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Institute for the Advanced Study
of Sustainability

INTERNATIONAL SAVANNA FIRE MANAGEMENT INITIATIVE

THE GLOBAL POTENTIAL OF INDIGENOUS FIRE MANAGEMENT

FINDINGS OF THE REGIONAL FEASIBILITY ASSESSMENTS

EXECUTIVE SUMMARY



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COVER & CLOSING PAGE PHOTO COURTESY WARDDEKEN LAND MANAGEMENT: RAY NADJAMERREK DEMONSTRATES FIRE MANAGEMENT IN WEST ARNHEM LAND, AUSTRALIA.

EXECUTIVE SUMMARY

For thousands of years, Indigenous peoples in Australia and around the world have used fire as a land management tool.

Such use of fire by Indigenous and local communities has often been interrupted. These interruptions to traditional management have resulted in high-intensity fire regimes and correspondingly high greenhouse gas (GHG) emissions from savanna wildfires.

Recent experience in remote north Australia demonstrates that strategic reintroduction of traditional, Early Dry Season (EDS) fire management practices can reduce emissions by more than a third. When coupled with carbon market participation, or through other funding sources, this reduction also provides meaningful income opportunities for remote Indigenous communities. Savanna Fire Management (SFIM) projects also have notable co-benefits such as improving biodiversity, reinvigorating cultural ties to country, improving food security and health, enhancing human capital, and helping remote communities adapt to climate change.

Savannas support about 10% of the human population, occupy one-sixth of the land surface and, while rates of land use change are uncertain, are likely to suffer twice the rate of conversion as for tropical forests. During the 1997-2014 period, net emissions of Carbon Dioxide (CO₂), Nitrous Oxide (N₂O) and Methane (CH₄) from fires in savanna amounted to approximately 0.31 Gt CO₂-eq per year. Savanna fire emissions are predominantly sourced from Africa, contributing approximately 71% of all savanna CO₂ emissions, followed by South America (12%), Australia (7.3%) and South East and Equatorial Asia (5.9%). Other regions - including Central America, temperate North America, Boreal Asia, Europe and Central Asia - also make small contributions to the total emissions from savanna landscapes.

'Savanna burning' is an accountable activity under the provisions of the Kyoto Protocol. Australia is the only developed economy that accounts for emissions from the burning of tropical savanna in its national accounts. SFIM in tropical north Australia savanna is covered by approved methods under Australia's Emissions Reduction Fund (ERF). Under these savanna fire management methods, prescribed burns are conducted early in the dry season, lowering the intensity and extent of Late Dry Season (LDS) fires, and reducing total biomass burnt. The methodologies build upon early work undertaken by Traditional Owners in Australia in projects such as the West Arnhem Land Fire Abatement (WALFA) Project and the Fish River Fire Project. As of October 2015, there were 14 Indigenous-led fire management projects across the north of Australia.

Guided by the success of northern Australia's SFIM emissions abatement programmes, the Australian Government funded the United Nations University's Traditional Knowledge Initiative (UNU-TKI) to manage a two-year 'International Savanna Fire Management Initiative' that has assessed the interest in and feasibility of establishing similar initiatives in developing countries. In order to achieve this, regional feasibility assessments were undertaken in three separate regions of the world that contain notable tracts of tropical savanna – namely Africa, Latin America, and Asia. The purpose of the assessments was to provide communities, governments, experts and potential donors with an informed starting point to explore the potential for implementing SFIM in their region. Proposals for SFIM implementation activities in promising savanna sub-regions were also developed.

In summary, the Initiative found:

- In each assessed region, fire has been used over long periods by Indigenous and local communities for social, cultural and environmental purposes. With interruptions to such traditional practices, LDC burning is contributing to increased GHG emissions and undermining biodiversity. The reintroduction of SFiM could bring significant environmental, social and economic benefits in all regions assessed.
- The regions assessed vary in the extent to which there is current scientific, technological, and regulatory readiness for the reintroduction of SFiM. Consequently, the type of support needed and the pathways for the reintroduction of practical SFiM in each region will be highly context dependent. Specifically:-
 - The development and application of SFiM methodologies similar to those utilised in the Australian context is likely to be possible in parts of Africa, where landscapes most resemble Australian conditions. Given that African savannas contribute 71% of global savanna greenhouse gas emissions - combined with acute human needs, reliance by local peoples on fire management to support existing livelihoods, and limited alternative opportunities – methodology-based SFiM represents an important, promising and unique opportunity for the African savanna region.
 - One of the most promising regions for SFiM in Africa is the Southern African savanna region, including the Kavango-Zambezi (KAZA) sub-region that includes parts of Angola, Botswana, Namibia, Zambia and Zimbabwe, and the Luangwa Valley sub-region of Zambia. Proposals for SFiM implementation activities have been developed for the KAZA sub-region, and the area in and around the Bwabwata National Park in North East Namibia.
 - In Latin America, savanna environments are varied and diverse, as are the social and governance contexts in which the savanna sub-regions are found. Despite long histories of fire management by the region's Indigenous peoples, fire policy has largely focused on prohibition and suppression. Some programmes have been introduced in the region to encourage and introduce strategic fire management. These programmes have built some technological readiness and human capacity for SFiM in the region. As in the case of Africa, while the application of SFiM methods similar to those utilised in the Australian context is likely to be possible in parts of the region, further work on the ground will be required to facilitate their introduction.
 - Particularly promising sub-regions for SFiM in Latin America include the Cerrado of Brazil, the Gran Sabana of Venezuela, and the Pine Savannas of Belize. Proposals for SFiM implementation activities have been developed for each of these sub-regions.
 - In Asia, while savanna ecosystems share many characteristics with tropical north Australia, the population density, highly fragmented landscapes and high historical rates of conversion of savanna suggest that different models for the reintroduction of SFiM may be more appropriate, notwithstanding the very significant benefits that improved fire management could bring to the region.

- Sub-regions suitable for further SFiM activities in Asia include the sub-region encompassing Eastern Indonesia and Timor Leste. A proposal for SFiM implementation activities that adopts a cross-border thematic approach based on risk management has been developed for that sub-region.
- Assuming the Australian project experience could be replicated in other regions, annual emission reduction potential from reducing CH₄ and N₂O emissions could be expected to be in the vicinity of 0.1 to 0.15 Gt CO₂ -eq per year. This potential is, however, dependant on further research and analysis of different vegetation types and different climatic conditions as compared to Australia.
- While there are many practical challenges ahead, the steps required to build readiness for SFiM are considered to be concrete and achievable over appropriate time scales and with well-targeted human, scientific, regulatory and economic investment.
- In considering future prospects for SFiM projects in developing countries, finding potential investors and understanding the demand for carbon credits, offsets and ecosystem services, is a priority and challenge of every SFiM project.
- The demand and price for SFiM projects and their credits is very diverse.
- The most promising demand for SFiM credits is from companies directly.
- REDD+ also provides some interesting opportunities for SFiM Projects.
- Long term demand and stability for the market will be driven by the timing and ambition of future climate policies, the importance of markets in delivering these targets, and the ability to implement the relevant policies (regarding supply and demand) effectively.
- The volatile and varying nature of demand further emphasises the importance of seed funding for new SFiM projects to assist them to develop viable SFiM projects. None of the various communities and governments that the Initiative worked with have the resources to develop viable proposals for SFiM projects without some seed funding.
- Practical steps to help SFiM projects promote demand and access markets would include:-
 - Regular exchanges between SFiM projects to allow for market intelligence to be exchanged and to address the asymmetry in capacities between the suppliers and buyers.
 - Developing an international methodology through, for example, the Verified Carbon Standard (VCS) or Gold Standard (GS), to enhance and promote demand for SFiM credits.
 - Supporting efforts to link carbon markets and allow the use of international credits thereby allowing SFiM projects in developing countries to access carbon markets in developed countries.
 - Promoting Emissions Reduction Fund type developments in national carbon markets.

- Exploring innovative market solutions, and facilitating/brokering partnerships between producers and the private sector.
- Developing models that value and price associated co-benefits.
- Supporting efforts to raise awareness among donors.
- Undertaking an expert analysis of the bond market.
- Developing an international platform or registry for SFiM projects, within one of the existing registries.
- Establishing significant and long-term leadership by governments to support the development of an SFiM network.

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