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INTEGRATED LANDSCAPE MANAGEMENT:

An approach to achieve equitable and participatory sustainable development

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1. INTRODUCTION

The 2030 Agenda for Sustainable Development, adopted in September 2015, and officially put into force on January 1, 2016, is a commitment from all nations – rich, poor and middle-income – to collectively combat global environmental and social challenges, such as climate change, land degradation, water scarcity, and entrenched poverty. This is to be accomplished through the alignment of policies and budgets across sectors and levels of government, and the adoption of innovative strategies and tools. Indeed, over the next fifteen years, countries are set to mobilize efforts to end all forms of poverty, fight inequalities and tackle climate change.

For the goals to be reached, unprecedented cooperation and coordination among governments, businesses, communities, and civil society will be required. Highly functional partnerships at global, national, regional, and landscape levels will need to be formed and supported. These partnerships must be built upon democratic values, such as inclusivity, fairness, transparency, and the endeavor toward common goals that place people and the planet at their center.

Integrated landscape management (ILM) has emerged as an innovative approach to land management that reduces land use conflicts, empowers communities, and achieves development objectives at the landscape scale. ILM is built on the principles of participation, negotiation, and cooperation; as such, it requires long-term collaboration among diverse stakeholders.

This paper presents ILM as a viable means of achieving sustainable and equitable development. Section 2 explains why managing resources at the landscape scale is necessary; defines 'integrated landscape management' as a concept, and describes its five key features; finally, it places ILM in the context of global development policies and international conventions.

Section 3 briefly describes how ILM has evolved over the past three decades; it summarizes key findings from the four continental reviews of integrated landscape initiatives (ILIs) that were conducted between 2012 and 2016 in Africa, Latin America and the Caribbean, Southeast Asia, and Europe.

Section 4 explains why strong partnerships are critical to the success of ILIs and describes different organizational structures of landscape partnerships.

Section 5 discusses the technical design aspects of ILM, including the adaptive management cycle.

Section 6 looks at the importance of aligning policy and markets to ILM, as well as the need for targeted landscape investments and finance. Finally, Section 7 describes some of the issues and steps the international community and governments must keep in mind, and act upon, for the advancement and scaling-up of ILM as a key means for realizing sustainable land management, and fair and equitable development.

2. RATIONALE FOR MANAGING LAND RESOURCES AT THE LANDSCAPE SCALE

2.1 Growing pressures on natural resources require an integrated and participatory approach to land management.

Between 2015-2050, the world's population is expected to increase to 9.7 billion (UN DESA, 2015). It is expected that by 2050, agricultural output will need to increase by 60%, globally, compared to the period of 2005-2007 (Alexandratos and Bruinsma, 2012), in order to respond to increased demand and changing food preferences. Water scarcity will affect 54 countries, home to nearly 40% of the world's projected population (UNEP, 2008). Climate change is further multiplying these threats. Other factors such as unclear land tenure rights, unsustainable land management practices, and uncoordinated and often competing sectoral policies are contributing to competition and conflicts over land and its resources (UNEP, 2015). In this context, business-as-usual approaches to natural resource management constitute a threat to human well-being, security and sustainable economic growth.

Sustainably managed landscapes are key to confronting and overcoming these challenges. A multi-functional landscape simultaneously meets a full range of local needs: ensuring water availability for households, farms, businesses and wildlife; biodiversity for crop pollination and wildlife tourism; producing nutritious and profitable crops for families, markets and industry; and enhancing human health through clean water and air. Sustainably managed multi-functional landscapes also enable national and international needs to be met, contributing, for instance, to national commitments regarding global targets (e.g., net reductions in land-based greenhouse gas emissions; the Aichi targets for biodiversity conservation; providing rural employment; generating power from renewable resources).

At the level of individual farms, there are numerous opportunities to increase sustainability and multi-functionality. However, simply adopting sustainable field practices and new technologies is usually insufficient to provide the full complement of societal benefits required from rural landscapes. A broader, spatially explicit landscape perspective is needed so as to address the dynamics, linkages, synergies, and trade-offs among multiple objectives, lands units, and stakeholder interests, as well as to manage or overcome conflicts (Scherr et al., 2014).

2.2 Integrated landscape management

Integrated landscape management (ILM) refers to long-term collaboration among different groups of stakeholders to achieve the multiple objectives required from the landscape, such as agricultural production, the delivery of ecosystem services, cultural heritage and values, and rural livelihoods, to name but a few (Scherr et al., 2013). ILM supports integration across sectors and scales, increasing coordination; similarly, it ensures the harmonization of planning, implementation and monitoring processes at the landscape, sub-national and national levels.

By coordinating strategies and encouraging synergies between different levels of government, ILM can create cost efficiencies at multiple levels. Given that ILM supports an inclusive, participatory process that engages all stakeholders in collaborative decision-making and management, it can also help to empower communities

Moreover, as a natural resource management strategy, it can serve to enhance regional and transnational cooperation across ecological, economic and political boundaries (Case 1).

CASE 1: INCORPORATING CLIMATE-SMART-TERRITORY PRINCIPLES INTO REGIONAL PLANNING FRAMEWORKS IN THE TRIFINIO TERRITORY, USING A COLLABORATIVE APPROACH[1]

1 This was adapted from a case by Leida Mercado in Denier et al. (2015).

The Trifinio territory lies in the border area of El Salvador, Guatemala and Honduras, comprising 45 municipalities and a population of over 800,000. Trifinio is historically marginalized, with little development, and an impoverished population dependent on subsistence farming. Slash and burn agriculture and lack of infrastructure have led to the unchecked degradation of key ecosystems. Revival of Trifinio's ecosystems is in the national interest of all three countries, since watersheds originating in Trifinio flow through each country, providing water for human consumption and industrial uses, as well as hydropower. The region also boasts high biological diversity, including some endemic species, found in the Montecristo Cloud Forest.

In 1987, El Salvador, Guatemala and Honduras came to a tri-national agreement to finance scientific analysis, regional capacity, reforestation, and flood control in Trifinio. After nearly thirty years of cooperation, strides toward achieving these objectives were made. Progress, however, was hindered by the centralized design of the agreement, which excluded local communities from having a say in the management of the area. Thus, challenges remained, including: extreme poverty; overexploitation, leading to erosion and degradation of rivers and forests; and increased climate variability.

To address these challenges, direct engagement of the people working and shaping the land would be essential. This gap was addressed in 2014 with the assistance of the Mesoamerican Agroenvironmental Programme of the Tropical Agricultural Research and Higher Education Center (CATIE-MAP), a regional center that champions the Climate-Smart Territory (CST) model, a type of ILM.

The CST model assumes that rural people depend heavily on natural resources and are therefore affected by the quality of ecosystems. The management of these resources implies the involvement, and buy-in, of local actors operating within a geographic area, the boundaries of which are defined by how stakeholders interact with ecosystems. Commonalities regarding land use, and a shared sense of place, create the foundations of such groups. The resulting ecosystem stewardship establishes the unit's authority to guide and lead land use decisions, relative, for instance, to the challenges of climate change. The input of local people, who have intimate knowledge of climate change impacts the landscape, offers insight on how best to target investments, how to build capacity for land use planning, and how to support climate change resilience on-the-ground.

By supporting multi-stakeholder platforms, CATIE-MAP builds the capacity of local people to improve the management of natural, human and social capital, effectively increasing climate change resilience. To open market opportunities, CATIE-MAP works to strengthen producer organizations and associated value chains. This work has brought many improvements to the daily lives of thousands of families. Practical and easy-to-use innovations in the management of water, solid waste, soil and crop production empowers local people to contribute to larger conservation goals, while accessing a more reliable, and nutritious, source of food. Furthermore, it gives a historically marginalized population critical leverage in the design of policies that affect their living conditions.

2.3 Five key features of ILM

Five key features characterize ILM, all of which facilitate participatory development processes: 1) shared or agreed upon management objectives that encompass multiple landscape benefits ; 2) field practices that are designed to contribute to multiple objectives; 3) management of ecological, social, and economic interactions for the realization of positive synergies, and the mitigation of negative trade-offs; 4) collaborative, community engaged planning, management, and monitoring processes; and, 5) the re-configuration of markets and public policies to achieve diverse landscape objectives (Scherr et al., 2013).

Shared or agreed management for multiple objectives
Strong and effective multi-stakeholder platforms and collaborative management are imperative to realize synergies, and manage tradeoffs, at a landscape scale. Broad stakeholder participation is required, i.e., farmers (both smallholder and large-scale), representatives from the various settlements and industries in the landscape, women, youth and indigenous groups, community action organizations, non-governmental organizations (NGOs), and local government representatives. The involvement of these disparate actors in shared learning and negotiation ensures a more democratic process of community management and planning, increases local empowerment, and facilitates locally appropriate planning objectives. Defining near-term, accessible targets can initiate the process of multi-stakeholder collaboration, and allows for shared learning that builds confidence and trust needed to confront longer-term and more complex issues.

Field practices provide multiple benefits
Once a diverse and inclusive stakeholder group is established, it must then adopt locally appropriate objectives. These objectives must recognize the full array of services provided by the landscape. Once this step is complete, farm and field practices must then be designed to improve the conditions in which to work toward the landscape objectives. Examples of such practices include utilizing integrated pest management (IPM), tillage regimes and crop rotations, animal management, and agroforestry, amongst many others. Sustainable practices, such as these, protect wild habitats, sustain land quality, efficiently use water and energy, contribute to food and nutrition security, minimize pollution from nutrients, improve pest control, and lower waste, thus positively affecting human health.

Spatial arrangement of landscape features designed to maximize synergies
A wide variety of recent research initiatives have focused on generating spatial information about ecosystem services, development, conservation and restoration opportunities, and the interactions between social, economic, and environmental forces shaping land use change (UNEP-GEF, 2013; Neely and Chesterman, 2015). Integrated analysis and planning tools, such as the Resilience Diagnostic and Decision Support Tool, developed by the World Agroforestry Centre (ICRAF) GeoScience Lab to determine priority landscape and livelihoods investments, are critical to finding courses of action that are both acceptable in the near-term, and sustainable in the long-term.

Spatial information, such as maps of important areas for biodiversity, agriculture and hydrology, is essential to plan strategically for a multi-functional landscape, and can help stakeholders to foresee and understand implications of potential trade-offs. For example, in the framework of the United Nations Environment Programme (UNEP) 'ecosystem management of productive landscapes' project, the World Conservation Monitoring Centre (UNEP-WCMC) conducted spatial analysis and mapping in the Great Lakes Region of East Africa, Peru, and the Mekong River Basin, so as to determine how commodity-driven scenarios of agricultural development affect biodiversity and ecosystem services at regional levels.

Additionally, monitoring integrated metrics – bio-physical factors, such as carbon storage, water quantity and quality, and other ecosystem services, as well as socioeconomic and cultural variables that can reduce conflict and encourage continued stakeholder engagement – provides critical information to land managers to inform coordinated responses at the landscape scale. Advances in technology and ecological monitoring significantly aid the ability of locally-generated data to contribute to national data-collection efforts to assess progress of commitments made at international conventions, including of the sustainable development goals (SDGs).

Collaborative community decision-making and action
Inclusive and participatory land management and planning over the long-term is a core principle of ILM. Stakeholders in different sectors and at different scales must work together to coordinate action, align goals, and/or reduce trade-offs. Partners work to resolve both collaborative challenges and conflicts, as well as resource deficiencies and crises, finding solutions to their collective needs. Beyond promoting greater democratic control, collaborative community management bolsters local autonomy by building local capacities for governance and management, and, correspondingly, by reducing dependence on exogenous support (Diaw, forthcoming). Ensuring the effectiveness and ongoing reliability of stakeholder management requires structuring local institutions, and creating agreements to support and perpetuate community and stakeholder empowerment.

Policies and markets to incentivize synergies
Supportive market institutions, public policies, and investment programmes can encourage synergies and reduce trade-offs among landscape objectives. As such, stakeholders in a landscape initiative might wish to establish market incentives. Options include: payment for ecosystem services; environmental and social certification standards, e.g., ecolabeling; secure systems of use, access rights, and property rights for farmers and communities, usually achieved through decentralized government (Scherr et al., 2014). To be effective, cooperation between government agencies at all scales is necessary to align sectoral policies, finance, investments, and regulations (see Section 6).

2.4 ILM in international policies on development, biodiversity, and ecological health
Several of the most prominent international policies, conventions, and strategies aimed at conserving and enhancing the world's natural resources and ecosystems – such as the Convention on Biological Diversity (CBD) and its Aichi targets, the United Nations Framework Convention on Climate Change (UNFCCC) and the Intended Nationally Determined Contributions (INDCs), the UN 2030 Agenda for Sustainable Development, and the Convention to Combat Desertification (UNCCD) with its emphasis on SDG target 15.3 on land degradation neutrality – are highly aligned with the principles and elements of ILM. The 2030 Development Agenda, and other international conventions, call for integrated approaches, based on partnership and coordination across traditional sectors, so as to help manage the complexity, reduce the trade-offs, as well as to build on the synergies inherent to such interrelated goals and targets.

This type of cooperation will be imperative as we grapple with the challenges associated with the Earth's limited land base for food, fiber, fuel and conservation uses. Systematic mechanisms for learning and negotiation among stakeholders, and deliberate efforts to reduce trade-offs and enhance synergies are necessary so as to ensure sufficient natural resources to meet the ambitious goals set down by the various international agreements and conventions.

3. EVOLUTION AND CURRENT STATE OF INTEGRATED LANDSCAPE MANAGEMENT

The term integrated landscape management (ILM) was coined by the Landscapes for People, Food and Nature Initiative, and is now widely used. As an umbrella concept, it aims to describe the diverse approaches which exist to landscape management (Landscapes for People, Food and Nature Initiative, 2012). Concepts of landscape management are not new, emerging first in the 1980s, with the development of landscape ecology. Forman and Godron produced a seminal book in 1986 on the distribution patterns of landscape elements or ecosystems; they described the flows of animals, plants, energy, mineral nutrients, and water, as well as the ecological changes in the landscape over time (Forman and Godron, 1986). By the 1990s, 'community-based natural resource management' became more popular in the fields of forestry, watershed management, and biodiversity conservation, as resource managers sought to accommodate human activities in and around important habitats and protected areas (van Noordwijk et al., 2001; Sayer and Campbell, 2001). By the 2000s, the role of agriculture and food production systems in landscape management was increasingly recognized as essential to any comprehensive and integrated land management approach (McNeely and Scherr, 2003; Jordan et al., 2007; UNEP, 2012).

Over the past decade or more, efforts to manage agricultural landscapes so as to simultaneously increase food production, ecosystem services, and local livelihoods have expanded, growing to include many different entry points. More than eighty communities of practice have been documented as rising to the challenge of meeting multiple objectives at once, including those undertaking participatory watershed management, model forests, ecosystem management, forest landscape restoration, climate-smart territorial development, indigenous landscape management, agricultural green growth, and city region food systems (Shames, 2013).

Most recently, private investors and companies have begun to recognize the importance of using a landscape approach to mitigate environmental, health, and social risks that threaten the profitability and long-term viability of their business models. By participating in ILM, the private sector lowers environmental and social risks, builds community goodwill, and secures the long-term sustainability of supply regions. For example, the Initiative for Sustainable Landscapes (ISLA), funded through the Dutch Sustainable Trade Initiative (IDH), engages companies as key partners in the management of six resource-vulnerable sourcing areas around the world (The Sustainable Trade Initiative, 2014). Unilever, IKEA, Olam, Starbucks and SABMiller are just some of the major multinational businesses with stakes in sustainable resources across the globe that are already adopting integrated landscape approaches to safeguard ecosystems, and reduce their own environmental footprint (Kissinger et al., 2013).

Cities and industrialized areas can also benefit from ILM. Urban sustainability can be enhanced by leveraging rural development in ways that positively impact sustainable food systems. City region food systems (CRFS) link rural and urban sustainable development, and promote sustainable consumption and production. Cities and their territories are increasingly incorporating sustainable food systems amongst their priorities to address hunger and improve nutrition while also addressing overall resilience of urban systems; examples include Calgary, in Canada, and Santa Monica, in California, US. The new goal for sustainable urbanization also addresses the rural dimension of urban expansion, calling for integrated urban, peri-urban and rural planning. ILM can help city regions in many countries achieve this target.

3.1 Continental reviews of integrated landscape initiatives

ILM has been implemented and tested in a wide range of environments and cultures across the globe, providing practical examples of place-based implementation. Continental reviews of landscape initiatives were conducted between 2012 and 2016 by the Landscape for People, Food and Nature Initiative so that lessons and best practices could be analyzed, disseminated and, eventually, replicated or improved upon. The reviews – completed in Africa, Latin America and the Caribbean, South and Southeast Asia, and Europe – identified 436 programmes that are utilizing methods and practices that characterize them as integrated landscape initiatives (ILIs). Results from the continental reviews show that simultaneous improvements in conservation, agriculture, livelihoods, and institutional capacity and coordination can be achieved using an ILM approach (Table 1).

The surveys have illuminated the wide spectrum of patterns of organization, participants, resources, problems, and values embodied in ILIs. Despite this variety, a desire for, and commitment to, sustainability, stakeholder participation and improved governance is a common thread that runs through them all.

Table 1: Areas of investment and achievements by integrated landscape initiatives on four continents
Sources: Milder et al., 2013; Estrada-Carmona et al., 2014; Zanzanaini et al., in review, García-Martín et al. 2016

Areas of Investment by Landscape Initiatives Sub-SaharanAfrica		Continent			
		Sub Saharan Africa	South and Southeast Asia	Latin America and the Caribbean	Europe
Total # of Integrated Landscape Initiatives		87	166	104	71
Agriculture	**ILIs that invested in one or more areas of agriculture (%)**	**97.0**	**89.2**	**95.2**	**81.7**
	ILIs that invested in agriculture and saw results (%)	73.8	62.8	79.0	49.6
	ILIs with increases in yield (%)	46	27.7	36.5	Not asked
	ILIs with increases in profitability (%)	33.3	31.9	35.6	Not asked
	ILIs with reduced environmental impacts (%)	44.8	34.3	53.8	32.4
Conservation	**ILIs that invested in one or more areas of conservation (%)**	**93.1**	**93.0**	**84.6**	**84.5**
	ILIs that invested in conservation and saw results (%)	84.0	79.9	93.0	59.1
	ILIs with improved biodiversity protection (%)	58.6	52.4	63.5	46.5
	ILIs with improved water quality and regularity (%)	33.3	31.3	40.4	32.4
Livelihoods	**ILIs that invested in one or more areas of livelihoods (%)**	**89.7**	**91.0**	**93.3**	**81.7**
	ILIs that invested in livelihood improvements and saw results (%)	79.5	75.5	74.0	53.8
	ILIs with improved food security (%)	52.9	41.6	40.4	11.3
	ILIs with higher income for low-income households (%)	52.9	57.8	50.0	5.6
Institutional	**ILIs that invested in one or more areas of institutions (%)**	**94.3**	**94.6**	**91.3**	**94.4**
	ILIs that invested in institution strengthening and saw results (%)	93.9	91.7	100.0	81.4
	ILIs that improved coordination between stakeholders (%)	77	78.3	79.8	67.6
	ILIs that saw greater empowerment of women (%)	51.7	50.0	52.3	8.5
	ILIs that preserved/used indigenous and local knowledge (%)	42.5	53.0	64.4	45.1

3.2 Emergence of policies and programmes worldwide to support ILM

National programmes to support the development of ILM have begun to emerge. For example, Rwanda has made a national commitment, as part of the Bonn Challenge, to restore 2 million hectares of degraded land in landscapes with the hope of improving rural livelihoods (FAO, 2016). Ethiopia is overcoming chronic food insecurity with landscape approaches to agricultural restoration and water management (Desta, 2015). In Australia, the National Landcare Programme has mobilized over 5,000 community groups to sustainably manage Australia's productive landscapes. Meanwhile, in Colombia, public-private partnerships for integrated watershed management are improving water quality and lowering municipal water treatment costs, while also reducing business risks for food and beverage companies. Indonesia is similarly adopting integrated landscape approaches to conserve forest in areas of rapid agricultural development. These programmes can and should be replicated in many more countries around the world.

In addition to national projects, a growing number of international policy initiatives and programmes have also been developed in recent years with the goal of supporting integrated landscape approaches. For example, the Bonn Challenge is an international initiative, supported by the Global Partnership on Forest and Landscape Restoration and by Initiative 20x20, with the goal of restoring 150 million hectares of degraded lands by 2020, including agricultural land, using a multi-functional landscape approach (IUCN, 2015). The European Landscape Convention, which was ratified by the Council of Europe member states in 2004, promotes the protection, management and planning of European landscapes, and organizes European co-operation on landscape issues. The City Region Food Systems (CRFS) Alliance also promotes integrated urban rural approaches to strengthen the resilience and sustainability of food systems.

4. DIVERSE ORGANIZATIONAL STRUCTURES OF ILIS

Institutional arrangements of ILIs can vary widely; the configuration of a partnership for ILM will depend on the objectives set out for the landscape in question (Kozar et al., 2014). Some partnerships may require only informal processes, such as occasional meetings that encourage knowledge exchange, and networking (Buck et al., forthcoming). Others, such as the Atlantic Forest Restoration Pact (PACT), put more formal governance processes into place to ensure internal accountability and external legitimacy (Case 2). Furthermore, ILIs that seek to achieve specific landscape outcomes, and/or which co-manage an investment portfolio, will often put rigorous monitoring processes into place, thus requiring formal legal structures and government involvement.

CASE 2: BRAZIL'S ATLANTIC FOREST RESTORATION PACT (PACT)[2]

2 This was adapted from a case by Miguel Calmon in Denier et al. (2015).

Brazil's Atlantic forest is one of the highest priority regions for conservation in the world. The forest supplies crucial environmental services – on which much of the regional economy depends. However, because of past land clearing for commercial agriculture and human settlements, less than 15% of the original forest remains intact. Large-scale forest and ecosystem restoration is required to maintain these ecosystem services, and to accomplish the long-term goals of diverse stakeholders in the region, including enhancing the water supply, controlling flooding, complying with Forest Code regulations, improving income, and creating thousands of green jobs through the restoration supply chain.

The Atlantic Forest Restoration Pact (PACT), commonly known as the PACT partnership, was formally established in 2009. Spearheaded by a small group of international environmental NGOs, the partnership facilitated the coming together of a larger group of conservation organizations, private companies, governments, researchers, and landowners around the shared goal of restoring more than 1 million hectares of land by2020. Under the leadership of this small group, a vision was developed with a set of priorities, and implementation strategies. Working groups composed of staff from several of the founding institutions were established to undertake priority activities and generate the first outcomes of the PACT, thereby establishing a credible track record. The PACT prepared media campaigns about the prospective benefits of restoration and its desired outcomes to elicit additional partners and financial support.

While partner participation in the PACT platform is voluntary, obtaining signed commitments from diverse actors to assume a spectrum of roles helps ensure the functioning of the PACT through a measure of peer-based accountability. Actors in PACT currently include more than 270 signatory organizations, including farmer and community organizations, which collectively promote, facilitate and undertake restoration projects across seventeen Brazilian states. PACT is governed by a central steering committee, which includes representatives from research institutions, the private and public sectors, and NGOs; it also includes an Executive Secretariat, and five working groups.

The first steps PACT took were to create a map of priority areas for forest restoration, and to assess which types of investments would maximize restoration outcomes. As a result, PACT prioritized natural regeneration, bringing landowners into compliance with existing legal codes, and creating incentive mechanisms to encourage actors to adopt restoration activities in the most strategic areas.

4.1 Organizational structures of landscape partnerships

Regardless of the level of formality chosen, partners of ILIs commonly opt to initially organize around partnership platforms. These are fora for bringing together different stakeholders to learn, to identify solutions to common problems, and, eventually, to achieve common goals through joint action. Thus, the organizational requirements of an ILI depend upon the functions the platform is expected to carry out.

Multi-stakeholder platforms, though challenging to manage because of their diversity, allow different groups to address common problems, and/or to advance a shared vision (Brouwer et al., 2015). An integrated landscape approach involves the participation of stakeholders in a collaborative management process, with a view to achieve their multiple objectives; in this approach, stakeholders are encouraged to weigh competing demands and to balance trade-offs between different land uses in a given geographical area. ILM necessarily requires that stakeholders share evidence, information and best practices, and develop a shared vision for action.

Organizational structures and institutional arrangements are not fixed – partnerships can evolve based on how they meet new challenges over time, with new partners joining, and former partners taking on different roles and levels of involvement (Buck et al., forthcoming).

Importantly, ILM provides a stable and long-term system of landscape governance, which helps create resilient institutional arrangements and decision-making processes, as well as cementing underlying values; it is into this context that multiple actors can pursue their individual and shared interests (Kozar et al., 2014). These systems help to reconcile, among diverse actors, which functions will be located where, and to determine resource rights and benefits, as well as to develop mechanisms to enforce the landscape's rules. Systems that have been institutionalized within government structures can be especially powerful and effective in the long-term (Case 3).

Case 3: INSTITUTIONALIZING ILM: THE CASE OF IMARISHA NAIVASHA, KENYA

The Lake Naivasha Basin of Kenya is home to over 700,000 people. Additionally, it contains important national parks and bird sanctuaries, and is the focal point of Kenya's export flower industry. As such, it epitomizes the concept of a diverse landscape. However, poor agriculture practices, over-abstraction of water, and uncoordinated resource management have put strains on the environmental health of the basin, and on the floriculture, horticulture, agriculture, and tourism industries that support the majority of the local economy.

In response, the Imarisha Naivasha Board was created to coordinate restoration by bringing diverse stakeholders together, including local government, NGOs, commercial flower growers, small-scale farmers, pastoralists, community groups and citizens, to develop an integrated basin management plan, and to cooperate in order to restore the water catchment area. To this end, Imarisha Naivasha adopted the "Lake Naivasha Integrated Management Plan", laying out the goals of development in the basin, and drawing up a "Sustainable Development Action Plan", in which specific objectives to be accomplished in five year increments were outlined. These objectives included the management of riparian zones and wider catchment, as well as strengthening the capacity of water resource management institutions, and of Imarisha Naivasha itself. These stakeholder-developed planning documents form the basis of Imarisha Naivasha's current endeavors in pursuit of sustainable development in the basin.

For example, recently, Imarisha Naivasha partnered with WWF-Kenya and the Embassy of the Netherlands on a programme called the Integrated Water Resource Action Plan (IWRAP). IWRAP's interventions align with the objectives of the "Sustainable Development Action Plan", and have enabled Imarisha Naivasha to strengthen its human resource capacity, develop a communication strategy, upgrade its website, begin publication of a quarterly magazine, and hold annual stakeholder meetings. Water action without collaborative management would have failed to create progress toward other goals within the Naivasha landscape, namely: strong institutions, decent work and economic growth, gender equality, and responsible consumption and production. A coordinated response to the myriad environmental and social risks meant that synergistic investments and interventions were able to be identified, lowering costs for both mitigation and adaptation. Federal government support for the initiative has lowered barriers to multi-jurisdictional management and helped convene key stakeholders, serving as an important example of the vital role national policymakers have to play in supporting ILM.

5. DESIGN ASPECTS OF ILM AND THE ADAPTIVE COLLABORATIVE MANAGEMENT CYCLE

The functions of landscape stewardship partnerships are dynamic, tending to progress, as the partnership does, through a cycle of adaptive planning, collaborative action, and reflective monitoring, with each phase informing the others (Brouwer et al., 2015). Figure 1 shows the five key elements of the adaptive collaborative management (ACM) cycle for ILM.
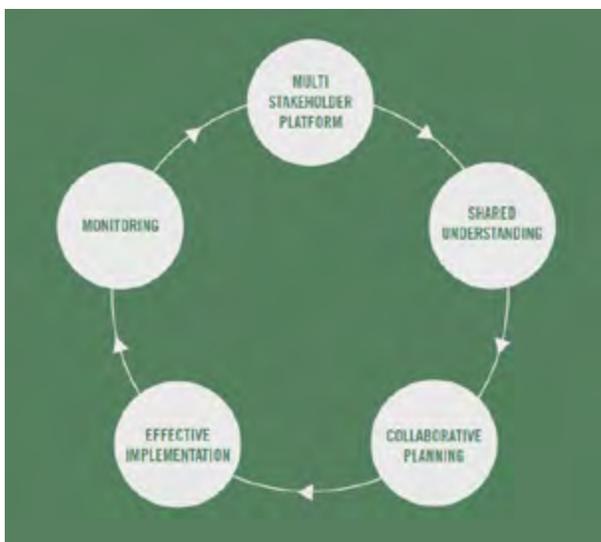

Figure 1. **Adaptive Collaborative Management Cycle**
Interested stakeholders in the landscape come together for cooperative dialogue and action in a multi-stakeholder platform. They follow a systematic process to exchange information and discuss perspectives to achieve a shared understanding of the landscape conditions, challenges and opportunities. This enables collaborative planning to develop an agreed action plan. Stakeholders then implement the plan, with attention to maintaining collaborative commitments. Stakeholders also undertake monitoring for adaptive management and accountability, which feeds into subsequent rounds of dialogue, knowledge exchange and the design of new collaborative action.
Source: Deneier et al., 2015. The Little Sustainable Landscapes Book. Oxford: Global Canopy Programme.

5.1 Strong multi-stakeholder platform
As discussed in Section 3, a multi-stakeholder platform is critical to the success of any landscape partnership, for it is in such a platform that the interests of diverse stakeholders can be heard, negotiated and ultimately harmonized to create viable landscape strategies. An effective platform will involve all relevant stakeholders, including women and indigenous peoples, as well as local governments and corporate actors. Stakeholder mapping is a tool that can be used to identify which stakeholders need to engage in order to reach a particular set of goals, and what support they may need in order to meaningfully participate (Denier et al., 2015). Understanding stakeholders' motivations to

participate in a landscape platform is also important, so that appropriate outreach and support systems can be put into place to ensure commitment to ILM's long-term collaborative processes.

5.2 Shared understanding
Partnerships for sustainable landscape management can emerge from a variety of concerns (e.g., conservation challenges, sustainability of agricultural commodity production, livelihoods, and food security) and they often involve many different types of stakeholders. It is important to take stakeholders' roles, needs and capacities into consideration in such partnerships. Equally significant is to come to a shared understanding (if not agreement) regarding the issues at hand, so as to develop a common vision for landscape change. Eliciting stakeholders' perceptions, as well as input from experts, can be valuable to understand the root causes of key issues, and analyze the synergies and tradeoffs associated with different actions.

5.3 Collaborative planning
Once there is a shared understanding of the issues in the landscape and a collective vision for future change, negotiation of clear objectives for collaborative action can take place. This will typically take the form of an agreed action plan, which serves as a road map for achieving desired changes. There are multiple types of interventions available, including: specific actions, which discrete stakeholders commit to, provided these align with the collaborative action plan; cross-stakeholder actions; and joint advocacy for new policies, or to advance market innovations (Buck et al., forthcoming).

5.4 Effective implementation
Most landscape interventions require a long time before results are seen, and as a result, sustaining the attention and momentum of diverse stakeholders can be challenging. Partnerships will inevitably need to manage conflict among members and address power imbalances, often by encouraging participation of diverse and traditionally underrepresented groups (e.g., minorities, women, youth). Capable leadership and strong facilitation skills are needed to navigate the diverse interests, biases and perspectives of stakeholders, while at the same time, harnessing the group's creativity and capacities to strengthen the partnership and accomplish direct action. Focusing on achieving a few quick wins and maintaining a strong communication strategy can help to ensure a landscape partnership remains effective over the long term.

5.5 Monitoring for adaptive management and accountability

Integrated landscape management requires a flexible and practical monitoring system, which can help stakeholders assess progress toward achieving multiple objectives, using agreed-upon indicators. This system can help the landscape partnership to learn, can inform future decisions about landscape interventions, and can provide accountability to both internal and external stakeholders. To meet the data needs for projects, communities, landscapes, as well as national and international partners, indicators and information flow need to be well-integrated across scales and actors (Denier et al., 2015).

6. ALIGNING POLICIES AND MARKETS – INCLUDING BEYOND LANDSCAPES

ILM has the best chance when policies, markets and financial conditions support it. This section describes the challenges inherent in developing an enabling environment for ILM, as well as some ways in which these positive conditions can be created.

6.1 Government roles

While ILM may not always be government-led, in most cases the government, be it national or local, it is an important stakeholder, and the effectiveness of many ILIs is largely impacted by the actions of governments. National and sub-national policies to instill enabling conditions for ILM are lacking in most areas of the world. Sectorally-siloed government planning and decision-making processes often hinder ILIs that seek to achieve multiple, cross-sectoral objectives. Furthermore, landscape negotiation processes that meaningfully involve multiple-stakeholders are often insufficiently supported, due to a prevalence of business-as-usual policies. As such, perverse fiscal and policy incentives continue to lead to unsustainable resource management at a landscape scale.

To support ILM more strategically, policymakers and government agencies will need to use their full complement of tools, and will have to cooperate across sectors and levels of government. In other words, ILM requires government to pursue the following goals:

- Articulate a policy vision for integrated approaches;
- Address improper or incomplete laws and regulations;
- Shift prevailing incentives to alter the economics of action or inaction by famers, companies and investors; and
- Improve the quality and availability of information and knowledge for stakeholders so that they can manage their landscapes for multiple objectives (Shames et al., forthcoming).

To accomplish these goals, governments will need to revise their mental models, priorities and institutional structures. Policymakers must rethink the level at which policy decisions should be made. Issues addressed at the national level may be more appropriate for that of the district or municipality. Local governments will need to work more closely with one another across borders. Additionally, in some cases, this shift will require governments to acquire new capacities in multi-stakeholder partnership development and landscape platform facilitation.

6.2 Market incentives

The wide variety of products and services from sustainable landscapes are often not properly valued in markets, increasing the likelihood of land use decisions that lead to negative outcomes. A variety of market barriers constrain producers from adopting ILM practices or investing in them. For individual farmers or operations, degrading practices may be more profitable in the short term, and their financial resources may be insufficient to allow for the transition to more sustainable practices. Similarly, land managers and businesses may have inadequate technical know-how to trigger the shift toward ILM. Other barriers may arise at the community or landscape scale, such as the need for collective action in a context of competing interests and weak connections between land managers and beneficiaries of good practice. Further challenges include insecure tenure, weak market demand, and cultural or social barriers.

Better information about the value and origin of products and services from sustainable landscapes must be made available to relevant market actors. Pertinent tools include single-product certification schemes (e.g., Forest Stewardship Council), as well as newly developing landscape labeling programmes (Hart et al., 2015). An increase in the demand for products and services from sustainable landscapes also needs to be fomented. This can be achieved, in part, by leveraging increasingly prevalent company commitments on sustainability, and by supporting the development of markets for a more diverse range of products within a given landscape.

6.3 Company engagement

Some market issues are unique to larger companies which are beginning to play a more significant role in ILM. Consumers, shareholders, and other stakeholders expect companies to be able to trace their supply chain all the way to the natural resource extraction or production level, and to manage the environmental and social risks and impacts associated with each stage of the chain. Risks such as water scarcity, land degradation, climate change impacts, or competition for natural resources and energy can only be effectively addressed at scales beyond the site-level.

Hence, solutions to effectively mitigate, and adapt to, such risks depend on collective or shared approaches developed at the landscape- or watershed- scales. To retain their long-term license to operate, and to manage the regulatory, reputational and operational risks they undergo, many businesses are making commitments to halt deforestation, improve water management practices, and generate positive social and environmental impacts. Companies and NGOs have developed various mechanisms by which to manage operational and supply chain risks, and to improve business sustainability. Examples include forest certification, commodity roundtables, and water stewardship standards. However, as these mechanisms generally offer segmented approaches – concentrating on distinct supply chains – they are often insufficient when it comes to fulfilling broader corporate commitments, and thus find themselves challenged to prove their respective impacts beyond the site or concession level. Businesses are increasingly expanding their risk mitigation and sustainability foci from individual operations and supply chains, to commodity sectors and production landscapes. In view of this, they are turning, more and more, to co-designed interventions through multi-stakeholder landscape partnerships, seen, under certain situations/ conditions, as an effective means to hedge risks, harness new opportunities, and test and implement innovative collaborative approaches for scaling up sustainability impact.

6.4 Financing ILM investments

ILM requires both asset and enabling investments by a wide range of land managers. Asset investments create tangible value that is returned back to the investor, while enabling investments lay the institutional and policy foundations for asset investments to occur. All integrated landscape investments require some degree of strategic planning or coordination through a landscape stakeholder platform and/or a landscape investment facilitator (Shames and Scherr, 2015).

Financing integrated landscape investments presents several unique challenges; solutions are, however, beginning to emerge:

- Incorporating landscape criteria into investment decision-making. This can be accomplished through the application of standards to screen out harmful investments, as well as via active targeting of sustainable land use and integrated landscape investments.
- Mechanisms to reduce investment risks that are unique to ILM (compared to traditional land-based investments). These mechanisms include financial subsidies, guarantees, co-investment with landscape partners, raising and diversifying returns, and documenting a track record of investment performance.

- Investors and financiers' effective engagement with landscape partnerships. These relationships can be built by joining existing platforms, strengthening weak or absent platforms, or, in cases where they do not have the capacity to engage, empowering intermediaries to manage landscape relationships.
- Strategically linking financial flows within landscapes. Asset and enabling investments can be coordinated by blending objectives and funds; this can occur via a single instrument, or through the use of enabling investment companion funds, either jointly managed within the same institution, or on a project by project basis. Finance can also be better linked within landscapes through the development of mechanisms to match funders with appropriately sized investments.
- Monitoring multiple outcomes at a landscape scale. Assessment tools designed to track impacts for sustainable land use and value chains can be geared toward landscape assessments. Other systems are being developed specifically to track outcomes within ILIs (Shames and Scherr, 2015).

7. NEXT STEPS TOWARD SCALING-UP INTEGRATED LANDSCAPE MANAGEMENT

ILM is an innovative, inclusive, and highly participatory management strategy that can adapt and respond to local needs and contexts. To scale up the approach – so that ILM is implemented in thousands, rather than hundreds, of landscapes around the world – will require greater support and inputs from governments, the private sector, and the international community. This paper proposes the following recommendations for action.[3] Policies and public budgets ought to be structured so as to enable adaptation to the local context, and thereby empower sub-national actors. National governments can provide fora for actors to address issues relevant to their own local contexts. This can be done through many mechanisms, including: restructuring budgeting and planning processes at different levels; encouraging policy dialogues between local and national actors; incentivizing local cross-sectoral partnerships between public-private-civic actors; and decentralizing decision-making so that local government and communities are empowered to manage their own resources sustainably. In order to overcome the limitations of current budgeting processes, finance needs to be based on place rather than sector. Place-based budget allocations at the landscape level will encourage cross-sectoral planning and integration, promoting synergies and reducing redundancies. Place-based allocations will also empower local actors to have more ownership of landscape investments. These allocations can also encourage private sector investment, in harmony with locally-defined objectives and desired outcomes.

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3 These recommendations are adapted from Thaxton et al. (2015)

It is also important to extend the time-horizon of ILM initiatives, pushing further than the current short-term investment frameworks adopted by governments, development partners and the private sector.Landscapes ought to be utilized as building blocks for the development of socio-ecological resilience. Place-based landscape planning will be key for resilience of local populations to endure and overcome social, economic, and environmental shocks and stresses. Landscape planning incorporates all voices, including those of the public, private, and civic sectors, and serves as the fundamental starting point for building resilient communities and ecosystems. To initiate this approach, those working to implement ILM could begin to conduct national or sub-national level scoping of existing ILIs, so as to analyze the opportunities available for implementing ILM. ILM ought to be used as a central feature in 'inclusive green growth' economic development models. Economic growth is a critical objective of countries around the world. In order to achieve sustainable development, nations are beginning to move beyond the "business-as-usual" model of economic growth, and to embrace inclusive green growth. The inclusive green growth model is an integrated strategy for accelerating economically, socially, and environmentally sustainable development. Inclusive green growth describes a path of economic growth that recognizes the fundamental uses of natural resources, and ensures their use in a sustainable manner.

This strategy requires embracing the private sector as a critical partner in the green economy. It also requires empowering local communities to plan, manage, and benefit from the sustainable use of resources. Therefore, partnerships are needed between governments, local communities, companies, and others at the national and sub-national scales. A "whole of government" approach ought to be instituted. ILM requires legal and regulatory reform to breakdown institutional silos. National governments can create and empower high-level, devolved interagency coordinating mechanisms, so as to drive the collaboration of different ministries across sectors. This empowerment would include a mandate from the highest level of national government, allowing the coordinator to encourage the cooperation of ministers and other directors regardless of their own internal mandates.

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