Case Study 1 – Enhancing institutional capacity to account for forest-related GHG emission reductions and increase in carbon stocks.

CHILE: *Integrated national Monitoring and Assessment System on Forest Ecosystems (SIMEF) in support of policies, regulations and SFM practices incorporating REDD+ and biodiversity conservation in forest ecosystems.* Implementing Agency: FAO.

GEF Grant: $6,293,684 (CC $3,448,167, BD $1,048,096, SFM $1,498,421). Co-finance: $25,248,346 (National Forestry Institute, National Forestry Corporation, Renewable Natural Resources Information Center, Ministry of Environment, Aerial Photogrammetric Service, FAO)

Background

Chile hosts an extraordinary diversity of ecosystems and habitats as well as outstandingly high levels of endemism that are amongst the highest in Latin America. The country ́s natural forests cover 13.6 million ha and possess almost one-third of the world's few remaining large tracts of relatively undisturbed temperate forest. These forests are of great ecological and conservation value. They store significant quantities of carbon, control flooding, purify water, cycle nutrients and soil, and house an incredible array of species that provide the genetic material for valuable new products and a foundation for the resilience of natural systems. However degradation of forests continues at an estimated rate of 0.5%/year in particular those forests concentrated in the center and southern part of the country, recognized to have unmeasured consequences for ecosystem functions especially biodiversity. This is exacerbated by increasing demand of energy in leading to unsustainable uses of wood biomass to cover household heating needs. Approximately 85% of the 9 million m3/year fuel wood is sourced from natural forests.

The Government of Chile has developed relevant instruments to monitor these forest ecosystems, namely the Vegetation Cadastre and the National Forest Inventory (NFI), which have greatly improved the availability of data on the status and conditions of the forest ecosystems, leading to improved policies and practices stopping overall deforestation. However adequate monitoring and assessment of forest ecosystems and use of the generated information to address the threats is constrained by:

- Limited inter-institutional coordination and management structure for integrating on -going forest related monitoring and assessments and ensuring participation of local stakeholders;
- Gaps in technical capacities for implementation of an integrated forest monitoring and assessment system;
- Coverage gaps in current national forest monitoring and assessment both in terms of forest areas covered and data and indicators covered which leaves to incomplete information on the current situation and trends for decision makers and planners to take action;
- Lack of cost-effective integration and coordination of information and monitoring systems;
- Limited availability and use of forest monitoring and assessment data and information by national policy and regulation formulators and decision maker as well as for local SFM practitioners;

The project

The project aims to develop and implement an Integrated Forest Monitoring and Assessment System including carbon stocks and biodiversity in Forest Ecosystems (SIMEF) supporting the National Greenhouse Gases Inventory and the development of policies, regulations and SFM practices which also incorporate REDD+ and biodiversity conservation outcomes in forest ecosystems. The project will support government institutions, the private sector and civil society organizations at all levels with improved data and information and its application for better decision-making on forest policies, land use

planning and regulations as well as on resources management by local communities to guarantee their sustainable use for improving livelihood conditions, providing them with an efficient structure securing bottom – up communication on a continued improvement of the SIMEF to serve their needs.

To achieve these objectives the project will be implemented through the following components:

- Development of institutional coordination framework and capacities for the implementation of the SIMEF;
- Operational implementation of SIMEF;
- Application of the information generated by SIMEF in local, regional, and national policies and regulations, land -use planning and in support of SFM incorporating REDD+.

Expected outcomes

The project will be executed by INFOR in close collaboration with CONAF, CIREN and other national and local government partners as well as small forest owners, the forest industry, research institutions and NGOs. The project will result in the SIMEF functioning at national level and providing updated and compatible information on carbon stocks and flows, biodiversity of forest ecosystems, links between socioeconomic drivers and land use changes, together with updated forest fragmentation and degradation data. Outcomes from the project are expected to include the following:

- Establishment of a coordination mechanism and development the required capacities among all institutions related to forest ecosystem issues to secure the implementation of the SIMEF initiative and the timely supply of information necessary to report on carbon stock changes, land use dynamics and forest ecosystems integrity status and trends.
- Four data collection protocols supplemented, validated and standardized facilitating the collection and analysis of high quality data covering forest ecosystems country wide, for: carbon stocks; biodiversity; drivers for land-use changes; and socioeconomic drivers for deforestation and forest degradation and incentives for SFM and REDD+
- Capacity developed in data collection protocols, analysis and development of SIMEF indicators and products within INFOR, CONAF and CIREN, RPC members (30) and data collection brigades
- Carbon stocks of 2 Gt CO_2 eq inventoried in an additional 3.4 million ha and 13.6 million ha of habitats brought into a monitoring regime.
- Forest degradation rate reduced by 20% and 4,300 ha of degraded forests under rehabilitation by EOP and 100,000 ha under rehabilitation after 20 years resulting in 40.6×10^6t CO_2 eq in avoided emissions from forest degradation and 13.5×10^6t CO_2 eq sequestered by rehabilitation.

Case Study 2 – Combining climate change mitigation and adaptation through a landscape level approach.

MALAWI: *Shire Natural Ecosystems Management Project.* Implementing Agency: World Bank

GEF Grant: $6,578,000 (BD $2,727,000, LD $1,082,000, CCA $1,500,000) SFM $1,269,000). Co-finance: $72,768,000 (Government of Malawi, local communities, World Bank)

Background

The Lake Malawi–Shire River hydrological system represents Malawi's single most important natural resource system. The Shire provides water for a number of productive purposes, including: hydropower, agriculture, fisheries, transport, tourism, urban water supply and rural water users along the length of the river, in addition to various environmental functions. The growing population expands land area under cultivation and exploits forests and woodlands for firewood and charcoal production. Deforestation, soil erosion and sedimentation form the most serious threats to the environment and natural resource base in the Shire River Basin, resulting in the increased incidence of erosion, run-off and flash floods. High loads of sediment are deposited in river beds, reservoirs and floodplain wetlands, affecting irrigation canals, fisheries and hydropower generation. These problems are a direct result of catchment degradation, unsustainable land use and management practices, and increased use of chemical fertilizers without complementary soil and water conservation measures.

Natural habitats are critical to the overall functioning of the Shire Basin, but are increasingly threatened. High rural population densities and almost universal reliance on wood fuels have placed high pressure on natural resources in the Shire Basin. Larger wildlife and extensive areas of natural terrestrial habitat have virtually disappeared outside of reserves, even some forest reserves have been effectively cleared, and most remaining forest and wildlife reserves are affected by agricultural encroachment. Extensive wetlands in the lower Shire attenuate the floods that affect the area, and have historically provided rich fish and bird resources for the local population, but these areas too are under pressure from environmental and anthropogenic changes to hydrological flows, and increasing pressure on land and biological resources. Changes to the physical environment of the Shire Basin also accentuate vulnerability to climate change through erosion of the resource base for climate-resilient livelihoods and of the buffering of extreme weather events. In particular, the population within the lower Shire Floodplain is perhaps the most climate-vulnerable in Malawi, having been subjected to successive floods and droughts. Their resilience is undermined both by upstream changes to hydrological and sediment flows, and by degradation of local floodplain resources and habitats.

The Project

The proposed project will be developed as an integrated multi-focal area project combining several GEF strategic goals, and one LDCF objective to mainstream natural habitat and biodiversity management alongside a $125 million IDA loan. GEF-funded activities will strengthen knowledge on the natural ecosystems of the basin, in order to allow this to be fully integrated into basin planning and management activities, and will strengthen the management of remaining natural habitat blocks in a cluster of National Parks, Wildlife Reserves and Forest Reserves. Alongside the parent project, this comprises a comprehensive catchment restoration approach that combines protection of natural habitats with improved land management in production landscapes. In addition the project will support improved understand the dynamics of the Marshes and establish co-management planning and pilot activities that will allow local people to use the wetlands in a more sustainable fashion. This will reduce their own vulnerability (farming within the Marshes is both vulnerable to flooding and extremely dangerous in its

own right), as well as safeguarding the role that the Marshes play in protecting the wider population of the Lower Shire from floods. This will include more integrated broader community flood resilience program in the lower Shire floodplain also involving flood warning systems, capacity building for community flood response, and small-scale flood protection infrastructure. The project is formed around three components:

- Shire Basin Planning will strengthen the institutional capacities and mechanisms for Shire Basin monitoring, planning, management and decision support systems;
- Catchment Management will reduce erosion in priority catchments and sedimentation and flooding downstream, while enhancing agricultural productivity and improving livelihoods;
- New Water Investments will invest in water related infrastructure that sustainably improves water resources management and development, and improves flood management in the Lower Shire, providing community level adaptation and mitigation support.

Expected Outcomes

Implemented by the Ministry of Agriculture, Irrigation and Water Resources, together with DNPW within national parks and in coordination with the Village Natural Resource Management Committees, the project is expected to result in a promising and largely indigenous model for community management of East African forests, and maintenance of substantial carbon stocks, particularly the intact natural habitats of the cluster of sites that would be targeted in the lower Shire – comprising 3,027 km2 of carbon-rich forests and wetlands specifically in terms of the following results:

- Establishment of Shire Basin management plan and framework with full intergovernmental cooperation between agencies in the Basin;
- 43,700 ha of forest reserves under improved management, contributing an estimated enhancement of carbon storage of 2,400,000 t CO2 eq;
- 1,440 km2 of protected areas under improved management;
- Establishment of integrated flood management measures including early warning systems, small-scale infrastructure, wetland management, resilient livelihoods.

Case Study 3 – Building capacity to plan, manage and monitor for multiple peatland ecosystem services.

THAILAND: *Maximizing Carbon Sink Capacity and Conserving Biodiversity through Sustainable Conservation, Restoration, and Management of Peat-swamp Ecosystems.* Implementing Agency: UNDP

GEF Grant: $3,224,000 (BD $436,544, CC $1,979,945) SFM $809,911). Co-finance: $13,382,711 (Government of Thailand, Tambon Administrative Offices, UNDP)

Background

The majority Thailand's peatlands are found in the provinces along the south-eastern coast. The Kuan Kreng landscape represents a major store of carbon of up to 58 million tC with areas of well-preserved peat including some primary forest. In addition to the carbon values, these house important biodiversity values including a number of endemic and globally threatened species. The landscape also includes areas with settled and unsettled land ownership claims from local communities and has a relatively large population density and high economic use demands. The 33 villages with a population of around 15,000 are primarily engaged in rice farming, rubber tree and oil palm planting, with some fishery and livestock activities. The peatland is also a major source of water critical for ecosystems and human settlements in the Songkhla Lake Basin and Pak Panang Basin, supporting agricultural production while buffering from the impact of rains and floods.

However Thailand's peatlands are being degraded and lost. Between 2002-2008 Thailand's peatland sequestration capacity fell by almost one third – most importantly due to the drainage and conversion to palm oil and rubber tree plantations. Additionally since much of the peatlands have been drained, these are left vulnerable to fire outbreaks. Both unintentional or intentional fires to clear land or burning by encroachers and hunters cause large-scale peat fires in peat-swamp especially during the dry seasons and can result in exceptionally rapid, high emissions.

In Kuan Kreng, as the population density is among the highest in the country, much of the areas is under land use pressure for more oil palm production or small scale farming. Coupled to this, dialogue on the proposal to gazette Kuan Kreng as an Environmental Conservation Area has not been concluded yet because inadequate consultation with local communities, leading to low local support for such a designation. Additionally although re-wetting plans exist the expertise and resources of the baseline program run by the Irrigation Department is unlikely to be sufficient to take into account the full complexity of the Kuan Kreng ecosystem and design a system that would rewet uniformly all dry peatland areas that are most prone to fires. This is further complicated by the paucity of data on carbon fluxes in tropical peatlands overall and very scarce Thailand-specific data on fluxes from oil palm plantations under various water regimes, nor on primary or secondary peat-swamp forests at raised bogs, nor on fluxes from other types of peatlands.

The Project

The long-term solution sought is to change the trajectory of the baseline approaches in order to facilitate a transformative shift from unsustainable to a sustainable and integrated use of peat-swamp forests in Thailand. The project demonstrates many approaches for the first time in Thailand, including oning for ecologically complex peat-swamp landscapes, hydro-technical engineering to prevent drainage effect from oil palm encroachment and fires, and carbon monitoring. While this is a relatively small investment, its replication potential goes far beyond the target areas. The second component of the project includes a tropical peatland carbon flux monitoring system. While the system is going to be implemented at the

project target sites but would also be applicable in similar ecosystems in Thailand and neighboring countries. The project strategy is to address the three barriers described through incremental outcomes organized into three components:

- Improving the protection status of remaining natural peat-swamp forests in the second-largest peat-swamp landscape of Thailand;
- Implementing innovative approaches to avoid degradation and restore peatlands;
- Improve understanding on the extent and status of peatlands and provide decision-makers with up to date information on the opportunities within new peatland management and use policies.

In doing so it will influence the production practices employed by local economic actors and will support measures to avoid GHG emissions from peat degradation and fires, and demonstrate approaches to increase sequestration through restoration.

Expected Outcomes

The project will generate multiple global environmental benefits by demonstrating improved conservation and sustainable management of peatlands and strengthening national policies governing peatland management of all types and will generate benefits by avoiding degradation of peatlands and restoration of peatland forests. These include:

- Expanding the protected area estate of Thailand to include approximately13,000 ha of previously unprotected natural primary or secondary peatland forest and other peatland ecosystems of high conservation and carbon value;
- Developing the new zoning arrangement within the Environmental Conservation Area covering 128,000 ha, in collaboration between the local communities and Government agencies
- design and implement hydro-technical measures to prevent the encroachment of the draining effect and fires on primary and secondary natural peat-swamp forest
- Developing and implementing a peatlands monitoring system to clarify and communicate to scientists, public and decision-makers the true value of peatlands, the cost of degradation and economic opportunities related to peatland conservation and rehabilitation.
- Address the policy gap in the conservation and use of peatlands through inventory of peatlands including land uses, biodiversity and carbon values and subsequent development of a national strategy and action plan on peatlands.

Case Study 4 – South-South exchange on community forestry and REDD+

GLOBAL (Brazil, Central African Republic, Cameroon, Democratic Republic of Congo, Gabon, Madagascar and the Republic of Congo): *Enhancing Institutional Capacities on REDD Issues for Sustainable Forest Management*

Implementing Agency: World Bank.

GEF Grant: $1,000,000. Co-finance: $1,811,542.

Background

The project centered around an intensive 10-day South-South Exchange on community forestry and REDD+ held in Brazil with participants from six African countries. The exchange aimed to support countries to better understand the role that community forestry can play in their national REDD+ strategies. The activity brought together participants from Africa (Central African Republic, Cameroon, Democratic Republic of Congo, Gabon, Madagascar and the Republic of Congo) to exchange experiences on "Community Forestry and REDD+" with various Brazilian counterparts, including federal and state governments, the private sector, civil society and indigenous people's organizations.

The event was one of the several activities being implemented under this GEF/World Bank initiative. Financed by the GEF, and implemented by the World Bank, this project is contributing to building increased absorptive capacities in non-Annex I countries on REDD+ and its role in the wider agenda of sustainable forest management (SFM).

The Project

By enabling these countries to engage in the new financing streams to be expected through REDD, there is an indirect contribution to the conservation and sustainable use of forest ecosystems, including non-timber forest products (NTFP). In addition, there will be an incentive for country governments to reengage in land use planning activities that will avoid conflictive land use decisions and hence jeopardize the ability to access sustainable financing for natural resources management, including SFM. The following outcomes are envisaged as a result of the project:

- Non-Annex I countries submit National Inventory Reports including LULUCF to the UNFCCC Secretariat, following IPCC Good Practice Guidance.
- Non-Annex I countries are able to detect and measure changes in forest land cover, including through remote sensing.
- Non-Annex I countries are able to detect and measure changes in forest carbon pools.
- The challenges of REDD are seen in a broader development context.
- Expertise and experience is built around development of national reference scenarios so as to increase confidence in the methods used for REDD.
- Non-Annex I countries have a sound framework for addressing REDD and increased understanding of monitoring requirements, that build on other non-Annex I countries' experiences, knowledge and technology.
- Greater awareness about the role of REDD in producing multiple benefits in forest ecosystems, including climate change mitigation.

South-South cooperation in knowledge and technology transfer is one of the key components of the project, through which experts from a non-Annex I country with rich expertise in scientific and other best practices share their experiences with experts from other non-Annex I countries, and train them on how to

implement these practices. The 10-day South-South Exchange on community forestry and REDD+ is one of the examples of such knowledge sharing. The event was organized by the Forest Carbon Partnership Facility (FCPF), with the help of the Amazonas Sustainable Foundation (FAS), and the Office National des Forêts International (ONFI).

Comments from the field – interview with the project manager

What are the key objectives of the South-South Exchange on REDD+ that was held in Brazil?

The main goal of the delegation was to learn from Brazil's experience in community forestry and its link to the REDD+ agenda. To do this, the group of government and civil society representatives from six African countries visited several sites in the Amazon.

What are the benefits to the delegates visiting from Africa?

Brazil has many relevant experiences to share with its African counterparts. For example, the Amazon Fund, managed by BNDES (the Brazilian Development Bank), is currently the largest national REDD initiative in the world. It has created an innovative model for managing and disbursing funds for activities that contribute to the objective of REDD.

Also, Brazilian civil society has just gone through a process of establishing national environment and social safeguards for REDD initiatives in the country, which will contribute to the preparation of a national REDD strategy for Brazil. In local communities, participants have had the opportunity to experience a program of payment for ecosystem services (a PES scheme) called Bolsa Floresta which, through payments, rewards households and communities that support forest conservation.

Did the interaction facilitate knowledge-sharing?

Participants were able to learn from what Brazil has achieved so far. They were particularly impressed by the transparent and independent structure of the REDD fund management, developed by the Amazon Fund. It was great to see delegates experience firsthand how communities are benefiting from REDD revenue flows and how this is impacting their daily life. For example, they are funding health facilities and schools, including the use of satellites for distance learning. The activities also allowed participants to network and open up channels of communication for future cooperation, not only between the African and Brazilian delegates, but also among the African delegates themselves.

What has been the main achievement of the initiative?

It is fascinating to see how this event allowed representatives of countries that make up the second largest forested area in the world (the Congo Basin) to learn from the experiences of the largest forested area in the world (the Amazon). The purpose of the initiative was to support these countries in their effort to 'get ready for REDD+' and we think that this has been achieved. It builds on the Forest Carbon Partnership Facility's continued support for knowledge-sharing and capacity building for REDD+ in developing countries.

Case Study 5 – Forests as an adaptation priority

ZAMBIA: *Promoting Climate Resilient Community-based Regeneration of Indigenous Forests in Zambia's Central Province*

Implementing Agency: UNDP

LDCF grant: $3.89 million
Co-financing: $29.03 million (national government. NGOs, UNDP)

Background

Zambia's indigenous forests are under tremendous pressure from land-use change, the unsustainable use of biomass for energy, and timber extraction. Climate change is emerging as an additional, significant driver of deforestation and forest degradation. At the same time, Zambia's rural poor rely increasingly on forests and the ecosystem services these provide as a source of livelihood and income. Consequently, Zambia's indigenous forests and agroforestry systems present an important entry point for enhancing the resilience of rural communities and landscapes to the effects of climate change. The proposed project focuses on the country's Central Province, where forest loss, on the one hand, and the risks imposed by climate change on rural livelihoods, on the other hand, are the most severe.

The project

The proposed project seeks to increase the rate of forest regeneration and promote climate-resilient adaptation practices among forest-dependent communities in Zambia's Central Province. The project is structured around three principal components, aiming to (i) pilot community-based, climate-resilient agro-forestry and assisted natural regeneration techniques; (ii) promote integrated, climate-resilient fire management; and (iii) increase the knowledge about and uptake of appropriate supply-side, biomass energy production technologies.

The proposed project would directly address Zambia's NAPA priority on the regeneration of indigenous forests. In addition, the proposed project is aligned with the country's Sixth National Development Plan, the National Policy on the Environment, the Zambia Forest Action Programme, the Draft National Forest Policy, as well as other relevant national policies, plans, reports and assessments.

Expected outcomes

The project is expected to directly reduce the vulnerability of some 16,000 people while promoting climate-resilient agro-forestry and ANR practices on at least 15,000 hectares. The project will also develop a geospatial fire occurrence dataset for Central Province based on satellite data and GIS mapping to ascertain burn severity classifications and climate change vulnerability of miombo woodlands.