November 2017

منظمة الأغذية والزراعة للأمم المتحدة | 联合国粮食及农业组织 | Food and Agriculture Organization of the United Nations | Organisation des Nations Unies pour l'alimentation et l'agriculture | Продовольственная и сельскохозяйственная организация Объединенных Наций | Organización de las Naciones Unidas para la Agricultura y la Alimentación

E

AFRICAN COMMISSION ON AGRICULTURAL STATISTICS

Twenty-Fifth Session

Entebbe, Uganda, 13 – 17 November 2017

SDG INDICATOR 15.2.1 PROGRESS TOWARDS SUSTAINABLE FOREST MANAGEMENT (Tier 2)

I. Introduction

The SDG indicator 15.2.1, Progress towards sustainable forest management, contributes to the monitoring of the Sustain Development Goal number 15, which is to "Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss". It specifically aims at monitoring Target 15.2 which is to "promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally".

The concept of Sustainable forest management (SFM) is central for target 15.2 and indicator 15.2.1. It has formally been defined by the UN General Assembly as follows:

> *[a] dynamic and evolving concept [that] aims to maintain and enhance the economic, social and environmental values of all types of forests, for the benefit of present and future generations" (Resolution A/RES/62/98).*

The indicator is composed of five sub-indicators that measure progress towards all dimensions of sustainable forest management. The environmental values of forests are covered by three sub-indicators focused on the extension of forest area, biomass within the forest area and protection and maintenance of biological diversity, and of natural and associated cultural resources. Social and economic values of forests are reconciled with environmental values through sustainable management plans. The sub-indicator provides further qualification to management of forest areas, by assessing areas which are independently verified for compliance with a set of national or international standards.

The sub-indicators are:

- Forest area net change rate
- Above-ground biomass stock in forest
- Proportion of forest area located within legally established protect areas
- Proportion of forest area under a long term forest management plan
- Forest area under an independently verified forest management certification scheme

A dashboard of traffic lights is used to assess progress related to the five sub-indicators. The adoption of the dashboard approach provides for clear view of areas where progress towards sustainable development goals has been achieved.

II. Methodology

a. Rationale for the SDG Indicator 2.a.1

The definition of SFM by the UN General Assembly contains several key aspects, notably that sustainable forest management is a concept which varies over time and between countries, whose circumstances – ecological, social and economic – vary widely, but that it should always address a wide range of forest values, including economic, social and environmental values, and take intergenerational equity into account.

Clearly a simple measure of forest area, while essential, and used for target 15.1, is insufficient to monitor sustainable forest management as a whole. The significance of the five sub-indicators can be briefly explained as follows:

1. Trends in forest area are crucial for monitoring SFM. The first sub-indicator focus on both the direction of change (whether there is a loss or gain in forest area) and how the change rate is changing over time; the latter is important in order to capture progress among countries that are losing forest area, but have managed to reduce the rate of annual forest area loss.
2. Changes in the above-ground biomass stock in forest indicate the balance between gains in biomass stock due to forest growth and losses due to wood removals, natural losses, fire, wind, pests and diseases. At country level and over a longer period, sustainable forest management would imply a stable or increasing biomass stock per hectare, while a long-term reduction of biomass stock per hectare would imply either unsustainable management of the forests and degradation or unexpected major losses due to fire, wind, pests or diseases.
3. The change in forest area within legally protected areas is a proxy for trends in forest biodiversity conservation and a clear indication of the political will to protect and conserve forest biodiversity. This indicator is related to the CBD Aichi Target 11 which calls for each country to conserve at least 17 per cent of terrestrial and inland water areas.
4. The fourth sub-indicator looks at the forest area that is under a long term forest management plan. The existence of a documented forest management plan is the basis for long term and sustainable management of the forest resources for a variety of management objectives such as for wood and non-wood forest products, protection of soil and water, biodiversity conservation, social and cultural use, and a combination of two or several of these. An increasing area under forest management plan is therefore an indicator of progress towards sustainable forest management.
5. The fifth sub-indicator is the forest area that is certified by an independently verified forest management certification scheme. Such certification schemes apply standards that generally are higher than those established by the countries' own normative frameworks, and compliance is verified by an independent and accredited certifier. An increase in certified forest area therefore

provides an additional indication of progress towards sustainable forest management. It should however be noted that there are significant areas of sustainably managed forest which are not certified, either because their owners have chosen not to seek certification (which is voluntary and market-based) or because no credible or affordable certification scheme is in place for that area.

b. Classification systems and definitions

Globally agreed terms and definitions used by FAO's Global Forest Resources Assessment are found in Annex 1 to this document.

c. Computation methods

National data on forest area, biomass stock, forest area within protected areas, and forest area under management plan are reported directly to FAO for pre-established reference years. Data on forest area under an independently verified forest management certification scheme are collected by FAO from the accredited forest certification bodies. Based on the country reported data, FAO makes country-level estimates of the forest area net change rate using the formula for compound annual growth rate, as well as the proportion of forest area within protected area and under management plan.

At aggregated regional and global level, a dashboard with traffic lights is used to indicate progress in each of five sub-indicators. Annex 2 shows in detail how the traffic light color is assigned for each of the sub-indicators. No dashboard traffic lights are made at country level.

d. Interpretation

The traffic light of each sub-indicator indicates whether there is progress, insignificant change or if the situation is deteriorating for the particular aspect of SFM to which the sub-indicator relates. The combination of traffic lights gives an overview of the progress towards SFM.

e. Treatment of missing values

For countries and territories where no information was provided to FAO for FRA 2015 (79 countries and territories representing 1.2 percent of the global forest area), a report was prepared by FAO using existing information from previous assessments and literature search.

Each sub-indicator is treated individually, and missing values are not included in the aggregated values used for assigning traffic-light color.

f. Regional aggregates

See Annex 2 – Methodology, which also shows how the dashboard traffic lights are applied at global and regional level.

g. Sources of discrepancies

The national figures in the database are reported by the countries themselves following standardized format, definitions and reporting years, thus eliminating any discrepancies between global and national figures. The reporting format ensures that countries provide the full reference for original data sources as well as national definitions and terminology. Separate sections in the reporting format (country reports) deal with the analysis of data including any specific assumptions made, methods used for estimates and projections to the common reporting years, and reclassification of national data to correspond to the global definitions and classes used in FAO's Global Forest Resources Assessment.

h. Quality assurance

Once received, the country reports undergo a rigorous review process to ensure correct use of definitions and methodology as well as internal consistency. A comparison is made with past assessments and other existing data sources. Regular contacts between national correspondents and FAO staff by e-mail and regional/sub-regional review workshops form part of this review process.

All country reports (including those prepared by FAO) are sent to the respective Head of Forestry for validation before finalization and publishing of data.

III. Data sources

a. Description

National data on the sub-indicators are reported periodically (until now every 5 years) by the countries to FAO's Global Forest Resources Assessment (FRA). Up to 2015, all data were provided to FAO by countries in the form of a country report following a standard format, which includes the original data and reference sources and descriptions of how these have been used to estimate the forest area for different points in time. For the next assessment (FRA 2020) data will be reported directly to an on-line reporting platform. The data collection process for FRA 2020 will be launched in early 2018 and data collection will take place in the period 2018-2019.

b. Time series

For FRA 2015, data were collected for 1990, 2000, 2005, 2010 and 2015. For FRA 2020, data will be collected for 1990, 2000, 2010, 2015, 2016, 2017, 2018, 2019 and 2020.

c. Collection process

Officially nominated national correspondents and their teams prepare and submit national data for the assessment. Some also report on dependent territories. For the remaining countries and territories where no information is provided, a report is prepared by FAO using existing information, remote sensing and literature search.

Once received, the submitted data undergo a rigorous review process to ensure correct use of definitions and methodology as well as internal consistency. A comparison is made with past assessments and other

existing data sources. Regular contacts between national correspondents and FAO staff by e-mail and regional/sub-regional review workshops form part of this review process.

Before publishing, all national data (including those prepared by FAO) are sent to the respective Head of Forestry for validation before finalization. Data are then aggregated at sub-regional, regional and global levels by the FRA team at FAO.

In order to obtain internationally comparable data, countries are requested to provide and document national categories and definitions, and in case these are different than the FAO categories and definitions, countries are requested to perform a reclassification of national data to correspond to the FAO categories and definitions and to document this step in the country report. Countries are also requested to use interpolation or extrapolation of national data in order to provide estimates for the specific reporting years.

IV. Conclusion

The methodology for the current 15.2.1 indicator is the result of a long collaborative process between FAO, countries and other international organizations. The indicator was elevated from Tier 3 to Tier 2 in 2016, and reported for the first time to the SDG 2017 report. The reporting has proven that it is possible to report on this indicator and that data are generally available from a majority of countries.

However, there is a general consensus that the indicator still need further revision, which will take place during the general revision of Goal 15, its targets and indicators to be initiated in 2018. In particular, some aspects on SFM are not well covered by current sub-indicators, such as the socio-economic aspects. There are also aspects explicitly mentioned in Target 15.2, such as forest degradation, restoration and reforestation that currently are not covered by any of the indicators.

ANNEX 1 – TERMS AND DEFINITIONS[1]

FOREST

Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds *in situ*. It does not include land that is predominantly under agricultural or urban land use.

Explanatory notes

1. Forest is determined both by the presence of trees and the absence of other predominant land uses. The trees should be able to reach a minimum height of 5 meters.
2. Includes areas with young trees that have not yet reached but which are expected to reach a canopy cover of at least 10 percent and tree height of 5 meters or more. It also includes areas that are temporarily unstocked due to clear-cutting as part of a forest management practice or natural disasters, and which are expected to be regenerated within 5 years. Local conditions may, in exceptional cases, justify that a longer time frame is used.
3. Includes forest roads, firebreaks and other small open areas; forest in national parks, nature reserves and other protected areas such as those of specific environmental, scientific, historical, cultural or spiritual interest.
4. Includes windbreaks, shelterbelts and corridors of trees with an area of more than 0.5 hectares and width of more than 20 meters.
5. Includes abandoned shifting cultivation land with a regeneration of trees that have, or are expected to reach, a canopy cover of at least 10 percent and tree height of at least 5 meters.
6. Includes areas with mangroves in tidal zones, regardless whether this area is classified as land area or not.
7. Includes rubberwood, cork oak and Christmas tree plantations.
8. Includes areas with bamboo and palms provided that land use, height and canopy cover criteria are met.
9. Excludes tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations, olive orchards and agroforestry systems when crops are grown under tree cover. Note: Some agroforestry systems such as the "Taungya" system where crops are grown only during the first years of the forest rotation should be classified as forest.

ABOVE-GROUND BIOMASS

All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage.

Explanatory note

1. In cases where forest understorey is a relatively small component of the aboveground biomass carbon pool, it is acceptable to exclude it, provided this is done in a consistent manner throughout the inventory time series.

PROTECTED AREAS

Areas especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.

[1] Global Forest Resources Assessment 2015 – Terms and Definitions.
http://www.fao.org/docrep/017/ap862e/ap862e00.pdf

FOREST AREA WITHIN PROTECTED AREAS

Forest area within formally established protected areas independently of the purpose for which the protected areas were established.

Explanatory notes

1. Includes IUCN Categories I – IV
2. Excludes IUCN Categories V-VI

FOREST AREA WITH MANAGEMENT PLAN

Forest area that has a long-term documented management plan, aiming at defined management goals, which is periodically revised.

Explanatory notes

1. A forest area with management plan may refer to forest management unit level or aggregated forest management unit level (forest blocks, farms, enterprises, watersheds, municipalities, or wider units).
2. A management plan must include adequate detail on operations planned for individual operational units (stands or compartments) but may also provide general strategies and activities planned to reach management goals.
3. Includes forest area in protected areas with management plan.

INDEPENDENTLY VERIFIED FOREST MANAGEMENT CERTIFICATION

Forest area certified under a forest management certification scheme with published standards and is independently verified by a third-party.

ANNEX 2 – METHODOLOGY

Sub-indicator 1 - Forest area annual net change rate

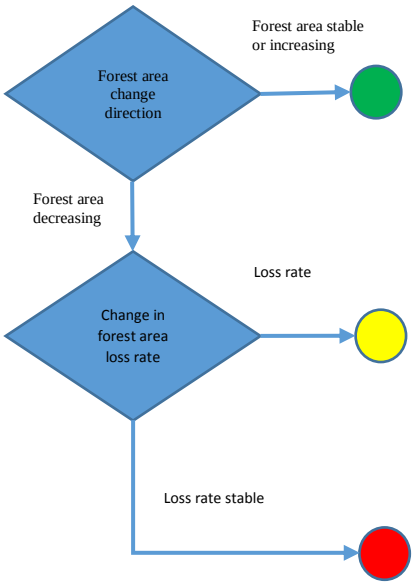
Unit: Percent

Reference period: Most recent period

Method of estimation: Compound interest formula

Translation to dashboard/traffic light:

The following flowchart explains the logic behind the translation of this indicator to a dashboard/traffic light:



The forest area change direction is determined by examining the value of the forest area change rate for the most recent period, a negative value indicate a loss of forest area, a zero value means that forest area is stable and a positive value means that forest area has increased. The change in forest area loss rate is based on a comparison of the current forest area net change rate with the baseline forest area net change rate for the period 2010-2015.

Comments:

This traffic light takes into consideration both the direction of forest area change (if forest area increases or decreases) as well as changes in the rate of forest area loss – the latter important in order to indicate progress among countries that are losing forest area but manage to reduce the loss rate.

For annual reporting, FAO can provide countries with imputed values based on previous trends that they can use in case they don't have new/updated information. The baseline should be updated every 5 years, so in 2020 a new baseline is calculated. Also, at country level, if a country gets new information and updates the historical time series, the baseline for the country will be recalculated, respecting the 2010-2015 period.

Sub-indicator 2 – Above-ground biomass stock in forest

Unit: tonnes/hectare

Reference year: Latest reporting year

Method of estimation: Biomass stock in forest (tonnes) / forest area (ha)

Translation to dashboard/traffic light:

The indicator value for the latest reporting year is compared with the indicator value for previous reporting year for assessment of continuity of progress since last report.

The ratio (r) between the current indicator value and the previously reported value is calculated; r>1 means an increase in stock per hectare, r<1 means a decrease while 1 indicates no change. A narrow interval for r has been established to indicate a stable condition, and traffic-light colors are assigned as follows:

$r \geq 1.01$ 
$0.99 < r < 1.01$ 
$r \leq 0.99$ 

Sub-indicator 3 – Proportion of forest area located within legally established protected areas.

Unit: Percent

Reference year: Latest reporting year

Method of estimation: Forest area within legally established protected areas / forest area 2015 * 100

Translation to dashboard/traffic light:

The indicator value for latest reporting year is compared the indicator value for previous reporting year for assessment of continuity of progress since last report.

The ratio (r) between the current indicator value and the previously reported value is calculated; r>1 means an increase in forest area within protected areas, r<1 means a decrease while 1 indicates no change. A narrow interval for r has been established to indicate a stable condition, and traffic-light colors are assigned as follows:

$r \geq 1.01$ 
$0.99 < r < 1.01$ 
$r \leq 0.99$ 

Comment:

Using forest area in 2015 as denominator for estimating this indicator ensures that the time series of percentages reflect real changes in the forest area within legally established protected areas and is not affected by changes (losses or gains) in total forest area.

Sub-indicator 4 – Proportion of forest area under a long-term forest management plan.

Unit: Percent

Reference year: Latest reporting year

Method of estimation: Forest area under a long term forest management plan / forest area 2015 * 100

Translation to dashboard/traffic light: The indicator value for latest reporting year is compared with the indicator value for previous reporting year for assessment of continuity of progress since last report.

The ratio (r) between the current indicator value and the previously reported value is calculated; r>1 means an increase in areas under forest management plan, r<1 means a decrease while 1 indicates no change. A narrow interval for r has been established to indicate a stable condition, and traffic-light colors are assigned as follows:

r ≥ 1.01	
0.99 < r < 1.01	
r ≤ 0.99	

Comment:

Using forest area in 2015 as denominator for estimating this indicator ensures that the time series of percentages reflect real changes in the forest area under forest management plan and is not affected by changes (losses or gains) in total forest area.

Sub-indicator 5 – Forest area under an independently verified forest management certification scheme.

Unit: Hectares

Reference year: Latest reporting year (as of June 30)

Method of estimation: Data is collected directly from the databases of each certification scheme and provided to countries for validation.

Translation to dashboard/traffic light: The indicator value for latest reporting year is compared with the indicator value for previous reporting year for assessment of continuity of progress since last report.

The ratio (r) between the current indicator value and the previously reported value is calculated; r>1 means an increase in areas under an independent forest management certification scheme, r<1 means a decrease while 1 indicates no change. A small interval for r has been established to indicate a stable condition, and traffic-light colors are assigned as follows:

r ≥ 1.01	
0.99 < r < 1.01	
r ≤ 0.99	

Comments:

Using June 30 as the date for reporting, allows for the certification bodies to have their databases updated so they can provide information to FAO by end of the year, and then be included in the annual reporting to SDG in the beginning of the following year.