



SUCCESS STORIES

DEVELOPING ZAMBIA'S NATIONAL FOREST MONITORING SYSTEM

The UN-REDD National Programme in Zambia is strengthening the country's capacity to report on its forests by setting up a decentralized national forest monitoring system and enhancing cross-sectoral knowledge for measuring, reporting and verifying REDD+ activities.



The Challenge

Forests in Zambia cover 60 per cent of the country—about 45.8 million hectares of land—and the deforestation rate is approximately 300,000 hectares per year. Given the extensive forest cover and the high rate of deforestation in the country, gaining information on the extent, quality and quantity of forests is vital for supporting Zambia's REDD+ readiness activities.

National REDD+ implementation depends on reliable and credible systems for monitoring and measuring, reporting and verifying (M&MRV) changes in carbon stock and greenhouse gas (GHG) emissions resulting from deforestation and forest degradation, and from the conservation and enhancement of carbon stocks and sustainable forest management practices. Zambia's capacity for measuring and reporting carbon stocks, changes in carbon stocks and GHG emissions has been central in the development of the country's UN-REDD National Programme.

The Initiative

Zambia's work in the area of MRV for REDD+ has focused on the development of a decentralized national forest monitoring system (NFMS). This has required extensive in-country capacity building and infrastructure development.

Ten provincial forest monitoring laboratories have been established and equipped with tools for forest monitoring, including computers with Geographic Information System (GIS) software, Geographical Positioning System (GPS) units for forest monitoring field activities, and printers and plotters for field map production. Each provincial laboratory is staffed by a group of trained cross-sectoral technicians from the forestry, agriculture and planning sectors who provide a decentralized hub of MRV expertise. The laboratories will provide near real-time spatial data on deforestation and forest degradation that can be relayed to the central national forest monitoring laboratory in Lusaka to inform national reporting.

"The creation of decentralized Geographic Information System Laboratories has not only provided a basis for reliable field data on deforestation and forest degradation, but has empowered provincial staff and has greatly improved their ability to practice effective forest stewardship in the provinces, creating a win-win situation for MRV reporting and improved forest management," says Deuteronomy Kasaro, National REDD+ Coordinator, Ministry of Lands Natural Resources and Environmental Protection, Forestry Department of Zambia.

Along with this infrastructure development, extensive capacity building of provincial cross-sectoral technicians in GIS, GPS, MRV and GHG reporting methodologies has also been carried out. In 2012, intensive training of technical staff in the central office in Lusaka was conducted at Brazil's National Institute for Space Research (INPE). Brazil's Terra Amazon platform, which allows different users to work simultaneously on forest cover classification and monitoring, will be used as the basis of a land cover classification system that will be adapted to Zambian needs and integrate country-tailored algorithms and image processing modules. Programming teams at FAO and Brazil's INPE, in close collaboration with in-country technical teams, envisage the development of the first beta version of the NFMS by the end of 2012.

Coordination with existing initiatives is also a key factor in the success of REDD+ initiatives. The development of the MRV system in Zambia is closely aligned with the Zambian Integrated Land Use Assessment phase II (ILUA II). Implemented through the country's Forestry Department, ILUA II receives technical assistance from FAO with financial assistance from the Government of Finland.

With over 4,000 sampling sites across Zambia, ILUA II will assess forests and integrated land-use practices to provide new qualitative and quantitative information on the current situation and trends regarding the state, use and management of natural resources. ILUA II will provide technically-sound information on the physical characteristics of forests and the socio-economic condition of communities living in and around these forests. With technical support from FAO, the information collected in ILUA II will satisfy local, national, regional and international reporting requirements, and will facilitate improved decision making at all levels. ILUA II will provide important inputs into monitoring and MRV reporting requirements for REDD+.

Effective MRV systems for REDD+ also require cross-sectoral approaches, a harmonized policy and legal framework for effective implementation. Monitoring and collecting information not only on the changes in carbon stocks in forests but also on the challenges in the implementation is key if REDD+ is to be achieved. That's why the UN-REDD

Programme supported a study to review existing laws and regulations relevant to REDD+ in Zambia, and identify legal challenges and innovative legal instruments for REDD+ implementation. The study was validated through a workshop hosted by the Forestry Department. The workshop was attended by representatives from other ministries, including Agriculture and Livestock, Finance, Lands and Justice and Legal Affairs, from the Zambia Environmental Management Agency and the Zambia Development Agency, and from civil society. The study identified a number of legal challenges for the implementation of REDD+ in the Zambian national context, such as securing land tenure and regulating customary lands; ensuring clarity and coherence of laws and institutions related to REDD+; regulating the charcoal industry; and establishing equitable and result-based benefit distribution systems.

The Impact

The Zambian NFMS will be strengthened by the recent launch of ILUA II field measurements. The UN-REDD National Programme and ILUA II are technically synchronized so that ILUA II feeds into the national MRV system. For example, ILUA II is measuring all necessary carbon pools as identified by the Intergovernmental Panel on Climate Change (IPCC), such as above-ground biomass, coarse woody debris, fine litter and soil organic carbon. Information on these carbon pools for different forest types, which are subject to varying degrees of deforestation, degradation and different land uses, will provide crucial input into Zambia's carbon stock calculations.

Remote sensing for MRV in Zambia has focused so far on the historical reconstruction of deforestation and forest degradation using freely available Landsat data. The launch of new Landsat satellites and European Space Agency (ESA) Sentinels with an open data access policy will occur in 2013. In the meantime, to detect forest cover change in the context of MRV reporting for REDD+, Zambia may need to acquire commercial satellite data to bridge the gap until the free high-quality satellite data becomes available.

UN-REDD Programme Secretariat

International Environment House
11-13 Chemin des Anémones
CH-1219 Châtelaine
Geneva, Switzerland
un-redd@un-redd.org

The United Nations Collaborative Programme
on Reducing Emissions from Deforestation and
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www.un-redd.org

