Box 1).

**Box 1: Spaces for citizen engagement**

In the new era of participatory governance, a “profusion of new spaces for citizen engagement” have emerged. These spaces exist “at the interface between the state and society”. In many cases they have been set up by the state and are supported through legal frameworks. The state may even think of these spaces as “their space into which citizens and their representatives are invited”. Equally they may be thought of as spaces created by civil society through their demands for inclusion in decision making.

But above all, they are spaces where a diversity of people with varying interests and interpretations of participation come together to negotiate and exchange information relating to public policy and how it should work in practice. They are then spaces of both “contestation as well as collaboration”.

From Cornwall and Coelho 2007
The generally accepted justification underpinning such widespread reforms is that decentralization will increase the equity, efficiency and effectiveness of public policy, as participatory governance leads to greater responsiveness and accountability of the state to its citizens. For this to be achieved, Ribot (2002) highlights a number of critical factors. Firstly, that local institutions acting within new decentralized frameworks should be both representative of and accountable to the needs and interests of citizens. Secondly, that the devolution of powers to local institutions should be secure and sustainable, giving legitimacy through the transfer of rights, as opposed to delegated privileges. Fundamentally, decentralization reforms depend on citizens being able and willing to participate, while the state is prepared to listen and respond. Moreover, in the context of decentralized natural resource management, as practiced through CBNRM, citizens and representative local institutions should collectively desire and be able to deliver sustainable natural resource management.

In practice, however, experiences of decentralization and CBNRM from around the world suggest that despite the commitments of governments and civil society to deliver the many benefits associated with a new participatory governance, the outcomes are variable and often disappointing (eg Ribot 2002; Ribot 2004; Blaikie 2006; Ribot et al 2006). Indeed, Cornwall and Coelho (2007) highlight that many everyday experiences of participatory governance do not support its positive expectations. Instead, the new spaces of citizen engagement are often characterized by inequalities in participation, where the marginal groups in society may be excluded, silenced, or co-opted, through processes which reinforce existing power relations and the interests of those with the greatest influence. Furthermore, these spaces are often constrained by central governments, who in spite of their rhetoric supporting decentralization, limit the transfer of powers to lower levels, such that local institutions lack legitimacy and security, and are more accountable to the centre than to local populations (Ribot et al 2006).

Similarly, in Cambodia different reports suggest variable outcomes of the on-going decentralization reforms and CBNRM efforts, highlighting a number of important limitations. Thus, while Rusten et al (2004) reveal a number of important achievements of Cambodia’s decentralization process, including the successful institutionalization of participatory processes, they also draw attention to a number of significant challenges. These include an imbalance
of the communes’ accountability, which favours upward accountability to political parties over downward accountability to local people. Commune councils are also reported to be lacking in capacity and resources to effectively fulfill their responsibilities, while participation more generally is contingent on local politics and culture. Turning to decentralized natural resource management, Van Acker (2004) points to the fragmented nature of multiple and often overlapping legislative structures, which typically delegate privileges on terms defined by central ministries, rather than provide legitimate decision making rights to lower levels. In addition, San (2006) reports that spaces of engagement provided through community protected areas (CPA) often limit participation of the poor due to insufficient facilitation and an absence of clear incentives for the community. This limited participation of the poor is exacerbated by the lack of capabilities to participate among the poor themselves.

Provided this context, the following paper attempts to further explore experiences of CBNRM in Cambodia and to critically consider how the new spaces of citizen engagement in CBNRM contribute to the wider expectations of participatory governance.

**RESEARCH QUESTIONS AND METHODOLOGY**

The paper seeks to address two key questions:

1. What are the spaces of engagement associated with CBNRM actually like in practice?
2. How are spaces of engagement contributing to local empowerment through participatory governance?

These questions emerged out of a research project which sought to understand how different people make sense of CBNRM and what impact CBNRM has on local livelihoods in the context of Community Fisheries (CFi). The research was based on a qualitative approach, which looked at two case studies of CFi in depth: 1) Culture and Environment Preservation Association CFi project in Stung Treng; and 2) Ministry of Environment’s Participatory Management of Coastal Resources project in Koh Kong. Case studies were selected to highlight specific situations, illustrating CFi practice in relation to distinct institutional arrangements (one an NGO led project, the other a government led project) taking place within different livelihood contexts. Such an approach does not
claim to be representative and does not offer generalizations. Rather it intends to explore some part of the diversity of experiences and in doing so expose particular insights, which can suggest ways of thinking about and dealing with other situations.

With each case study we carried out in-depth semi-structured interviews with a range of people involved, or affected by, each CFi project at national, provincial, local and village levels, including a sample of households from two research villages involving both CFi members and non-members. An indication of the numbers of different stakeholders interviewed at each case study site is shown in Table 1 below. For many of the national, provincial, local, village and sample household’s, initial interviews were followed up with additional interviews and informal conversation. This allowed for the development of trust between the research team and those being researched and also allowed for a greater depth of understanding to be developed as initial open questions were followed up with probing questions to expand, clarify and analyse issues with interviewees.

For local level interviews a number of different participatory tools (e.g., seasonal calendars, time lines, daily activity diagrams, etc.) were used to encourage greater level of engagement with the interviewees. Observations were also carried out by all members of the researcher team during interviews and during the period in the field. The focus of observations were on the general livelihood status, assets and activities of households, as well impressions of the disposition, atmosphere and behaviour of the interviewees, which were then the subject of on-going reflection among the research team. This was viewed as an important strategy not only for gaining a more detailed understanding of local livelihoods, but also to compare between what people say and what they do. This strategy also allowed the research team to reflect on the influences of the research process itself regarding the information collected during interviews.

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In this way repeated and flexible questioning of qualitative approaches allows the researcher to gain greater insights which the more rigid and closed questioning formats of quantitative approaches do not permit.
Table 1: An indication of the interview sampling strategy at two study sites

<table>
<thead>
<tr>
<th>Case study stakeholders</th>
<th>Numbers of stakeholders interviewed</th>
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<tr>
<td></td>
<td>CEPA’s Community Fishery Project, Stung Treng</td>
</tr>
<tr>
<td>National level institutions</td>
<td>3</td>
</tr>
<tr>
<td>Provincial level institutions</td>
<td>6</td>
</tr>
<tr>
<td>Local authorities &amp; village community fishery committees</td>
<td>6</td>
</tr>
<tr>
<td>Households</td>
<td>20 (20% of households)</td>
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Interview and observation notes were translated from Khmer into English through a lengthy process involving detailed discussion within the research team to establish the ‘best’ interpretation of information collected. A qualitative software package known as NVivo7 was then used to sort the information within English interview transcripts into key themes relating to the research questions and to aid in the identification of patterns of similarity and difference in stakeholders perceptions.

MAJOR FINDING

The research highlighted a number of important findings in relation to different people’s perceptions of CBNRM and their experiences of the spaces of engagement produced by each case study project. For the purposes of this paper, we first focus on how different people interpreted agendas of decentralization and participatory governance, in particular their perceptions of local empowerment. Secondly, we explore perceptions of participation, or involvement in CFi among local authorities responsible for implementing CFi and households who are, in theory, represented by these authorities. From these key findings we draw attention to a number of critical factors which appear to be limiting people’s engagement in CFi. Finally we consider evidence of more critical engagements in CFi; moments when constraints to participation appear to be overcome, often with unintended consequences.
Perceptions of local empowerment

Among the different people responsible for implementing CFi, at national, provincial and commune levels, there existed a range of distinct and sometimes conflicting perceptions, or interpretations of local empowerment in relation to CFi.

These differences were illustrated most clearly in the case study in Stung Treng, as shown in the four quotes in Figure 1 below. Thus, at a national level Cultural and Environmental Preservation Association (CEPA) perceived its CFi project to be an important means of promoting local empowerment, by increasing access to information and providing rights and opportunities to participate in decision making. At the same time, the national level of CEPA also believed that CFi was an important way of helping people to become economically empowered by improving their access to fishery resources and income from these resources. Moreover these expectations of empowerment were not just associated with social and economic concerns, indeed at a national level CEPA also highlighted the importance of empowerment for conservation: “if no empowerment, no conservation either ... because the principle of conservation is encouraging people to have ownership of a specific area (of

Figure 1: Changing perceptions of local empowerment in Stung Treng

“Community Fishery can help people to be empowered ... to participate to solve problems and help society and development”

“Empowering the Community Fishery seems to be out of the hierarchy because the Community Fishery has no power”

“empowerment is a sensitive word related to power, if we transfer power to other people then they can do anything ... they will not listen to the government anymore”

“To say empowerment is not right. Empowerment should be that the people implement the power that is provided in the law”
natural resources). In other words, giving people rights to conserve and the authority to manage an area of the fishery is essential for conservation. Not only will local participation in fisheries management lead to socially and economically empowered citizens, it will also lead to fishery conservation.

In practice, however, CEPA staff working at the provincial level found such interpretations of empowerment problematic and difficult to work with. They suggested that the CFi was perhaps supporting local people to do what they wanted and to stop listening to government. These concerns were confirmed by provincial government actors, who disliked the notion of empowerment, preferring the focus be on what power the government provides the people through the law. These perceptions were also echoed at the commune level, where the commune council did not recognize the CFi as having any power, rather the Community Fisheries’ role was to “cooperate with people in power”.

So for CEPA’s provincial staff, implementing CFi in practice was less about empowering local people to participate in society and development, but more about engaging local people to help the government do its work. Instead of saying ‘empowerment’ CEPA’s provincial staff chose to say only that the CFi “provides legal rights in natural resource management”, recognizing that in practice the CFi was important in acting as the “eyes and nose” of the provincial fishery office.
These multiple perspectives on local empowerment suggest uneasiness with the agendas of decentralization and participatory governance as they might apply to CFi. Among provincial and local government, there is a clear reluctance to recognize the CFi as an autonomous local institution, rather it is perceived to be simply an extension of existing government structures that retain authority. This perspective is at odds with CEPA’s interpretation of empowerment, but ultimately dominates the way in which CEPA engage with CFi in practice.

**Experiences of participation**

Among village and households levels, there was also a range of experiences of participation in CFi, as illustrated by the quotes in Figure 2 below. For local authorities in both case studies their participation was interpreted as part of their official functions and in response to the external expectations of the projects and government. Thus when different local institutional actors in Stung Treng were asked how the CFi project had begun, they unanimously responded it was CEPA who introduced the project and organized the establishment of the CFi. As the village chief explained:

“At the beginning CEPA came to inform me to make an appointment with people in the village to have a meeting, then CEPA explained about the causes of the fish decline and asked people whether they want the fish to increase or keep declining ... realizing that no one conserves the fish resources, CEPA organized to establish the CFi in order to undertake it”.

In contrast, in Koh Kong, responses to the same questions were less straight-forward. Here it was acknowledged that local authorities had lobbied for a CFi in response to local people’s requests. However, once the project was initiated it was external knowledge and agendas provided by the project which shaped local authorities engagement. Indeed, it was common in both case studies for local authorities to focus their participation on transferring information from the outside to local people; informing them about the CFi by-laws, or illegal fishing, as the village chief in Koh Kong suggests below (Figure 2). In this way, local authorities appeared to be responsive and accountable

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5 Local institutional actors referred to here included the community fishery committee chief and committee member, the village chief, the village development committee chief, the commune council chief, and the commune council vice chief
to agendas established externally, as opposed to representing the interests of local people. However, this upward accountability was a significant responsibility and not without difficulties. As the CFi committee chief in Stung Treng reveals (Figure 2), stopping local people from illegal fishing was a cause of tension with other villagers and a source of intimidation and fear—an experience shared by other committee members in Stung Treng and Koh Kong.

Among different households in both Stung Treng and Koh Kong, their experiences of participation complemented those expressed by local authorities. Therefore, for many villagers their experience was going to meetings to listen to what those in official positions had to tell them; participating in order to receive information from higher authorities. For some households participation also involved sharing this information with their family and neighbours. However, it was also the case for other households that this was avoided because of the fear of conflict, as a villager in Stung Treng explained: “outside my family I don’t dare to inform (about illegal fishing) because I’m afraid they don’t understand and then they will be angry with me ... I’m afraid that they will have ill will in secret”.

Figure 2: Variable experiences of participation

- “the community has invited me to join and listen to the information that the project brings to disseminate”
- “about my work ... I know that people hate me ... the parents of the illegal fishers were angry, they said ‘why did we vote for you?’”
- “my participation doesn’t give me any benefit at all, I only get benefit from going to fish using crab traps”
- “my participation doesn’t give me any benefit at all, I only get benefit from going to fish using crab traps”
- “I only listened in the meeting because I had no role to talk in the meeting”
- “I am invited in the name of elder to join and share comments”

Variable experiences of participation
Though many households perceived participation to be about listening and not speaking during meetings, feeling they lacked knowledge or position to speak, there were also certain villagers who did experience a more active engagement in the projects. In particular these were people that were considered elders in the village, who had lived there for a long time, and who had good connections with the village authorities and community committee. Therefore, they had a position and role that allowed them to participate more fully. However, at the same time there were households in both Koh Kong and Stung Treng that did not participate at all. There were many households who felt obligated to attend meetings because it was their duty to respond to

**Box 2: A household’s perspective on illegal fishing**

Dany finds life is a struggle and she often feels desperate with worry, for though she and her daughter, Reaksmey, work hard to make their living they earn very little income and it is difficult to get enough for the small family to eat. Dany feels angry because people in the village refuse her credit to help her buy rice, saying she has no provider, as she is a widow. She is also angry at the village management committee when they suggested that the hand net, on which she and her daughter depend, should be banned along with other illegal fishing gears. Indeed, together with other villagers she and her daughter protested at the village meeting, asking “what should we eat if the hand net is stopped?”. And she accuses the village management committee of only thinking of themselves, never considering that she has no rice to eat, resolving that “if the community does not think about me I won’t think about the community”.

For among the many activities that fill Dany and Reaksmey’s time, it is using the illegal hand net which they value most. In the dry season, Reaksmey pushes the hand net in front of her through waters often as high as her neck, in search of small grouper fingerlings, or “gecko” fish. For this activity they rely on a thao kei, or trader, who provides access to a boat to reach the fishing grounds and to whom they must sell all their catch, often at low prices. However, using the hand net still provides the family with good income and they consider it the most important of their many activities, providing most of their income even though catches are sometimes unreliable.

(Household, Koh Kong)
invitations from village authorities, but they did not get involved in any other activities of the CFi. For some people this was because they were unable to find time when they were busy making their living, others felt that they did not get any immediate benefit from participating (see Figure 2), while some simply felt it was not relevant for their lives, as they were mostly concerned with farming and not fishing.

In both case studies, there were also households who chose not to participate and continued to use illegal fishing gear. There were many reasons used to explain why this was the case. Among the households we encountered, who were open with this position, the choice to continue illegal fishing was generally justified as their only option to make a living. They had no other gear to use, not enough money to change, or they might depend heavily on illegal fishing having no land for farming and no other alternatives (see Box 2). Such situations were particularly widespread in Koh Kong where the use of illegal fishing gear was more common and the lack of access to land for farming severely restricted alternatives.

In practice, participation in the CFi was variable and depended on an individual’s position and status and a household’s livelihood situation. However, overall it appeared to be a process which tended to be responsive and

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6 We present here the perspectives of those households we encountered during the research. However, there were also different perspectives among those not openly engaging in illegal fishing and particularly among the local authorities which conflicted with the household accounts, suggesting that people continued illegal fishing simply because they wanted to make a lot of money quickly, they did not caring about others, or the natural resources and were willing to use connections with higher officials to avoid being arrested or fined.
accountable to the external agendas of CFi, as opposed to the interests of local households. Thus, households were expected to listen and respond, while local authorities disseminated and instructed. However, this process was often difficult and sometimes confrontational, leading to tensions between households and between local authorities and the people, who according to the rhetoric of decentralization, the local authorities were meant to represent.

**Factors limiting engagement**

These findings, in relation to people’s perceptions of local empowerment and of participation, begin to suggest that the spaces of engagement produced through two case studies of CFi are subject to a number of critical constraints, which limit people’s engagement. Three factors appear to be particularly important: 1) the legal framework; 2) cultural norms or dispositions; and 3) the realities of poverty.

Legal frameworks surrounding CFi are without doubt an essential part of legitimizing the decentralization of fisheries management to communities and securing the sustainability of CFi institutions. In this way they have been significant in ensuring that the new spaces of engagement associated with CFi are recognized. Yet at the same time, it appears that this same legislation also limits these spaces of engagement; claiming them as ‘government’ spaces which local institutions and people are invited to follow delegated privileges. There is little room for alternative notions of empowerment in which local people have greater involvement in decision making. Rather, local people are required to listen and follow external agendas passed to them by upwardly accountable local authorities.

Spaces of engagement are also structured by the cultural norms, or everyday dispositions which influence the way in which different people relate to one another. Therefore participation is infused with the hierarchies which govern relations within society, in particular, those which structure relations between levels of government which dictate the way local people relate to authority. Such embedded hierarchies oblige many people to join meetings simply because they have been invited by those in authority, but these hierarchies also have the ability to devalue and silence the voices of ‘ordinary’ people without position or status. At the same time they give power to those in authority reinforcing the value of external agendas, expertise, and the need to seek legitimacy from above.
Finally it appears that realities of poverty, or the vulnerability of different people’s livelihoods, are also critical in limiting engagement in CFi. Not only does poverty reduce a household’s status within the social order, but it also has the ability to marginalize their knowledge or experience confining them to listen to others with position. It also limits their choices and abilities to participate, to join meetings or stop illegal fishing.

These three critical factors frame and shape the spaces of engagement associated with CFi. They create a space constrained by political agendas and cultural dispositions and by the inequalities of people’s livelihoods. Moreover, such limitations challenge the fundamental logic on which ideals of decentralization and decentralized natural resource management is based; that citizens are equally able and willing to participate and the government is prepared to listen and respond.

**Moments of critical engagement**

Despite these different factors which appear to be limiting people’s engagement in the CFi, we also encountered moments when it seemed that these were overcome. We refer to these as ‘moments of critical engagement’. Moments when people who would otherwise have been silent, or not involved in the CFi, did find a voice. Moments when people overcame their positions as passive recipients and chose to assert their interests.

Evidence of these types of moments of critical engagement was particularly apparent in Koh Kong. They were encountered when illegal fishers chose to protest at CFi meetings, complaining about the prohibition of the illegal fishing gear that they relied on. They protested even though they lacked position and would normally only listen during meetings. So they overcame the constraints of social hierarchies and cultural norms and they found a space to actively engage in the CFi. These moments were also encountered when the same people who protested against the ban of illegal fishing chose to openly continue their use of illegal fishing gear, defying authority and the legal framework. In Stung Treng, however, such moments of open critical engagement by illegal fishers were not encountered. Rather, critical engagement was observed at a different level among CFi committee members who chose to speak out during a provincial meeting and
challenge government representatives about the enforcement of illegal fishing regulations. They did so in spite of their lower position, overcoming the social hierarchies which would normally limit their engagement.

Although quite different, in each case these moments clearly challenged the constraints which govern participation, expanding the spaces of engagement to include otherwise marginalized voices. Moreover, in Koh Kong, where the marginalized voices were those of illegal fishers, there were also moments of conflict in which the agenda of the CFi and its effort to protect the natural resources were contested.

**CONCLUSION AND RECOMMENDATION**

We have sought through this paper to better understand what the spaces of engagement associated with CBNRM are actually like in practice and how they are contributing to local empowerment through participatory governance. Our findings from two case studies of CFi suggest that the spaces of engagement are constrained, such that the ideals of local empowerment through participatory governance are undermined. However, at the same time there are exceptions, moments of critical engagement when people who may normally be silent find a voice and a space to express their experience. These critical engagements not only challenge the factors which constrain participation, they may even conflict with the ideals of the CFi itself. Yet we would suggest that such moments of conflict, though an unintended consequence, should not necessarily be interpreted negatively. Rather, they may offer the opportunity to expand existing spaces of engagement and to address and respond to the concerns of those whose interests are routinely marginalized.

We propose that critical engagement should be understood as a space of possibility. A space which may offer opportunities for dialogue and better understanding between the diverse interests associated with the fishery resources. Yet, as Cornwall and Coelho (2007) emphasize, if these moments of conflict are to be accepted positively, much depends on the willingness of those in authority to listen and respond to the inequalities which currently constrain participation and limit citizen engagement.
REFERENCES


Chapter 29
The development of the Green Book: A service delivery handbook for commune councilors

By: Sam Oeun Sothyro¹, Heang Sochan², Nhem Sovanna³, Meas Chomno⁴ Sok Sothy⁵

This paper details the strategy taken by the team at CBNRM Learning Institute on the development and publication of the Green Book. The Green Book is a type of directory containing clear service information in the field of natural resource and environmental management. This type of information helps the commune councils and other service seekers like government agencies, NGOs, and private sector businesses to find suitable, skillful partners more easily. Also, this book provides the opportunities for service providers to promote their services to a wider audience. The paper clearly explains the process and steps taken for the creation of this valuable resource including the strategy for designing format, annual life cycle, marketing strategy, data collection, distribution strategy, as well as the challenges faced. In addition, the paper indicates some recommendations that would be useful for a follow up volume including (1) an English publication to provide access for national and international donors, (2) wider disseminations through radio, TV programs, leaflets and other media, and (3) the information should also be published in the form of a website in order to take advantage of the increasing use of technology in Cambodia.

INTRODUCTION

The government of Cambodia celebrated the first commune council elections in February 2002 in order to delegate authorities and governing functions from the top levels to the ground levels. This new policy is called

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the “decentralization and deconcentration program”. The commune councils are empowered to carry out duties entirely on their own behalf.

Seeing that commune councils are facing problems in choosing skillful partners to develop their communes when changing the governing style, the National Committee for the Management of the Decentralization and Deconcentration Reform Program Support Team (NCDD PST) and a development partner, Danida, allocated a budget to solve this problem by producing a directory called “Green Book”.

The Green Book contains clear information about service providers in the field of natural resource and environmental management which helps the commune councils and other service seekers like government agencies, NGOs and private sector businesses, to find suitable, skillful partners more easily. Also this book provides opportunities for service providers to promote their services widely.

**STRATEGY FOR DESIGNING THE FORMAT**

Following discussions among the relevant development partners to find a consultant to produce this kind of book, the CBNRM Learning Institute was appointed to undertake the consultancy role because it has extensive experience in publishing and research.

To ensure that the Green Book format would be easy for users, the Green Book team and other partners - especially the NCDD PST - brainstormed ideas. The results are as follows:

<table>
<thead>
<tr>
<th>The Green Book is divided into six different colour leaves and functions:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Green Leaves:</strong> search by main categories (eg agriculture, fishery, forestry, land)</td>
</tr>
<tr>
<td><strong>Red Leaves:</strong> search by sub categories (eg animal vaccination, wildlife conservation)</td>
</tr>
<tr>
<td><strong>Grey Leaves:</strong> search for any specific service provider by name</td>
</tr>
<tr>
<td><strong>Purple Leaves:</strong> search for service providers by provinces (24 provinces/ cities)</td>
</tr>
<tr>
<td><strong>Pink Leaves:</strong> search for information about ministries, communes/ sangkats, NGOs, and private sector businesses</td>
</tr>
<tr>
<td><strong>Blue Leaves:</strong> search for service providers’ locations on the maps (24 provinces/ cities)</td>
</tr>
</tbody>
</table>
The reason for the “Green Book” name is that it focuses on natural resource and environmental management. Continuing the colour theme, the sections were given colour names, each fulfilling a different function, and the pages (or ‘leaves’) were printed in that colour making the sections easy to recognize. The idea to group services under different main categories and sub categories - and the scope of each category - was based on existing data from the Seila Program.

The intellectual property right was recognized as an important element for the Green Book to ensure the uniqueness of its business name. Consequently, a request was made by the Green Book team to the Ministry of Commerce to protect the name and logo. This was accepted and the related validation will last for 10 years from 18th January, 2008.

**ANNUAL LIFE CYCLE**

The Green Book team collaborated with the NCDD to set an annual work plan and budget request - as illustrated and detailed below - for a period of three years starting from 2007. The details of the specific processes involved are as follows:

**Figure 1. Annual Work Plan**

![Annual Work Plan Diagram]
DATA COLLECTION

Data collection is conducted in 24 provinces/cities. The Green Book field researchers are divided into three groups— one responsible for 12 provinces and one for 11 provinces, all grouped logically according to distance and location. The other is responsible for data collection in Phnom Penh. The decision to group provinces in this way means that the teams can travel from one province to another in as short a time as possible, giving them more time to arrange the details for the next province and to submit data to the database specialist.

DATA ENTRY

Data entry occurs simultaneously with the data collection process and is conducted by a database specialist, based in Phnom Penh, who processes and designs the artwork. The internet is a key tool for communication and data synchronization. All data sheets are zipped and sent to the database administrator. When the field researchers are back in the office, they finish processing the data entries and place them in order.

INFORMATION CHECK AND CLARIFICATION

When the data entry and data arrangement processes have been completed, the team members contact the service providers by email and phone to make sure that no information has changed. If it has, amendments are made before sending the Green Book final draft to the printing house.

PUBLICATION

The printing process starts as soon as the data arrangement and data clarification procedures have been completed. Before choosing a printer, the Green Book team contacted a number of printing houses in Phnom Penh to discuss and negotiate the price and quality of the product. The one offering the best service and quality of product at an acceptable price was contracted. The Green Book team work closely with the printing house to make sure that all the original information provided is not changed unexpectedly during the printing process. The thickness of the paper—and its colour and texture—binding, combination and covering are the main technical aspects that must all be checked against the standards set.
DISTRIBUTION

After the Green Book copies are published, the team deliver them to the target groups that were set up. There are three channels of distribution:

- **The National Committee for Management of Decentralization and Deconcentration Reform Program Support Team (NCDD PST):** the NCDD PST team deliver copies of the Green Book to commune councils and to provincial and municipal departments.
- **Green Book team:** the Green Book team delivers copies of the Green Book directly to service providers in Phnom Penh.
- **Provincial collaborators:** the provincial collaborators deliver copies of the Green Book to target service providers identified by the Green Book team.

The logos on the map below represent all of the provincial collaborators with whom the Green Book team have built a distribution network:

**Figure 2. Names and Logos of Green Book Collaborators in 24 province/cities**
MONITORING AND EVALUATION

Monitoring and evaluation (M&E) sheets are attached to all copies of the Green Book. Therefore, when the data update is conducted with the service providers, these sheets are simultaneously collected from the provinces and municipalities.

In addition, to ensure that the Green Book fits well with the needs of the users, monitoring and evaluation workshops were conducted in the five random selected provinces after the distribution of the Green Book Test Edition. Comments, feedback and suggestions were also collected from these (see section below).

COMMENT ANALYSIS

The comments that were collected from the M&E sheets and from the workshops were analyzed and those that were considered by the Green Book team to be urgent and/or necessary for users, were used to improve the Green Book for the First Edition. Suggestions that were considered less important were kept for future editions.

MARKETING STRATEGY

Marketing strategy is important in attracting charged-listing service providers to participate in the Green Book in order to make it self-financing by the target date of 2010.

Therefore, listings are divided into two kinds-free listing and charged listing:

- **1st choice**: Free listing - all service providers are allowed to display some of their information without charge, such as name, address, contact person, position, telephone number, fax, email and website address.

- **2nd choice**: Charged listing - service providers taking advantage of the Green Book as an advertising medium, can display their information as mentioned above, with the addition of different colours to make their entry stand out, or they can choose one of the listing packages. In such cases they design and supply whatever colour artwork they would like.
The price of each package was determined in accordance with a survey of the directories produced by other organizations and companies, and by conducting practical marketing workshops with the service providers and advertisers. The results from the market survey and practical exercise workshops led us to determine prices as below:

**Figure 3. Advertising Packages and Prices**

<table>
<thead>
<tr>
<th>Package</th>
<th>Size</th>
<th>Color</th>
<th>B&amp;W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double Pages</td>
<td>17 x 26.3 cm</td>
<td>$950</td>
<td>$80</td>
</tr>
<tr>
<td>Full Page</td>
<td>17 x 23.4 cm</td>
<td>$650</td>
<td>$50</td>
</tr>
<tr>
<td>2/3 Page Vertical</td>
<td>17 x 23.4 cm</td>
<td>$525</td>
<td>$50</td>
</tr>
<tr>
<td>1/3 Page Horizontal</td>
<td>17 x 9.6 cm</td>
<td>$275</td>
<td>$25</td>
</tr>
<tr>
<td>1/3 Page Vertical</td>
<td>17 x 9.6 cm</td>
<td>$275</td>
<td>$25</td>
</tr>
<tr>
<td>2/9 Page Horizontal</td>
<td>17 x 7.6 cm</td>
<td>$150</td>
<td>$15</td>
</tr>
<tr>
<td>1/9 Page</td>
<td>17 x 5.6 cm</td>
<td>$80</td>
<td>$40</td>
</tr>
</tbody>
</table>

- **A.** Free listings cannot exceed 10 lines.
- **B.** FAST-FIND INDEX & MAP
  - Fast Find Index 1/1 Page Front..FL..$750
  - Maps & Info -Color Placement.............$195
- **C.** BOLD LISTING
  - Bold Black | ID | $20 | $15 | $13
  - Bold Color | B| $28 | $21 | $19
  - By additional 5 lines: $15
To make the income management from the advertising packages clear and transparent, the team opened an account at ACLEDA Bank Plc so that money from the charged listing service providers could be transferred to this. The ACLEDA Bank Plc was chosen for the following reasons:

- It is among the advertisers who are displaying their services in the Green Book.
- It is the bank with the most branches in the target places where our service providers are located.

**TRAINING**

To ensure the effective use of the Green Book among commune councils, the Green Book team is planning to collaborate with the department of local administration (DOLA) to produce a training course to show relevant users how the directory can help to solve their problems.

**THE RESULTS OF THE TEST EDITION**

What is the objective of the Green Book Test Edition?

The Green Book Test Edition was the first stage in identifying the specific needs of the users and in discovering whether or not the project fits with the new policy of the Royal Government of Cambodia’s decentralization and deconcentration program. Copies of the Green Book were distributed to target service providers and other stakeholders after the launching ceremony, which took place at the Ministry of the Interior on 5th November, 2007, in the presence of His Excellency Sar Kheng, the Deputy Prime Minister, and Mr. Tom Berthel Hansen, Head of Representation, Royal Danish Embassy, Danida - Phnom Penh. This prestigious event was also attended by other dignitaries - national and international – along with commune/sangkat councilors and representative of NGOs and private companies.

Comments made at the launch indicated that the Test Edition was appreciated by the donor - Danida- by NCDD and by other stakeholders as well as by service providers. It was acknowledged as a benefit to communes - sangkats and other targets.
The photographs below were taken at the launching ceremony.

**MONITORING AND EVALUATION OF TEST EDITION**

As mentioned above, as a further exercise to check that the Green Book would be able to fulfill its designated role, monitoring and evaluation workshops were held in five provinces, selected because they were the pilot provinces that the NREM project of the NCDD had been working with. The objective of the workshops was to collect comments and feedback from the direct users, who were from various levels through the country. These workshops were held as collaboration between the Green Book team and NCDD. The five selected provinces, the number of participants from each, and their categories, are listed below:

<table>
<thead>
<tr>
<th>Table 1. Target Audiences for the Green Book M&amp;E</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target Group</strong></td>
</tr>
<tr>
<td>Commune Council</td>
</tr>
<tr>
<td>NRM Advisor</td>
</tr>
<tr>
<td>District facilitator</td>
</tr>
<tr>
<td>Provincial facilitator</td>
</tr>
</tbody>
</table>

Pictured handing out copies of the Green Book Test Edition at the launch event are HE Sar Kheng (right, in the first picture) and Tom Berthel Hansen (left, in the second picture).

Photo by: CBNRM Learning Institute - 2007
The general comments that emerged from the workshops included the following:

- A contents page should be added as the front page after the introduction sheet
- The guideline sheet should be moved to the front of the Green Book after the introduction sheet because it is easy for users to start with that
- The Grey Leaves should be changed to another colour because it is difficult to read the type against the grey background
- The maps should be in Khmer
- There should be training courses on how to use the Green Book
- The contact details of more, relevant ministries and their departments should be added
- Titles like Mr, Ms or Miss should be added before the names of contact people
- More detailed information about service providers should be added to the Pink Leaves, and so on.

THE FIRST EDITION OF THE GREEN BOOK

The good results from the Test Edition led to the publication of the First Edition in 2009. This reflects comments and suggestions from the feedback sheets, workshops and other discussions. Some parts of the First Edition have been amended in terms of colour, font size and format. In addition, the contact details of more service providers have been added, bringing the total number to 207. Below is a comparison between the formats of the Test and First Editions:
### Table 2. Updating from Test to First Edition of the Green Book format

<table>
<thead>
<tr>
<th>Test Edition Format</th>
<th>Green Book First Edition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Green Leaves</strong></td>
<td>Search by main categories</td>
</tr>
<tr>
<td><strong>Red Leaves</strong></td>
<td>Search by sub categories</td>
</tr>
<tr>
<td><strong>Grey Leaves</strong></td>
<td>Search for specific service providers</td>
</tr>
<tr>
<td><strong>Purple Leaves</strong></td>
<td>Search by province</td>
</tr>
<tr>
<td><strong>Pink Leaves</strong></td>
<td>Search for information of ministries, communes-sangkats, organizations and private sector businesses</td>
</tr>
<tr>
<td><strong>Blue Leaves</strong></td>
<td>Search for location on the maps.</td>
</tr>
</tbody>
</table>

The First Edition not only includes more service providers, but also adds the contact addresses of the 24 communes and sangkats throughout Cambodia. In addition, the addresses of more ministries have been added, and existing ones updated. Moreover, the logos of the service providers have been arranged on maps covering all of Cambodia’s 24 provinces.

The First Edition of the Green Book was published in January 2009, and 6000 copies were delivered to target groups through the channels that were set up. The conviction is that this edition will continue to help the commune/sangkat councils to develop their communes and sangkats effectively.
CHALLENGES

The Green Book project is off to a good start. But challenges remain:

• This new concept has not yet been widely disseminated, so many stakeholders are reluctant to believe in it and to provide information – especially to display with a charged listing

• Poor collaboration from ministries in providing their contact information and that of their subordinate departments

• Some ministries, organizations and private sector businesses do not yet clearly understand about the benefits of the Green Book to communes/sangkats and other stakeholders

• A more effective method is needed to attract service providers to pay for a charged listing.

RECOMMENDATIONS

To make the Green Book fit more closely to users’ need, and to address the challenges mentioned above, some recommendations are made:

The Green Book concept should be widely disseminated through radio, TV programs, seminars and events, leaflets and other media

• An English version should be published to provide an easy way for national and international donors to understand the concept and to contribute to support this directory

• A marketing and business plan should be enhanced to help to generate income

• The Green Book should also be published in the form of CDs and as a website to enable it to take advantage of high technology in spreading service information.
CONCLUSION

Cambodia adopted the decentralization and deconcentration process in 2002, but implementation of it is not strong enough because this is a new concept for people to grasp: commune councils and other stakeholders still do not clearly understand this concept and lack the capacity to capitalize on their new powers. These problems hamper its effective implementation. Nevertheless, empowering local communities, and transferring the authorities, responsibilities and functions from the national to the ground level are important ways to develop Cambodia and to enable its people to escape poverty. In order to achieve this, collaboration is a crucial factor that needs strong consideration. In this respect, the Green Book directory initiative can play a major role in supporting the progress of sustainable development within the country. Experience so far has shown that people, particularly at commune level, welcome the Green Book and it is realistic to assume that it will continue its role in supporting the D&D reforms by linking service seekers in the field of natural resource and environmental management with the relevant service providers in a way that has not previously existed.
Chapter 30
Accelerating research and collaboration with information and communication technology (ICT)

By: Sam Oeun Sothyro

Following an IDRC-supported symposium in 2007 a number of organizations and government departments agreed that there was a real need for them to collaborate more closely. It was decided that a forum should be established to link these groups together that would serve as a means to provide information about relevant current research, emerging issues and upcoming events. It was also hoped that the forum would promote the increased use of Information and Communication Technologies (ICT) in bringing together development researchers in Cambodia. The ICT platform of the Cambodia Development Research Forum (DRF) was thus created and this paper charts its construction from the initial conception through to the current stage of development. It records the difficulties faced along the way such as securing fast, cost effective internet access and building capacity among member organizations. It is hoped that the DRF’s ICT platform will facilitate increased sharing of knowledge and information between the partners consisting of NGOs, government, private and academic sectors. Since there is also a strong demand for facilities such as video conferencing and sharing of Geographical Information Systems (GIS) it is hoped that the ICT infrastructure can continue to be expanded and thereby enable more effective interaction between the partners in the future.

INTRODUCTION

The title ‘accelerating research and collaboration with information and communication technology may suggest that this chapter will be more information-technology based or may discuss, critically, technical perspectives which those who have limited ability to cope with complicated IT coding might not be able to understand. In fact, this paper will present the relevant

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1 Sam Oeun Sothyro, Communications Manager of the CBNRM Learning Institute. This chapter has been written with some feedback from Michael Roberts, Groupia International, c/o Bellanet Alliance of Social Entrepreneurs.
information in a different way: the paragraphs and sections below will describe cross-cutting activities that derive from information technology, including participatory development communications, business involvement, academic credit and relevance to research findings and their distribution among various stakeholders or recipients. In addition, it comes with some technical guidance that will enable readers to benefit from these development processes. In this way, it will help others to develop a discussion forum and to learn from this experience.

The paper describes the general perspective in Cambodia in terms of both research sharing and the real context of current accessibility to the important research findings or documents from that research. What is more, the process of bringing the idea of the development of an ICT platform to reality will also be covered. It also presents the current situation of the Development Research Forum, along with its first success and how its members can proceed by building upon what they can gain from it, from a business point of view. By way of illustration, the hosting of the DRF website and the negotiation with Internet Service Providers for a consortium idea is a good start.

To sum up, discussion about the DRF development, successes and challenges will be summarised in this chapter along with future hopes and recommendations.

**BACKGROUND**

**At first glance**

Imagine a world where the ideas and skills needed to help Cambodia develop are not only easy to find, but are also being turned into action. This world has been created in part through years of collaboration amongst Cambodian research organizations. These organizations regularly share results and collaborate on projects, creating a cohesive web of knowledge about development challenges and opportunities. This knowledge has gained respect with policymakers and even businesses. They see that research can help them make better decisions, and act accordingly. While this access to knowledge does not magically usher in development, it does make development efforts easier, and more likely to succeed. Mark Surman, 2008.
The good news is that this world is possible. In fact, it is very much within our reach. The creation of the Cambodian Development Research Forum (DRF) is one step towards creating this world. Making simple, strategic investments in accelerate ICT use amongst Forum members is another.

In reality, in Cambodia, Information Technology is currently seen as an important element to enable communication and even to make work easier. However, the real story behind the scene is quite different. Put simply, most organizations use their computers for email, for some web surfing and to perform some analyses. While the world is now welcoming new perspectives of the web, for instance Web 2.0, and the new, but already famous social networks like FaceBook®, KhmerCity®, NING®, YouTube®, in Cambodia, only a few people know about and use these social networks to exchange information, communicate, build their own networks and learn from each other. In addition, organizations and foundations around the world are now developing a lot of repositories or encyclopedias like Wikipedia, Encarta, OARE and Mekong Info. These enable researchers to instantly access information for their research. However, in Cambodia there are not many people with access to those resources because of some simple reasons: slow internet connection or no internet connection at all; unwillingness to communicate with the wider world when they already feel overloaded with their local work; and, for the last part, they simply do not like reading.

What is even more significant is that some of our target audiences are particularly important because they are the key decision makers and/or the ones who should be aware of the reality at grassroots level. They might have knowledge about particular areas or fields, but little understanding about the broaden perspective or the latest updates and/or current emerging issues that researchers have found from their studies. What they need are summaries or briefing papers which are handy and take little time to access or even read yet still give them information that is relevant to their decision making.

The formation of Development Research Forum

The idea for the DRF came in late 2007 when the International Development Research Centre (IDRC) invited all of the people and organizations that it works with in Cambodia to an 'All Partners Meeting'. This day-long event provided an opportunity for partners to share information about their research, discuss
common themes and issues and identify opportunities for collaboration. It ended with a clear call from all attending: we need to collaborate like this more often!

As a result, five institutions are currently contributing to this initiative as a steering committee: the Community Based Natural Resource Management Learning Institute (CBNRM Learning Institute), the Cambodia Development Research Institute (CDRI), the Cooperation Committee for Cambodia, the Supreme National Economic Council and the Royal University of Phnom Penh. There are two coordinators, one from the CBNRM Learning Institute and the other from CDRI.

There are three main components to the Development Research Forum, which are monitored by working groups: a Research Symposium; University Support; and an ICT Platform.

**Objective of the ICT Platform**

The Forum’s initial focus has been to convene yearly gatherings to share research results, to stimulate new collaborative research through a small grants fund, and to improve the effectiveness of member organizations through joint initiatives. As part of this, the Forum has undertaken an initiative to promote the accelerated use of information and communication technologies amongst members.

**Expected achievement**

The decision was made to start with something simple. It was agreed that the Forum’s ICT activity should begin with a very basic website, which could act as a central place to make people aware of where they should go when they need research findings or information. That basic website should be simple, easy to use but flexible and with long-term vision. It might contain basic contact information of research institutions, briefing issues, policy reviews, a research findings download section, a discussion board, news of important events and so on. Additionally, to be more proactive, the website should be dynamic and be able to be upgraded or to have new initiatives added later.
It was, however, also agreed that providing partners with the basic skills of information technology was very important because the entire idea would collapse if nobody knew how to use it. Thus, a series of capacity building activities should be organized, providing tips about use. Furthermore, an automated study tour could be prepared, to perform an on-demand interactive learning process for partners, members and other users.

Fortunately, in Cambodia now there are more than 10 Internet Service Providers (ISP), so that means more competition. Thus, another idea was to negotiate with those ISPs and secure cheaper, faster internet plans for DRF members. This would make a good start for getting them involved with the initiative and even to enhance their internet experience. It was accepted that different ISPs would have different perspectives about marketing strategy and that we would need to make a comparison to get the most benefit for our partners. We would also need to analyse the technology they were providing because reliability was still the most important aspect, even though cheaper and faster internet service was a goal.

**PROCESS | TURNING THE DRF ICT PLATFORM VISION INTO REALITY**

**Initial Planning**

Our challenge was to start from scratch. But we were hopeful. The ICT platform development working group was formed to take charge of the planning and development of the platform. During the planning phase, we prepared the ground by first visiting institutions that participated in the first annual symposium – 14 in total. During the visit, general question were asked to assess their willingness to become involved with an ICT platform and we especially wanted to ascertain their current ICT state.
**Results and Proposed Options**

A single access point for Cambodian research: The creation of a Cambodia Development Research Online Library to house locally produced research, especially from Forum members, was put forward as another objective of the DRF formation. The library would make it easy for researchers and students to find useful research by Cambodians about Cambodia. It would also ensure that results and (possibly) data sets produced by Cambodian researchers would be archived for posterity. One option proposed was that the Cambodia Development Research Online Library could be built on top of the existing CDRI library catalogue, which is running on top of widely used open source library management / open access software. This would, of course, depend on whether CDRI was interested in taking on this expanding library. It was agreed that offline access could be offered directly at the CDRI library, which is already well used by students. Library hours could be extended to include the weekend as a part of this Forum initiative, and although it was recognised that partners might be concerned about consultants or commercial interests
using their research to make a profit, it was suggested that this risk could be managed by either using a licence that would limit use of research results to non-profit, educational purposes or by holding back more detailed data sets and only publishing final reports.

**Cheaper, faster internet access for researchers:** The option identified by the initial research to promote cheaper, faster internet access for researchers has two parts. 1. Forum partners secure cheaper, better quality internet access by negotiating with ISPs as a consortium / buying club. 2. They work with ISPs to create a Cambodia Research and Education Network (C-REN) that leverages existing infrastructure to create a high speed network for researchers and educators within Cambodia.

With the consortium model, it was realised that the main risk would be that the ISPs would simply not agree to offer discounts. It was, however, considered to be worth trying: there was nothing to lose. With the C-REN, the major risk was that it was not possible to build the right partnerships between the ISPs, government and the research sector. The steering committee concluded, however, that the best way to manage this risk was to ensure that there was up-front support for the idea from high profile people.

**Sharing advanced, high end infrastructure (eg Geographical Information Systems - GIS):** Once a C-REN was in place, partners would be able to share high-end online infrastructure such as video conferencing and GIS systems. These new tools could be rolled out over the C-REN if and when it was in place. Our research revealed that there was high demand for facilities like video conferencing. However, the base infrastructure needed to make these tools useful is not yet available in Cambodia and trying to push these tools into use too quickly was considered undesirable.

**Improved ICT skills among all partners:** A further aim was to improve the capacity of all Forum members through shared training and access to technical support. At the simplest level, it was agreed that this capacity building should include training on how to use the Forum website and how to increase the impact of research using online communications. It was clear that all partners would benefit from this. Furthermore, it was clear that the
capacity building effort could be extended beyond this to include ongoing hands-on technical support and assistance to partners on an as-needed basis. As most partners were in or near Phnom Penh, training sessions could be offered face to face, once or twice a year and could be tied into the Forum meetings. Shared technical support could be offered using the 'e-rider' model, which employs roving technology consultants to work on a one-to-one basis with organizations focused on a common theme or activity (see: www.eriders.net). These e-riders would have a mix of technology and communications skills. (Mark Surman 2008)

**Developing the platform**

In accordance with the ICT priorities identified by the potential Forum members, the core ICT platform of the Development Research Forum was considered a really important initial focus. Thus, the creation of an associated work plan was a crucial first stage and an ICT working group was established.

A DRF - ICT platform Development Cycle was then created. This cycle consists of six main steps, each of which can be fully revisited to ensure that an interactive development mechanism is possible:

**Perspective, resource and technology assessment**

This was the first stage during which, as mentioned above, we conducted a study to determine the current perspective of our target audience and their environment; it was important to understand current problems, as well as those that might lie ahead. At the same time, resource and technology capacity needs were assessed to ensure proactive project implementation.

**Mechanism and lifecycle development**

The next stage was the development of a mechanism for, and lifecycle of, the ICT platform. This was particularly important because its stability and potential for dynamic future updates is based on this. During this stage, communication with a resource person in an agreed time schedule was particularly important. This phase required vision, imagination, an identification of needs and a work plan.
Coding
Once the mechanism was in place, it was time to turn our creative imagination into reality. This was a very technical phase requiring concentration and non-destructive workflow, ie one that would allow us to retrace our steps if necessary. Dynamic content development software, design and editing software and development language, were selected to start the coding process.

Testing and decoding
The coding process started, we then took the opportunity to test the newly developed ICT platform’s elements, and get rid of any bugs. To encourage members to feel ownership of the ICT platform, we involved them in this testing and try-out phase.

Documentation and orientation
Now that everything has been tried and tested, the next step – the one we have currently reached - is to develop a manual, quick-start guide and provide orientation to users to enable them to use the Forum efficiently at the optimal level.

Monitoring and evaluation
Monitoring and evaluation is always a very important element in this type of work because we want to hear from our users and to satisfy their needs, fix bugs or seek new improvements. Monitoring can be conducted through face-to-face or online feedback (surveymonkey.com is a good survey service provider) and through feedback from the orientation sessions. We can even put feedback forms on our website. A simple strategy is: LEARN – PLAN – ACT – REFLECT.
The consortium and its campaign

Returning to the initial research, we discovered that although members who were based in Phnom Penh and who already had ICT skills were very enthusiastic, not everyone was in a position to take advantage of the Forum’s proposed ICT initiatives. For instance, providing high speed internet access and reliable connection in Cambodia, even in Phnom Penh, is difficult due to coverage issues. The telephone line is used by a group of institutions who demand a cheap internet plan but it is very slow and not reliable. Asymmetric digital subscriber line (ADSL) and digital subscriber line (DSL) are newly introduced, and are now well known and used by many organizations. But they are still not reliable or fast. And while the Fibre Optic is a new faster and more reliable option, it is the most expensive compared with the other internet technologies.
As another challenge, DRF membership criteria needed consideration. This is particularly because the ICT working group needs to be clear about members’ locations and their internet plan requirements versus the price rates. The initial plan is for the DRF to start with only a small group of around five to seven members to set the ball rolling and to ensure a good start. Membership criteria can be decided later if the initiatives are moving.

With our colleague Michael Roberts, a negotiation campaign was implemented with five selected internet service providers: MekongNet, WiCAM, ONLINE, VIETTEL, EZCOM. These ISPs were selected for negotiation out of the 10 possibles that had been identified because they provide a unique technology and also have a competitive marketing strategy.

**CURRENT SITUATION**

**Development Research Forum on the Net**

The ICT working group of the DRF has taken the main responsibility to develop and host the Forum. It can now be accessed at [WWW.DRFCAMBODIA.NET](http://WWW.DRFCAMBODIA.NET).

It is envisaged that Forum membership will expand as follows:

- **Phase 1**: Five institutions constitute the founding members of the Forum
- **Phase 2**: The second phase should take place after six months to a year of the hosting of the Forum. This is because the DRF will provide benefits to the first five institutions with the ISP under a one year contract. Another potential 14 institutions will become members of the Forum after that. However, membership might be flexible according to the growing demand from those potential institutions.
- **Phase 3**: In the third phase, practitioners, individuals, and local NGOs in the provinces might become members of DRF.

As planned, an online discussion Forum was hosted from the first week of April and will now be followed by training in its use. The Forum will be equipped with many important features including up-to-date information and details about members’ activities on the front page. A discussion section will provide
the space for the members to debate certain topics with coordination by a moderator. There is also a section in which upcoming events, including the DRF’s Annual Symposium, can be announced. Members can use this function to promote group events, to invite participants, to monitor répondez s’il vous plait (RSVPs), and to deposit the relevant documents for more information.

We will also provide dedicated space for members, so that they can feature their own organization’s information and link to their specific resources. Discussion summaries, reports, interview audio files, and transcripts will be stored in the section called the DRF Repository Box, so that visitors or members can follow up any previous or current topics.

**Fruitfulness of the consortium idea**

To fulfil our expectation of faster internet service, cheaper price, and reliable connection with satisfactory customer care, three main negotiation themes were created to bring to the discussions with selected Internet Service Providers:

**Our requirements from the Internet Service Provider:**
- Create a relationship as a partner rather than a client
- Increase Bandwidth by 2X (2 times)
- 50 percent price reduction in the monthly internet charge
- 1 MB Virtual Private Network Line at 50 percent price reduction
- One year service agreement to be re-negotiated when that term expires
- Review internet service after the first six months
- After the first three months, the CBNRM Learning Institute need to review the service given by the ISP
- Negotiate dedicated support from ISP
- Second six months implement 1 Meg Virtual Private Network (VPN).

**What the Forum offers the selected Internet Service Provider:**
- A showcase at the DRF’s annual symposium
- The ISP can demonstrate their services through a booth
- The ISP assists with video conferencing demonstrations
• Add the ISP Logo to the Forum website
• Promote the ISP to all future members of the Forum
• Kudos to the ISP for supporting Cambodian research
• Promote the ISP beyond Cambodia.

**Criteria for the selection of the Internet Service Provider:**

- Cost
- Service and support
- Type of service (Fibre / DSL / WiMax)
- Other considerations
  - Ability to support provincial areas
  - Ability to offer complete VPN and Video Conferencing service
  - Voice over Internet Protocol (telephone calls made through the internet)
  - References provided by the ISP
  - Interest in supporting Cambodian research networks.

During our negotiations, it transpired that not many ISPs could offer a 50 percent discount. However, two of them did agree.

Out of the two, we decide to test WiCAM because of good references and a cheaper Virtual Private Network with future expansion to the provinces.

**The repository**

The steering committee, especially CDRI, agreed to the request from the ICT working group for the use of the existing CDRI online catalogue as our repository. Furthermore, we have an interactive box on the Repository and Symposium page to store any Forum-related documents.

**Capacity building**

Capacity building is also an important activity because it provides an opportunity for the core team as well as the technical staff of institutional members to make full use of the Development Research Forum, and they can become day-to-day trainers for their colleagues.
A series of actual training sessions will be offered to different target audience groups. However, we are also hosting an interactive training video on the Forum website, so that visitors, or those who missed the actual training, can undergo self-learning.

This orientation training will focus on the main features of the Forum and its importance. Moreover, the objective of the training is to guide users along the process from registration, to interaction and distribution of the output from discussions.

Those who are familiar with FaceBook, WordPress, YouTube, Ning, Box, KhmerCity.net and some of the other social networks, will find that the DRF website and its transactions are similar.

**Showcase**

Presentations at the annual symposium will make non-member research institutions aware about the exciting opportunities the new Development Research Forum offers as well as the benefit of the 50 percent internet discount rate if they became a DRF member.

To promote the ICT platform, the CBNRM Learning Institute in conjunction with the ISP will prepare a booth and presentation during the annual symposium to show how this faster, cheaper and reliable internet connection can help researchers in their work. The Learning Institute itself will show its own experiences before and after receiving the benefits of DRF membership.

**NEXT STEPS**

**Proactive episodic discussion**

The mechanism for running discussion topics will be designated to the DRF team. They will seek emerging issues or topics which the five members can contribute to or discuss. Generally, CDRI or the CBNRM Learning Institute will rotate the task of moderator - CDRI generally focusing on the national level and the CBNRM Learning Institute on community level. The moderator will seek experts or resource people who will have a particular interest in contributing to the chosen discussion subject.
Interviews with resource people, and audio versions will be transcribed and both versions will then be hosted on the Forum to open new discussions. Each episodic discussion will run for three weeks before being replaced by a new topic. Coordinators and moderators will monitor the discussion while related technical support will always be available from each working group. Furthermore, resource people can join in the discussion and provide reactions to, or interact with, comments from members. When the discussion period is over, the moderator will create a report. A debate about this report will be hosted in the DRF Repository Box and archived.

The moderator will then work closely with the communication team to prepare and disseminate the associated news and information release.

**Maintaining the Forum as state-of-the-art and expanding its benefits**

In the near future, our members will stay up-to-date with an SMS alerting service. This will cover important Forum activities like new discussion topics, the responses of resource people, summaries, new resource availability, new events, etc. so members will always be able to post their comments by using their mobile phones. They may, however, need to pay the SMS sending charge to their local operator.

In due course, the internet consortium benefits will be available to all member organizations in Phnom Penh and other provinces. The Virtual Private Network will enable member organizations to communicate more quickly and effectively in a one central hub with lowest price of the Voice Call over Internet Protocol (making telephone calls through the internet).

Furthermore, video conferencing and Geographical Information Systems (GIS) will be introduced to researchers and member organizations.

**Participatory Development Communications and promotion**

Although the system and policy are now in place, we need more than that. Participatory development communications (PDC) refers to the use of mass media and traditional, inter-personal means of communication that empower communities to visualize aspirations and discover solutions to their development problems and issues (Wikipedia.com 2009). “Promotion” – involving PDC - will be included in the Development Research Forum’s future activities.
DISCUSSION

We have seen good progress, and many participants now are registering to participate in our Forum (also known as ICT platform). The website has now been successfully launched and, additionally, we are now benefiting from the cheaper, faster internet access. However, several challenges have emerged and need extra attention in order to keep our Forum growing and performing well.
For instance, the language barrier is one of the most challenging aspects. Difficulty in understanding because of limited language ability means that potential participants may be unaware of how the Forum can help them, and will just not participate. This relates not just to English, but even to Khmer. In a technical perspective, for example, even though Khmer Unicode is available for developers to integrate to our site and which enables users to use Khmer, many client computers are now using non-standard Khmer fonts and cannot read our Khmer Unicode on the web. The Unicode downloadable function is in place but requires extra understanding for normal users to download and install it to their computers. So those who have worked at the ground level and who focus much on their field work may require some support or they could easily ignore the Forum.

We must, too, take the political aspects into account in the expansion of the Development Research Forum: we need to pay extra attention to, or moderate the Forum to ensure that the discussion is fruitful, but is also balanced in respect of government policy or laws. The need to impose restrictions or internal regulation may need to be frequently revisited. However, to facilitate wider constructive comment and discussion the restriction itself should also be balanced in tune with research findings.

Furthermore, the continuation of support is limited - for instance, from a financial perspective. Ownership and future responsibility should also be considered to make the Forum run in a sustainable way.

**CONCLUSION**

To summarise, the Development Research Forum will benefit all levels of stakeholders including researchers, academic institutions and even policy makers. It will boost communication and act as a central place for discussion among them with the support of the ICT platform. At the same time, they can also benefit from a service that can make their daily work more productive and faster.

Dynamic interaction, along with the introduction of new technology, and a new virtual world that Cambodia is now progressing towards, should enable them to experience the optimal flexibility of the new technology and to easily share learning together and stay up-to-date with other partners.
Despite this, there are many challenges to overcome. But these can be solved, and we can build upon the recent resources we have gained. Those members who are experienced with this ‘sharing perspective’ can be promoters to the others who are not. Promoting and mainstreaming something, particularly this Forum, require step-by-step strategic participatory development activity. Sustainability should be assured when the Forum can demonstrate its quality and importance.

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Chapter 31
Information and Communication Technology (ICT) as a Tool for Better Governance and Environment Management

By: Chun Vat

This paper outlines the huge potential of Information and Communications Technology (ICT) in the creation of sustainable development, improved governance and responsible resource management in Cambodia. As part of the socio-economic development plan, the Royal Government of Cambodia is establishing a system of electronic governance which aims to provide services and information exchange for citizens and business in a more transparent and accessible manner. This shift in government administration from traditional paper-based procedures to electronic services allows important data such as resident, vehicle and real estate information to be more efficiently stored and effectively utilized in social development planning, which is crucial in light of a rapidly growing population. Increasing investment in ICT also aims to improve early-warning systems for natural disasters, enabling early intervention and the prevention of loss of life. The introduction of remote sensor networks and geographic information system (GIS) can effectively improve the management of precious natural resources such as forests and fisheries by monitoring resource use and assisting in the development of sustainable management plans.

INTRODUCTION

Information and Communications Technology (ICT) is playing an important role in sustainable development. It has been broadly used in every aspect of society such as tele-work, widespread in business, and personal utility. It has been used, in addition, for improving the effectiveness and efficiency of production and services. An electronic service such as electronic government (e-Government) is an example of an ICT platform which is playing an increasing role in government administration today.

1 Chun Vat, Deputy Secretary of General, National ICT Development Authority (NiDA)
With regard to e-Government implementation, the Royal Government of Cambodia (RGC) is shifting its focus to a new ICT development paradigm. In the long run, the key factors of production will shift from land and natural resources to information, knowledge and innovation embodied in Cambodia’s human capital. In other words, the knowledge, skills and expertise of the Cambodian people will become increasingly crucial to the country’s future economic growth. An extensive economic growth and development will gradually give way to intensive economic growth. This type of growth requires more emphasis on ideas and innovation. Thus, the RGC has endeavored to promote the use of modern technology in Cambodia to enable the country to respond to the current needs in all sectors, and in the development of ICT in particular.

Cambodia, one of the world’s developing countries, has considered the policy to adopt ICT as a part of socio-economic development. So far, the Government has promoted the establishment of the ICT infrastructure through encouraging public and private investments in the sector so that the country can possess an adequate network to improve business activities. To pursue its e-Government agenda, the RGC implemented the e-Government project in early 2002, namely the government administration information system (GAIS). In 2007, it started to implement the provincial administration system (PAIS) as an extension of GAIS (www.nida.gov.kh/gais-pais). These two projects have upgraded the government back offices and improved productivity and the quality of public services.

As a specific part of e-Government, ICT has been applied in environment management, resources and disaster management. Such development and applications of interlinked real time sensing technologies and ICT can enable smart management of our natural resources. The real time dimension of data gathering and resource management can lift resource efficiency and environmental outcome while creating new business opportunities.

**ELECTRONIC GOVERNMENT**

Electronic Government in General

The definition of e-Government ranges from the use of information technology to free movement of information to overcome the physical bounds of traditional paper and physical based systems, to the use of technology to
enhance access to, and delivery of, government services to benefit citizens, business partners, and employees (Pascual 2003, p. 5). The Wikipedia definition of e-Government, refers to the use of internet technology as a platform for exchanging information, providing services and transacting with citizens, businesses and other arms of government (Wikipedia.org). e-Government may be applied by legislature, judiciary, or administration, in order to improve internal efficiency, the delivery of public services, or the processes of democratic governance. In addition, the common theme behind these definitions is that e-Government involves the automation or computerization of the existing paper-based procedures that will prompt new styles of leadership, new ways of debating and deciding strategies, new ways of transacting business, new ways of listening to citizens and communities, and new ways of organizing and delivering information (JICA Report 2004).

Ultimately, e-Government aims to enhance access to and delivery of government services to benefit citizens and businesses. It should create a database containing various types of information that people need and have access to, anywhere and at any time. It should also promote industrial development and create employment opportunities. More importantly, it aims to help strengthen the government drive toward effective governance, to strengthen good government, to strengthen the legal system and law enforcement, and to increase transparency to better manage the country’s social and economic resources for development (Pascual 2003, p. 5). It is important to improve productivity in clerical work within the government offices - known as back offices - and to provide better services to private businesses and citizens.

To achieve these objectives, a long-term and organization-wide strategy needs to be established to constantly improve operations, with the ultimate aim of fulfilling citizens’ needs by transforming internal operations such as staffing, technology, processing and work flow management. Thus, e-Government should result in the efficient and swift delivery of goods and services to citizens, businesses, government employees and agencies. To citizens and businesses, e-Government would mean the simplification of procedures and strengthening the approval process. To government employees and agencies, it would mean the facilitation of cross-agency coordination and collaboration to ensure appropriate and timely decision-making.
Figure 1. e-Government Concept

The common models of e-Government services are known as government to government (G2G), government to business (G2B), government to citizens (G2C), business to business (B2B), business to customers (B2C), and citizens to citizens (C2C). The general concept of e-Government is presented in figure 1.

Electronic Government in Cambodia

The Royal Government of Cambodia has a strong desire and commitment to build a people-centered information society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and people to achieve their full potential in promoting sustainable development and improving their quality of life through the use of ICT. To pursue such a commitment, in August 2000, the RGC decided to establish the National Information Communication Technology Development Authority (NiDA). Its function is to help to realise the information communication technology vision. In this way, the RGC intends to bring government closer to citizens and vice versa through the computerization of its administration (NiDA Profile: www.nida.gov.kh)).
In the first quarter of 2002, the Government launched the e-Government pilot project, namely the Government Administration System (GAIS) in order to pursue its ICT vision. The project’s scope embraces all ministerial bodies of the central governmental administration and the Phnom Penh Municipality only. It has brought all 27 ministries and Secretariats of State and the Phnom Penh Municipality online, including the seven districts and 76 communes, and has employed dedicated applications including a resident information system, a vehicle information system, and a real estate information system. The architecture of GAIS is presented in figure 2. There is clear evidence that these systems have facilitated the more effective and efficient local registration of newborn babies, motors, cars, and real estate. Data stored has been properly managed and effectively used to achieve better security and other social development planning, such as population planning and school construction etc.

**Figure 2. Application Architecture of Government Administrative Information System (GAIS)**

Source: ICT Development Action Plan, NiDA, 2004
Based on the success of GAIS implementation, the RGC have decided to expand the second phase of the e-Government project. This aims to establish an independent information infrastructure network for the government, and to deploy the provincial administration information system (PAIS) in major provinces (PAIS Implementation Plan Paper 2007). This project is focusing on the building of an access network in all provincial towns, building three regional data centers, and introducing the three applications namely a resident information system, a vehicle information system and a real estate information system. The three regional data centers built in Phnom Penh, Siem Reap and Sihanoukville as three strategic economic development poles, will store data from all provinces and towns located nearby.

**Figure 3. Architecture of Provincial Administrative Information System (PAIS)**

With the policy toward e-Government, the government has pursued its commitment to develop a more advanced network and systems to deliver its services and information to citizens and communities at anytime and anywhere. Strategically, it has made a commitment to develop the e-Government system both physical and soft infrastructures up to villages.
The ICT policy of the country, as is evident from the following statement made by the Prime Minister, rightly lays emphasis on “promoting the use of modern technology in Cambodia’s e-mail systems to enable the country to respond to the current needs in all sectors, especially to the development of e-commerce. The top priority in the short run is to use ICT to serve and to meet the day-to-day needs of the people”. It is envisaged that ICT will become an efficient means for the public to exercise their rights to get information related to the decisions made by the government and the conduct of government business in accordance with the principles of transparency and good governance. In addition, the country will build up its policies on information and communication technologies to directly or indirectly address human development and poverty alleviation in particular.

**ELECTRONIC GOVERNMENT IMPLICATION IN ENVIRONMENT MANAGEMENT**

As mentioned earlier, ICT is playing a cross-cutting sector role to benefit individual sectors and the national socio-economy as a whole. This covers, for instance, the environment such as resource management, disaster management etc. Globally, large scale environment sensor network applications play an increasingly important role in real time resource management. For the first time, measuring and forecasting the effect of resource use and natural hazards on environment quality allow for the real time sustainable and competitive management of the environment (Ministry of Research, Science and Technology 2007, p.1). This knowledge, when integrally linked to resource decisions and markets, can enable us to not only sustainably manage resources but also to maintain a competitive advantage in increasingly discerning global markets.

The development and applications of interlinked real time sensing technologies and ICT can enable smart management of our natural resources. The real time dimension of data gathering and resource management can lift resource efficiency and environmental outcomes while creating new business opportunities (see figure 4). Precise data and forecasting can optimize our management which ranges from on the farm (ie local and small-scale) to issues of regional and national decision making importance, such as irrigation, fertilizer application, seeding and harvest, hazard preparedness, biodiversity, waste management, energy extraction, groundwater etc (Botts 2004.).
Sensor networks combined with ICT can deliver a real time image of the environmental state across a wide range of areas. Sensor networks provide quality and cost effective resource management information (Botts 2004). Armed with real time data, information predictions and management decision tools, resource managers are able to act at the time when issues arise and before problems become irreversible (illustration in figure 5). Environment sensor networks provide the means to investigate resource management options in a timely manner so as to optimize environmental outcomes.

In addition, real time sensing can significantly reduce regional authority compliance monitoring costs and enable early intervention. The impetus is to make environment data relevant to individual resource users, who, with the help of decision analysis tools, will then be in a position to better optimize resource decisions.
The integration of sensor networks has the further potential to transform industries which require the collection of a wide range of natural resource information, such as fisheries and forestry.

Lastly, significant cost savings can be made by more accurate prediction of catastrophes and problems. Resource managers are increasingly looking for real time predictive capability of hazards. Such tools can give early warnings and allow for more cost-effective hazard preparedness. This also applies to managing land slide and earthquake hazards as well as pollution and algal blooms around marine farms.

Another application of ICT has been in disaster management. The first important steps towards reducing disaster impact are to correctly analyze the potential risk and identify measures that can prevent, mitigate or prepare for emergencies (Chanuka Wattegama 2007, p.6). ICT can play a significant role in highlighting risk areas, vulnerabilities, and potentially affected GIS. The importance of timely disaster warning in mitigating negative impacts should never be underestimated. For
example, although damage to property cannot be avoided, developed countries have been able to reduce loss of life due to disaster much more effectively than their counterparts in the developing world (see table 1). A key reason for this is the implementation of effective disaster warning systems and evacuation procedures used by developed countries, and the absence of such measures in the developing world.

This table clearly shows that the case of Hurricane Katrina. Although the economic loss and damage to property were much higher, the number of deaths was remarkably less than those resulting from the Indian Ocean tsunami in Sri Lanka and the Pakistan earthquake. This is largely because in Sri Lanka and Pakistan, the victims were mainly communities living below the poverty line and because effective disaster warning systems were not in place.

Table 1: Comparison of Damage Caused by Three Recent Disasters

<table>
<thead>
<tr>
<th>Incident</th>
<th>Considered area</th>
<th>Number of deaths</th>
<th>Estimated financial loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian Ocean Tsunami</td>
<td>Sri Lanka</td>
<td>30,920 or 38,195 (2 different official estimates)</td>
<td>USD1 billion damage and USD1.8 billion recovery cost</td>
</tr>
<tr>
<td>Northern Pakistan earthquake</td>
<td>Pakistan</td>
<td>87,350 (official) Over 100,000 (unofficial)</td>
<td>USD5 billion</td>
</tr>
<tr>
<td>Hurricane Katrina</td>
<td>New Orleans, USA</td>
<td>1,604 accounted for (both direct and indirect) 2,000 missing</td>
<td>USD25-US$100 billion USD75 billion (accounting to the US National Hurricane Center)</td>
</tr>
</tbody>
</table>


GIS can be loosely defined as a system of hardware and software used for storage, retrieval, mapping and analysis of geographic data. Spatial features are stored in a coordinate system (latitude, longitude, state, plane, etc.) that references a particular place on the earth. Spatial data and associated attributes in the same coordinate system can then be layered together for mapping and analysis. GIS can be used for scientific investigations, resource management and development planning (Chanuka Wattegama 2007, p.17).
Remote sensing is the measurement or acquisition of information about an object or phenomenon by a recording device that is not in physical or intimate contact with the object. In practice, remote sensing is the remote utilization (as from aircraft, spacecraft, satellite or ship) of any device for gathering information about the environment. Thus, an aircraft taking photographs, earth observation and weather satellites, monitoring of a foetus in the womb via ultrasound, and space probes are all examples of remote sensing. In modern usage, the term generally refers to techniques involving the use of instruments aboard aircraft and spacecraft.

As disaster management work usually involves a large number of different agencies working in different areas, the need for detailed geographical information in order to make critical decisions is high. By utilizing a GIS, agencies involved in the response can share information through databases on computer-generated maps in one location. Without this capability, disaster management workers have to access a number of department managers, their unique maps and their unique data. Most disasters do not allow time to gather these resources. GIS thus provides a mechanism to centralize and visually display critical information during an emergency.

There is an obvious advantage to using a map with remote sensing or GIS inputs instead of a static geographical map. A static map is mostly analogous and is not interactive. On the other hand, a vulnerability map with GIS input provides dynamic information with cause and effect relationship.

GIS-based space technology solutions have become an integral part of disaster management activities in many developed and some developing countries. The United Nations Office for Outer Space Affairs has been implementing a Space Technology and Disaster Management Programme to support developing countries in incorporating space-based solutions in disaster management activities.

The sensitive and creative use of technology can help nurture change processes that can lead to a more peaceful and sustainable future and avoid the pitfalls of partisan aid and relief operations. These include providing for mobile telephony that gives remote communities access to constantly update weather and geological information, helping to create endogenous earlier warning systems incorporating local knowledge, using tele-centers to
serve as repositories of information on emergency procedure and evacuation guidelines, co-ordinating the work of aid agencies on the ground ensuring the delivery of aid and relief to all communities, monitoring aid flows and evaluating delivery, and creating effective mechanisms for coordination of construction and relief efforts.

In the Cambodian context, the use of ICT in environment and resource management is rare case. There is a project funded by the EC namely environmental information system (EIS) implemented in Siem Reap town. It is a computer based system uses to store, view, and analyze the environmental information related to waste management, water pollution management, and urban environmental protection.

CONCLUSION

Information communication technology is a very important tool that has been broadly used in every aspect of society. Examples include tele-work, and it is widespread in business, and personal utility, for improving the effectiveness and efficiency of production and services. The popular platform of ICT application, such as e-Government, enables the government to deliver services to society and communities more effectively and efficiently. The application of e-Government such as large scale sensor network applications and GIS can be used for scientific investigations, resource management and development planning. The sensitive and creative use of ICT can help nurture change processes that can lead to a more peaceful and sustainable future.
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Section F: The Future of CBNRM in Cambodia

Emerging Trends, Challenges and Innovations for CBNRM in Cambodia
GLOSSARY OF TERMS

**Access** is the multiplicity of ways in which people claim, benefit, control, and negotiate their use over natural resources, including land and water.

**Bia:** it is followed khmer words and refer to a big well or pond for stocking fish in the dry season when the water level is low.

**Civil Society:** the collection of intermediary groups and voluntary organizations that occupy the space between the family and the state.

**Civil Society Organizations:** communities, groups, committees or associations that are established by local people themselves or government regulations such as community based natural resource management groups, farmer associations, community livelihood improvement groups, saving groups, water user groups etc. These groups are voluntarily joining together for collective action around shared interests, purposes, and values of their community.

**Common Pool Resources:** the resource is held by an identifiable community of interdependent users. These users exclude outsiders while regulating use by members of the local community. The rights of the group may be legally recognized. In community, rights to the resource are unlikely to be either exclusive or transferable; they are often rights of equal access and use. Fresh water fisheries and forests have been managed as communal property. Similarly, water-users associations for many groundwater and irrigation systems can be included in this category.

**Commune Councils** is the lowest elected administrative level with authority to plan, manage and use natural resources in a sustainable manner; the exact role with regard to their area of jurisdiction has yet to be fully clarified.

**Community** refer to group of resident in one or more villages in the Kingdom of Cambodia who share a common social, environmental, Cultural, traditional and economic interest and use the natural resources in an area (where they live or nearby) in a sustainable way for subsistence and livelihood improvement purpose.

**Community Based Eco-Tourism** is practiced where local people have substantial control and involvement in eco-tourism project in order that the majority benefits can remain in the community.

**Community Based Forest Management** refers to forest management by or with the local community that includes traditional forms of forest management. This entails self-mobilized community forestry initiative, in commune or municipal forests, possibly sharing ownership with the state, and forms of collaborative management between state and community organizations.

**Community Based Forest Protection:** comprises any action taken by a community to protect forest resources in their vicinity; it is one part of Community Forestry, but not limited to official community forestry areas.

**Community Based Natural Resource Management:** a diversity of co-management approaches that strive to empower local communities to actively participate in the conservation and sustainable management of natural resources though different strategies including community forestry, community fishery, participatory land use planning, and community protected area management.
**Community Fishery**: refers to a “group of people who voluntarily cooperate in order to manage, conserve, develop and use fisheries resource sustainably”. It protects the rights and benefit of the people in accordance with other legislations related to the fishery sector.

**Community Forestry** is generally understood to encompass activities carried out by a formally constituted forest community to manage, develop, protect, use, and benefit from forest resources in a specifically designated area.

**Decentralization**: as any act by which central government formally cedes power to actors and institutions at lower levels in a political administrative and territorial hierarchy. It is processes that reflects a government management style, focusing on “bottom up” forms of influence and emphasize empowerment and poverty reduction through local participation and decision-making.

**Deika** are orders given by provincial governors or commune councils that have the force of law within the geographical limit of their territorial authority.

**Empowerment**: the process of increasing the capacity of individuals or groups to make choices and to transform those choices into desired actions and outcomes. Central to this process are actions which both build individual and collective assets, and improve the efficiency and fairness of the organizational and institutional context which govern the use of these assets.

**Gender**: refer to roles, attitudes and values assigned by culture and society to women and men. These roles, attitudes and values define the behaviors of women and men and the relationship between them. They are created and maintained by social institutions such as families, governments, communities, schools, churches, and media. Because of gender, certain roles, traits and characteristics are assigned or ascribed distinctly to women or men.

**Indigenous people** are described as “tribal people in independent countries whose social, cultural and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partially by their own customs or traditions, or by special laws or regulations”

**In marine area** is the fishing operation in the inshore fishing area, which extends from the coastline at higher tide to a depth of 20 meters.

**Local Empowerment** is an important mean promoting local empowerment, by increasing access to information providing rights and opportunities to participate in decision making.

**Non-Timber Forest Products (NTFPs)** are all biological materials other than timber which are extracted from forests for human use. These include foods, medicines, spices, essential oils, resins, gums, latex, tannins, dyes, ornamental plants, wildlife (products and live animals), fuel wood and raw materials, notably rattan, bamboo, small wood and fibers.

**Participation**: an activity and process involving local people in the development of plans, implementation strategies, and monitoring the proposed activities. Participation is a continuous process that should take place throughout all stages for all stakeholders for effective negotiation and decision making at various levels.

**Participatory Action Research** is a cyclical method that moves from analysis to planning to action and then to more analysis, planning and action.
**Perceptions** are simply our own ideas, views and opinions or judgments - they are not ‘right’ or ‘wrong’.

**Prakas** is ministerial or inter-ministerial regulation that is used, like sub-decrees, to implement and clarify specific provisions within higher level legislative documents.

**Reproductive Work**: refer to tasks or roles which do not make income including such works as bearing children and household tasks etc.

**Rights** are what belong to people. There are moral and legal dimensions of rights in securing tenure and the gamut of tenure options—temporary, permanent, sharecroppers, renters, owners, leaseholders, free-riders, open access, common property, common pool and so forth. Rights are often discussed through statutory or customary law, and via international human rights conventions and legislation.

**Salaphoum** is a process of village-led action research initiated by local villagers in Stung Treng province, Northeast Cambodia, where villagers own and run the whole circle of its work.

**Small-Scale Fishing**: in inland fisheries, it is also known as “Subsistence fishing” or “Family fishing”. Small-scale fishing is done in floodplain areas, in fishing lots during the closed season and in rice fields during the rainy season. No license is required for this type of fishing. In the marine area, this refers to fishing operation in the inshore fishing area, which extends from the coastline at higher tide to a depth of 20 meters. Boats used are without engines or with engines of less than 50 hp. License are not required for boats with no engine or with engine below 33 hp.

**Social Capital**: consists of the stock of active connections among people: the trust, mutual understanding, and shared values and behaviors that bind the members of human networks and communities and make cooperative action possible.

**Social Opportunity** is referring to the provision of facilities and access to education and health care etc.

**Spatial Planning Framework** is intrinsically a land use planning document seeking to order and regulate the use of land in an efficient way. It rests on the differentiation of provincial territory into land zones characterized by specific interactions between natural and human factors.

**Tenure**: Control over resources, or the way in which people hold, or do not hold, individually or collectively, exclusive rights to land and all or part of the natural resources upon it.

**Transparency** is means that decisions taken and their enforcement are done in a manner that follows rules and regulations. It also means that information is freely available and directly accessible to the media and those who will be affected by such decisions and their enforcement.
<table>
<thead>
<tr>
<th>Name of Organization</th>
<th>Relevant Area of Focus</th>
<th>Sector</th>
<th>Contact information</th>
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</table>
| 3 River Protected Networking (3SPN)                 |  - Protect and restore river ecosystem  
  - River-based livelihood  
  - Conservation and development of 3S River | NRM          | 075 974 112 sesan@camshin.net      |
| American Friends Service Committee (AFSC)           |  - Integrated sustainable livelihood program (ISLP)  
  - Natural resource management  
  - Nationalism, ethnicity and identity | Fisheries    | 023 216 400, 023 216 448, 023 216 447 afsc@online.com.kh |
| Aphivat Strey (AS)                                  |  - Human resource development  
  - Support service and training  
  - Sustainable natural resource conservation | NRM Gender   | 012 818 577, 053 952 433 asbtb@camintel.com |
| Asian Development Bank (ADB)                        |  - Agriculture, environment and natural resource | NRM Fisheries | 023 215 805, 023 215 806, 023 215 807 adb.carm@adb.org |
| Australian Agency for International Development (AusAID) |  - Agriculture development  
  - Reduce vulnerability of the poor  
  - Strengthen rule of law | Agriculture   | 023 213 470, 023 213 466 023 213 413 australia.embassy.cambodia@dfat.gov.au |
| Cambodia Center for Study and Development in Agriculture (CEDAC) |  - Enterprise for social development  
  - Local development  
  - Research and development consultant service  
  - Environment and health | Agriculture   | 023 880 916, 023 885 146, 012 447 599 cedac@online.com.kh |
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<th>Organisation</th>
<th>Focus Areas</th>
<th>Department</th>
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| **Cambodia Community Based Ecotourism Network (CCBEN)**                      | ■ Exchanging information and networking  
■ Building local capacities and training in CBET  
■ Joining marketing and promotion  
■ Facilitating between communities and travel agencies  
■ Lobbying and advocating                                                   | NRM, Environment | 012 927 636, 023 217 875  
info@ccben.org                                                               |
| **Cambodia Development Research Institute (CDRI)**                          | ■ Research on natural resource and environment  
■ Democratic governance and public sector reform                                           | Environment, NRM | 023 883 603, 023 881 701  
023 881 384, 023 881 916  
cdrimonline.com.kh  
cdrimail@online.com.kh  
pubs@cdri.forum.org.kh                                                      |
| **Community Based Natural Resource Management Learning Institute (CBNRM LI)** | ■ Good governance and sustainable livelihoods  
■ Human resource development  
■ Knowledge building and sharing  
■ Partnerships and networking  
■ Institutional arrangements and policy support                                  | Forestry, Fisheries, NRM | 023 224 171, 023 994 935  
office@cbnrmli.org.kh                                                          |
| **Community Legal Education Center (CLEC)**                                 | ■ Legal education, land and natural resource project  
■ Access to justice  
■ Good governance                                                              | NRM, Land | 023 211 723, 023 215 590  
012 811 860  
admin@clec.org.kh                                                              |
| **Concern Worldwide**                                                        | ■ Community forestry  
■ Non-Timber Forest Products  
■ Support to policy development                                                | Forestry, Livelihood | 023 214 891, 023 210 314  
concercf@bigpond.com.kh                                                        |
| **Cooperation Committee of Cambodia (CCC)**                                 | ■ Strengthen the collective voice of civil society  
■ Enhance cooperation across civil society  
■ Influence the thinking and practice of Cambodia’s development partners     | NRM, Right | 023 214 152, 023 216 009  
info@ccc-cambodia.org                                                           |
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<tr>
<th>Organization</th>
<th>Activities</th>
<th>Sector(s)</th>
<th>Contact Information</th>
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| Council for Agriculture and Rural Development (CARD) | - Assistance farmers to increase agriculture productivity  
- Facilitate the rehabilitation of the agricultural and rural development sectors  
- Encourage change from traditional practices of self-sufficiency to farming practice | Food security and Nutrition | 023 722 439, 023 428 464  
foodsecurity@online.com.kh  
technical-fsnis@online.com.kh |
| Culture and Environment Preservation Association (CEPA) | - Training on young activity on NRM  
- Empowering forest and river dependent people on resource management | Forestry Fisheries NRM | 023 881 613, 023 369 179  
cepa@cepa-cambodia.org |
| Danish International Development Agency (Danida) | - Decentralization with focus on NREM at commune level  
- Land management  
- Civil societies and local NGOs  
- Pro-poor market | NRM Fisheries Forestry Land | 023 987 629, 023 211 484  
danifda@online.com.kh |
| Department for International Development (DFID) | - Governance  
- Health  
- Education  
- Water sanitation and infrastructure  
- Natural resources | NRM | 023 430 240, 023 430 254  
dfidincambodia@dfid.gov.uk  
pressoffice@dfid.gov.kh |
| Fishery Administration (FiA) | - Revising and improving the institute and capacity of fisheries sector  
- Increasing more area for family fisheries  
- Conservation and research study  
- Enhance post-harvest fisheries development  
- Community-based Fisheries management  
- Enhance the sustainable use of aquatic resource and rural aquaculture development | Fisheries NRM | 011 856 821  
chuopsokhan.fia@maff.gov.kh |
<table>
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<tr>
<th>Organization</th>
<th>Focus Areas</th>
<th>Contact Information</th>
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</thead>
<tbody>
<tr>
<td>Food and Agriculture Organization (FAO)</td>
<td>Agriculture, fisheries and aquaculture, Economic and social, Forestry and natural resource, Technical cooperation</td>
<td>Agriculture, Forestry NRM 023 216 566, 023 211 702 <a href="http://www.fao.org">www.fao.org</a></td>
</tr>
<tr>
<td>Forestry Administration (FA)</td>
<td>Sustainable forest management, Forest and wildlife protection, Capacity building, Rehabilitation reforestation</td>
<td>Forestry NRM 023 292 209 <a href="mailto:kamfo@online.com.kh">kamfo@online.com.kh</a></td>
</tr>
<tr>
<td>German Development Service (DED)</td>
<td>Rural development, Improvement of health system</td>
<td>Good Government 023 219 397, 023 213 761, 023 994 103 <a href="mailto:ded@ded.org.kh">ded@ded.org.kh</a></td>
</tr>
<tr>
<td>German Technical Cooperation (GTZ)</td>
<td>Rural development, Health, family planning and HIV/AIDS, Economic reform and development of marketing system</td>
<td>NRM Land 023 212 1180, 023 212 783 <a href="mailto:gtz-kambodscha@gtz.de">gtz-kambodscha@gtz.de</a></td>
</tr>
<tr>
<td>Heinrich Boll Foundation (HBF)</td>
<td>Sustainable resource government, Indigenous livelihood rights, Gender democracy</td>
<td>NRM Gender 023 210 535, 023 216 482 <a href="mailto:phnompenh@hbfasia.org">phnompenh@hbfasia.org</a></td>
</tr>
<tr>
<td>Indigenous Community Support Organization (ICSO)</td>
<td>Community right training and advocacy support, Natural resource management network, Culture maintains and community right, Facilitation to develop community solidarity and community statue</td>
<td>NRM Right 023 997 657 <a href="mailto:ppooffice@icso.org.kh">ppooffice@icso.org.kh</a></td>
</tr>
<tr>
<td>International Development Research Center (IDRC)</td>
<td>Environment and natural resources management, Information and communication technologies, Innovation, policy and science, Social and economic equity</td>
<td>NRM +65 6438-7877, +65 6438-4844 <a href="mailto:asro@idrc.org.sg">asro@idrc.org.sg</a> <a href="http://www.idrc.org.sg">www.idrc.org.sg</a></td>
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<tr>
<td>Organization</td>
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</table>
| Kratie Provincial Rural Development Committee (PRDC) | ■ Agriculture  
■ Environment  
■ Land Management, urban planning, construction and cadastre  
■ Community economic development                  | NRM         | 012 974 663  
chamnanpnkrt@camshin.com.kh |
| Lutheran World Federation Cambodia (LWF)          | ■ Disaster preparedness  
■ Environment and community development  
■ Health  
■ Food security and income generation  
■ Human rights awareness and advocacy  
■ Education                                   | NRM Social Development             | 023 881 100, 023 883 254, 023 881 616  
lwf@wfcambodia.org.kh |
| Ministry of Agriculture, Forestry and Fishery (MAFF) | ■ Establish agriculture sector development plan  
■ Monitor and manage natural resources of agriculture sector  
■ Evaluate and development human resource in agriculture sector  
■ Necessarily support and advise to the farmers on technologies  
■ Participate in enhancing and acceleration of investment            | Agriculture Forestry Fisheries Land NRM | 023 211 411, 023 217 320, 023 215 321  
maff@everyday.com.kh |
| Ministry of Environment (MoE)                    | ■ National and regional environment plans  
■ Environment impact assessment  
■ Natural resource management  
■ Environment protection  
■ Monitoring, record-keeping & inspection                     | Environment | 023 427 894, 023 213 908, 023 427 844, 023 212 540  
moe-cabinet@camnet.com.kh |
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<tr>
<td>Mlup Baitong</td>
<td>Community based forestry, Community based ecotourism, Environment education</td>
<td>Environment NRM</td>
<td>023 214 409, 023 220 242 <a href="mailto:mlup@online.com.kh">mlup@online.com.kh</a></td>
</tr>
<tr>
<td>My Villages (MVI)</td>
<td>CBNRM programme, Community economic development programme, Ownership and self confident programme</td>
<td>NRM</td>
<td>012 458 640 <a href="mailto:youra@mvlcambodia.org">youra@mvlcambodia.org</a> <a href="mailto:myvillage@mvlcambodia.org">myvillage@mvlcambodia.org</a></td>
</tr>
<tr>
<td>National Committee for Sub-National Democratic Development (NCDD)</td>
<td>Law on administrative management of the capital, provinces, municipalities, districts and khans (organic law), Law on administrative management of communes/sangkats, Decentralization and deconcentration policy</td>
<td>NRM Law</td>
<td>023 362 175, 023 720 038 <a href="mailto:info@ncdd.gov.kh">info@ncdd.gov.kh</a></td>
</tr>
<tr>
<td>National Information Communication and Technology Development Authority (NIDA)</td>
<td>Formulate IT promotion and development policy, IT policy implementation to ensure economic growth, Monitor and audit all IT related projects in Cambodia</td>
<td>IT Internet Technologies</td>
<td>023 724 708, 023 880 367 <a href="mailto:aseanocm@camnet.com.kh">aseanocm@camnet.com.kh</a></td>
</tr>
<tr>
<td>NGO Forum on Cambodia</td>
<td>NGO coordination/networking, Development issue program, Environment, land and livelihood program</td>
<td>Forestry Fisheries Land</td>
<td>023 214 429, 023 994 063 <a href="mailto:ngoforum@ngoforum.org.kh">ngoforum@ngoforum.org.kh</a></td>
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<tr>
<td>Non-Timber Forest Products Exchange Program (NTFPs-EP)</td>
<td>Forest management and sustainable of NTFPs, Livelihood security, Strengthened negotiating position of forest-dependent communities</td>
<td>Forestry NRM Livelihood</td>
<td>023 727 407 <a href="mailto:ntfp_epc@online.com.kh">ntfp_epc@online.com.kh</a></td>
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<tr>
<td>Regional Community Forest Training Center (RECOFTC), Cambodia</td>
<td>Support community forest development, Designing and facilitating learning process, Strengthen capacity community forestry</td>
<td>Forestry</td>
<td>023 988 784 cambodia(at)recoft.org, <a href="http://www.recoft.org">www.recoft.org</a></td>
</tr>
<tr>
<td>Save Cambodia’s Wildlife (SCW)</td>
<td>Awareness raising and education, Providing technical support and strengthening cooperation with partners, Participating with government in relevant policy formulation</td>
<td>Environment, Forest, Wildlife</td>
<td>023 211 263, 023 222 036 <a href="mailto:info@cambodiaswildlife.org">info@cambodiaswildlife.org</a></td>
</tr>
<tr>
<td>Swedish International Development Cooperation Agency (Sida)</td>
<td>Support education and rural development, Democracy and human rights, Environment, gender equality and HIV/AIDS</td>
<td>NRM, Health</td>
<td>023 212 259 <a href="mailto:claes.sida@online.com.kh">claes.sida@online.com.kh</a></td>
</tr>
<tr>
<td>Supreme National Economic Council (SNEC)</td>
<td>Economic policy, Social policy research, Governance policy research</td>
<td>Economic</td>
<td>023 726 449, 023 726 447 <a href="mailto:snec.adamin@snec.gov.kh">snec.adamin@snec.gov.kh</a></td>
</tr>
<tr>
<td>Village Support Group (VSG) based Battambong</td>
<td>Community fishery development, Civil capacity network, Community protected area (Forestry), Local administration and reform (LAAR), Community led poverty reduction in former conflict zones in North-West Cambodia Community</td>
<td>Fisheries, NRM, Rights, Forestry, Society, Agriculture</td>
<td>053 730 355, 012 915 540 <a href="mailto:vsg@online.com.kh">vsg@online.com.kh</a></td>
</tr>
<tr>
<td>Voluntary Service Overseas (VSO)</td>
<td>Education, Reproductive and child health, Secure livelihoods</td>
<td>Forestry, Fisheries, NRM</td>
<td>023 216 734, 023 214 384, 023 213 762 <a href="mailto:vso.cambodia@vsoint.org">vso.cambodia@vsoint.org</a></td>
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| Wetland Alliance                    | - Local development and management  
- Aquatic resources  
- Institution policy change  
- Resource mobilization          | Fisheries NRM  
+66 (0)84-426-7770,  
+66 (0)2-524-8356,  
secretariat@wetlandsalliance.org  
www.wetlandsalliance.org |
| Wild Conservation Society (WCS)     | - Fisheries management  
- Upper Mekong, Sre Ambel river, and Tonle Sap conservation projects  
- Biodiversity conservation in forest concessions  
- Landscape management in northern plains | Environment Fisheries Forestry  
023 217 205, 023 219 443  
cambodia@wcs.org |
| World Bank (WB)                     | - Health sector support project  
- Provincial and rural infrastructures project | Environment Health  
023 213 538, 023 217 310  
www.worldbank.org |
| World Fish Center                   | - Policy, economic and social science  
- Natural resource management  
- Aquaculture and genetic improvement | Fishery NRM  
023 223 208, 023 223 209  
www.worldfishcenter.org |
| World Vision Cambodia (WVC)         | - Advocacy and education  
- Food & water security  
- Community mobilization for child protection  
- HIV and AIDs and health and nutrition | Health Rights  
023 216 052, 023 216 220  
Cambodia@wvi.org |
| World Wild Fund for Nature (WWF)    | - Landscape  
- Lower Mekong dry forest eco region  
- Freshwater conservation program | Environment Fisheries Forestry Land, NRM  
023 218 034, 023 211 909  
wwfcambodia@wwfgreatermekong.org |
<table>
<thead>
<tr>
<th>United Nations Development Program (UNDP)</th>
<th>Consolidate a participative democracy with civil society</th>
<th>Create an enabling environment for inclusive growth</th>
<th>Strengthening on sustainable natural resources management</th>
<th>Environment NRM</th>
<th>023 216 167, 023 216 217, 023 721 042</th>
<th><a href="mailto:Registry.kh@undp.org">Registry.kh@undp.org</a> <a href="http://www.un.org.kh">www.un.org.kh</a></th>
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<td><strong>LIST OF UNIVERSITIES</strong></td>
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<tr>
<td>Asian Institute of Technology (AIT)</td>
<td>Offering state of the art education</td>
<td>Research and Training in technology</td>
<td>Management and societal development</td>
<td>Technology NRM</td>
<td>+(662) 516 0110-44, +(66-2) 516 2126</td>
<td><a href="mailto:Admission@ait.ac.th">Admission@ait.ac.th</a></td>
</tr>
<tr>
<td>Peak Leap National School of Agriculture (PNSA)</td>
<td>Organize and provide consultancy service</td>
<td>Short and long term trainings on agriculture, forestry and fisheries to community</td>
<td>Research and community development</td>
<td>Agriculture Forestry Fisheries</td>
<td>023 219 746, 012 707 677</td>
<td><a href="mailto:info@pnsa.edu.kh">info@pnsa.edu.kh</a></td>
</tr>
<tr>
<td>Royal University of Agriculture (RUA)</td>
<td>Educate students in agricultural fields</td>
<td>Sustainable and natural resource management</td>
<td>Development of human resource of agriculture</td>
<td>Agriculture Fisheries Forestry NRM</td>
<td>023 219 829, 023 219 690, 023 219 753</td>
<td><a href="mailto:rua@camnet.com.net">rua@camnet.com.net</a></td>
</tr>
</tbody>
</table>
| Royal University Phnom Penh (RUPP) | Promotion of research for academic  
| | Extension of knowledge &  
| | technological  
| | Academic service to the public and  
| | private sectors and community  
| | development  
| | Promotion of cultural preservation | Science  
| | Social Science and humanities | 023 883 640, 023 880 116  
| | secretary@rupp.edu.kh |  

**LIST OF COMMUNITIES**

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<thead>
<tr>
<th>Community</th>
<th>Field of Management</th>
<th>Contact Information</th>
</tr>
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<tr>
<td>Beanteay Mean Chey Community Forest</td>
<td>Community fishery management</td>
<td>Forestry</td>
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<tr>
<td>Chanbok Community</td>
<td>Eco-tourism conservation and management</td>
<td>Community Ecotourism</td>
</tr>
<tr>
<td>Community Fishery in Stung Treng (Under Sala Phum Project)</td>
<td>Community fishery management</td>
<td>Fishery</td>
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<tr>
<td>Domnak Neakta Thmorpuon Community Forestry (Chum Kiri district, Kampot)</td>
<td>Community forestry management</td>
<td>Forestry</td>
</tr>
<tr>
<td>Peam Krasaob Community Protected Area (Koh Kong)</td>
<td>Community Protected Area</td>
<td>CPA</td>
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<tr>
<td>Preak Norin Community Fisheries (Battambang)</td>
<td>Community fisheries management</td>
<td>Fishery</td>
</tr>
<tr>
<td>Preak Loung Community Fishery (Battambang)</td>
<td>Community fishery management</td>
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</tr>
<tr>
<td>Roha Soung Community Fishery (Battambang)</td>
<td>Community fishery management</td>
<td>Fishery</td>
</tr>
</tbody>
</table>
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Emerging Trends, Challenges and Innovations for CBNRM in Cambodia

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Emerging Trends, Challenges and Innovations for CBNRM in Cambodia

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Full details of our activities and publications can be found on our website

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