

## **Measuring sustainable forest management:**

*A report on on-going and emerging global initiatives to develop results frameworks and performance indicators for sustainable development, agriculture and natural resources management*

Prepared by Kimberly Ross,  
*Monitoring and Evaluation Consultant*

for the Forest Economics, Policy and Products (FOE) Division of  
the Food and Agriculture Organization of the United Nations (FAO)

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## Acronyms and Abbreviations

ABD	Agricultural Biodiversity
ACTO	Amazon Cooperation Treaty Organization
AfC	Agenda for Change
AIS	Alien Invasive Species
ARD	Agriculture and Rural Development
AU	African Union
CBD	Convention on Biological Diversity
CCA	Climate Change Adaptation
COP	Conference of the Parties
C&I	Criteria and Indicators (FAO-led project)
CIFOR	Center for International Forestry Research
CIGI	Center for International Governance Innovation
COMIFAC	Central African Forest Commission
DEVCO	Development and Cooperation (EuropeAid)
DME	Design, Monitoring and Evaluation
EC	European Commission
ECOWAS	Economic Community of West African States
EFI	European Forest Institute
EGSS	Environmental Goods and Services
ESR	Ecosystem Service and Resilience
EU	European Union
EUTR	EU Timber Regulation
FA	Focus Areas
FAO	Food and Agriculture Organization of the United Nations
EU-FLEGT	European Union Forest Law Enforcement, Governance and Trade Facility
EUTR	EU Timber Regulation
FOE	Forest Economics, Policy and Products (a Division of FAO)
FRA	Forest Resources Assessment (FAO)
FSNSA	Food Security, Nutrition and Sustainable Agriculture
GBI	GEF Biodiversity Index
GDP	Gross Domestic Product
GDRPD	Global Donor Platform for Rural Development
GEF	Global Environment Facility
GGGI	Global Green Growth Institute
GGKP	Green Growth Knowledge Platform
GINI	(coefficient)
GSP	Global Soil Partnership
ICF	UK International Climate Fund
IEEAF	Integrated environmental and economic accounts for forests (EU system)
IFAD	International Fund for Agricultural Development
IIED	International Institute for Environment and Development
IISD	International Institute for Sustainable Development
INRM	Integrated Natural Resource Management
KDI	Korea Development Institute
KPI	Key Performance Indicators
LF	Logical Framework (LogFrame)
LM	Logical Model (results framework)
LULUCF	Land Use, Land Use Change, and Forestry <sup>1</sup>
MA	Millennium Ecosystems Assessment

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<sup>1</sup>See UNFCCC definition here: <http://unfccc.int/methods/lulucf/items/3060.php>

MCPFE	Ministerial Conference on the Protection of Forests in Europe
MDGs	Millennium Development Goals
MDGIs	Millennium Development Goal Indicators
M&E	Monitoring and Evaluation
M&MRV	Monitoring and Measurement, Reporting and Verification
MOV	Means of Verification
MRV	Measurement, Reporting and Verification (for REDD Safeguards Information Systems)
NEPAD	The New Partnership for Africa's Development
NRM	Natural Resources Management
OECD	Organization for Economic Cooperation and Development
OWG	The UN Open Working Group (on SDGs)
PFM	Public Finance Management
PMF	Performance Measurement Framework
RE	Renewable Energy
REDD/REDD+	UN Reducing Emissions from Deforestation and Forest Degradation programme
SADC	Southern African Development Community
SCP	Sustainable Consumption and Production
SDG	Sustainable Development Goal
SDI	Sustainable Development Indicator
SDGIs	Sustainable Development Goal Indicators
SEEA	System of Environmental-Economic Accounting (UN system)
SEPL	Socio-Ecological Production Landscape
SEPLS	Resilience in Socio-ecological Production Landscapes and Seascapes
SFA	Sustainable Food and Agriculture
SFM	Sustainable Forest Management
SIS	Safeguards Information Systems (for REDD)
SLM	Sustainable Land Management
SMART	Specific, Measureable, Achievable, Relevant, Time-bound (criteria for strong indicators)
SO2	Strategic Objective 2 (from FAO's Corporate Monitoring Framework)
SoEF	State of Europe's Forests
TEREA	Terre Environnement Aménagement
TOC	Theory of Change
TPA	The Partnering Alliance
UN	United Nations
UN-IAS	United Nations University Institute of Advanced Studies
UNCCD	United Nations Convention to Combat Desertification
UNEP	United Nations Environmental Programme
UNFCC	United Nations Forum on Climate Change
UNFF	United Nations Forum on Forests
VPA	Voluntary Partnership Agreements (FLEGT)
WFP	World Food Programme
WLE	Water, Land and Ecosystems (a CGIAR research programme)

## Executive Summary

### A. Background

This report was commissioned by Forest Economics, Policy and Products (FOE) Division of the Food and Agriculture Organization of the United Nations (FAO), as part of an FAO-led 2-year project on *“Strengthening criteria and indicators (C&I) for sustainable forest management (SFM) and their use in forestry policy and practice.”*<sup>2</sup> It is also linked to FAO’s broader work on a common vision and approach on Sustainable Food and Agriculture (SFA), covering all agricultural sub-sectors (e.g., crops, livestock, fisheries, aquaculture, and forestry). One of the emerging issues in this regard is that Forestry Sector-specific issues are best tackled as part of broader sustainable development frameworks covering natural resources management as a whole – given that many sustainability issues in the Forestry Sector are driven by non-forestry factors (e.g., agriculture and food security, climate change, energy). Many organizations are actively tackling the challenge of defining “sustainable development” in these sectors and trying to develop or improve performance indicators for knowing whether or not such efforts are successful. There is not yet a broadly agreed approach to measuring sustainability in agriculture and natural resources sectors – yet there are numerous on-going initiatives in that sense.

### B. Purpose

Therefore, an independent Monitoring and Evaluation (M&E) consultant was contracted by FAO between November 2014 and January 2015 to:

1. Conduct a desk review of on-going or emerging initiatives<sup>3</sup> to measure sustainability in agriculture and natural resources sectors in an integrated way, including identification of the most relevant indicators or categories of measurement for forestry as one specific agricultural sector.
2. Provide observations and options/recommendations for engaging in a process of developing a coherent set of indicators of sustainability in agriculture and natural resources sectors, both in the context of international Forest C&I experts as well as in the context of FAO’s involvement in SFA and the Sustainable Development Goals (SDG) of the post-2015 agenda.

Note that this desk review was only concerned with broad sustainable development, agriculture, and natural resources management (NRM) results frameworks and related indicators. It excluded Forest sector-specific initiatives, under the understanding that the C&I Project is tackling those separately.

### C. Types of Initiatives Inventoried

Thousands of initiatives to develop indicators of sustainability have been documented worldwide to define criteria, to elaborate guidance and tools, and/or to formulate indicator sets pertaining to sustainable development. The intensity of such work has increased since the introduction of the MDGs and, even more recently with the preparation of the SDGs for the post-2015 agenda. Therefore, only a selection of those initiatives was examined, in an attempt to keep this exercise manageable and meaningful. This review aimed to concentrate on the most relevant ones to SFM, particularly in the context of SFA and the SDGs. It disregarded any initiatives that are extremely outdated,<sup>4</sup> project-based,

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<sup>2</sup> 2014-15, in partnership with the UN Forum on Forests (UNFF), International Tropical Timber Organization (ITTO), Montreal Process, Amazon Cooperation Treaty Organization (ACTO), Commission des Forêts d’Afrique Centrale (COMIFAC), and FOREST EUROPE.

<sup>3</sup> Such “initiatives” include the development of results frameworks and performance indicators at global or regional levels as well as the creation of assessment and measurement tools for application at country level.

<sup>4</sup> The publication or completion date was not the only criteria for determining whether to consider an initiative “outdated”. In many cases, an indicator framework that was developed 5 to 10 years ago remains highly relevant today because changes at impact and outcome levels can take decades to manifest. Furthermore, indicators are not intended to undergo revision on a regular basis – rather, it is recommended that a core set of indicators be retained and examined over extended periods (decades!), to enable analysis of trends. Therefore, the recommendation is not to exclusively consider “new” initiatives and disregard long-standing ones – rather efforts should concentrate on identifying well-formulated indicators that address the types of results that stakeholders are currently interested in.

purely academic or theoretical. The inventory is also limited to high-level global initiatives, rather than encompassing a vast number of results frameworks tailored to the diverse contexts (and languages) of specific regions or countries. Finally, it should be noted that this task did not involve assessing the quality of the indicators found – it was limited to inventorying and reviewing initiatives of relevance.

The initiatives that were retained, inventoried and analysed in this report are summarized as follows:

- 1. Indicator sets that already exist or are under currently development (i.e. partially completed).** Sources included: *the Millennium Development Goal Indicators (MDGIs); the United Nations Indicators of Sustainable Development; the World Bank's Little Green Data Book; Sector Indicator Guidance of the European Commission Development Cooperation (EC-DEVCO); the OECD (Organization for Economic Cooperation and Development) Green Growth Indicators; a Scoping Paper by the Green Growth Knowledge Platform on the Green Growth Indicators; A Sourcebook of Indicators for M&E in Agriculture and Rural Development by FAO, the World Bank, and partners; United Nations University Institute of Advanced Studies (UNU-IAS) and Bioversity International's Indicators of Resilience in Socio-Ecological Production Landscapes; the Aichi Biodiversity Targets and Indicators of the Convention on Biodiversity (CBD); the Global Environmental Facility (GEF) Focal Area results frameworks; UK International Climate Fund (ICF) Performance Indicators; the priority result areas and tentative results framework; the Global Climate Fund (GCF); and more.*
- 2. Existing results frameworks and other resources providing ideas on 'Categories of Measurement.'** There are various guidance documents, policy briefs and technical papers that do not contain actual indicators, yet that provide helpful information on possible categories of measurement (i.e. thematic areas, sectors/subsectors, and related goals [or desired impact] and objectives [desired outcome]). Some examples are: *an FAO/PROFAM framework and guidance for monitoring and assessing Forest Governance; ISEAL Alliance's paper on Governmental Use of Voluntary Standards as an Innovation in Sustainability Governance; the Guide to Statistics in the European Commission's Development Cooperation; the United Nations Environmental Programme (UNEP) Working Paper on Using Indicators for Green Economy Policymaking; CGIAR's Ecosystem Services and Resilience Framework; the Millennium Ecosystems Assessment;*
- 3. On-going or emerging processes for development of results frameworks and/or performance indicators.** By far, the most predominant work currently underway in this area pertains to the SDGs. Numerous organizations have produced discussion papers on targets and indicators to be considered for the SDGs, and some are engaged in multi-stakeholder processes to jointly propose recommendations on the formulation of SDGs and their indicators. These involve: *the International Institute for Environment and Development (IIED); International Institute for Sustainable Development (IISD); United Nations Environmental Programme (UNEP); Center for International Governance Innovation (CIGI); Korea Development Institute (KDI), among others.* This Desk Review also revealed a few non-SDG-related indicatives – that are either under way or planned – for the development of new indicators or the revision of existing results frameworks on sustainable development, agriculture, natural resources management and/or environment. These include: *an update to the EC-DEVCO Results Framework; the development of an indicator on sustainable land management (of which SFM is a subset) by FAO; an external evaluation of the EU-FLEGT Action Plan; and on-going discussions and consultations on Monitoring and Measurement, Validation and Reporting (M&MVR) on Safeguard Information Systems (SIS) for REDD+; etc.*
- 4. Other relevant resources.** Several other documents of interest were discovered and have been included in the Annexes as references for further consultation, if helpful. These include, for instance, guidance and toolkits on indicator formulation and use of statistics as well as explanations of key concepts and terminology on topics discussed in this report.

## D. Key Findings and Analysis

Firstly, the available indicator sets were examined to determine whether or not Forest-specific indicators were included within a larger set of indicators covering a range of sectors or sub-sectors. Secondly, any indicators that were not specific to the Forest sector were inventoried and analysed for relevance to results in Forestry. This led to the categorization of the indicators into 3 general types:

- i. Indicators specific to Forests, where forests are explicitly and exclusively mentioned;
- ii. Indicators encompassing the entire Agricultural sector, of which Forestry is a sub-sector; and
- iii. Indicators pertaining to other related sectors of thematic areas, which are directly or indirectly affect Forest results.

### *i. Forest-specific indicators*

The most common Forest-specific indicator included in these results frameworks and indicator sets pertains to **forest cover**, or related results such as **deforestation rate**. This not surprising given that it responds directly to MGD Goal 7. Another very common indicator pertains to **protected areas**.

Many of these initiatives also examined indicators related to the **area of forest under management or designated for specific uses**. A few organizations consider SFM to be a component of Sustainable Land Management (SLM) and therefore this indicator is subsumed as a subset of SLM indicator, in some cases. Yet it is important to highlight that there does not appear to be a commonly agreed definition of SFM in this context. Without a standardized way of defining and collecting data on SFM, it seems that this indicator remains a challenge to operationalize.

One observes increasingly more reference to forest-related indicators within results frameworks and initiatives on **Climate Change mitigation and adaptation** – especially those related to the United Nations REDD/REDD+ Programme. **Energy sector** initiatives also indirectly refer to forests (in promoting fuel-efficient, renewal energy and improved innovations for cooking that reduce the use of household firewood) – yet few explicitly name forests or the forest sector within their results frameworks and indicators.

In addition, the initiatives focusing on **illegal logging** and the European Union Forest Law Enforcement, Governance and Trade Facility (FLEGT) used: (1) **forest governance indicators**; (2) **trade data**; and (3) **business statistics pertaining to forest products**. It is worth noting that these examined initiatives lacked actual performance indicators for assessing the results of illegal logging responses and FLEGT in particular. General goals, objectives and categories of measurement could be compiled, yet there seems to be a gap in terms of standardized indicator sets.

Finally, other forest-specific indicators identified in these broad, sustainable development and agriculture/NRM-focused initiatives pertained to **forest policy frameworks** and **public financial management (PFM)** vis-à-vis the forest sector.

### *ii. Agriculture sector-wide indicators*

The Agriculture sector-wide initiatives (of which Forests are a subset) contained an extensive list of indicators for each of the various sub-sectors (crops, livestock, fisheries, aquaculture and forests). Most refer to productivity, yet it is well-recognized that agricultural production is one of the most significant threats to forest conservation and SFM. Increasingly, recent and emerging indicator development efforts are attempting to shift toward including **agri-environmental indicators**, involving **agrobiodiversity measurement**, and monitoring more **integrated NRM (INRM)** as opposed to sector-specific monitoring and evaluation (M&E). These include indicators on the following:

- **Land Tenure** – applicable to forest tenure
- **Land Use (LU)** status and changes – which includes Ecosystems Services and INRM/SLM/SFM
- **Land Cover (LC)** status and conversion rates – including forests, woody areas and agroforestry ecosystems (tree plantations, fruit tree orchards, etc.)
- **Biodiversity and Conservation of fragile or high-value Ecosystems** – including of plant genetic resources and forest wildlife species

As the international development community prepares for the Post-2015 agenda, it is clear that many stakeholders recognize that sustainable development will require more linkages and synergies between sectors as well as more integrated design, implementation, and M&E even within each sector. There are many proponents of a “Landscape Approach” and an “Ecosystems Approach” based on Ecosystem Service and Resilience (ESR) concepts. The above ‘categories of measurement’ seem to present the most promising entry points for forest-related results. While a standard set of globally-agreed indicators is not yet defined, there is a noticeable push toward Land Cover, Land Use Changes, and Forest (LCLUCF) data for the M&E of such results.

### *iii. Indicators of other related sectors*

The largest number of indicators reviewed fall into this third category: those that pertain to other related sectors of thematic areas, in that they directly or indirectly affect Forest results. The relationship to Forests may not always be obvious, yet generally speaking many of these indicators refer to underlying factors or root causes of forest-related results. When considering the inclusion of any of these indicators within results frameworks for Forestry programmes/project, it will therefore be important to keep in mind that many sustainability issues in the Forestry Sector are driven by non-forestry factors (e.g., agriculture and food security, climate change, energy). The additional types of indicators inventoried are too exhaustive to list here, but broadly they fall into these categories: **Socio-economic status; Environment** (Climate Change Adaptation [CCA]: Disaster Risk Reduction [DRR], Disaster Risk Management [DRM] and resilience to natural disasters; Carbon and Energy Productivity: CO<sub>2</sub> and Greenhouse Gas Emissions [GHG], Carbon footprint, Use of renewable energy and fossil fuels); **Policy and Governance**; and **Private Sector** and **public-private partnerships**.

*Please refer to **Annex A** for more detail. It contains a table summarizing the forestry-related indicators that are included in the results frameworks and indicator sets inventoried as part of this Desk Review.*

## **2. On-going or emerging processes**

A range of global initiatives involving multiple stakeholders have taken place recently or are under way to formulate sets of indicators and measurement systems to assess sustainability both for sustainable development in general and for specific sectors, sub-sectors or programmes. The kinds of processes discovered in this review ranged from global conferences and working group meetings, to research studies and literature reviews, to revision of existing indicator sets and establishment of systems for data collection and reporting.

### *i. SDG-focused*

It is no surprise that the majority of such processes pertain to the SDGs and involve various organizations – some unilaterally, others collaboratively – circulating positioning papers and technical briefs that advocate for certain types of indicators and/or approaches for indicator development. Each of the SDG initiatives have resulted in products (papers, recommendations, briefs) that can inform the development of new or revision of existing results frameworks on SFM and broader areas – especially in terms of helping Forest experts ensure that indicators of SFM address broader and/or cross-sectoral issues of relevance. Some of these processes could also present opportunities for collaboration with or inputs by FAO and the Forest C&I Experts.

## *ii. Non SDG-focused*

In terms of the recent or emerging non SDG-focused processes, the following were mainly included here as references when developing SFM-related indicators that take into account broader sustainability, agriculture and NRM issues:

- ***The Revision of the European Union (EU) DEVCO Results Framework***, during which EU-DEVCO has been approaching various agencies about alignment of their results frameworks and indicator sets. Given the anticipated release date of the revised version, there is probably no longer an opportunity to contribute any more feedback. However, once the revised version is circulated it might provide additional ideas on indicators to consider.
- ***CIFOR's Research on Landscape Mapping***, for which the results (once available) could potentially inform the design of evidence-based landscape and INRM indicators, including forests.
- ***The External Evaluation of Implementation of the Action Plan on EU Forest Law Enforcement, Governance and Trade (FLEGT)***, for which the results (when available) could provide helpful information to fill currently existing gaps in the evidence base and indicators for assessing forest law enforcement, governance and trade at country, regional and global levels. At a minimum, this review reveals that there is a lack of standardized indicators in this component of Forest work.
- ***The Meta-Evaluation Natural Resource Management Interventions linked to Climate Change, by the Climate-Eval Community of Practice***, for which the eventual results could provide interesting ideas on linking Forests (as an aspect of NRM) and Climate Change.
- ***The Study of Good Practices on Climate Change Adaptation (CCA) Indicators, by the Climate-Eval Community of Practice***, which (once completed) should provide extensive resources for consultation in developing SFM indicators – both from the pragmatic perspective of indicator formulation and prioritization as well as from the technical perspective of the CCA sector.

On the other hand, the following processes could provide opportunities for engagement by FAO and the Forest C&I expert group, to potentially influence the final product(s), in an attempt to ensure that SFM is sufficiently included and adequately addressed within the final product.

- ***The 2014 Climate Change Conference and the 2014 Sustainability Science Congress***: As with all other global conferences involving key stakeholders from diverse backgrounds, these fora set the stage for follow-up actions and create momentum for new or strengthened partnerships around common areas of interest and priorities agreed during the conference discussions.
- ***Bioversity International's efforts to measure and monitor Agro-biodiversity***: This work could potentially be leveraged to expand the work into tree genetics or related areas.
- ***The Climate-Eval Community of Practice***: Both aforementioned initiatives of Climate-Eval are being undertaken through a very open and participatory approach, whereby feedback is proactively being solicited from the development community in general.

## **E. Next Steps and Conclusions**

This Desk Review revealed that many of the older indicator sets tend to feature rather segregated lists of performance indicators by sector/subsector, with limited linkages across sectors and few integrated indicators.

There is a noticeable shift, however, in on-going and recent indicator development initiatives. These suggest a greater interest in holistic indicator sets and more integrated indicators. While it remains extremely challenging to capture trade-offs and balances between sectors (i.e. crops-forests, production-conservation, energy/pollution-economic development) as well as to measure the complex causal relationships between results, the international development community seems committed to making advances in this area – especially through the SDGs and emerging SDGI efforts.

It should be emphasized that many of the sector-specific indicators are still valid and should not necessarily be completely eliminated – since there will continue to be a need to track long-term trends that are specific to each sector. Yet it has become evident to many stakeholders that results frameworks are not effective if they simply consist of a long inventory of sector-specific indicators. There is increasing recognition among Forest sector stakeholders, in particular, that focusing on the traditional Forest -sector indicators alone will not enable monitoring of the underlying root causes and indirect/direct influences on forests that are caused by other sectors.

On the basis of the indicator sets, results frameworks and indicator development processes examined in this Desk Review, the findings suggest that even within the Forest sector itself, there is significant room for improvement regarding synergies and a comprehensive monitoring of all components of Forestry work (e.g., the full range including forest governance, forest tenure, rights and livelihoods of forest communities, ecosystem services and forest products, the timber trade to legality assurance vis-à-vis illegal logging, protected forests and mangroves, biodiversity and tree genetics, and even the role forests play in CCA and controlling GHG/Carbon footprint). Noticeable gaps in indicators were observed, whereby some of these areas seem to lack standardization and/or operationalized data collection and reporting systems. So in addition to considering cross-cutting and multi-sectoral indicators, it is recommended that “pure” Forest sector indicators also be examined for possible improvements.

The C&I Project and its steering committee of Forest experts provide an optimal starting point and solid foundation for taking action to strengthen criteria and indicators for sustainable forest management. The on-going and emerging SDG work provides another good opportunity to get involved, especially with regards to the third scenario above (but also the second to a lesser – yet still significant – extent).

This review revealed that the majority of current sustainable development, sector-wide agriculture, and NRM frameworks and indicators sets feature only a couple Forest-specific indicators – and those are derived from the MDGs. This suggests that whatever indicators are retained for the SDGs will significantly determine the kinds of results that most stakeholders monitor and evaluate worldwide over the next couple of decades. Therefore, this is a critical moment for results-based management (RBM) of sustainable development.

The work of FAO and the C&I Project is, thus, a very timely. Equipped with the extensive information available in this and other reference documents – and of course with the skills, knowledge and experiences of the staff and consultants – FAO and the C&I Project members are well positioned to play an important role.