UN-REDD PROGRAMME

Framework for Action 2009-2014 on Measurement, Reporting and Verification (MRV)

Concept Note

UN-REDD PROGRAMME

28 May 2009

TABLE OF CONTENTS

1. Introduction

This concept note deals with sustained and consistent implementation of Measurement, Reporting and Verification (MRV) for Reducing Emissions from Deforestation and Forest Degradation (REDD). It builds on the MRV scoping for the UN-REDD Programme as presented to its Policy Board in March 2009. The note outlines a framework for action for the UN-REDD Programme and partners, beyond the quick-start phase, for providing coordinated support to developing countries for MRV.

The Framework for Implementation of MRV:

(a) follows the decisions and conclusions of UNFCCC including its subsidiary bodies and meetings, following the "Bali Action Plan" (Decision 2/CP.13)
(b) strives to meet the expectations and ambitions of participating countries in this regard
(c) seeks synergies and complementarity with national and international initiatives.

Annex 1 provides a review of current international institutions in relation to MRV under REDD.

Urgency to design and implement MRV systems

For the implementation of REDD, there is an urgent need to initiate processes to enhance MRV systems pertaining to:

- compatibility, comparability, consistency and transparency in methods, designs, tools and protocols on measurement and assessment
- generating data that are transparent, robust, precise and accurate (see also Annex 2)
- generating information that spans both forest carbon and multiple benefits
- considering synergies with information requirements beyond REDD.

Besides investments at the national level, the delivery by international institutions should be enhanced in order to better (a) serve countries with free, frequent, relevant and easily accessible data and (b) support institutional strengthening. The overarching need is to strengthen countries' capacities for implementing national MRV systems.

Objective

The objective of the Framework is to accelerate essential improvements in measurement and assessment elements of MRV at the national and international levels by the end of 2010 and to help achieve full functional and sustainable national MRV systems in participating countries by 2014. Such systems should ensure fair, equitable and transparent information that significantly contributes to a sustainable and time bound reduction in forestry-related greenhouse gas emissions.

2. Context and Rationale

There is a growing convergence by countries for a time limit (2050) and there is a high likelihood for a convergence on the limit of permissible increase in average global temperature (1.5 to 2 degrees). Further, countries are working towards a convergence on the period (some time around 2020) for peaking of this permissible increase in the average global temperature.

This indicates an urgent need to implement national forestry actions that are mainstreamed with national sustainable development efforts and are coupled with robust, consistent, transparent and

institutionalized MRV systems to reduce emissions in forestry, which currently account for about one fifth of the global emissions.

Countries and international institutions are preparing to implement REDD. The quick start - or readiness - actions have started or are being started in the nine UN-REDD Programme countries and in about 30 countries under FCPF programme of the World Bank (see also Annex 1). The formulation of the national programmes has benefited from strong inter-agency collaboration - delivering as one UN. Efforts so far have deepened the understanding of key issues and the ways of addressing them, both at the national and the international levels, including:

- mainstreaming REDD with national sustainable development efforts;
- multi-stakeholder engagement, including indigenous peoples and civil society;
- recognition of multiple benefits of forests;
- implementation of institutionally sound, statistically robust, consistent and transparent national MRV systems.

These are important elements for enabling sustainable reduction of forestry related greenhouse gas emissions. Quick start and readiness actions will further enhance the understanding and strengthen country capacities to implement national REDD programmes.

3. Scope of MRV in the UN-REDD Programme

The UN-REDD Programme conceptualizes that REDD can only be realized when forest carbon stocks are considered along with related multiple benefits (co-benefits) from forests (products and services) e.g. biodiversity conservation, soil and water protection, wood and non-wood products. Furthermore, the REDD efforts need to be integrated with broader development goals, improved livelihoods, poverty reduction, food and energy security, land tenure, good governance, sustainable forest management, and adaptation to climate change.

Table 1 outlines examples of data and information items that may be required for REDD implementation. Note that the table is indicative and does not aim at predicting outcomes of REDD negotiations, nor specific information requirements at the national level. Current approaches should be flexible to cater for developing or varying needs.

Table 1. Indicative information requirements for REDD implementation, related to carbon, natural resources and their management and uses

	International (UNFCCC) reporting requirements	**Further National REDD implementation requirements, to be defined at country level**
Carbon	Stock and changes of carbon pools in the six land use categories	Localized carbon information is required on carbon in ecosystems, landscape, species, and tree components for each category of land use, and tailored to national REDD implementation.
Multiple Benefits (co-benefits)	(Co-benefits Incentive Systems)	Goods (Non-wood and wood products) Ecosystem and other services (biodiversity conservation, water conservation, soil conservation cultural and spiritual values, forest pasture) Uses and users of goods and services Socio-economic, livelihoods, food security and

		poverty indicators Land tenure

4. Proposed action, expected outcome and investment needs

The proposed actions of the Framework for Action draw from experiences and progress under the UN-REDD Programme Quick Start phase, during which MRV gaps and priorities have been identified. They also build on the evolving consensus in the UNFCCC process. Investment needs have been identified under three action components, anticipating 20 participating countries:

Table 2. Phases and outputs

1. Design phase 2009-2010	**2. National action 2010-2014**	**3. International action 2009-2014**
Expected outputs: - Multi-year plan of work - Methodological alignment with convention agreement - Advise / Guidance for meeting MRV requirements - Comprehensive progress report by COP-15	Expected outputs: - By end-2010 national MRV systems planned - Increased engagement of stakeholders - By end-2014 national MRV systems operational	Expected outputs: - International support components and advise for national MRV systems - Increased engagement of stakeholders - Increased institutional capacity to support national MRV systems

4.1 Design phase 2009-2010

The key output of the design phase will be a plan of work for implementation of the MRV Framework, based on experiences from UN-REDD Quick Start actions and other initiatives. The design phase will also evaluate methodological options and provide guidance to national implementation.

Table 3. Indicative activities of the design phase

Output	**Indicative activities**
D-1 By mid-2010 multi-year plan of work for MRV under the UN-REDD Programme	• Establish country participation, target 20 countries, and initiate country programmes development • In consultation with countries and donors identify synergies in funding and implementation opportunities • Establish partnerships and enhance international capacity to support national implementation

D-2 By end-2010 methodological alignment with convention agreements	• Evaluate methodological options and limitations for MRV implementation • In consultation with stakeholders establish advise and guidance for national MRV implementation
D-3 By Dec 2009 progress report to COP-15	• Provide comprehensive update of progress before the Copenhagen conference

4.2 National action 2010-2014

National action aims at full implementation of MRV systems in participating countries by 2014, through country-driven programmes.

Objective

To accelerate essential and sufficient improvements in M&A elements of MRV at national level by the end of 2010 to achieve full functional and sustainable national MRV systems by 2014 to ensure a fair, equitable and transparent information that significantly contributes to a sustainable and time bound reduction in forestry related greenhouse gas emissions. A new MRV system will be developed for countries that do not have any system to monitor forest carbon. Action will build on and draw from national REDD strategies and similar guidance.

Linking with Nationally Appropriate Mitigation Actions (NAMA)

Integration of REDD programme in NAMA and mainstreaming of NAMA with national planning seems essential in sustaining national REDD efforts including its MRV system. The Bali Action Plan envisages development of "Nationally Appropriate Mitigation Actions (NAMA)" by developing countries. The FOCUS document also indicates concurrence of developing countries on development of Nationally Appropriate Mitigation Actions (NAMA) on a voluntary basis. The NAMA may include actions under REDD; sustainable development policies and measures, nation- or sector-wide mitigation programmes activities and projects; low-carbon development plans and strategies; national sector-based mitigation actions and standards; technology deployment programmes; relevant standards, laws, regulations and targets at a national or sectoral level; and cap-and-trade schemes.

National MRV Programme

The programme will ensure that national MRV systems are transparently linked with national sustainable development planning and monitoring systems and fulfil other information needs like identification of drivers of deforestation and forest degradation, impact of different policy intervention on these drivers, development of effective forest policy and planning, food security, livelihood support, poverty alleviation, and progress towards MDG. The national programme will ensure its integration with respective "national appropriate mitigation action" plan (NAMA).

The proposed national MRV component is a six year (2009-2014) planned programme that will be implemented individually in participating countries in two distinct phases (a) National planning phase (2009-2010), up to about a year to tailor the national MRV (REDD) system that suits the unique national circumstances of each of the participating countries, and (b) Implementation phase (2010 – 2014), a three to five year programme of work.

Outputs and indicative activities

Table 4. Indicative activities at the national level

Output	Indicative activities
1. By end-2010 national MRV system development is planned in harmony with international requirements; and institutional strengthening and capacity building initiated.	• National expert reviews and consultation process • Establish coordination mechanism between relevant ministries and agencies. • Establish synergies of international Standards, Guidelines, Methods and Protocols with national ones • Design of national MRV system and associated institutional development • Development and implementation of national training program
2. By end-2010 increased engagement of stakeholders in national MRV systems is in place	• Engaging CSO/IP representative groups in development of MRV • Communicating MRV REDD system to stakeholders
3. By end-2014 MRV systems are operating in participating countries	• Implementation of national MRV system • Development of knowledge management and sharing, emphasizing uptake of information into policy processes

Investment needs

The amount of investment and time to establish full operational MRV will vary from country to country and must be determined through country-driven processes, which the UN-REDD Programme is well placed to facilitate. An average ball-park figure would be $10 million for each participating country over a fiver year period. Planned implementation of such comparable and compatible institutionalised MRV systems will need firm commitment from donors for consistent investment in the selected countries during implementation of this programme. The National Joint Programmes modality offers a proven option for implementation in countries, currently applied for the Quick Start under of the UN-REDD Programme. However, the national investment needs in this regard may be met by a single or multiple donors or pool of donors not limited to the UN-REDD Programme.

4.3 International action 2009-2014

International action aims at supporting the implementation of national MRV systems.

Objective

To accelerate international support to fully functional and sustainable national MRV systems by 2014, to enable fair, equitable, accessible and transparent information that significantly contributes to a sustainable and time bound reduction in forestry related greenhouse gas emissions.

Process

The programme attaches significant responsibility to international efforts by way of demanding technical support to countries in establishing their MRV system that provide transparent, comparable, compatible, robust, verifiable, and consistent information.

The programme plans to achieve this through training workshop, research and development, expert consultations, development of technical guidelines, standards, harmonization, and knowledge sharing.

The programme also provides detailed interaction and support to international agencies that seek forest related information like UNFCCC on issues like setting specifications and standards; and development of methods and tools for MRV.

For example, the programme plans to make remote sensing work for countries. FAO has already initiated action with GEO and CEOS to provide free, frequent, standardised and useful remote sensing data by coordinating with different space agency. It demands development of agreed standardisation of data, methods and tools. This component also looks forward to link data generating systems of remote sensing with that of national forest inventories/ assessment.

Outputs and Indicative activities

Table 5. Indicative activities at the international level (support functions)

Output	Indicative activities
1. By end-2010 international support components for national MRV systems are designed	• International and Regional expert reviews and consultations • Development of international Standards, Guidelines, Methods and Protocols on measurements and assessment • Develop partnership and program for free, frequent and useful remote sensing data supply to countries (activity already started)
2. Increased engagement of stakeholders	• Informing and engaging CSO/IP representative groups in development of MRV • Communicating MRV REDD system to stakeholders
3. Increased capacity of national and international institutions to support national MRV systems	• Enhanced and focused research across MRV subjects • International training programmes • specifically on C inventory reporting (already initiated) • Supporting implementation of MRV training program at national levels
4. By end-2014 MRV systems are operating in countries, assisted by international support components	• Remote sensing data supply (already started) • Establish regional coordination mechanisms among national forest inventory institutions • Development of knowledge reference for managing and sharing knowledge • Technical advise to national MRV systems • Enhance south-south and other means of international collaboration

Annex 1. International institutions in relation to MRV under REDD

UNFCCC

UNFCCC and its associated bodies and protocols demand information on terrestrial carbon emissions in the five pools (sixth pool- harvested wood products is optional) in each of the six (final) land use categories (forest, crop, grassland, wetland, settlement, and other land). They also demand details by part of land use category that has maintained its land use and the part that has transformed to this land use category from another category. The reporting is by final land use categories of any land. In doing so, the guidelines (IPCC) make two basic assumptions that (a) the flux of carbon is equivalent to changes in carbon stocks in carbon pools and (b) change in carbon stocks can be estimated from land use and management at various points in time, their impacts on carbon stocks and the biological response to them. These assumptions were necessary since direct measurement of flux of carbon is very difficult and costly. The IPCC Guidelines provide three methodological tiers varying in complexity to be chosen on the basis of national circumstances. The higher tier methods (2&3)are advised for "key source categories" i.e. source or sink categories that contribute substantially to the overall national inventory level, trend or uncertainty.

The above needs two set of data for each land use category (Activity) (a) area and area change data for a land use category called Activity Data, and (b) information on carbon stocks associated with each land use (activity) category (Emission factor per unit (area) of activity).
The development of the area related data set can be achieved by assessing the measurement data provided either by ground survey ore remote sensing survey or a combination of both. The assessment may use traditional cartographic tools or can use modern tools like GIS.

The importance of measurements and assessment has been recently recognised while the reporting and verification have been topic of continuous debate in UNFCCC and its associated bodies and protocols. The last COP (13) of UNFCCC at Bali has stressed importance of transparency, comparability, robustness and has indicated the

(i) estimations of reductions or increases of emissions should be **results based, demonstrable, transparent and verifiable, and estimated consistently over time**.
(ii) **estimation and monitoring** of reductions in emissions or increases resulting from the demonstration activity should be **based on historical emissions**, taking into account national circumstances.
(iii) **experiences** in implementing activities should be reported and made available via the **Web platform**.
(iv) independent expert **reviews** should be **encouraged**.

The COP 13 of UNFCCC have launched a comprehensive process under a subsidiary body (Ad Hoc Working Group on Long-term Cooperative Action under the Convention – "AWG-LCA") to describe areas of convergence in the ideas and proposals of countries, exploring options for dealing with areas of divergence, and identifying gaps that might need to be filled in order to reach an post Kyoto agreement including agreement on REDD for adoption for a decision at COP 15. The AWG has recently (March 2009) developed a document (FOCUS) that best describes (http://unfccc.int/resource/docs/2009/awglca5/eng/04p02.pdf) expectations and perceptions of the countries in this regard.

It mentions that there is a convergence among countries regarding the specification of the "long-term" global goal for emission reductions aiming to achieve the ultimate objective of the

Convention. The countries concur that 2050 is an appropriate time frame for a long-term goal. However they are deliberating on options to quantify long term goals in this time period that include; stabilization of GHG concentrations - 450 ppm carbon dioxide equivalent (CO2 eq) or 350 ppm CO2 eq; limiting increase in the global average temperature - around 1.5 to 2degrees above the pre-industrial level; GHG emission reductions - options include the following or other options; reduction of 50 per cent of 1990 levels, or without specifying the base year; reductions of between 75 and 85 per cent (including ranges within these figures) of 1990 levels; and other approaches like including reducing global average GHG emissions per capita to about 2 t CO2; and peaking of Global GHG emissions – options include by 2015, by 2020, within 10 to 20 years or in the next 10 to 15 years.

FOCUS clearly indicates convergence of countries to explore a range of actions, identify options and undertake efforts, including demonstration activities, to address the drivers of deforestation relevant to their national circumstances, with a view to reducing emissions from deforestation and forest degradation. Further that the co-benefits, broad participation and sustainable forest management (consistent with long-term sustainable land management) should be promoted, during implementation of the actions, and the issues of permanence and leakage should be adequately addressed. The countries have convergence in providing support to (a) readiness activities, including (capacity-building, institutional strengthening, technical assistance, improving governance and enforcement), (b) initiating national programmes, and (c) demonstration projects.

The countries concur specifically to support capacity-building, provide technical assistance, facilitate the transfer of technology to improve, inter alia, data collection, estimation of emissions from deforestation and forest degradation, monitoring and reporting, and address the institutional needs of developing countries to estimate and reduce emissions from deforestation and forest degradation.

The FOCUS document specifically spans MRV and indicates that it should be broader and based on the best available scientific information, in particular from the IPCC and be reviewed on a regular basis on the basis of evolving scientific evidence. It should be achievable and realistic, considering cost-effective emission scenarios, and not undermine global economic development. In addition, it should be comprehensive; covering all anthropogenic emissions and removals of greenhouse gases. Further that the MRV should include following purpose, basis, scope and core elements in its design and implementation.

Purpose

It should enable monitoring of progress in (a) achieving quantified emission limitation and reduction objectives and (b) fulfilling other mitigation commitments and actions, including those that are not directly measurable

Basis

It should be based on (a) National forest inventories, existing or to be developed and (b) unbiased, periodic reviews of modalities including review of data.

Scope

It should measure and report (a) Reduction in GHG emissions by an action (national and or , sectoral level); (b) Information on implementation of voluntary mitigation plans, programmes and actions (NAMA); (c) Incremental cost of the action, and support needed; and (d) Sustainable development benefits and co-benefits of the action.

Three Core Elements

The focus document indicates three core elements of MRV (a) robust national forest monitoring systems and ex-post verification systems; (b) reference emissions and reference levels; and (c) common methodology.

IPCC

The latest (2006) guidelines of IPCC for national inventory for LULUCF and address the five carbon pools. It does not cover optional carbon pool - Harvested Wood Products. These 2006 IPCC guidelines have integrated the agriculture and LUCF/LULUCF sectors into one sector "Agriculture Forestry and Land Use (AFOLU)" to remove inconsistencies and double counting. It provides guidelines to report carbon in five pools (above ground, belowground, deadwood, litter and soil) in each of the six landuse categories (forest, crops, grassland, wetlands, settlement and other lands). It provides a choice between two methods of assessing change in carbon ("stock change method or a gain and loss method) and an option to include or not to include sixth carbon pool (Harvested Wood Products -HWP).The guidelines are mandatory for the Annex I countries while Non-Annex I countries are encouraged to use them for reporting their GHG inventories to the UNFCCC.

UN-REDD Programme

The UN-REDD Programme, a collaboration between the UN agencies FAO, UNDP and UNEP, attaches significant importance to MRV and has already developed its concept and architecture of MRV (www.un-redd.net) (Policy Board UN-REDD, March 2008). UN-REDD MRV concepts and design match with UNFCCC and also meets expectations expressed in the FOCUS document. Although its primary focus is on the five pools of forest carbon but it is much broader and synergises with other information needs and systems relating to forests (environment, sustainable forest management, land use and livelihoods (i.e. including multiple benefits (like Goods and Services, their use, Ecosystem services, Biodiversity conservation, Water Conservation, Soil Conservation, Cultural and Spiritual Values) and drivers of deforestation/forest degradation as well as of other land use change).

FCPF -Forest Carbon Partnership Facility

Forest Carbon Partnership Facility (FCPF) within World Bank aims to assist developing countries in their efforts to reduce emissions from deforestation and land degradation (REDD). It has dual objectives of: (a) building capacity for REDD in developing countries (target about 20 countries, based on demand) and (b) testing a program of performance-based incentive payments in some pilot countries, on a relatively small scale, in order to set the stage for a much larger system of positive incentives and financing flows in the future. It aims to prepare countries to use Carbon Fund mechanisms.

FIP - Forest Investment Program

The Forest Investment Program (FIP) also within World Bank is a part of the Strategic Climate Fund (SCF) to support developing countries' REDD-efforts, provide up-front bridge financing for readiness reforms and investments identified through national REDD readiness strategy building efforts, while taking into account opportunities to help them adapt to the impacts of climate change on forests and to contribute to multiple benefits such as biodiversity conservation and rural livelihoods

enhancements. The FIP will finance efforts to address the underlying causes of deforestation and forest degradation and to overcome barriers that have hindered past efforts to do so.

Finding synergies between initiatives

Following requests from countries and stakeholders, the above three initiatives are making efforts to deliver complementary and synergetic services to developing countries. Figure 1 illustrates how the UN-REDD Programme, FCPF and FIP may relate to each other, and with other initiatives and development objectives.

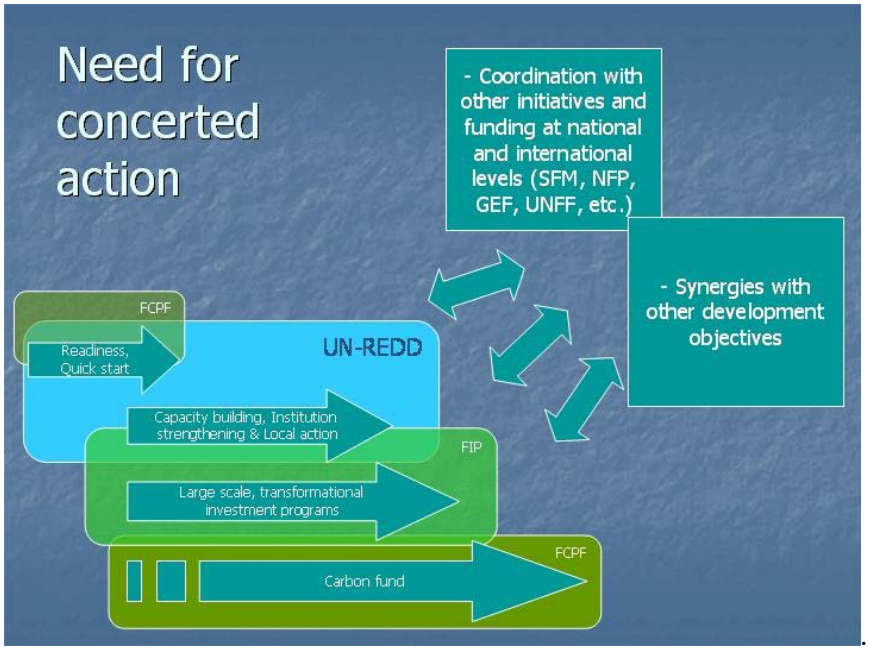

Figure 1. Relationship between UN-REDD Programme and World Bank programmes on REDD. Process over time indicates a preliminary Readiness phase, followed by institution strengthening, capacity building and investments, to eventually facilitate Carbon funds.

Annex 2. Data situation

Lack of compatibility, comparability, consistency and transparency in methods, designs and tools both at international and national levels to generate information leads to significantly different and some times very wide estimates of carbon stocks and therefore of emissions. For example, space agencies often have separate specifications for data generation.

Variation in sources, methods and protocols provides non-comparable and varying estimates. Figure 2 presents such a set of varying estimates for countries with major changes in their carbon stocks.

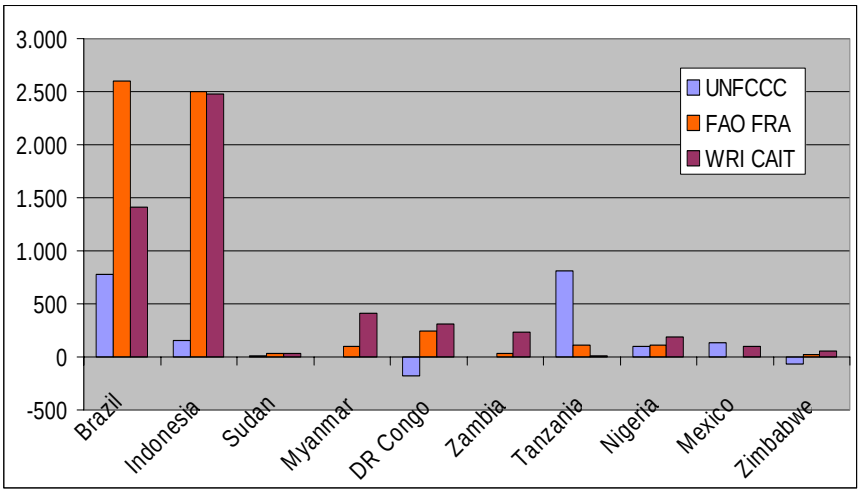

Figure 2. Variation in forest Carbon in 10 countries with changes in carbon stocks.

There is large variation among countries in terms of sources of data for measurement and assessment their forest resources and carbon (Figure 3). This illustrates the variation in capacity of national institutions for measuring and assessing forest resources between countries. Currently, few countries appear to have sufficient institutions and capacity to provide required information.

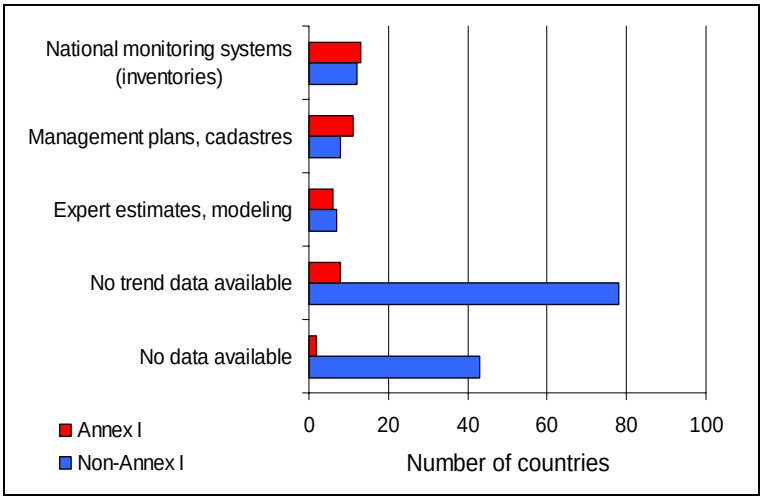

Figure 3. Sources of data for forest carbon in countries (FRA 2005)