

# Potential fit of community-level monitoring of biodiversity and socio-economic outcomes with national REDD+ programmes

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## Summary

The current text on the technical aspects of REDD+ explicitly gives indigenous people and local communities a role in monitoring REDD+ programmes, yet little guidance is available as to how community-based REDD+ forest monitoring should be undertaken in practice.

In this report, we examine the potential fit of community level monitoring of biodiversity and socio-economic outcomes within national REDD+ programmes. We explore the data requirements of biodiversity and socio-economic outcomes in forest certification schemes and in REDD+ safeguards, and we review the opportunities provided by community level monitoring.

To explore the data requirements of biodiversity and socio-economic outcomes in existing forest management certification schemes and in REDD+ safeguards at the national level, we examined (i) seven currently active certification schemes and (ii) proposals for safeguards from six countries. Most certification schemes require that a plan for monitoring biodiversity and socio-economic outcomes is developed as part of the forest management agreement. Monitoring serves as a basis for adapting and revising the management plans and for third-party audits to validate the performance of the project. The monitoring plans comprise a list of specific 'indicators' (e.g. 'degree of forest fragmentation' or 'level of acceptance from the neighbouring population in regard to the project') to be assessed annually by the forest managers themselves for the duration of the agreement. Indicators are chosen by project developers on the basis of their judgement of the 'appropriateness' of the indicator to the specific context.

Most national REDD+ safeguards have not yet been developed. It is as yet unclear how biodiversity and socio-economic impacts of REDD+ programmes are to be assessed or by whom. National Readiness Preparation Proposals primarily suggest relying on expertise and data accumulated by NGOs and government institutions. Some proposals aim for a participatory approach to monitoring while others state that local stakeholders can be involved 'where appropriate'.

Existing monitoring schemes carried out by community members cover a wide array of biodiversity and socio-economic attributes which are relevant to REDD+. In these schemes, the community members and local government staff are responsible for both data collection, interpretation and management decision-making at the local level, but foresters provide advice and training. Often several methods are used simultaneously, thereby improving the overall accuracy of the schemes. Community-based monitoring schemes are typically based on locally available resources and can be sustained at very low cost. The community members participate as volunteers because of their interest or they are compensated for their labour but their involvement can also help make their livelihoods more secure. Community monitoring can be very effective in generating local forest management decisions. If the monitoring is to have impacts beyond the local scale, the activities must be embedded within or linked to a national (or international) scheme that feeds the data up to the national or international level. Key bottlenecks are the widespread scepticism among government staff as to whether you can trust data from community members - and the fact that few government staff have had previous experience of facilitating participatory approaches. The report concludes with a list of key topics for further

discussion.

## 1. Introduction

**Background.** Around 240 million people live in tropical forests in developing countries (Peskest et al. 2008). This includes some of the world's poorest and most marginalized communities, who use the forest as their resource base (Funder 2009). At the UNFCCC negotiations, indigenous peoples' organizations have generally opposed REDD+ (IWGIA 2009; Rights and Resources 2010), mainly because it is expected to operate via national governments. It is feared that it will undermine local control over forest resources and alienate communities from their resources (Chhatre & Agrawal 2009). In response to this, the current text on the technical aspects of REDD+ explicitly gives indigenous people and local communities a role in monitoring REDD+ programmes (UNFCCC 2009). There is, however, little guidance available internationally as to how community-based forest monitoring should be undertaken in a REDD+ context (GOF-C-GOLD 2009; Skutsch 2010).

**Objective.** The objective of this study is to synthesize our current experience of community monitoring of biodiversity and socio-economic outcomes for national REDD+ programmes. By 'community monitoring', we mean monitoring by community members and local government staff.

We hope that this report will provide useful inputs for further discussion and inspire the development of technical guidance materials for REDD+ countries to ensure closer integration of indigenous peoples' and local communities efforts at forest monitoring and at developing national Monitoring, Reporting and Verification (MRV) systems.

**Role of biodiversity and socio-economic monitoring.** Why should we care about monitoring the biodiversity and socio-economic impacts of REDD+ programmes? From the perspective of local and national REDD+ implementers, it is important to monitor the biodiversity and socio-economic outcomes of REDD+ programmes because:

- This is necessary to ensure the adherence of forest certification schemes to national REDD+ programme safeguards
- It will help ensure pro-poor environment-friendly REDD+ implementation, which for instance will make the REDD+ programmes less susceptible to external criticism
- It is likely to lead to increased demand from investors to purchase carbon.

**Benefits of the community approach.** Aside from the concrete data and results that will be generated by community monitoring, involving community members in monitoring may also provide added benefits (Skutsch 2010; Fry 2011) that are important but outside the scope of this report. These benefits include:

- Potentially providing a direct link between forest monitoring and forest management, by promoting decision-making at the operational level of day-to-day forest management
- Encouraging locally relevant and meaningful monitoring, creating ownership of the monitoring and thereby enhancing the sustainability of REDD+ programmes in the long term
- Promoting local accountability and encouraging the sharing of benefits from the REDD+ programmes
- Reducing the overall transaction costs of REDD+ programmes by involving local residents in monitoring instead of outsiders, thus reducing transport costs (Skutsch et al. 2010; Danielsen et al. 2011).

**Structure of this report.** In this report, we first examine the data requirements of biodiversity and socio-economic outcomes in existing REDD+ forest management certification schemes and national REDD+ safeguards (section 2). We then review existing experiences of community monitoring and describe potential opportunities provided by community monitoring schemes (section 3). The report concludes with a list of proposed topics for further discussion (section 4).

## **2. Data requirements of REDD+ programmes**

This section describes the existing demand for data on biodiversity and socio-economic outcomes from existing REDD+ forest management certification schemes (section 2.1) and from national REDD+ safeguards (section 2.2).

### **2.1 Data requirements of REDD+ forest management certification schemes**

We reviewed the biodiversity and socio-economic outcome data requirements of seven of the ten currently active forest certification schemes (Merger et al. 2011). These were the Climate, Community and Biodiversity Standard (CCB), CCB REDD+ Social and Environmental Standards, Carbon Fix Standard, Forest Stewardship Council, ISO 14046:2006, SOCIALCARBON Standard and the Voluntary Carbon Standard (Annex 1). Two of these certification schemes do not deal with co-benefits and co-benefit monitoring at all (ISO 14046:2006 and the Voluntary Carbon Standard). Most of the certification schemes however require that a plan for monitoring biodiversity and socio-economic outcomes is developed as part of the technical materials needed in advance of a forest management agreement, along with the specifications on forest management aspects of the agreements. The certification schemes prescribe that monitoring will serve as a basis for adapting and revising the management plans and for third-party audits to validate the performance of the project.

The certification schemes provide minimal requirements or guidance as to what this monitoring plan should look like, however, either because the schemes want to allow for maximum flexibility, or because it is envisaged that the monitoring requirements will be determined through national standard-setting processes. Typically, however, the certification schemes prescribe that the monitoring plan should comprise a list of specific 'indicators' to be assessed every year for the duration of the agreement. By 'indicators', the certification schemes typically mean 'quantitative or qualitative parameters which can be achieved and verified in relation to a criterion'.

The monitoring is usually the responsibility of the forest managers themselves and the results are reviewed by a third-party auditor. The spatial scale of the monitoring is generally the entire area covered by the forest management agreement and may thus vary from a few hectares to several thousand.

The certification schemes often provide an array of possible indicators that project developers can draw from on the basis of their judgement of the 'appropriateness' of the indicator to the specific geographical area and context. It is the responsibility of the certifying organisations to approve the indicators chosen as these form part of the forest management agreement. A list of typical biodiversity and socio-economic indicators proposed by the certification schemes for use in the monitoring plans is provided in Table 1. The methods to be used for assessing the indicators are not usually described. Typically, the certification schemes prescribe an 'expert'-based ticking off of the status of the agreed indicators, or it is prescribed that the status of the indicators should be scored as 'critical', 'satisfactory' or 'sustainable' on the basis of interviews, questionnaires and meetings with stakeholders.

Table 1. Biodiversity and socio-economic indicators proposed by forest certification schemes for use in REDD+ monitoring.

Theme	Indicator examples
<b><i>Biodiversity</i></b>	
Species level	<ul style="list-style-type: none"> <li>- IUCN Red List species, status and associated protection activities</li> <li>- abundance of wild flora and fauna used by the local communities</li> <li>- use of native tree species in project</li> <li>- guarantee that no Genetically-Modified Crops will be used</li> <li>- composition and observed changes in the flora and fauna</li> </ul>
Ecosystem level	<ul style="list-style-type: none"> <li>- 'High Conservation Value' forest present in project area</li> <li>- degree of forest fragmentation</li> <li>- evidence that use of 'chemical' products is minimized or justified</li> <li>- evidence of water resources' quality and quantity</li> <li>- evidence of 15 m wide buffer strips along water courses</li> <li>- evidence of disposal of waste in an environmentally appropriate way</li> <li>- growth rates, regeneration and condition of the forest</li> <li>- environmental impacts occurring due to the project, including erosion and floods</li> <li>- the impact of socio-economic activities on forests and water resources</li> </ul>
<b><i>Socio-economic</i></b>	
Economic	<ul style="list-style-type: none"> <li>- income</li> <li>- access to credit</li> <li>- creation of employment</li> <li>- food security</li> </ul>
Welfare	<ul style="list-style-type: none"> <li>- health</li> <li>- schools</li> <li>- education</li> <li>- quality and results of social programs</li> <li>- description of capacity-building and 'welfare' activities</li> </ul>
Physical	<ul style="list-style-type: none"> <li>- accessibility (e.g. roads)</li> <li>- market access</li> <li>- social impacts of harvesting operations</li> <li>- spiritual, religious or other socially important places influenced by the project activities</li> <li>- displacement of people</li> </ul>
Process-related	<ul style="list-style-type: none"> <li>- stakeholder involvement from the time the project was planned</li> <li>- level of the neighbouring population's support or acceptance of the project</li> <li>- social impacts of creating associations/groups, solving conflicts over land and resources, reducing political interferences, improving family relations</li> <li>- results of stakeholder consultations</li> </ul>

Most certification schemes require, or encourage, local stakeholder participation in the development of the forest management agreements, sometimes also in the monitoring, although what this precisely entails is rarely described. Sometimes there is a requirement that the monitoring plan and results are made publicly available and communicated to the local communities and other stakeholders.

## **2.2 Data requirements of REDD+ safeguards**

We reviewed the biodiversity and socio-economic outcome data requirements of the Forest Carbon Partnership Facility (FCPF) guidelines in the context of REDD+ readiness operations supported by the FCPF. We reviewed specific country Readiness Preparation Proposals (R-PPs) from two countries on each tropical continent: Argentina, Cambodia, Costa Rica, Ghana, Indonesia and Tanzania (Annex 1).

R-PPs have to demonstrate how a country will develop reference scenarios, adopt a REDD+ strategy, design monitoring systems and set up REDD+ national management arrangements in ways that are inclusive of the key stakeholders. The REDD+ Readiness process should ensure that implementation of REDD+ programs and activities will not cause adverse social and environmental impacts, while at the same time striving to enhance the benefits for local communities and the environment.

Countries receiving FCPF support for REDD+ readiness must comply with World Bank safeguard policies regarding the management of environmental and social issues. Hence a Strategic Environmental and Social Assessment (SESA), which includes preparation of an Environmental and Social Management Framework (ESMF), must be prepared as part of the readiness process. Generic guidelines for preparation of the SESA and ESMF are provided. It is envisaged that the national ESMF should provide detailed principles, guidelines and procedures for environmental and social impact screening.

National R-PPs must provide a proposal for the initial design of the monitoring scheme and a work plan that includes addressing benefits, impacts and governance. Such benefits may include, e.g., rural livelihoods and conservation of biodiversity. Most countries have yet to develop indicators through the readiness process but, in a few cases, suggestions for indicators have been prepared.

The Costa Rican R-PP identifies indicators for environmental and social assessment. These comprise biodiversity and water resource indicators as well as indicators on economic activity, employment, income, social participation, civic rights and health, i.e. availability and access to formal health service networks and social security as well as proper nutrition. The Argentine R-PP identifies basic indicators in the short-term, which will be complemented by more complex indicators over time. Short-term biodiversity indicators will be informed by the standards of the Climate, Community and Biodiversity Alliance and the IUCN Red List. This includes the presence/absence of key 'indicator species' such as jaguar. It is stated that socio-economic monitoring will apply poverty reduction and job creation indicators.

The methods to be used for assessing and monitoring the environmental and social impacts of REDD+ are not described in the R-PPs but are to be developed at national level as part of the REDD readiness process.

While carbon-stock assessment is usually seen as part of a national forest inventory, it is unclear how social and environmental impact assessments are to be carried out and collated or by whom. National R-PPs primarily suggest relying on expertise and data accumulated by international and national NGOs and government institutions, and on government evaluations of REDD+ pilot projects. Some countries suggest linking environmental and social monitoring to the national forest inventory. National governments are usually given responsibility for the assessments.

Some country R-PPs aim for a participatory approach to monitoring while others state that local stakeholders and communities can be involved 'where appropriate'. The FCPF guidelines require that draft and final national Environmental and Social Management Frameworks are made publicly available.

### **3. Opportunities provided by community monitoring**

This section attempts to present what community monitoring can deliver in terms of REDD+ relevant data on biodiversity and socio-economic outcomes. We describe a community monitoring scheme and list key attributes that are suitable for community monitoring. We also discuss methods, incentives and challenges, and the potential linkages between community monitoring and forest management.

**Characteristics of community monitoring schemes.** What does a community monitoring scheme look like? Box 1 provides an example. It is a community-based forest and biodiversity monitoring scheme used in forests and woodlands in Tanzania.

**Box 1. A community-based forest and biodiversity monitoring scheme in Iringa, Tanzania.**

Since the early 1990s, the Tanzania forest sector has been undergoing a process of decentralisation and devolution. The Danish government supported a project in Iringa Region between 1999 and 2004 which facilitated the establishment of Participatory Forest Management in 23 villages and over 140,000 hectares of forest.

As part of this project, a participatory monitoring scheme was developed and established in all participating villages with the objective of establishing a process that was simple and cost-effective and which empowered community managers to more effectively manage their woodland and forest resources. The monitoring scheme was built on the existing government structures at village level and complies with the regulations and legal duties set out in prevailing local government and forestry legislation.

The Village Natural Resource Committees (VNRC), who are bylaw the designated forest managers following the establishment of participatory forest management, must demonstrate an ability to manage forest lands to the benefit of their constituents (the community) and in a sustainable manner (to the District Forest Officer). The monitoring scheme provides a tool for achieving this by feeding data both upwards (to higher levels of government), downwards to the wider village community and laterally (to the members of the VNRC). The VNRC compiles monthly records of forest patrols, income, expenditure, meetings and problems encountered. These records are then compiled into a monthly summary sheet and forwarded to the district authorities for review and, where necessary, action. As well as forwarding the summarized records to higher level authorities, a key aspect of the scheme was the use of the records during routine meetings of the VNRCs to stimulate discussions regarding revised management strategies, harvesting volumes, patrol and enforcement and collection of revenue. A key principle of the scheme since its establishment has been to ensure that information gathered at village level has direct use value for the forest managers themselves – rather than generating data for higher level stakeholders. This has ensured that local incentives were created and maintained to ensure the continuation of the monitoring system beyond the life of the project.

The government agency responsible for supervising forestry activities in Tanzania, the Forestry and Beekeeping Division, is currently in the process of establishing a national monitoring framework that will track key national indicators related to forest extent, condition, revenues, harvesting volumes and products as well as the extent of community involvement and benefits arising from participatory forest management systems established at the community level. The design of this new system builds strongly on the community-based models described above. Data on forests under the management of community institutions are captured at the village level and fed through a district platform to a national database. Although yet to become fully operational, this system will, for the first time, be in a position to generate routine data from across the country, captured at village and district levels. Source: Topp-Jørgensen et al. 2005; Burgess et al. 2010; Danielsen et al. 2010.

In this example from Tanzania, as in most community-based monitoring schemes (Danielsen et al. 2009; Fry 2011), the community members and local government staff are responsible for both data collection, interpretation and management decision-making at the local level although external scientists provide advice and training. The spatial scale of community monitoring is

usually the entire forest or woodland that is managed by a village. Sometimes this area may be 50-100 hectares but, often, it can stretch to several thousand hectares.

**Attributes monitored by community members.** Monitoring schemes carried out by community members can cover a wide array of biodiversity and socio-economic attributes. Many of these attributes are relevant to REDD+. Some examples are given in Table 2.

Table 2. Examples of REDD+ related biodiversity and socio-economic attributes that are monitored in community monitoring schemes.

Topic	Example of data that community-based monitoring can deliver
<b><i>Biodiversity</i></b>	
Species level	Trends in the abundance of flora and fauna that are of interest to the local communities
Ecosystem level	Trends in ecosystem services delivered at local scale such as bushmeat, firewood, medicine plants, water, fodder, grass and building materials  Estimates of changes in water regimes and sedimentation  Descriptions of changes in soil quality and possible erosion
<b><i>Social impacts</i></b>	
Benefit sharing	Data on the extent, distribution and character of stakeholder benefits
Potential displacement of local people and resource rights	Data on the impacts of forest management measures on statutory and customary rights
<b><i>Compliance with Good Governance principles</i></b>	
Stakeholder representation and involvement	Participatory review data on how forest users and beneficiaries are represented in decision-making, including gender and poverty issues
Transparency and accountability	Data on governance, financial management and accountability of local institutions

**Methods.** There is no single prescribed field method for community-based monitoring of biodiversity and socio-economic outcomes but most existing community-based monitoring schemes use one or more of the following methods:

1. Interviews, questionnaires or village group discussions, i.e. discussions between government staff and local volunteer members of 'community monitoring groups'
2. Patrol records, i.e. filling out routine patrol sheets on key topics
3. Transects, i.e. simple dedicated transects of e.g. wildlife and human resource use

4. Photography, i.e. on-the-ground fixed point photography
5. Village committee records of incomes and revenues from community forests

Each method has different strengths and weaknesses (Danielsen et al. 2000: 1683). By employing more than one method in the same area, it is possible to compare and 'triangulate' the findings. This helps reduce bias and improve the overall accuracy of the monitoring.

In some schemes, the results of the monitoring are presented annually to the entire village in order to enable the communities' inputs and responses to be obtained. This also helps improve the accuracy of the results. Likewise, it helps ensure that the monitoring leads to decisions being taken that have the broad support of the local community.

Typically, community members compile data on a weekly or monthly basis and assess them on a 3-monthly basis. The data belong to the village. The data are therefore stored in the village but, if local government staff request it, they can obtain a copy.

For biodiversity data, the basic raw data typically comprise either field forms, filled in by hand with observations of species/resource use, quantity, place and time, or by tables on perceived trends in key resources from meetings. For socio-economic data, the raw data often comprise summary tables from questionnaires, interviews and meetings or village committee files.

In many community monitoring schemes, the data are not analysed numerically by the villagers (Poulsen and Luanglath 2005). Instead the generated data are used at the local level as a way of documenting immediate threats and making informed local judgments of e.g. perceived trends in resources.

**Costs, incentives and methods of payment.** Community-based monitoring schemes are typically based on locally available resources and equipment. Unlike most other monitoring approaches, community-based schemes can therefore be sustained over time at very low cost. The main materials needed are sheets of paper, a pen, a watch and, sometimes, a Geographical Positioning System receiver (GPS).

The costs of community-based monitoring vary according to the intensity of data collection. From a government perspective, community-based monitoring schemes are, however, always inexpensive relative to the costs of monitoring by professional foresters. The average cost of the 15 schemes examined was 0.08 USD/ha/yr (Danielsen et al. 2005).

Why are community members interested in monitoring? The community members generally participate as volunteers because of their interest but sometimes – as in the example from Tanzania – they are also compensated for their work with 1-2 dollars a day from funds generated locally by the village forest (Topp-Jørgensen et al. 2005).

For communities to be keen on investing resources in monitoring, and thus detracting time from e.g. tending their farm, the monitoring activity needs to be seen as contributing to their priorities, which will often involve securing their livelihood. In many community monitoring schemes, resource protection and territorial defence are seen by the participants as an important reason for spending time and effort on monitoring (Funder et al. 2011). "It shows them that this forest belongs to us" as one woman from Itagutwa village, Tanzania, expressed it. Participating in monitoring is not only an opportunity for the villagers' insights and knowledge to be used but also for their voices to be heard and their livelihoods made more secure.

**Integration with forest management.** Community monitoring is often more effective in generating local forest management decisions than monitoring without the participation of the community (Danielsen et al. 2007; 2010).

There are several ways in which we can encourage local monitoring data to be translated into local decision-making. For instance, the monitoring forms can be designed so that those who fill them in can also organize and interpret the data and propose possible management actions at the same time. Likewise, agreement can be reached with the village council (or other local community forest authority) that, at the first meeting every year, the results of the previous year's monitoring must be on the agenda so that management decisions can be taken. It is also important to have clear 'job' descriptions for village monitors as well as of course a policy and regulatory framework that is supportive of participatory forest management.

In general, decisions from community monitoring are often taken promptly and at the local level. Decisions often result in actions based on community rules and enforcement, such as local bylaws governing resource use. Decisions emanating from community monitoring therefore often tend to be respected by the locals.

If community monitoring is to have impacts on forest management *beyond* the local scale, however, then the community monitoring must be embedded within - or linked to - a national (or international) scheme that feeds the data up to the levels at which governments and international agencies operate. If community monitoring is to be widely used in REDD+ contexts, there is thus a need to develop and pilot generic approaches for linking individual community monitoring schemes with the national REDD+ programmes, just as in Tanzania.

**Bottlenecks.** There are two key bottlenecks if community monitoring is to be scaled up for use in REDD+ programmes.

First, there is widespread scepticism among national government staff and scientists as to whether you can trust the data provided by community members, especially as they may have a vested interest. We believe this scepticism can be overcome by the development and use of rigorous tools for auditing and evaluating all (both community and expert-based) monitoring results. Such tools should be incorporated into the existing forest certification schemes and national REDD+ safeguards. Likewise, we suggest further quantitative assessments of the ability of community monitoring methods to detect changes in biodiversity and socio-economic data across a range of local contexts.

Second, in many countries, some government staff have had minimal previous experience of facilitating participatory approaches and entering into dialogue and agreements with local communities. Sometimes, government staff are used to seeing local communities as potential contraveners of forest regulations rather than as potential partners in forest management and conservation. We think this challenge can be overcome by involving intermediate organisations and NGOs to liaise between communities and government staff during the establishment and supervision of community monitoring.

#### **4. Proposed topics for further discussion**

Assuming there is interest in establishing community monitoring of biodiversity and socio-economic data for assessing the performance of REDD+ schemes and their adherence to national safeguards then suitable approaches and methods need to be developed.

At the workshop in Mexico City in September 2011, we suggest the following for discussion:

a) **Approaches and methods.**

This includes:

- Who should undertake the monitoring? Who should be responsible for work planning and supervision?
- How should the data be used? How to get from field data to results, and from results to management responses?
- Field methods and sampling frequency?

b) **Integration with C-monitoring and with national and sub-national REDD+ programmes.**

c) **Appropriate level and mechanism of compensation for villagers/local government staff.**

d) **Auditing and evaluation of how the monitoring is implemented.**

#### **5. Tasks ahead**

This will depend on the outcome of the discussions at the workshop.

## **Annex 1 Table of reviewed certification schemes and standards (still to come).**

## **Annex 2. Literature used**

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