

Costa Rica

Developing an integrated forestry sector MRV system

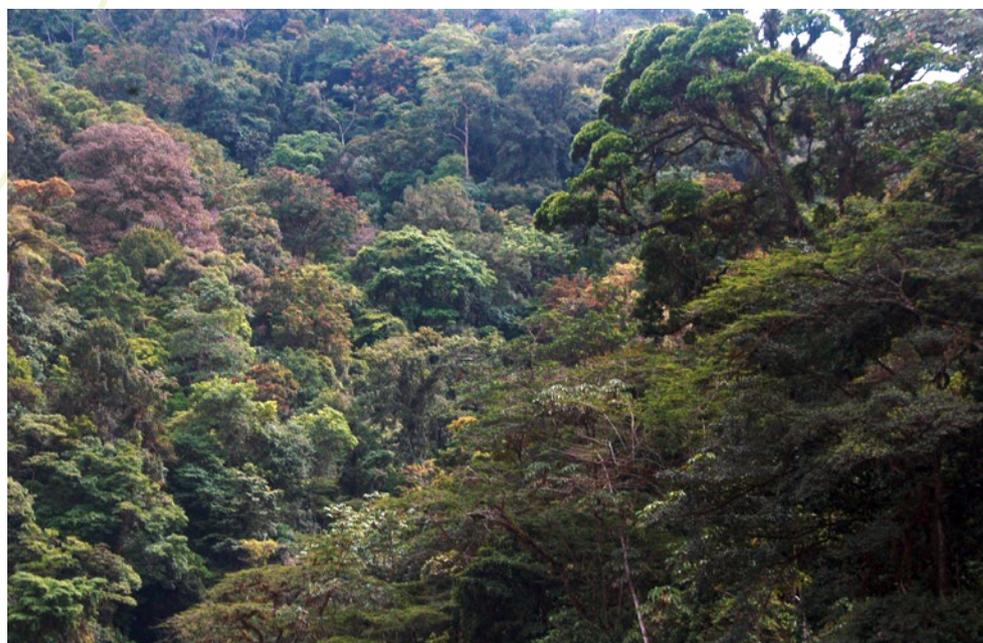
Activity	Development of the National Forest Monitoring System, an integrated MRV system for the Forestry Sector in Costa Rica to support Payment for Ecosystem Services, REDD+ and other forestry projects
Country	Costa Rica
Sector(s) involved	Forest
Time frame	2008–ongoing

Case summary

The National Forest Monitoring System is a national MRV system, currently under development, aimed at improving the coordination and organisation amongst different institutions involved in the forestry sector in Costa Rica, in order to generate quality and verifiable information for different purposes.

The National Forest Monitoring System builds on Costa Rica's Payment for Environmental Services (PES) monitoring system to support significant forest sector-related national policy objectives and/or programmes, including: (1) the national 2021 carbon neutrality goal; (2) participation in the Forest Carbon Partnership Facility (FCPF) and efforts to access its funds; (3) compliance with the United Nations Framework Convention on Climate Change; and (4) pursuit of the Verified Carbon Standard Jurisdictional and Nested REDD+ (VCS JNR) Framework for accounting and crediting REDD+ programmes.

A coordination mechanism is in place where a group of specialists have come together to identify and solve technical and information gaps, in order to complete and adjust this new overarching MRV system that caters to various different requirements and needs. A series of completed, on-going and planned actions are developed under this process.



Tropical Forest with PES, in Turrialba, province of Cartago, Costa Rica

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Background

Costa Rica was the first country to introduce and implement the Payment for Environmental Services (PES) model, starting in 1997. The National Forestry Financing Fund (FONAFIFO) developed the PES in 2007, which in order to be effective, required accurate monitoring of land properties covered by the payments to confirm that contractual commitments were being met, and to generate information of the programme's overall achievements.

Since then, improvements in the quality of data through Geographic Information Systems (GIS), automated equipment, satellite images and aerial photos have improved and supported the PES. More recently, various programmes and/or goals have arisen, that demand a more comprehensive national forestry MRV system to connect the various initiatives and serve their respective objectives. Four main programmes and/or goals referred to are listed below:

- » **2021 carbon neutrality goal:** In 2007, Costa Rica declared its intention to become Carbon Neutral by 2021, and numerous tools have been developed to support progress towards this goal. In 2011, a national standard was created to guide and certify carbon neutral operations in both private and public sectors, leading to the introduction of Costa Rican Compensation Units (UCC), emission reduction units that may be produced nationally. The standard establishes the procedures for the granting of a "C-Neutral" brand by the Ministry of Environment, provides inventory reporting guidance and registration of organisations' carbon footprints. It also integrates the log of UCC's and other compensation mechanisms and the national registry of emission reductions and offsets. The introduction of the National Standard has led to the development of a domestic carbon market in which companies can offset emissions through the purchase of UCC's, after maximising mitigation actions. UCC's can be linked to forestry (reforestation and forest protection), as well as other projects to reduce emissions such as energy efficiency measures. The establishment of the National Voluntary Carbon Market was recently finalised and FONAFIFO has been awarded exclusivity for the provision of Forestry UCC's due to its advanced PES MRV system.
- » **Compliance with the United Nations Framework Convention on Climate Change (UNFCCC):** Costa Rica is a signatory to the UNFCCC which requests developing countries develop "robust and transparent national forest monitoring system for the measurement, reporting and verification of REDD+ activities" (FONAFIFO, CONAFOR and Ministry of Environment, 2012). Under the framework of the UNFCCC agreements, Nationally Appropriate Mitigation Action (NAMA) proposals in the agriculture sector are also advancing quickly within the country.
- » **Access to the Forest Carbon Partnership Facility (FCPF):** Costa Rica participates in the Forest Carbon Partnership Facility (FCPF), through which the Government has been granted USD 3.6 million for the definition of reference scenarios, the development of a REDD+ strategy, the development of monitoring systems and the creation of a national platform for managing REDD+. This work began in 2012, and Costa Rica is so far the first and only country to have assured approval for implementation of its REDD strategy, with a letter of intent signed to access up to USD 63 million for implementing carbon emission reductions through the PES programme between 2010 and 2020.
- » **Costa Rica's pursuit for the adherence to the Verified Carbon Standard Jurisdictional and Nested REDD+ (VCS JNR) framework for accounting and crediting REDD+ programmes:** Costa Rica seeks achievement of VCS-JNR certification. This methodological framework is also emerging and has been evaluated by the REDD+ Secretariat, yet Costa Rica (through FONAFIFO) has signed an agreement with VCS for a pilot implementation in the country with JNR Norwegian Agency for Development Cooperation (NORAD) fund resources. The VCS originally covered only project-level REDD+ activities. In December 2010, the VCS Association launched an initiative to develop a new jurisdictional and nested

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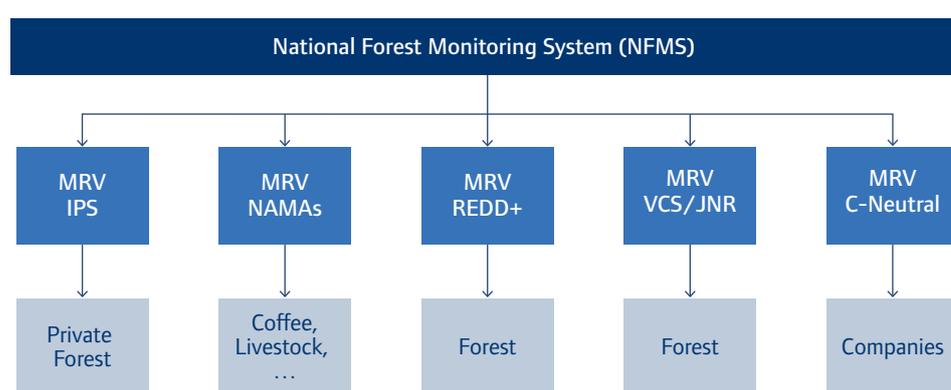
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REDD+ standard that could account for emission reductions and removals at the national, subnational, and project levels. The initiative was launched to address the need for a framework that allowed governments to account for emission reductions and removals generated through large-scale policies and programmes and to support REDD+ projects that may be integrated into national or subnational accounting frameworks.

Activities

- » **Implementation of a first national forest inventory:** Which allows the estimation of carbon stocks by forest type and estimated emission factors associated to all REDD+ activities.
- » **Establishment of an inter-institutional commission:** To define a dialogue for the creation of the National Forest Monitoring System (NFMS) was created in 2012. This commission encompasses all efforts to centralise and unify MRV amongst different institutions. It is also a task of this commission to establish a land use change committee responsible for generating a unified forest cover map.
- » **Ensure comprehensive and thorough knowledge of the IPCC guidelines:** This also involves the use of appropriate land-use categorisation, reporting within agreed UNFCCC deadlines and maintaining knowledge of on-going revisions.
- » **Coordination of a Roundtable Series:** Consultation feedback and capacity building for the National Forest Monitoring System is coordinated by the REDD+ Secretariat.
- » **Generation of unified national forest cover maps:** FONAFIFO, SINAC and the Meteorological Institute have all generated several types of forest cover maps independently. These different maps consisted of distinct categorisations for the same years, which resulted in duplication of work, inconsistent results and confusion among users of the information. In the context of REDD+, an agreement has been reached among participating institutions to generate harmonised maps. This requires capacity building, especially to meet the requirements of the various methodological frameworks sought, as detailed above.

Components of NFMS



Source: The author.

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- » **Efforts to generate other information:** The National Forest Monitoring System must also generate information to verify advances on national policies, i.e. illegal logging. Work is being done to generate information on the emissions from forest fires and forest degradation, and wood commercialization which involves the adoption of new approaches and methodologies for accurate estimation according to the IPCC guidelines. Also in process, is the measurement of growth and carbon sequestration in forest plantations, agroforestry systems and forest regeneration. Some products such as the Forest Types map have begun to be delivered.
- » **Data improvement:** Further improvements are planned which include implementing LANDSAT models (calibrated LIDAR) for estimating carbon stocks in the historical reference period and for future monitoring activities. The Terms of Reference have been designed for hiring the generation of allometric biomass and carbon models to estimate carbon stocks and carbon changes using data from the national forest inventory (tree measurement), and high-resolution images purchased in 2013.
- » **Addressing gaps in the methodological framework:** The FCPF approved the ER-PIN methodological framework in December 2013. Given that Costa Rica had been participating since a year earlier, technical gaps were exposed that required attention. These have been identified and the terms of reference for their solution have been developed for implementation in 2014. Similarly, the voluntary carbon market guidelines and methodologies are recent or still being generated. Terms of Reference are being elaborated for a consultancy to analyse the requirements of voluntary markets that need to be considered within the MRV (Fernández, 2013a).

Institutions involved	National Meteorological Institute (IMN); National System of Conservation Areas (SINAC); National Forestry Financing Fund (FONAFIFO); National Forestry Office (ONF); College of Agricultural Engineers (CIAgro); REDD+ Secretariat; National Academy; Department of Climate Change (DCC); Ministry of Environment and Energy (MINAE); Indigenous and Rural Coordinating Association of Central American Communal Agroforestry (ACICAFOC); Costa Rican Forest Chamber (CCF); Ministry of Agriculture and Livestock (MAG); National Institute of Statistics and Census (INEC).
Cooperation with	Forest Carbon Partnership Facility (FCPF)/World Bank; Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ); Norwegian Agency for Development Cooperation (NORAD); and the United States Agency for International Development (USAID).
Finance	<p>The state has invested in REDD+, especially in the required interagency coordination and the re-routing of related projects. An estimated USD 90,000 has been allocated from the national budget for REDD+ readiness. For REDD+ implementation, Costa Rica has invested USD 84 million.</p> <p>The FCPF provided USD 3.6 million for the R-PP. Furthermore, a letter of intentions has been signed for USD 63 million, to which access will be gained once the REDD+ package is completed. Other programs from NORAD, USAID and GIZ have contributed to funding in the amount of USD 5 million.</p> <p>An additional request for USD 4.5 million will be presented before FCPF in June 2014. Excluding these funds, approximately USD 9 million has been secured to advance Costa Rica's preparation for REDD+.</p>
Impact of activities	<ul style="list-style-type: none"> » Stronger coordination of effort: Without the comprehensive MRV system development undertaken, the varied and many goals and/or programmes adhered to in Costa Rica related to the forestry sector could lead to confusion, duplication of efforts, double counting and other problems for those involved and interested in the results.

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- » **Enabling greater participation in international mechanisms:** PES has served as a platform to quickly meet the requirements to access the FCPF and Costa Rica has signed a letter of intent with the World Bank, trustee body of the Readiness Carbon Fund.
- » **Strengthens nationwide efforts and international acceptance:** The efforts to demonstrate additional terrestrial carbon sequestration, leakage and permanence, etc., make the Costa Rican product more accurate, transparent, complete and reliable.
- » **Improved access to global funds:** Strengthened MRV framework that harmonises at least four different goals and/or programmes, generating information which enables access to global funds when competing with other countries that would generally be considered more important given their forest size and forest protection urgency.

Why is it good practice

- » A well institutionalised, transparent and verified monitoring system, has already allowed FONAFIFO to sell UCC's in the newly created national carbon market. These activities form part of the country's LEDS efforts.
- » The National Forest Monitoring System is being developed through a multi-stakeholder approach, as the need for participation from all actors involved and affected is recognised and acted upon. The creation of an inter-institutional commission and the development of roundtables for discussion and reaching consensus are key to the successful design and future implementation of the MRV Forest System.
- » The development of a more comprehensive MRV system, has secured interest and support at the highest political level. The process under way is a long-term process. Initial steps for an MRV system expansion to include other national objectives started in 2008, while pending activities are defined at least until 2020 to build what is expected to be a permanent system.
- » The enhanced MRV system development has involved the coordination of government ministries, autonomous institutions, academic sector, NGOs, and organizations representing communities and interest groups. A clear example is the integration of the Inter-institutional Commission of the National Forest Monitoring System as mentioned above.

Success factors

- » **High level political commitment:** Has promoted and allowed the successful pursuit of ambitious forest related initiatives and facilitated resources and active participation from relevant stakeholders.
- » **Multi-stakeholder participation and verification of monitoring results:** Costa Rica has held workshops and participatory events with multiple actors, making it possible to reach consensus in many fields.
- » **Transparency and verifiability:** Has been important to provide confidence internationally of the product offered (e.g. guarantee of no double counting and delivery of planned conservation impacts).

Overcoming barriers/
challenges

Financial

What were the main barriers/challenges to delivery?

How were these barriers/challenges overcome?

The cost of adequate monitoring is substantial. For example, LIDAR (a technology for measuring forest transects that includes over-flight) costs around one million USD.

Costa Rica requested additional funds for this subcomponent (through FCPF R-PP) in order to complete the preparation of the REDD+ strategy and all its subcomponents.

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Information

Inconsistency in government information systems and lack of common technology platforms across institutions.

Without having had the PES Programme, Costa Rica would not have advanced as rapidly as it has in FCPF. The country is currently generating a common platform for inter-governmental information systems for the measurement of REDD+ activities.

In 2011 Costa Rica agreed on a definition of forest degradation. However, tools for measuring and monitoring forest degradation lack consensus. Availability of spatially explicit information is subject to quality controls documented in the monitoring of REDD+ activities.

An allometry programme is being developed by collecting field data and using the allometric equation databases generated by the FAO and CATIE for Central and South America. Acquisition of LiDAR data to estimate carbon stocks reduces uncertainty and improves estimation of degradation processes nationwide. A rapid degradation assessment will be conducted from available national data (e.g. forest fires, illegal logging) to determine if related emissions are >10% of total forest-related emissions. If so, improved MRV tools will be generated according to FCPF's methodological framework.

Institutional

Stakeholders need capacity. REDD+ implies many features and requirements that are not yet fully known and understood. Understanding the phenomenon of land use change in each country is essential. Specifically the National Forest Monitoring System requires MRV of five defined REDD+ activities for this plan and development of capacity building and institutional arrangements.

About 50% of planned roundtables for the National Forest Monitoring System have been developed. The rest will be developed during 2014.

In general there is political consensus and the line of work has already been preserved during two different governmental periods. But in some specific areas agreement is necessary, due to existing disagreements on monitoring issues, forest inventory analysis, uncertainty estimates, actions required in the productive forest sector and co-benefits.

Policy viability is required. Costa Rica's carbon neutrality policy by 2021 has led to rapid progress in MRV and other issues. Through roundtables, institutional arrangements for the conservation of carbon stocks have been defined, reducing emissions from degradation and promoting sustainable management of forests. New sessions of roundtables will be held to discuss and agree on the cost of monitoring, forest inventory analysis, inter-institutional online reporting platform for the National Forest Monitoring System, harmonisation of national reports to the UNFCCC, uncertainty and co-benefits estimations.

Lessons learned

» **Build on existing activities:** The success of a programme like this has been significantly enhanced by existing and consolidated advances as a foundation. For example, the development of the MRV process is supported by FONAFIFO's monitoring work. If this is not possible, then government support is required in the form of a stable budget and long-term permanent positions dedicated to the programme.

How to replicate this practice

» **Ensure a robust institutional foundation:** The process in Costa Rica began with an institutional base (which had a budget and permanent personnel) within the State, as was the MRV for PES. If a similar base does not exist, the creation of that structure is needed. With such a base, it will be easier to adapt to new requirements.

» **Secure strong political support:** In the case of Costa Rica, for example, the political decision to proclaim a national Carbon neutrality goal provided a mandate for development of the work.

» **Ensure adequate finance:** Is available to support the work. In the case of Costa Rica, access to funding resources, mainly from FCPF, made the development of this system possible.

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Contact for enquiries	» Ing. Jorge Mario Rodríguez, CEO, FONAFIFO, jmrodriguez@fonafifo.go.cr
Further key resources	» Documents contained in the FONAFIFO website: www.fonafifo.go.cr/ » All documents presented for Costa Rica in REDD: www.forestcarbonpartnership.org/costa-rica
Website(s)	» REDD+ Costa Rica: www.reddcr.go.cr » MRV roundtables results: http://reddcr.go.cr/es/centro-de-documentacion/sistema-nacional-de-monitoreo-de-bosques » FONAFIFO: www.fonafifo.go.cr/ » SINAC: www.sinac.go.cr/Paginas/Inicio.aspx » DCC: http://cambioclimaticocr.com/ » MINAE: www.minae.go.cr/ » IMN: http://cglobal.imn.ac.cr/ » ONF: http://onfcr.org/
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