



Guidelines and Specifications

FRA 2025

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The FRA Working Paper Series provides an important forum for the rapid release of information related to the FRA programme. Should users find any errors in the documents or would like to provide comments for improving their quality they should contact fra@fao.org.

GLOBAL FOREST RESOURCES ASSESSMENT

FAO has monitored the world's forests at 5-10 year intervals since 1946. The recent Global Forest Resources Assessments (FRA) are produced every five years to provide a consistent approach to describe the world's forests and how they are changing.

During this period, the scope of FRA has evolved from timber-focused inventories to more holistic assessments that seek to respond to increasing information needs related to all aspects of sustainable forest management. At the same time, countries' role in the FRA data collection process has been strengthened, and the country reports prepared by the National Correspondents, their alternates and other national contributors have become a cornerstone of the process.

FRA 2025 reporting builds on previous assessments. The reporting content has been further streamlined to increase efficiency and reduce countries' reporting burden. The changes made respond to recent developments in the international forest policy arena, such as the Agenda 2030 for Sustainable Development, United Nations Strategic Plan for Forests 2017-2030 (UNSPF), the Paris agreement and Kunming-Montreal Global Biodiversity Framework. Furthermore, the online reporting platform created for FRA 2020 has been further developed to facilitate reporting and ensure data quality. These changes have been made with the support of international experts consulted during the Eighth Expert Consultation on FRA, held virtually in September 2022.

This document intends to support the FRA National Correspondents in preparing the FRA 2025 Country reports by providing information about the country reporting process, including an introduction to the FRA reporting platform and specifications of the FRA 2025 national reporting tables.

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INTRODUCTION

Ever since its foundation, FAO has regularly collected, analysed, interpreted and disseminated information on the status and trends of the world's forests resources through the Global Forest Resources Assessment (FRA). The scope, the methodology and the periodicity of the assessments have evolved over time to respond to changing information needs, to increase the level of participation of the countries, as well as to streamline and harmonize definitions and reporting in collaboration with other organizations and international reporting processes. Since FRA 2000, assessments have been conducted every five years.

The preparatory work for FRA 2025 began with an internal evaluation of the FRA 2020 reporting process, followed by a user survey. The results of the internal evaluation and the feedback from National Correspondents and other FRA users that participated in the user survey, have helped the FRA secretariat to shape the scope and the reporting content of FRA 2025. These were further refined in consultation with other teams of the FAO Forestry Division, the FRA Advisory Group, the Collaborative Forest Resources Questionnaire (CFRQ¹) and the FAO/UNECE Team of Specialists on Sustainable Forest Management.

The Eighth Expert Consultation on FRA, held online in September 2022, concluded this consultation cycle, and provided important inputs for the FRA secretariat to finalize the scope and reporting framework for FRA 2025. The objective of the consultation was to guarantee that the FRA process continues to meet the need of the stakeholders and monitoring progress towards internationally agreed goals and targets at national and international levels. In particular, the expert consultation provided recommendations and advice on:

- Scope of FRA 2025 including the country reporting process and the remote sensing component.
- Standardized definitions to help ensure increased consistency of reporting across countries.
- Enhanced collaboration with other forest related reporting processes and organizations in order to reduce the reporting burden on countries and improve consistency of data across organizations/processes.
- Technical modalities for capacity building in developing countries.
- Future voluntary updates of the reports.
- Priority thematic studies.

In order to facilitate reporting and reduce the reporting burden, FRA 2025 introduces some important changes. The number of variables has been reduced by eliminating several reporting tables (reforestation, employment and forest education). A new reporting table on forest restoration has been added. The reporting of data quality for key variables has been improved by introducing a new system for tier assessment. Furthermore, once the reporting to FRA 2025 is finalized, countries will have the opportunity to update their reports for accuracy and new data that become available.

The online FRA platform that was introduced for FRA 2020 has been further developed to facilitate the process of reporting and improve transparency and reliability of the results. It also facilitates the review process and the access to FRA data.

The FRA 2025 reporting will start in 2023 with regional workshops to support National Correspondents in applying FRA reporting methodology and using the on-line platform.

¹ In 2011, FAO, the International Tropical Timber Organization (ITTO), FOREST EUROPE, the United Nations Economic Commission for Europe (UNECE), the Observatory of Central African Forests (COMIFAC/OFAC) and the countries of the Montréal Process came together to create the Collaborative Forest Resources Questionnaire (CFRQ). The questionnaire was created with the aim to reduce the reporting burden and increase data consistency across organizations through standardized definitions and common timing of data collection. The CFRQ questionnaire contained a subset of the FRA 2015 variables, which were in common with at least one of the partner organizations and covered 104 countries representing 88 percent of the world's forests. These data, once collected, were then shared among the CFRQ partners.

The reporting and review process will continue until the end of 2023 when reports should be completed and validated by countries. Reported data will be analysed throughout 2024 and the results will be released in 2025. Major milestones and activities planned for the FRA 2025 exercise are summarized below.

Activity	Date	Notes
Establishment of FRA 2025 NC network	October 2022	Official letters sent to the Heads of Forestry to confirm current NCs or nominate new ones
Finalization of FRA 2025 scope and FRA platform	November and December 2022	
Launch of FRA 2025 reporting process	First quarter 2023	All NCs are granted access to the prefilled country reports in the FRA platform
Regional/sub regional workshops	February to December 2023	NCs and reviewers meet to work on the compilation and review of the FRA 2025 country reports
Finalization of the country reports	December 2023	The country reports are approved. After that it is not possible to edit reports
Validation of FRA 2025 country reports	February 2024	Formal validation of approved country reports for publishing.
Analysis and write up	February 2024-June 2024	Data analysis, followed by report writing
Editing, layout, translations of FRA publications and fine-tuning of platform user interface	June 2024-February 2025	
Launch of FRA 2025 results	March to October 2025	Release of the FRA 2025 results and publications

FRA ONLINE PLATFORM

The FRA Long Term Strategy prepared in 2010 recommended the development of on-line tools to facilitate the reporting and review process. To take into account this recommendation an on-line Forest Resources Information Management System (FRIMS) was developed for FRA 2015. The online reporting system was well received by the National Correspondents as it both facilitated the reporting and improved the internal consistency of the data. This was achieved by allowing simultaneous data entry by multiple contributors and provision of several automatic checks to detect logical errors and inconsistencies in the reported data.

Encouraged by the positive experience and building on the lessons learned from the use of FRIMS, a next generation on-line platform was developed for FRA 2020 to improve data entry, visualization, review and analysis functionalities. Building on the experiences and lessons learned from the FRA 2020 reporting; the design and the implementation of the FRA 2025 platform was done bearing in mind the following objectives:

- a) Transparency – the platform should contain all the documentation necessary for understanding how the reported figures were produced, including the original data sources, definitions and the methodology which has been applied to convert national figures into FRA estimates.
- b) Ease of use – the platform should have an intuitive interface which allows easy data entry, copying and pasting from existing data sheets and upload of existing documentation.
- c) Added value – the platform should have functionality which facilitates the reporting and guarantees consistency of the reported values (system validation rules).
- d) Improved communication – the platform should have a transparent review and revision functionality, which allows tracking of changes in the reported figures and facilitates understanding of the flow of the review process.
- e) Flexibility – The platform should be flexible enough to allow adjustment of the data collection questionnaires.

The benefits of a flexible and easy-to-use on-line reporting system are not limited to the FRA reporting process as it also benefits other reporting needs and ultimately even serve more general data storing, sharing and dissemination needs the countries may have. That is, the platform provides a significant contribution to monitoring progress towards SDG 15 and other internationally agreed goals and targets. Particularly for countries that do not have inventory and monitoring systems producing annual data, the platform will be a useful tool for consistent interpolation or extrapolation of these figures and a provide a transparent mechanism to allow their review and update.

In addition to the SDGs, the platform serves as a common reporting tool for other partners of the CFRQ. Particularly, the platform will be used to collect data for pan-European reporting on indicators for sustainable forest management in collaboration with FOREST EUROPE and United Nations Economic Commission for Europe.

In order to facilitate the reporting process, especially for countries where forest information is limited or not available, the platform provides the opportunity to access related external information as well as geospatial data from global remote sensing products.

The access to the platform is exclusive to the National Correspondents and their collaborators. National Correspondents and alternates will be provided access to the platform to their respective country in order to start the work of reporting by filling in the reporting tables. They can also invite further collaborates to participate in the reporting. To further facilitate the reporting, the platform will be pre-filled with data and metadata reported to FRA 2020.

REPORTING METHODOLOGY

The standard methodology to be applied to all reporting tables is a process that consists of several steps as outlined below and further explained in the following sections.

1. Identification and selection of data sources.
2. Documentation of data sources, national classes and definitions, and original data.
3. Analysis of national data (usually includes 2 steps):
 - Step 1 – Reclassification of national data to FRA categories.
 - Step 2 – Estimation and forecasting to FRA reporting years.

1. IDENTIFICATION AND SELECTION OF DATA SOURCES

Based on the requirements of each specific reporting table, the National Correspondent should identify all potential data sources and evaluate them for transparency, validity, completeness, methodology, quality (including relevance, accuracy and reliability, coherence, accessibility and clarity), and compliance with FRA definitions.

It is important to choose data sources that represent a consistent time series. Whenever possible, select data sources that use the same classification of forests. If several data sources are available for a certain year, the source that results in most consistent time series should be chosen.

2. DOCUMENTATION OF DATA SOURCES, NATIONAL CLASSES, DEFINITIONS AND ORIGINAL DATA

Data sources

The documentation of the national data sources is extremely important to give an idea of the reliability of the data.

The selected data sources, their references and the corresponding data should be documented, whenever possible, according to the following:

- Full reference of the data source: Author(s), year of publication (if published) and title; add DOI or URL if document is available online.
- Type of data source: To be selected from a drop-down menu.
- FRA variable(s) the source provides data for.
- Data year(s). Note that the this is the year that the data represent, not the year of publication.

Example 1: Documentation of data sources

Reference to data source	Type of data source	FRA variable	Year for data	Comments
1)	2)	3)	4)	5)
Example: Grove, N 2004. <i>National report on the state of the forests.</i>	Remote sensing based assessment without ground truthing	Forest area	2002	Analysis of forest cover based on satellite images.

- 1) Insert reference to the data source
- 2) Select appropriate type of data source from drop-down menu
- 3) Select FRA variable for which data source is used (drop-down)
- 4) Insert year for data
- 5) Provide further comments to describe data source

In the specific case of Tables 1a and 1b when national data points are used, a category should be assigned that describe the methodology for data collection:

- National Forest Inventory – The national data point is derived from national forest inventory (field inventory) data;
- Sample-based remote sensing assessment – The national data point is derived from a sample-based assessment of plots using remote sensing techniques, such as Collect Earth or other tools;
- Full cover forest/vegetation maps – The national data point is derived from full cover mapping of forest/land cover/vegetation either by direct generation of statistics from raster or vector data, or adjusted through a sample-based accuracy assessment;
- Registers/questionnaires – The national data point is derived from data in national/subnational registers of administrative forest units, or through questionnaires;
- Other – to be specified by the NC.

Definitions

For each data source the national classes and their corresponding definitions should be documented as shown in Example 2 below:

Example 2: Documentation of National classes and definitions

National class	Definition
Pine Plantations	Man-made pine forests of <i>Pinus caribaea</i> .
Closed Forest	Natural forest with crown cover by trees and / or ferns 40-100% and ground coverage by, palm and / or bamboo over 20%
Open Forest	Natural forest with crown cover by trees and / or ferns 10-40% and ground coverage by, palm and / or bamboo 50-80%
Hardwood plantations	Man-made forests with <i>Tectona grandis</i> .
Other land	Agricultural lands and built-up areas

Original data

Countries should further clearly document the original national data that constitute the basis for the estimates in the table. Note that only the original data relevant for each specific reporting table and used for the further analysis need to be documented.

Example 3: Documentation of original data

National class	Area 1000 ha	
	1992	2002
Pine Plantations	200	185
Closed Forest	600	600
Open Forest	100	100
Hardwood plantations	900	885
Other land	610	640

3. ANALYSIS OF NATIONAL DATA

The analysis of national data comprises two steps that may or may not be necessary to carry out, depending on the nature of the national data. These include the reclassification and the estimation and forecasting.

STEP 1: Reclassification

The reclassification can be necessary in order to make national data correspond to the categories defined for FRA. When the national classes are identical to the FRA categories, or when countries have National Forest Inventories that permit the direct use of data according to the FRA categories and definitions, the reclassification can be omitted.

Reclassification is performed assigning percentages in a “Reclassification matrix” (see Example 4 below), in which each national class is assigned a percentage that correspond to each FRA category. Each row should add up to 100%.

Example 4: Reclassification matrix

Classifications and definitions	FRA classes		
	Forest	Other wooded land	Remaining land area
National Class			
Pine Plantations	100%	0%	0%
Closed Forest	100%	0%	0%
Open Forest	70%	20%	10%
Hardwood plantations	100%	0%	0%
Grassland	0%	0%	100%

STEP 2: Estimation and forecasting

The estimation and forecasting of values are often necessary in order to report data for the pre-defined FRA reporting years. The estimation is the process of interpolation between observations, and forecasting is the extrapolation of values beyond the range of observations.

In order to decide whether estimation and/or forecasting are necessary, the following general principles apply:

- If the country has data sources that provide observed data for the requested reporting years, these data can be used directly without any estimation.
- If available data do not correspond to the requested reporting years, estimation and/or forecasting is required. Data for 2025 will always be forecasted.
- Forecasts may also be necessary for earlier reporting years if the most recent national data is older than the reporting year.

Estimation and forecasting can be made using linear inter- or extrapolation. However, in cases where trends are not linear, curvilinear relationships or multiple linear relationships (for different segments of the time series) can be applied.

It is important to emphasize that estimation and forecasting are not only mathematical calculations. It is equally or even more important to assess whether the estimated/forecasted figures are likely to reflect real trends.

Many times, there may be reasons why data from different years vary, and such variations do not necessarily imply that there is a trend that can be used for estimation and forecasting.

If time series indicate trends that, according to the professional judgment of the National Correspondent, do not reflect the real situation, this must be documented in the country report. In such cases, countries should make adjustments of the estimated / forecasted data, and clearly document and justify this in the country report.

As a general rule, the documentation of the calculations should follow the order in which the steps were carried out.

Example 5: Estimation and forecasting using linear interpolation. Actual data years are indicated in bold.

FRA class	Area 1000 ha							
	1990	1992	2000	2002	2010	2015	2020	2025
Forest	1 776	1 770	1 746	1 740	1 716	1 701	1 686	1 671
Other wooded land	20	20	20	20	20	20	20	20
Remaining land area	604	610	634	640	664	679	694	709
Total land area	2 400	2 400	2 400	2 400	2 400	2 400	2 400	2 400

The reclassification matrix (example 4) was applied to the original data (example 3) to obtain data according to the FRA categories (Forest, Other wooded land and Remaining land area) for the years 1992 and 2002. Data for the FRA reporting years were then estimated using linear interpolation and extrapolation.

STEP 1: Calculate the annual change

Time difference between observations: (2002-1992 = 10 years)

Difference between observed values: (1 740 000-1 770 000 = -30 000 ha)

Annual change (-30 000/10 = -3 000 ha per year)

STEP 2: Estimation and forecasting using linear interpolation and extrapolation

2a linear interpolation for the year 2000

Value for 2002 - (number of years between 2000 and 2002 * annual change)

1 740 - (2*-3 000) = 1 746 000 ha

2b linear extrapolation for the year 2010

Value for 2002 = (number of years between 2010 and 2002 * annual change)

1 740 + (8*-3 000) = 1 716 000 ha

NATIONAL DATA POINTS: Preferred reporting method for tables 1a and 1b

In order to facilitate the reporting and to increase the transparency of FRA estimates, the platform allows direct reporting of national data points for tables 1a and 1b.

For these two tables, when beginning the reporting, the National Correspondent has the possibility of choosing between “traditional reporting” or “national data point reporting”. The national data point reporting is based on the reporting methodology outlined above (documentation of national data source, national data, reclassification and estimation and forecasting). The difference compared to the traditional reporting is that with the national data point method, the data and metadata for each data point is incorporated in the platform in such a way that the reporting is facilitated, and the visualization and the understanding of the resulting estimates and time series are improved. Furthermore, reported national data points remain in the system and will be directly available for future FRA reporting.

When choosing the national data point method, the National Correspondent should start by adding a new national data point. Next, the documentation of the national data sources, national classes and related definitions and area figures should be completed (text and the figures can be either manually entered in the table or copied and pasted from a previous report or a different source).

The system will automatically use these national classes to populate the reclassification matrix. The National Correspondent will then have to assign the percentage of the FRA categories that correspond to each national class (the reclassification matrix) and the system will automatically calculate the corresponding areas.

When these steps are completed, by clicking on the button “Done editing” the National Correspondent can access the page with the final table where areas from national classes are displayed according to the corresponding FRA category for the national data years.

In all the cases where the data years do not correspond to the FRA reporting years or to forecast value to the future, the National Correspondent has to perform the estimation and forecasting. The platform provides the following options for automatically make the estimation and forecasting:

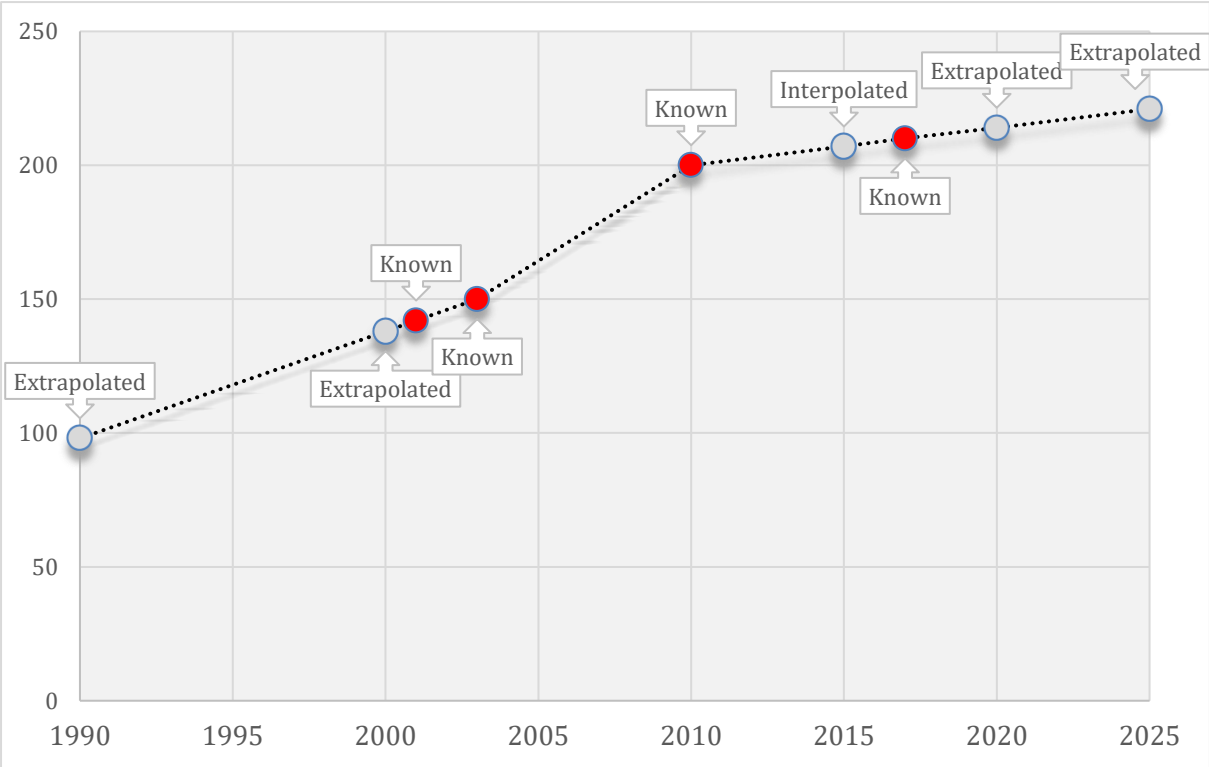
- linear interpolation/extrapolation: the interpolation is an estimation between two data points. The linear interpolation connects the known national data points using a straight line on either side of the unknown point (FRA reporting year). The extrapolation is based on the last two data points. The linear extrapolation uses the same straight line that connects the two last data known points to estimate the value for the FRA reporting year;
- repeat last: this option can be chosen to extrapolate by repeating the latest national data point;
- annual change: the annual change option can be used to adjust future and past trend by applying a given change value in 1000 hectares per year to the latest (or first) national data point. With the annual change, the system provides the possibility to select two different change values – one to make the estimation into the future and another into the past.

The system allows using different estimation and forecasting methods for each of the variables of the table (for example in table 1a, linear interpolation and extrapolation can be used for Forest, while the “repeat last” can be applied to Other wooded land). These estimation methods can be applied to each of the FRA categories in table 1a and 1b.

Once an estimation method is selected the system will automatically calculate the corresponding figures for the FRA reporting years and display the results in a graph in order to facilitate the understanding of the estimates.

A careful analysis of the resulting graph should be done, assessing whether it corresponds to real trends, and also to detect irregularities in the trend, sudden jumps or drops etc., which often are effects of using non-consistent national data sources, and in such a case re-evaluate the data sources to include and possibly also the reclassification done.

Example 6: Illustration of the use of linear interpolation and extrapolation. Red dots are national data points.



Example 7: Table 1a in the Platform when using National data point reporting: In the table below 1996, 2008 and 2015 are national data points.



TIER ASSESSMENT

For a few of the reporting tables, countries are requested to assign a tier for the reported data. The tier assignment help assessing the methods and data sources used as an indicator for data quality and reliability.

The reporting tables for which tier assessments should be done are:

- Table 1a – Extent of forest and other wooded land
- Table 2a – Growing stock
- Table 2c – Biomass stock

Tiers are reported as High, Medium and Low, where a higher tier indicate data collected through methods generally considered to be more accurate. The criteria for the tier assessment depend on the reporting table and are described in detail under each relevant table later in this document.

SUBMISSION OF THE COUNTRY REPORT AND REVIEW PROCESS

Once the report has been completed and all the tables have been filled in, whenever possible, the National Correspondent can submit the Country Report. This will lock the report for further editing and allow the review process to begin. The review is carried out by the FRA secretariat and is necessary to ensure that reported figures are consistent and that the proposed reporting methodology is applied correctly. When a report is submitted for review, its status in the platform is “Under Review”.

If during the review process the need for clarifications or amendments arises, the reviewers can insert feedback in the form of comments and send back the report to the National Correspondent. The National Correspondent is notified that the review process is completed and that a number of comments needs to be addressed. The report will then be again in “Edit” mode and the National Correspondent can modify the report accordingly and resubmit it for another review cycle.

When no further clarifications or amendments are needed the report is considered finalized and ready for the final validation.

VALIDATION OF COUNTRY REPORTS

Once the review process is complete, the reviewers will change the status of the country report in the platform to “pending validation” and an automated message is sent to the National Correspondent and the alternate, informing them that the report has been cleared and it is ready to be formally validated for publication. The validation allows sharing the country reports with national authorities for review and possible feedback, before their publication.

NATIONAL REPORTING TABLES

The table below shows a summary overview of FRA 2025 reporting tables. Tables in bold have tier assessment.

Title	Table	Unit	Reporting year						Yearly
			1990	2000	2010	2015	2020	2025	
1 Forest extent, characteristics and changes	1a Extent of forest and other wooded land	1000 ha	×	×	×	×	×	×	
	1b Forest characteristics	1000 ha	×	×	×	×	×	×	
	1c Specific forest categories	1000 ha	×	×	×	×	×	×	
	1d Annual forest expansion, deforestation and net change	1000 ha/year	(1990-2000), (2000-2010), (2010-2015), (2015-2020), (2020-2025)						
	1e Other land with tree cover	1000 ha	×	×	×	×	×	×	
2 Forest growing stock, biomass and carbon	2a Growing stock	m3/ha Million m3	×	×	×	×	×	×	
	2b Growing stock composition	Million m3 %	Most recent year						
	2c Biomass stock	t/ha Million t/ha	×	×	×	×	×	×	
	2d Carbon stock	t/ha Million t/ha	×	×	×	×	×	×	
3 Forest designation and management	3a Designated management objective	1000 ha	×	×	×	×	×	×	
	3b Forest area within protected areas and forest area with long-term management plan	1000 ha	×	×	×	×	×	×	
	3c Forest restoration	Not applicable	Not applicable						
4 Forest ownership and management	4a Forest ownership	1000 ha	×	×	×	×	×		
	4b Holder of management rights of public forests	1000 ha	×	×	×	×	×		
5 Forest disturbances	5a Forest damage	1000 ha		×	×	×	×		2000-2022
	5b Area affected by fire	1000 ha		×	×	×	×		2000-2022
	5c Degraded forest	Not applicable	Not applicable						
6. Forest policy and legislation	6a Policies, legislation and national platform for stakeholder participation in forest policy	Not applicable	Not applicable						
	6b Permanent forest estate	1000 ha	×	×	×	×	×	×	

Title	Table	Unit	Reporting year						
			1990	2000	2010	2015	2020	2025	Yearly
7 Non wood forest products removals and value 2020	7 Non wood forest products removals and value 2020	Value: 1000 local currency							
		Quantity: local unit					×		

Title	Table	Unit	Reporting year						
			2000	2005	2010	2015	2020	2025	Yearly
8 Sustainable Development Goal 15	Forest area as proportion of total land area	Percent	×	×	×	×	×	×	2021-2024
	Annual forest area change rate	Percent	(2000-2010), (2010-2015), (2015-2020), (2020-2025) (2005-2015), (2015-2025)						
	Above-ground biomass in forests	t/ha	×	×	×	×	×	×	2021-2024
	Proportion of forest area located within legally established protected areas	Percent	×	×	×	×	×	×	2021-2024
	Proportion of forest area under a long-term management plan	Percent	×	×	×	×	×	×	2021-2024
	Forest area under an independently verified forest management certification scheme	1000 ha	×	×	×	×	×	×	2021-2024

GENERAL GUIDELINES TO FILL IN THE FRA 2025 TABLES

Apart from specifically designed tables with qualitative data, only numerical values can be inserted in the tables. If a cell is left blank the database will archive this information as “unknown/missing information”. Therefore, it is important to fill in a cell with a zero in case the value for a certain variable is actually zero (and not unknown). Further note that some tables may contain categories, which are not applicable for all countries (e.g. Table 1c Specific forest categories, which include mangroves and bamboo). In these cases, zero (0) should be used to fill in the table.

FORMATTING

Values may be reported with or without decimals. The system allows for entering data with two decimals. When reporting decimals, the dot (.) should be used as separator, no other separators should be used.

EXPERT ESTIMATES

When documented national data are weak or missing, countries are encouraged to make expert estimates to fill in the requested information, as long as it is clearly documented in the country report in the respective field under “Comments related to data, definitions, etc”. In particular, the countries are encouraged to make expert estimates in the following cases:

- In order to make time series complete. A missing data point in a time series may lead to not including the country in global/regional aggregates, so expert estimates to ensure complete time series are strongly encouraged;
- In order to make categories add up to a total.

1. FOREST EXTENT, CHARACTERISTICS AND CHANGES

1a EXTENT OF FOREST AND OTHER WOODED LAND

FRA 2025 categories	Area (1000 ha)						← Reporting unit
	1990	2000	2010	2015	2020	2025	← Reporting years
Forest							
Other wooded land							
Remaining land area							← Calculated
Total land area							← Prefilled

The categories to be reported on in table 1a are **Forest** and **Other wooded land**. **Total land area** is pre-filled with official land areas maintained by FAOSTAT and **Remaining land area** is automatically calculated by subtracting the area of Forest and Other wooded land from the Total land area. In order to allow further analysis of forest area by main ecological domains, National Correspondents are asked to validate or otherwise update the figures provided by FAO related to the share in percentage of forest area by main climatic domain.²

Climatic domain	% of forest area	
Boreal		← Prefilled
Temperate		← Prefilled
Sub-tropical		← Prefilled
Tropical		← Prefilled

Table 1a should also be accompanied with a tier assessment, and countries are requested to assign a tier for the estimate of current status as well as for the trend. Tier levels are: High, Medium and Low, and the criteria to be used for the assessment are related to the data sources used as follows:

² The analysis of forest area by climatic domains was carried out using the latest version of the FAO Global Ecological Zone map (<http://www.fao.org/docrep/017/ap861e/ap861e00.pdf>) and the MODIS Vegetation Continuous Fields (VFC) pixels with a canopy cover larger than equal to 10% to determine the forested area.

Forest area tier criteria		Tier
Status	Data sources: Recent ¹ National Forest Inventory or remote sensing (sample-based survey or wall-to-wall mapping) with accuracy assessment / field data calibration.	High
	Data sources: Old ² National Forest Inventory or remote sensing (sample-based survey or wall-to-wall mapping) with accuracy assessment / field data calibration.	Medium
	Data sources: Other, such as registers, expert estimates, or remote sensing without accuracy assessment / field data calibration.	Low
Trend	Estimates based on repeated <u>compatible</u> ³ National Forest Inventories where the most recent data are <u>not older than five years</u> ; and/or analysis of multi-temporal remote sensing data for a period ending <u>not more than five years ago</u> .	High
	Estimates based on repeated <u>compatible</u> ³ National Forest Inventories where the most recent is <u>older than five years</u> ; and/or analysis of multi-temporal remote sensing data for a period ending <u>more than five years ago</u> ; or comparison of compatible maps without multitemporal analysis.	Medium
	Other data sources, e.g., expert estimates, or estimates based on non-compatible assessments.	Low

1. Data not older than 5 years from year of submission of report (2018 or more recent for FRA 2025 country reports)
2. Data older than 5 years from year of submission of report (older than 2018 for FRA 2025 country reports)
3. Compatible in terms of methods, categories and definitions used

Internal consistency

In Table 1a, the system calculates the **Remaining land area** based on the **Total land area** as maintained by FAOSTAT (system validation rule).

Should the total land area figures generally accepted by your country be different from those maintained by FAOSTAT, the competent national authority should make an official request to FAOSTAT to change the official figures. Once an official request is made, the updated figures can be used even if they are still not reflected in the on-line databases. In such case a note should be added in the comments section to specify that a request has been sent to FAOSTAT@fao.org in order to change the official figures of country area and/or land area.

The system also compares the forest area figures with those reported to FRA 2020 and highlights any major discrepancies (system validation rule). In case of differences in the reported figures, the NC should double-check the data entered is correct and add a comment to explain the reasons of the differences.

Inter-tabular consistency

The area of Forest as presented in table 1a constitute the basis for reporting in many of the other reporting tables. For inter-tabular consistency, the forest area must match with corresponding figures in tables 1b, 3a, 4a. The system automatically prefills the total forest area as of table 1a, for tables 1b, 3a, 4a. The difference in forest area between two FRA reporting years is automatically calculated to prefill the net change of table 1c.

Forest area is also used for calculating total volume/biomass/carbon when countries report per hectare values (tables 2a, 2c, 2d). Similarly, for countries that report totals for volume/biomass/carbon, forest area is used for calculating per hectare values.

1b FOREST CHARACTERISTICS

FRA 2025 categories	Forest area (1000 ha)						← Reporting unit
	1990	2000	2010	2015	2020	2025	← Reporting years
Naturally regenerating forest (a)							
...of which primary forest							
Planted forest (b = b1+b2)							← Calculated
...of which plantation forest (b1)							
...of which introduced species							
...of which other planted forest (b2)							
TOTAL FOREST AREA (a+b)							← Prefilled from 1a

The main reporting categories in table 2a are **Naturally regenerating forest** and **Planted forest**. **Naturally regenerating forest** has one subcategory – **Primary Forest**, and **Planted forest** has two subcategories – **Plantation forest** and **Other planted forest**. Furthermore, **Plantation forest** has one subcategory – **Plantation forest of introduced species**.

Planted forest is calculated as the sum of **Plantation forest** and **Other planted forest**.

Total forest area is automatically prefilled using the Forest area from table 1a.

Countries are further asked to assess how their primary forests are distributed by climatic domain.

Primary forest by climatic domain	Area (1000 ha)						← Reporting unit
	1990	2000	2010	2015	2020	2025	← Reporting years
...of which boreal primary forest							
...of which temperate primary forest							
...of which subtropical primary forest							
...of which tropical primary forest							
Total primary forest area							← Prefilled from 1b

Internal consistency

The sum of **Plantation forest** and **Other planted forest** must correspond to **Planted forest** (system validation rule).

The area of the subcategory **Primary forest** cannot be greater than the area of **Naturally regenerating forest** (system validation rule).

The area of the subcategory **Plantation forest of which of introduced species** cannot be greater than the area of **Plantation forest** (system validation rule).

In the table on primary forest by climatic domain, the sum of the subcategories should add up to the total primary forest area (system validation rule).

A decision tree has been elaborated to facilitate a more consistent interpretation and reporting for the proposed forest types (see Annex 1).

Inter-tabular consistency

The sum of **Naturally regenerating forest** and **Planted forest** must match the **Total forest area** prefilled from table 1a (system validation rule).

1c SPECIFIC FOREST CATEGORIES

FRA 2025 categories	Forest area (1000 ha)					
	1990	2000	2010	2015	2020	2025
Bamboos						
Mangroves ³						
Rubber wood						

← Reporting unit
← Reporting years

Table 1c reports the area of three specific forest categories: **Bamboos**, **Mangroves**, and **Rubber wood**. When one or more of these specific forest categories do not exist in the country, zero values should be reported. If cells are left blank, the system will consider them as unknown and treat them as missing when calculating consolidated regional and global totals.

Inter-tabular consistency

The area corresponding to each specific forest category cannot be greater than the forest area from table 1a (system validation rule).

1d ANNUAL FOREST EXPANSION, DEFORESTATION AND NET CHANGE

FRA 2025 categories	Area (1000 ha/year)				
	1990-2000	2000-2010	2010-2015	2015-2020	2020-2025
Forest expansion (a = a1+a2)					
...of which afforestation (a1)					
...of which natural expansion (a2)					
Deforestation (b)					
Forest area net change (a-b)					
<i>Forest area net change (for comparison only)</i>					

← Reporting unit
← Reporting periods

← Calculated
← Prefilled from 1a

The main categories of reporting table 1d are **Forest expansion** and **Deforestation**, and the subcategories of **Forest expansion** are **afforestation** and **natural expansion**.

Forest area net change is prefilled based on data reported in table 1a. It is also calculated as the difference between **Forest expansion** and **Deforestation**.

The net change can be either positive (gain), negative (loss) or zero (no change). **Forest expansion** and the **Deforestation** should be reported as annual average (thousand hectares per year) for the reporting periods.

Internal consistency

The sum of **afforestation** and **natural expansion** should match **Forest expansion** when both subcategories are reported upon.

Inter-tabular consistency

If both **deforestation** and **forest expansion** are reported, their balance should match the **forest area net change** as prefilled and calculated from table 1a (system validation rule).

If differences are found, the system will alert that reported figures on **forest expansion** and **deforestation** are inconsistent with the forest area time series as reported in table 1a. In this case

³ For the category Mangroves, the area should include both Forest and Other wooded land

countries may opt for keeping the data reported in table 1d and include a comment to explain why the figures are different.

1e OTHER LAND WITH TREE COVER

FRA 2025 categories	Area (1000 ha)					
	1990	2000	2010	2015	2020	2025
Palms						
Tree orchards						
Agroforestry						
Trees in urban settings						
Other (Specify)						

← Reporting unit
← Reporting years

The reporting categories of table 1e are related to the other land with tree cover and more specifically to the area occupied by **Palms**, **Tree orchards**, **Agroforestry** and **Trees in urban settings**. In case of a different type of other land with tree cover other than those listed in the table, the category **Other** can be used, and the type of tree cover formation should be specified in the comments section.

2. FOREST GROWING STOCK, BIOMASS AND CARBON

2a GROWING STOCK

FRA 2025 categories	Growing stock (m ³ /ha over bark)						← Reporting unit
	1990	2000	2010	2015	2020	2025	← Reporting years
Naturally regenerating forest (a)							
...of which primary forest							
Planted forest (b)							
...of which plantation forest							
...of which introduced species							
...of which other planted forest							
Forest (weighted average)							
Other wooded land							

FRA 2025 categories	Total growing stock (million m ³ over bark)						← Reporting unit
	1990	2000	2010	2015	2020	2025	← Reporting years
Naturally regenerating forest (a)							
...of which primary forest							
Planted forest (b)							
...of which plantation forest							
...of which introduced species							
...of which other planted forest							
Forest (a+b)							
Other wooded land							

The main categories to be reported on in table 2a are **Growing stock** (m³/ha over bark) and **Total growing stock** (million m³ over bark) of **Naturally regenerating forest** and **Planted forest** and **Other wooded land**, and the subcategories **Primary forest**, **Plantation Forest**, **Plantation forest of introduced species**, and **Other Planted Forest**.

Countries may choose to report per hectare values and the totals will then be automatically calculated by multiplying with forest area figures in table 1b. Likewise, countries may choose to report total growing stock, and the per hectare values will be automatically calculated. Changes in any of these tables will cause the other table to be recalculated. In case that countries decide to change previously reported forest area, total growing stock will be recalculated based on the existing per-hectare values.

Table 2a should also be accompanied with a tier assessment, and countries are requested to assign a tier for the estimate of current status. Tier levels are: High, Medium and Low, and the criteria to be used for the assessment are related to the data sources used as follows:

Growing stock tier criteria		Tier
Status	Data sources: Recent ¹ National Forest Inventory or Airborne Laser Scanning (ALS) with field data calibration.	High
	Data sources: Old ² National Forest Inventory, partial field inventories, or ALS without field data calibration.	Medium
	Other data sources, such as satellite data, registers, questionnaires or expert assessments.	Low

1. Data not older than 10 years from year of submission of report (2013 or more recent for FRA 2025 country reports)

2. Data older than 10 years from year of submission of report (older than 2013 for FRA 2025 country reports)

Countries should choose which of the two tables to use for data entry as follows:

If data on average **Growing stock** (in m³ per hectare) are available, data can be entered in the first of the two tables above. The Growing stock per hectare of Planted forest should then be calculated as the area weighted average of the growing stock per hectare of Plantation forest and of Other planted forest, and the Growing stock per hectare of Forest as area weighted average of the growing stock of the Naturally regenerating forest and the Planted forest. In this case, the system will automatically calculate and fill in the total Growing stock in million cubic meters in the second table, using the corresponding area figures in table 1b.

If data on **Total Growing stock** (in million m³) are available, data can be reported in the second table. In this case, the Growing stock of Planted forest is calculated as the sum of the Growing stock of Plantation forest and Other planted Forest, and the Total growing stock is calculated as the sum of the growing stock of Naturally regenerating forest and Planted forest. In this case, the system automatically calculates the Growing stock per hectare in the first table, using the corresponding area figures in table 1b.

The same automatic calculations are performed for the Other wooded land category.

Inter-tabular consistency

The data on growing stock per hectare and total growing stock as entered in table 2a must be consistent with forest area as reported in tables 1a and 1b. The system will ensure this consistency so if for example forest area is changed at a later stage, total growing stock will be recalculated using the already entered per hectare values.

2b GROWING STOCK COMPOSITION

FRA 2025 categories	Scientific name	Common name	Most recent year		← Fill in year
			Million m ³	% of total	← Reporting unit
Native tree species					← % Calculated
#1 Ranked					← % Calculated
#2 Ranked					← % Calculated
#3 Ranked					← % Calculated
#4 Ranked					← % Calculated
#5 Ranked					← % Calculated
#6 Ranked					← % Calculated
#7 Ranked					← % Calculated
#8 Ranked					← % Calculated
#9 Ranked					← % Calculated
#10 Ranked					← % Calculated
Remaining native tree species					← % Calculated
TOTAL: Native tree species					← Calculated
Introduced tree species					
#1 Ranked					← % Calculated
#2 Ranked					← % Calculated
#3 Ranked					← % Calculated
#4 Ranked					← % Calculated
#5 Ranked					← % Calculated
Remaining introduced tree species					← % Calculated
TOTAL: Introduced tree species					← Calculated
TOTAL growing stock					← Calculated

The growing stock of the ten most common **Native tree species** and of the five most common **Introduced tree species** should be reported in table 2b. The system will then calculate their relative share of the total growing stock expressed as percent. Each species listed in this table should be identified by both *scientific name* and common name. The scientific name should be chosen from the list provided as a drop-down menu in the system.

Internal consistency and validation rules

The reference year for the ranking order of the species is the most recent year for which national data on growing stock composition is available. The year should be reported in the table header and doesn't have to be one of the standard FRA reporting years.

Inter-tabular consistency

If the year reported as most recent national data year equals one of the standard FRA reporting years, the calculated **Total growing stock** at the end of table 2b should correspond to the value reported in table 2a (system validation rule).

When the most recent national data year is different from any of the standard FRA reporting years, the **Total growing stock** at the end of table 2b should be within the range or values for the period 1990-2025 reported as total growing stock in table 2a (system validation rule).

2c BIOMASS STOCK

FRA 2025 categories	Forest biomass (tonnes/ha)						← Reporting unit
	1990	2000	2010	2015	2020	2025	← Reporting years
Above-ground biomass							
Below-ground biomass							
Dead wood							

FRA 2025 categories	Total forest biomass (million tonnes)						← Reporting unit
	1990	2000	2010	2015	2020	2025	← Reporting years
Above-ground biomass							
Below-ground biomass							
Dead wood							

Table 2c refers to the biomass stock in forest and the main categories to be reported on are the **Above-ground biomass**, **Below-ground biomass** and **Dead wood**.

Countries that have national data on biomass derived from forest inventories and applying country specific or biome specific conversion factors or biomass equations, should use these as a first option, as it corresponds to a higher Tier.

Countries that do not have national/biome specific biomass conversion factors or equations, can still estimate biomass and carbon stocks, using international/regional default biomass conversion and expansion factors published by IPCC. The conversion and expansion factors are multiplication factors that expand growing stock to different biomass components such as branches, foliage and roots.

These countries are invited to use the Excel biomass calculator workbook which is available for download on the platform (see further information in Annex 2). The biomass calculator is provided to facilitate the reporting and provides an easy way to produce biomass and carbon estimates, using data on forest area and growing stock already reported in tables 1b and 2a and applying conversion and expansion factors and root-shoot ratios published in the 2006 IPCC Guidelines.

In 2019 IPCC published an update to the guidelines⁴ in which the root-shoot ratios were updated, but these new root-shoot ratios are not included in the biomass calculator as they require additional input. However, countries are encouraged to use these new root-shoot ratios for estimating below-ground biomass whenever they have the necessary information available.

Table 2c should be accompanied by a tier assessment, and countries are requested to assign a tier for the estimate of current status. Tier levels are: High, Medium and Low, and the criteria to be used for the assessment are related to the estimation methods used as follows:

⁴ https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch04_Forest%20Land.pdf

Biomass estimation methods tier criteria		Tier
Status	Country-specific biomass conversion and expansion factors or allometric equations applied.	High
	Application of generic or biome-level allometric equations or a combination of country/biome specific conversion factors and IPCC default biomass expansion factors.	Medium
	IPCC default biomass conversion and expansion factors applied (e.g., using the "biomass calculator"), or estimates based on remote sensing-based biomass maps.	Low

2d CARBON STOCK

FRA 2025 categories	Forest carbon (tonnes/ha)						← Reporting unit
	1990	2000	2010	2015	2020	2025	← Reporting years
Carbon in above-ground biomass							
Carbon in below-ground biomass							
Carbon in dead wood							
Carbon in litter							
Soil carbon							

FRA 2025 categories	Total forest carbon (million tonnes)						← Reporting unit
	1990	2000	2010	2015	2020	2025	← Reporting years
Carbon in above-ground biomass							
Carbon in below-ground biomass							
Carbon in dead wood							
Carbon in litter							
Soil carbon							

Soil depth (cm) used for soil carbon	
---	--

The main categories to be reported on in table 2d are **Carbon in above ground biomass** and **Carbon in below ground biomass**. Reporting on the **Carbon in dead wood**, **Carbon in litter** and **Soil Carbon** is optional. Carbon content in biomass is usually derived using conversion factors (carbon fraction, i.e., the proportion of biomass that is carbon). Soil depth for the data on carbon in the soil should be specified.

Carbon content for above- and below-ground biomass can be calculated starting from the biomass figures of table 2c using either national data on carbon fraction or default carbon fraction values from the IPCC guidelines. If above-ground and below-ground biomass is estimated using the Excel biomass calculator, carbon of these two categories is also automatically calculated (see Annex 2).

3. FOREST DESIGNATION AND MANAGEMENT

3a DESIGNATED MANAGEMENT OBJECTIVE

FRA 2025 categories	Forest area (1000 ha)						← Reporting unit
	Primary designated management objective						← Reporting years
	1990	2000	2010	2015	2020	2025	
Production							
Protection of soil and water							
Conservation of biodiversity							
Social Services							
Multiple use							
Other (specify)							
No designation							
Unknown							← Calculated
Total forest area							← Prefilled from 1a

FRA 2025 categories	Forest area (1000 ha)						← Reporting unit
	Total area with designated management objective						← Reporting years
	1990	2000	2010	2015	2020	2025	
Production							
Protection of soil and water							
Conservation of biodiversity							
Social Services							
Other (specify)							

The main reporting categories of the two tables in 3a refer to the designated management objective (primary and not primary) of a forest area and more specifically the following five designation categories: **Production**, **Protection of soil and water**, **Conservation of biodiversity**, **Social services** and **Multiple use**. If the designated management objective of a forest area is other than these already listed, the category **Other** can be used for reporting and the management objective referred to under **Other** should be specified in the comments section. If there is no designated management objective it should be reported under the category **No designation**. The system automatically calculates the **Unknown** as the difference between total forest area and the sum of the designation categories.

The areas recorded under a **Primary designated management objective** (first table) are exclusive and should only be counted once. The areas which are recorded under **Total area with designated management objective** (second table) should refer to the total area that is managed for a specific objective, regardless of whether is primary or not. Because of the non-exclusiveness of these management objectives, areas in this table can be double-counted.

Inter-tabular consistency

The total forest area reported in table 1a is prefilled by the system in the table for the Primary designated management objective, and the sum of the individual forest areas under primary designated forest management objectives should sum up to the forest area from table 1a (system validation rule).

3b FOREST AREA WITHIN LEGALLY ESTABLISHED PROTECTED AREAS AND FOREST AREA WITH LONG-TERM MANAGEMENT PLAN

FRA 2025 categories	Forest area (1000 ha)						← Reporting unit
	1990	2000	2010	2015	2020	2025	← Reporting years
Forest area within legally established protected areas							
Forest area with long-term management plan							
...of which in protected areas							

The main categories to be reported on for table 3b are **Forest Area within legally established protected areas** and **Forest area with long-term management plan**. The reporting on the subcategory **Forest area with long term management plan of which in protected areas** is optional.

Inter-tabular consistency

None of the individual values can be greater than total forest area as reported in table 1a (system validation rule).

3c FOREST RESTORATION

Has your country forest restoration commitments?	Yes/No	
If "Yes"		Is there a law or other government mandate in support of forest restoration?
		Is there a national definition of "forest restoration"? if yes, provide the definition, the monitoring process and results.
		What areas in need of forest restoration have been identified and how have they been identified?
		What are the targets set for the forest restoration? E g xxx hectares by year yyyy
		How many hectares of forest have been restored to date?

This reporting table is new for FRA 2025 and provides information about forest restoration commitments and activities. Countries are asked to provide answers to the questions in the table reflecting the current status of forest restoration in the country.

4. FOREST OWNERSHIP AND MANAGEMENT RIGHTS

4a FOREST OWNERSHIP

FRA 2025 categories	Forest area (1000 ha)					← Reporting unit
	1990	2000	2010	2015	2020	← Reporting years
Private ownership						
... of which owned by individuals						
... of which owned by private business entities and institutions						
... of which owned by indigenous peoples and local communities						
Public ownership						
Other (specify in comments)						
Unknown						← Calculated
Total						← Prefilled from 1a

The main category to be reported on in table 4a are forest area with **Private ownership** and forest area with **Public ownership**. The category of privately owned forest can further be reported by subcategories of which owned by **individuals, private business entities and institutions** or **indigenous peoples and local communities**. If a forest area has another kind of ownership which can neither be classified as private nor public the category **Other** should be used, and the type of ownership should be specified in the comments section. The **Unknown** is calculated automatically as the difference between the total forest area and the sum of **Private, Public and Other**.

Internal consistency

The sum of the subcategories of private ownership should equal the total privately owned forest area.

Inter-tabular consistency

The sum of private, public, other and unknown ownership should match the total forest area from table 1a (system validation rule). The area of forest under public ownership is automatically prefilled in table 4b.

4b MANAGEMENT RIGHTS OF PUBLIC FORESTS

FRA 2025 categories	Forest area (1000 ha)					← Reporting unit
	1990	2000	2010	2015	2020	← Reporting years
Public Administration						
Private business entities and institutions						
Indigenous Peoples and local communities						
Other (specify in comments)						
Unknown						← Calculated
Total public ownership						← Prefilled from 4a

The main categories to be reported on in table 4b refer to the **Management rights of public forests**, specifically: **Public Administration, Private business entities and institutions** and **Indigenous Peoples and local communities**. If management rights of a publicly owned forest area are others than

those listed above, the category **Other** can be used, and the type of management rights should be specified in the comments section. **Unknown** is calculated automatically as the difference between the total forest area under public ownership and the sum of the other categories.

Inter-tabular consistency

The sum of the categories of management rights of public forests in table 4b must add up to the Public ownership forest area of table 4a (system validation rule).

5. FOREST DISTURBANCES

5a FOREST DAMAGE

Predominant cause	Forest area affected (1000 ha)						
	2000	2001	...	2017	2018	...	2022
Insects							
Diseases							
Severe weather events							
Other (specify)							

← Reporting unit
← Reporting years

Table 5a reports on forest area affected by damage, and the main categories to be reported on are **Insects**, **Diseases**, **Severe weather events** and **Other**. If Other is reported, the type of damage should be specified in the comments. Note that damage due to wildfires are not reported here, these are reported separately in table 5b. The reporting is annual starting from the year 2000 until the year 2022. The reporting should reflect the predominant cause of the damage, hence the areas reported should be exclusive.

Inter-tabular consistency

As the categories are exclusive, the sum of the area damaged by the different categories cannot be greater than the total forest area as of table 1a (system validation rule).

5b AREA AFFECTED BY FIRE

FRA 2025 categories	Area affected (1000 ha)						
	2000	2001	...	2017	2018	...	2022
Total land area affected by fire							
...of which on forest							

← Reporting unit
← Reporting years

The main reporting category in table 5b is the **Total land area affected by fire** and the subcategory **of which on forest**. Annual data from 2000-2022 is requested.

For reporting on table 5b, countries can use national data obtained from national fire monitoring systems, or in absence of national data, use statistics derived from the FRA geospatial portal and/or Global Wildfire Information System (GWIS) of the Joint Research Center of the European Commission. These estimates are based on the monthly global burned area product built on time-series of surface reflectance data collected by the MODIS sensor. By overlaying this product with the forest maps or tree cover products, an estimate of burned tree cover/forest area can be obtained.

Inter-tabular consistency

The area of forest burned should not be greater than the total forest area as of table 1a for the FRA reporting years (system validation rule).

5c DEGRADED FOREST

Has your country a national definition of "Degraded forest"	Yes / No
If "Yes"	What is the national definition of "Degraded forest"?
	Criteria applied in the definition of degraded forest
Does your country monitor area of degraded forest	Yes / No
If "Yes"	Main methods applied to monitor degraded forest area
	Monitoring scale
If national level data are available	Year of latest assessment
	Degraded forest area for that year (in 1 000 ha)

Table 5c requests countries to respond whether they have a national definition of degraded forest and if so, what criteria has been used for the definition. Countries are also asked if they are monitoring the area of degraded forest and if so, provide more information about methods and scale, as well as information about national assessments of degraded forest.

6. FOREST POLICY AND LEGISLATION

6a POLICIES, LEGISLATION AND NATIONAL PLATFORM FOR STAKEHOLDER PARTICIPATION IN FOREST POLICY

Indicate the existence of:	Boolean (Yes/No)	
	National	Sub-national
Policies supporting SFM		
Legislations and/or regulations supporting SFM		
Platform that promotes or allows for stakeholder participation in forest policy development		
Traceability system for wood products		

Table 6a does not require numerical data input. National Correspondent can simply report “yes/no” on the existence of Policies supporting SFM, Legislations and/or regulations supporting SFM, Platform that promotes or allows for stakeholder participation in forest policy development and traceability system for wood products.

6b AREA OF PERMANENT FOREST ESTATE

FRA 2025 categories	Forest area (1000 ha)						
	Applicable	1990	2000	2010	2015	2020	2025
Area of permanent forest estate	Yes/No						

← Reporting unit
← Reporting years

Table 6b refers to the **Area of permanent forest estate**. Countries in which the permanent forest estate concept does not exist can report “No”, in the **Applicable** column.

Inter-tabular consistency

The area under permanent forest estate cannot be greater than the total forest area as of table 1a (system validation rule).

7. NON-WOOD FOREST PRODUCTS REMOVALS AND VALUE 2020

	Name of NWFP product	Key species	Quantity	Unit	Value (1000 currency)	NWFP category
1 st						
2 nd						
3 rd						
4 th						
5 th						
6 th						
7 th						
8 th						
9 th						
10 th						
All other plant products						
All other animal products						
Total						

Name of currency	
------------------	--

Table 7 relates to the removals and value of **Non wood forest products** for the year 2020. If available, the table should be filled with the name of each product, the key species, the quantity of removals and its unit. Value should be reported in 1000 local currency (to be specified) and the corresponding FAO Non wood forest products category should be also given. Ranking of table 6 is to be organized according to the monetary value.

NWFP CATEGORIES

Plant products / raw material

1. Food
2. Fodder
3. Raw material for medicine and aromatic products
4. Raw material for colorants and dyes
5. Raw material for utensils, handicrafts & construction
6. Ornamental plants
7. Exudates
8. Other plant products

Animal products / raw material

9. Living animals
10. Hides, skins and trophies
11. Wild honey and bee-wax
12. Wild meat
13. Raw material for medicine
14. Raw material for colorants
15. Other edible animal products
16. Other non-edible animal products

8. SUSTAINABLE DEVELOPMENT GOAL 15

The final section of the platform relates to the SDG 15 reporting. The following tables are automatically filled in using the data reported in the FRA reporting tables where individual years in-between regular FRA reporting years are estimates based on linear interpolation.

The National Correspondent should revise these figures and if national data exist for these individual years the pre-filled estimates can be changed. In such case, national data and data sources should be described under table 1a. Special care should be taken to ensure a consistent time series.

The National Correspondent should also keep the National Statistical Office informed about the data reported in these SDG tables as these data will be submitted to the global SDG database.

SDG Indicator 15.1.1 Forest area as proportion of total land area

Indicator	Percent									
	2000	2005	2010	2015	2020	2021	2022	2023	2024	2025
Forest area as proportion of total land area	1)	2)	1)	1)	1)	2)	2)	2)	2)	1)

1) Pre-filled using data from table 1a and land area data from FAOSTAT

2) Pre-filled using interpolation (countries can override interpolated values)

SDG Indicator 15.2.1 Progress towards sustainable forest management

Sub-Indicator 1	Percent					
	2000-2010	2010-2015	2015-2020	2020-2025	2005-2015	2015-2025
Annual forest area change rate	1)	1)	1)	1)	2)	1)

1) Pre-filled using data from Table 1a, applying the compound interest formula.

2) Pre-filled using SDG 15.1.1 interpolated value for 2005 and data from Table 1a.

Sub-Indicator 2	Forest Biomass (tonnes/ha)								
	2000	2010	2015	2020	2021	2022	2023	2024	2025
Above-ground biomass in forests	1)	1)	1)	1)	2)	2)	2)	2)	1)

1) Pre-filled using data from Table 2c.

2) Pre-filled using interpolation (countries can override interpolated values).

Sub-Indicator 3	Percent (2015 forest area baseline)								
	2000	2010	2015	2020	2021	2022	2023	2024	2025
Proportion of forest area located within legally established protected areas	1)	1)	1)	1)	2)	2)	2)	2)	1)

1) Prefilled using data from tables 3b and 1a).

2) Pre-filled using interpolation (countries can override interpolated values).

Sub-Indicator 4	Percent (2015 forest area baseline)								
	2000	2010	2015	2020	2021	2022	2023	2024	2025
Proportion of forest area under long-term management plan	1)	1)	1)	1)	2)	2)	2)	2)	1)

1) Prefilled using data from table 3b and table 1a).

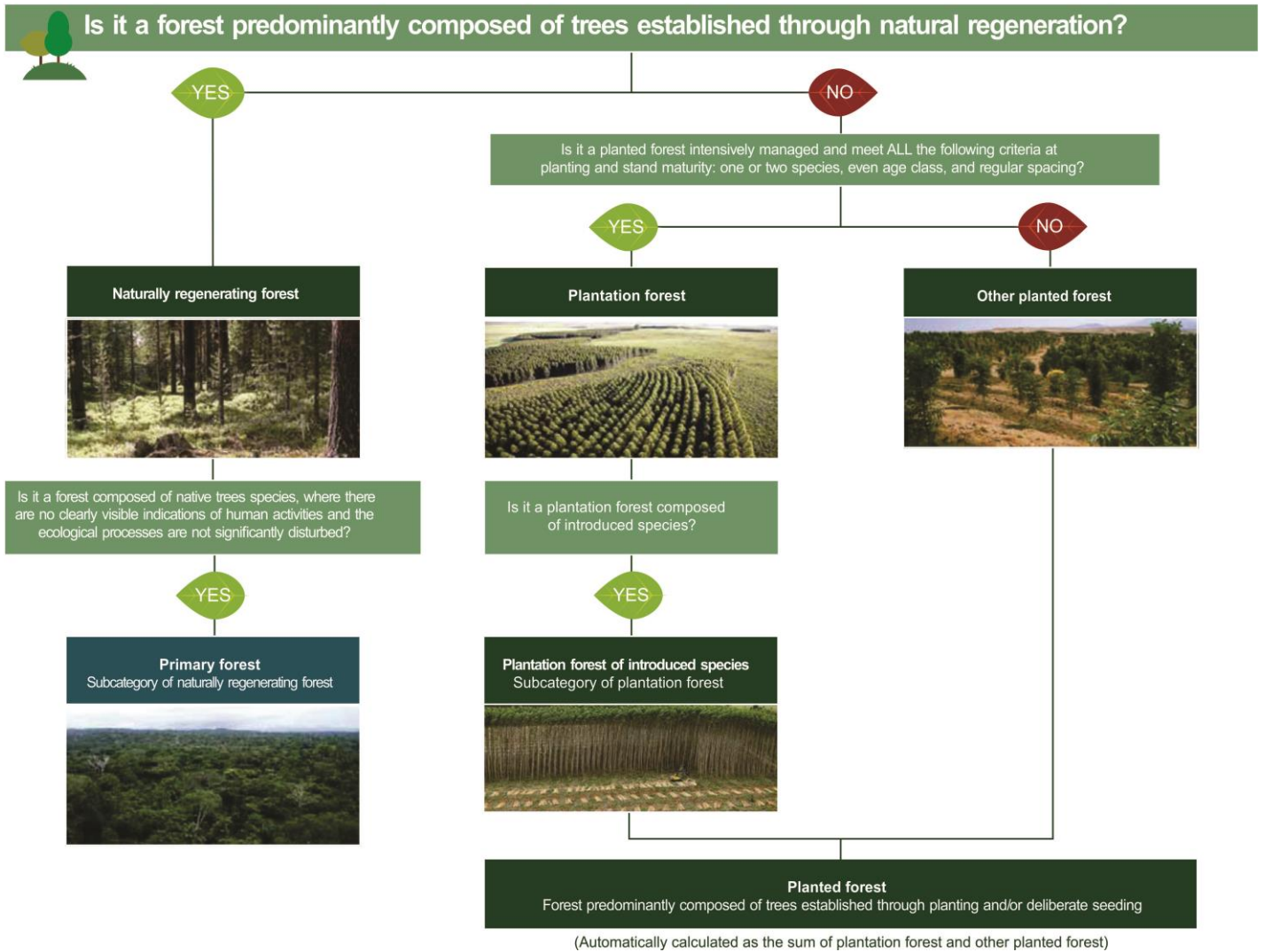
2) Pre-filled using interpolation (countries can override interpolated values).

Sub-Indicator 5	Forest area (1000 ha)							
	2000	2005	2010	2015	2016 ... 2022	2023	2024	2025
Forest area under independently verified forest management certification schemes	1)	1)	1)	1)	1)	2)	2)	2)

1) External data provided by the certification bodies.

2) Will be updated annually when data is becoming available.

ANNEX 1 – FOREST CHARACTERISTICS DECISION TREE



ANNEX 2 – BIOMASS CALCULATOR

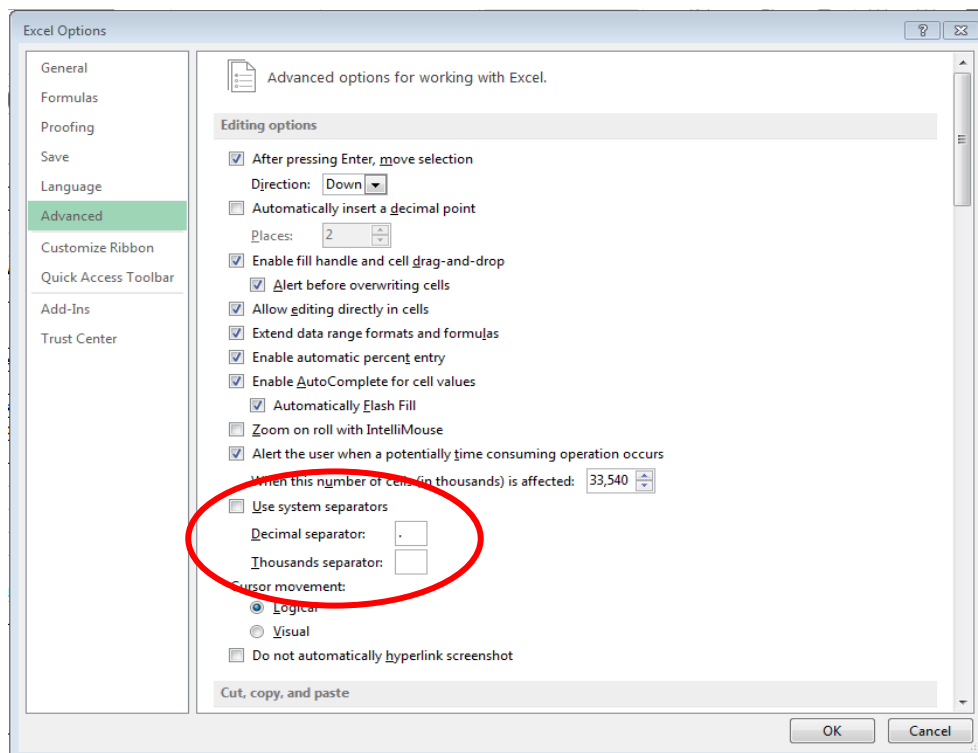
The Biomass Calculator aims at facilitating the estimation of above and below-ground biomass and the carbon in these biomass components. It is particularly aimed at those countries that do not have their own biomass equations or conversion factors and that fully rely on using the IPCC default factors for their estimates. It uses the default biomass conversion and expansion factors, as well as root-shoot ratios published in the 2006 IPCC guidelines. It is The Biomass Calculator is NOT intended for countries that have their own estimates based on national factors or biomass equations, or estimates based on a more detailed analysis of subnational geographical units, they should instead make the biomass and carbon estimates separately and report the results and methods applied directly in the platform. Similarly, countries that wish to use the updated root-shoot ratios included in the latest update of the IPCC guidelines should not use this biomass calculator and instead perform the estimation manually.

Setting up Excel for using the Biomass Calculator

The Biomass Calculator is an Excel workbook. It has also been tested and works with the LibreOffice spreadsheet software. In order to work correctly, Excel has to be configured so that it uses the dot “.” as decimal separator and the “space” as thousands separator.

If the Excel configuration has to be changed, it is done the following way:

- Click File, Options, Advanced
- Deselect “Use system separators”
- Put a “dot” in the Decimal separator box
- Put a “space” in the Thousands separator box



How it works

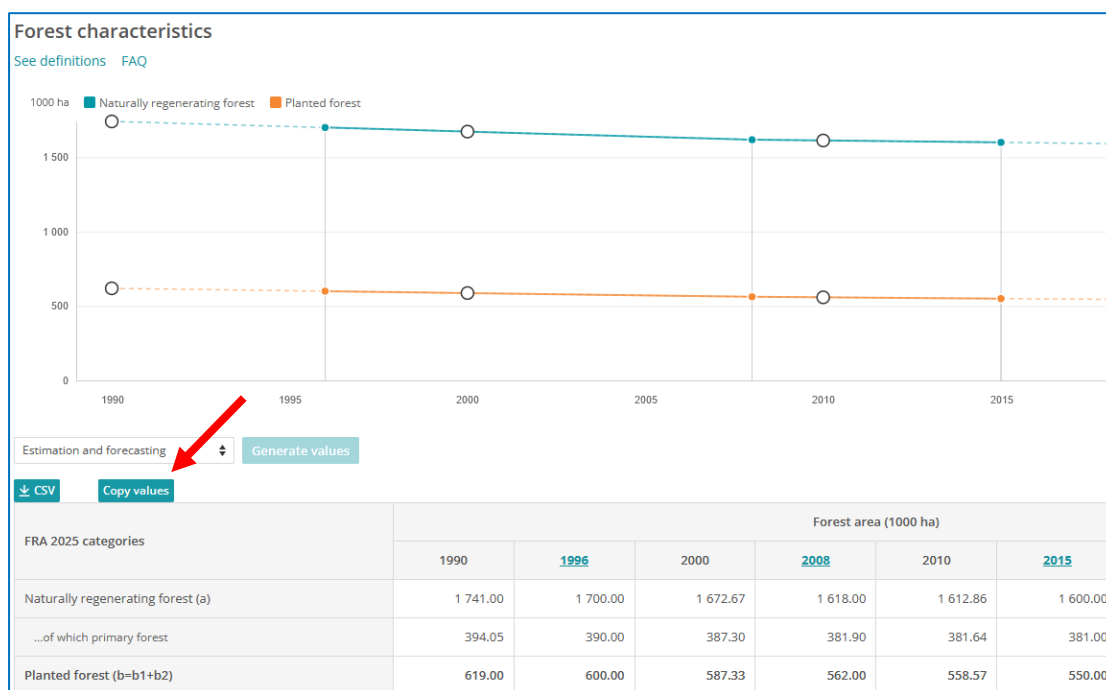
The Biomass Calculator uses data already entered in the FRA platform on forest characteristics (Table 1b) and growing stock (Table 2a). It further requires user input on how to map the IPCC forest types to the FRA categories. It also provides an option to introduce a carbon fraction different from the IPCC default of 47%. Below is a guide how to proceed, step by step.

1. Download the Biomass Calculator workbook according to climatic domain

There are four different Biomass Calculator workbooks for different climatic domains (tropical, subtropical, temperate and boreal). In the platform under Table 3c, select and download the Excel file for the domain that represents the majority of the forests in your country. Open the Biomass Calculator in Excel.

2. Copy data on forest area from Table 1b

In Table 1b in the platform, make sure that it has been fully completed. The line “...of which introduced species” is optional and not used by the Biomass Calculator. Press the button “Copy values”, then go to the Biomass Calculator, position the cursor in cell D16, press paste, and **choose the paste option “Match Destination Formatting”**. If you paste directly (not using destination formatting), the cells may become read-only and you cannot change or edit them further.



1. Input data on Forest area from reporting table 1b						
Forest category	1990	2000	2010	2015	2020	2025
	1000 ha	1000 ha	1000 ha	1000 ha	1000 ha	1000 ha
Naturally regenerating forest						
Plantation forest						
...of which introduced species						
Other planted forest						
Total	0	0	0	0	0	0

3. Copy data on Growing stock from reporting table 2a.

In Table 2a in the platform, make sure that it has been fully completed. Press the button “Copy values”, then go to the Biomass Calculator, position the cursor in cell D27, press paste, and choose the **paste option “Match Destination Formatting”**.

Growing stock

[See definitions](#) [FAQ](#)

Please make sure you have entered data in tables 1a & 1b before editing this table

↓ CSV

Copy values

FRA 2025 categories	Growing stock m ³ /ha (over bark)			
	1990	2000	2010	2015
Naturally regenerating forest	175.00	175.00	175.00	175.00
...of which primary forest	225.00	225.00	225.00	225.00
Planted forest	130.00	140.00	150.00	160.00
...of which plantation forest	130.00	140.00	150.00	160.00
...of which introduced species	130.00	140.00	150.00	160.00
...of which other planted forest	130.00	140.00	150.00	160.00
Total Forest				
Other wooded land	5.00	5.00	5.00	5.00

2. Input data on Growing stock from reporting table 2a						
Forest category	1990	2000	2010	2015	2020	2025
	m ³ /ha	m ³ /ha	m ³ /ha	m ³ /ha	m ³ /ha	m ³ /ha
Naturally regenerating forest						
Planted forest						
...of which plantation forest						
...of which other planted forest						
Total						

4. Assign the percentage distribution of IPCC forest types by FRA categories.

In the area marked with orange color beginning at cell D42, insert for each FRA category (column) how it is distributed by the IPCC forest types. Note that the forest types are different for different climatic domains – the example below is for the tropical domain. The distribution should be based on growing stock, not area. This information is often not available, so expert estimates may be necessary. Note that all three columns should be filled in and that the column totals must be 100%.

IPCC forest types	FRA forest categories		
	Naturally regenerating forest	Plantation forest	Other planted forest
	% of Growing stock		
Broadleaved humid	70%	50%	30%
Broadleaved dry	20%	10%	50%
Coniferous	10%	40%	20%
	100%	100%	100%

5. The carbon fraction in cell D50 is prefilled with the IPCC default value (47%) but countries may enter another carbon fraction if they so wish.

Insert Carbon fraction used by country (IPCC default = 0.47)	
Carbon Fraction	47%

6. With the input from steps 1 to 5, the above- and below-ground biomass as well as the carbon in these biomass components are calculated. First, BCEF and Root-shoot ratios are retrieved based on climatic domain, forest type and stock levels, using the IPCC 2006 default values. Then weighted BCEF and root-shoot ratios are calculated. Finally, these weighted factors are applied to the growing stock estimates to generate biomass estimates, and further by multiplication with the carbon fraction, to generate carbon estimates.
7. The biomass values can now be copied from the Excel sheet and pasted into the FRA platform, Table 2c. Similarly, the carbon values can be copied and pasted in the FRA platform, Table 2d.

9. Copy highlighted biomass values into FRA platform table 2c						
Forest biomass (tonnes/ha)	1990	2000	2010	2015	2020	2025
Above-ground biomass						
Below-ground biomass						
10. Copy highlighted carbon values into FRA platform table 2d						
Carbon in Forest biomass (tonnes/ha)	1990	2000	2010	2015	2020	2025
Above-ground biomass						
Below-ground biomass						

8. Finally, in order to document the calculations made, the area within the dashed border, beginning in cell C37, should be copied and pasted into the section Analysis and processing of national data in table 2c in the FRA platform (see figure on next page).

Insert the percentages of Growing stock by IPCC forest type for each of the FRA forest categories

IPCC forest types	FRA forest categories			% of Growing stock
	Naturally regenerating forest	Plantation forest	Other planted forest	
Broadleaved humid				
Broadleaved dry				
Coniferous				
	0%	0%	0%	Must add up to 100%

Insert Carbon fraction used by country (IPCC default = 0.47)

Carbon Fraction	47%
-----------------	-----

Biomass conversion and expansion factors (BCEF)

Naturally regenerating forest	1990	2000	2010	2015	2020	2025
Broadleaved humid						
Broadleaved dry						
Coniferous						
Plantation forest						
Broadleaved humid						
Broadleaved dry						
Coniferous						
Other planted forest						
Broadleaved humid						
Broadleaved dry						
Coniferous						
Weighted BCEF						
Naturally regenerating forest						
Plantation forest						
Other planted forest						

Root-shoot ratios

Naturally regenerating forest	1990	2000	2010	2015	2020	2025
Broadleaved humid						
Broadleaved dry						
Coniferous						
Plantation forest						
Broadleaved humid						
Broadleaved dry						
Coniferous						
Other planted forest						
Broadleaved humid						
Broadleaved dry						
Coniferous						
Weighted RS ratio						
Naturally regenerating forest						
Plantation forest						
Other planted forest						

Above-ground biomass (t/ha)

	1990	2000	2010	2015	2020	2025
Naturally regenerating forest						
Plantation forest						
Other planted forest						
Total						

Below-ground biomass (t/ha)

	1990	2000	2010	2015	2020	2025
Naturally regenerating forest						
Plantation forest						
Other planted forest						
Total						

ANNEX 3 – FREQUENTLY ASKED QUESTIONS

TABLE 1a

Q:	Can I correct or change previously reported figures?
A:	If new data have become available since last reporting, you may need to also change the historical figures as the new data most likely will affect the trends. Likewise, if you notice that some errors were made in the estimations for FRA 2015, these should be corrected accordingly. Whenever, previously reported figures are changed, the justification should be clearly documented in the comments to the table.
Q:	Can sub-national level information on forest area be used to improve/generate national level estimates?
A:	If boundaries of the sub-national units are consistent and definitions compatible, sub-national level information can be aggregated to generate a composite national level estimate through addition of the sub-national figures. Where definitions/classifications differ, harmonization of national classes or reclassification to the FRA categories should be done prior to adding the various estimates.
Q:	How does one address the problem of different reference years for sub-national level figures used to generate an aggregated national estimate?
A:	First bring the different estimates to a common reference year through inter/extrapolation, then add the sub-national figures.
Q:	When it is difficult to reclassify national classes into FRA categories, can I use and report data for the national classes as a proxy for the FRA categories?
A:	It is important that the time series reported to FRA are consistent. If the national categories are reasonably close to the FRA categories countries may use these as long as this is clearly documented in the country report. However, if the national categories differ substantially from the FRA categories, countries should try reclassifying the national data to the FRA categories. When in doubt, please contact the FRA secretariat.
Q:	What should I do when the national datasets from different years use different definitions and classifications?
A:	In order to build a time series, these datasets must first be brought to a common classification system. Usually the best way is to first reclassify both datasets to FRA classes, before making the estimation and forecasting.
Q:	Mangroves are found below the tidal level and are not part of the total land area, how should they be accounted for in forest area?
A:	Most mangroves are located in the inter-tidal zone i.e. above the daily low tide, but below the high water mark. The land area according to country definitions may or may not include the inter-tidal zone. For, all mangroves which meet the criteria of “forest” or “other wooded land” should be included in the respective category in the forest area, even when they are found in areas not classified by the country as land area. When necessary, the area of “other land” should be adjusted in order to ensure that the total land area matches the official figures as maintained by FAO and the UN Statistics Division and a comment about this adjustment included in the comment field to the table.
Q:	What estimate should I use for 1990? Our estimate at the time or an estimate projected back from the latest inventory?
A:	The estimate for 1990 should be based on the most accurate information available, not necessarily a repetition of a previous estimate or the result of an inventory/assessment undertaken in or just prior to 1990. Where a time series is available for a time period before

1990, the estimate for 1990 can be calculated by simple interpolation. If the latest inventory is considered more accurate than earlier inventories, then this should be taken into account and an attempt made to project the results back in time.

Q: How should I report forest fallows / abandoned “shifting cultivation”?

A: It depends on how you consider the future land use. Long fallows, in which the woody fallow period is longer than the cropping period and trees reach at least 5 m in height should be considered as “forest”. Short fallows in the cropping period is greater or equal to the fallow period and/or woody vegetation does not reach 5 m during the fallow period should be classified as “other land” and, when relevant, as “other land with tree cover” since the main land use is agriculture.

Q: How should “young forests” be classified?

A: Young forest should be classified as “forest” if the land use criterion is met and the trees are capable of reaching 5 m in height.

Q: Where should line be drawn between “forest” and agricultural tree crops (fruit plantations, rubber plantations, etc.). For example: How to classify a plantation of *Pinus pinea* with the main objective of harvesting pine nuts? Is it an agricultural tree crop or is it a forest where NWFP are harvested?

A: Rubber plantations should always be classified as “forest” (see explanatory note 7 under the definition of forest). Fruit tree plantations should be classified as “Other land with tree cover”. The general rule is that if the plantation is made up of forest tree species, it should be classified as “forest”. The case of the *Pinus pinea* plantation for pine nut production should therefore be classified as “forest” and the harvested pine nuts should be reported as NWFP if they are traded commercially.

Q: How do I report on areas of bush-like formations (e.g. in the Mediterranean countries) with a height of about 5m?

A: If the woody vegetation has more than 10% canopy cover of tree species with a height or expected height of 5 m or more, it should be classified as “forest”, otherwise it should be classified as “Other wooded land”.

Q: How to report when national data are using different thresholds than FRA definition of forest?

A: Sometimes national data do not allow making estimates with exactly the thresholds specified in the FRA definition. In such cases countries should report according to national thresholds and clearly document the thresholds used in the comments to the table. The same threshold must be used consistently throughout the time series.

Q: How does the FRA definition of forest correspond with the definition of forest in other international reporting processes?

A: The definition of forest used for reporting to FRA is generally accepted and used by other reporting processes. However, in the specific case of the UNFCCC, the IPCC guidelines for country reporting on greenhouse gas emissions allow for certain flexibility in the national definition of forest, stating that the country can choose the thresholds of the following parameters, allowed interval within parenthesis:

- minimum area (0.05 – 1.0 hectares)
- tree crown cover (10 – 30 per cent)
- tree height (2 – 5 meters)

The thresholds should be selected by the country at the first national communication and must then be kept the same for subsequent national communications.

Q: How should I classify power lines?

A: Power and telephone lines less than 20 m wide and crossing through forest areas should be classified as “forest”. In all other cases they should be classified as “other land”.

TABLE 1b

Q: How should I report areas where enrichment planting has been carried out?

A: If it is expected that the planted trees will dominate the future stand, then it should be considered as “other planted forest”; if the intensity is so low that the planted or seeded trees will have only a minor share of the future growing stock, it should be considered as naturally regenerating forest.

Q: How should I report when it is difficult to distinguish whether a forest is planted or naturally regenerated?

A: If it is not possible to distinguish whether planted or naturally regenerated, and there is no auxiliary information available that indicates that it was planted, it should be reported as “naturally regenerating forest”.

Q: How should I report areas with naturalized species, i.e. species that were introduced a long time ago and which are now naturalized in the forest?

A: Areas with naturalized species that are naturally regenerated should be reported as “naturally regenerating forest”.

Q: How should I interpret “clearly visible indication of human activities” in order to distinguish between “primary forest” and “naturally regenerating forest”?

A: Almost all forests have been affected one way or another by human activities for commercial or for subsistence purposes by logging and/or collection of non-wood forest products, either recently or in the distant past. The general rule is that even if a strict reading of the definition may imply that only truly pristine forests with no evidence of human presence can qualify as primary (due to the lack of any “clearly visible indications of human activities”), it is the last component of the definition - “the ecological processes are not significantly disturbed” - that prevails over the third component. This means that areas of intact forest blocks inhabited by Indigenous Peoples and local communities that do not significantly disturb ecological process should be considered primary forests, as mentioned in Explanatory note 2 of the definition.

Q: Can I use the area of forest in protected areas as a proxy for reporting on area of primary forest?

A: In some cases, the area of forest in protected areas is the only information available that can be used as a proxy for the area of primary forest. However, this is a very weak proxy potentially subject to major errors which should only be used where there are no better alternatives. Caution should be employed when reporting time series, because establishing new protected areas does not mean that the area of primary forest increases.

Q: How can the ITTO classification of forests be translated to the FRA categories on forest characteristics?

A: ITTO defines primary forest as follows: “*Forest which has never been subject to human disturbance, or has been so little affected by hunting and gathering that its natural structure, functions and dynamics have not undergone any unnatural change*”. This category can be considered equivalent to the FRA definition of primary forest.

ITTO defines a degraded primary forest as follows: “*Primary forest in which the initial cover has been adversely affected by the unsustainable harvesting of wood and/or non-wood forest products so that its structure, processes, functions and dynamics are altered beyond the short-term resilience of the ecosystem; that is, the capacity of the forest to fully recover from exploitation in the near to medium term has been compromised*”. This definition falls within

the FRA definition of “naturally regenerating forests” and outside the FRA definition of primary forest.

ITTO defines a managed primary forest as follows: “Forest in which sustainable timber and non-wood harvesting (e.g. through integrated harvesting and silvicultural treatments), wildlife management and other uses have changed forest structure and species composition from the original primary forest. All major goods and services are maintained”. Also, this definition falls within the FRA definition of “naturally regenerating forests” and outside the FRA definition of primary forest.

Q: Some forests are regularly affected by severe disturbances (such as hurricanes) and will never reach a “stable” climax state, but still there are substantial areas with no visible human impact. Should these be classified as primary forest (despite the visible hurricane impact)?

A: Yes, a disturbed forest with no visible human impact should be classified as “primary”, even if the age structure, vegetation structure and species composition is significantly different from a mature forest. See also Explanatory note 1 to the definition of Primary Forest.

TABLE 1c

Q: What species should be considered as mangroves?

A: FRA uses the definition of mangroves as of Tomlinson’s Botany of Mangroves, where the following are listed as “true mangrove species”:

<i>Acanthus ebracteatus</i>	<i>Heritiera fomes</i>
<i>Acanthus ilicifolius</i>	<i>Heritiera globosa</i>
<i>Acanthus xiamenensis</i>	<i>Heritiera kanikensis</i>
<i>Acrostichum aureum</i>	<i>Heritiera littoralis</i>
<i>Acrostichum speciosum</i>	<i>Kandelia candel</i>
<i>Aegialitis annulata</i>	<i>Laguncularia racemosa</i>
<i>Aegialitis rotundifolia</i>	<i>Lumnitzera littorea</i>
<i>Aegiceras corniculatum</i>	<i>Lumnitzera racemosa</i>
<i>Aegiceras floridum</i>	<i>Lumnitzera x rosea</i>
<i>Avicennia alba</i>	<i>Nypa fruticans</i>
<i>Avicennia bicolor</i>	<i>Osbornia octodonta</i>
<i>Avicennia eucalyptifolia</i>	<i>Pelliciera rhizophorae</i>
<i>Avicennia germinans</i>	<i>Pemphis acidula</i>
<i>Avicennia integra</i>	<i>Rhizophora x annamalayana</i>
<i>Avicennia lanata</i>	<i>Rhizophora apiculata</i>
<i>Avicennia marina</i>	<i>Rhizophora harrisonii</i>
<i>Avicennia officinalis</i>	<i>Rhizophora x lamarckii</i>
<i>Avicennia rumphiana</i>	<i>Rhizophora mangle</i>
<i>Avicennia schaueriana</i>	<i>Rhizophora mucronata</i>
<i>Bruguiera cylindrica</i>	<i>Rhizophora racemosa</i>
<i>Bruguiera exaristata</i>	<i>Rhizophora samoensis</i>
<i>Bruguiera gymnorrhiza</i>	<i>Rhizophora x selala</i>
<i>Bruguiera hainesii</i>	<i>Rhizophora stylosa</i>
<i>Bruguiera parviflora</i>	<i>Scyphiphora hydrophyllacea</i>
<i>Bruguiera sexangula</i>	<i>Sonneratia alba</i>
<i>Camptostemon philippinensis</i>	<i>Sonneratia apetala</i>
<i>Camptostemon schultzii</i>	<i>Sonneratia caseolaris</i>
<i>Ceriops australis</i>	<i>Sonneratia griffithii</i>
<i>Ceriops decandra</i>	<i>Sonneratia x gulngai</i>
<i>Ceriops somalensis</i>	<i>Sonneratia hainanensis</i>
<i>Ceriops tagal</i>	<i>Sonneratia ovata</i>
<i>Conocarpus erectus</i>	<i>Sonneratia x urama</i>
<i>Cynometra iripa</i>	<i>Xylocarpus granatum</i>
<i>Cynometra ramiflora</i>	<i>Xylocarpus mekongensis</i>
<i>Excoecaria agallocha</i>	<i>Xylocarpus rumphii</i>
<i>Excoecaria indica</i>	

TABLE 1d

-
- Q:** When do I consider that abandoned land has reverted to forest and therefore should be included under “natural expansion of forest”?
- A:** It should fulfil the following:
- having been abandoned from previous land use for a period of time and be expected to revert to forest. There should not be any indications that it will go back to previous land use. The period of time may be chosen by the country and should be documented in a note in appropriate comment field.
 - have regeneration of trees that are expected to comply to the definitions of forest.
- Q:** What is the difference between afforestation and reforestation?
- A:** Afforestation is the planting/seeding of trees on areas that previously were either other wooded land or other land. Reforestation on the other hand takes place in areas that already are classified as forest and does not imply any change of land use from a non-forest use to forest.
- Q:** Are the FRA definitions of afforestation and reforestation the same as is used in the IPCC guidelines for greenhouse gas reporting?
- A:** No, the terminology on afforestation and reforestation is different. In the IPCC guidelines, both afforestation and reforestation imply a land use change and correspond to the FRA term afforestation, while the IPCC term revegetation corresponds approximately to the FRA term reforestation.

TABLE 1e

-
- Q:** How should areas under multiple land use (agroforestry, forest grazing, etc.) be classified in a consistent way, when no land use is considered significantly more important than the others?
- A:** Agroforestry systems where crops are grown under tree cover are generally classified as “Other land with tree cover”, however 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”. In the case of forest grazing (i.e. grazing on land that fulfil the requirements of canopy cover and tree height), the general rule is to include the forest pastures in the area of Forest, unless the grazing is so intensive that it becomes the predominant land use, in which case the land should be classified as “Other land with tree cover”.
- Q:** How to classify seed orchards?
- A:** Seed orchards of forest tree species are considered as forest.
- Q:** How should we report on palm plantations?
- A:** According to the FRA definition of “forest”, oil palm plantations are specifically excluded. Regarding other palm plantations, it is a land use issue. If managed primarily for agricultural production, food and fodder they should be classified as “other land” and – when applicable – as “...of which palms (oil, coconut, dates, etc)”. When managed primarily for production of wood and construction material and/or protection of soil and water they should be classified as either “forest” or “other wooded land” depending on the height of the trees. In the specific case of senile coconut palm plantation, the classification depends on expected future land use. If expected to be replaced with a new coconut palm plantation or other agricultural land use it should be classified as “other land with tree cover”. If abandoned and not expected to return to agriculture, it should be classified as “forest”.
- Q:** Should natural stands of coconut palms be included in the forest area?
- A:** Yes, if it is not managed for agricultural purposes and the minimum area, crown cover and height criteria are met (see the definition of “Forest”).

TABLE 2a

Q: Is it possible to estimate growing stock from biomass stock using the conversion factors?

A: It is possible, but should be done with much caution; particularly the conversion and expansion factors need a growing stock per hectare as part of the input, so here some assumptions need to be made. Using wood density and biomass expansion factors is more straightforward.

TABLE 2b

Q: Does Table 2b on growing stock composition refer to natural forests only?

A: No. All the table refer to both natural and planted forests of both native and introduced species.

Q: Which reporting year should be used as reference for compiling the species list?

A: The ranking of species is according to volume for the year 2015.

Q: In table 2b, should the ranking of species be by volume, area or number of trees?

A: By volume (growing stock).

Q: In table 2b, is it possible to provide information by groups of species when the number of species is too large?

A: Yes, if national data do not allow the distinction of individual species within certain species groups, countries may report on genera (or groups) instead of species, and make a note in relevant comment field to the table.

TABLE 2c and 2d

General methodological aspects

For any biomass calculation, irrespective of whether for Above-ground biomass, Below-ground biomass or Dead wood, the choice of method is determined by available data and country-specific biomass estimation methods. The following list indicates some choices, starting with the method that provides the most precise estimates.

1. If a country has developed biomass functions for directly estimating biomass from forest inventory data or has established country-specific factors for converting growing stock to biomass, using these should be the first choice.
2. The second choice is to use other biomass functions and/or conversion factors that are considered to give better estimates than the default regional/biome-specific conversion factors published by IPCC (e.g. functions and/or factors from neighbouring countries).
3. The third choice is to use the automatic calculation of biomass which is using the IPCC default factors and values. For the automatic estimations of Biomass, the FRA process relies on the methodological framework developed by the IPCC and documented in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 4, chapters 2 and 4. This document is available at: <http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.htm>.

Q: What about the biomass/carbon stock of shrubs and bushes? Should they be included or excluded?

A: The IPCC guidelines states that when the forest understory is a relatively small component of the above-ground biomass, it can be excluded provided this is done in a consistent manner throughout the time series. However, in many cases shrubs and bushes are important in terms of biomass and carbon, particularly for areas classified as “other wooded land”, and should therefore be included to the extent possible. Please indicate in the relevant comment field how shrubs and bushes have been handled in your biomass estimates.

- Q: Should I report the same figures on biomass and carbon stocks to FRA as to UNFCCC?**
A: Not necessarily – but ideally the figures reported to UNFCCC should be based on the FRA figures and then adjusted/reclassified, when necessary, to comply with the UNFCCC definitions.
- Q: Does “above ground biomass” include forest litter?**
A: No, above-ground biomass only includes living biomass.
- Q: In our national forest inventory we have biomass estimates where biomass equations have been used. Should I use these or rather use the IPCC default factors in the guidelines?**
A: Generally, biomass equations are considered to give better estimates than default factors, but if for some reasons you believe that the use of default factors provide a more reliable estimate you may use these factors. In such case please make a comment in the report.

TABLE 3a

- Q: If the national legislation states that all forests should be managed for production, conservation of biodiversity and protection of soil and water, should I then report all forest area as having “multiple use” as primary designated function?**
A: The definition of primary designation function, explanatory note 2, says that “Nation-wide function established in general clauses of national legislation or policies should not be considered as designations”. So you must instead look into what functions have been designated at management unit level.

TABLE 4a and 4b

- Q: How should I report on ownership where indigenous land overlaps protected areas?**
A: It is the formal ownership of the forest resources that define how you should report. If the indigenous rights to the forest resources correspond to the definition of ownership, then report as “Local, tribal and indigenous communities”. Otherwise, protected areas where indigenous rights are present are likely to be of “public ownership”.
- Q: My country has a complex land tenure regime that is difficult to fit into the FRA categories. How should I do?**
A: Contact the FRA team for advice, describing the particular land/resource tenure regime of your country.
- Q: Do the three sub-categories of private ownership add up to total private ownership?**
A: Yes.
- Q: How to classify ownership of forests planted by private companies on government land?**
A: Sometimes, private companies are required to plant trees as part of concession or harvesting agreements. Generally speaking the planted forest is public, unless there are specific legal or contractual clauses giving the private company ownership of the planted trees, in which case they should be classified as private.
- Q: How to classify ownership of forests on private land where a permit is needed from the authorities to cut the trees?**
A: It depends on the legal status of the ownership of the forest. You may have forests that are legally owned by the private land owner, but the state still can enforce restrictions on harvesting and in this case it is private ownership. You may also have the case where the trees belong to the state even if the land is private. In this case it should be reported as public ownership and a note that the ownership of trees and land are different.

- Q: How to report on forest areas with concession rights?**
A: Concession rights are not full ownership rights – they usually only refer to the right to harvest and responsibility to manage the forests. Forest concessions are almost always on State land and ownership is therefore “public” and management rights is “private corporations”. In the rare case when a private owner gives a concession, it should be reported on under private ownership in table 4a.
- Q: How to report on concessions of only commercial species?**
A: To be classified as a concession in the table 4b on management rights, the concession should not only give the right to harvest but also the responsibility to manage the forest for long-term benefits. As long as these criteria are fulfilled, it doesn’t matter if the harvesting rights only cover a few commercial species, all species or just some NWFPs. If the concession is only a short-term harvesting right, it should be reported under “public administration” in table 4b.
- Q: How to report when the ownership status is ambiguous (e.g. communities claiming ownership, disputed ownership, etc.)?**
A: The current legal status should be the guiding principle. If legally clear that the land is either public or private it should be reported so, although there may exist claims to the land. Only when it is legally unclear or unknown, it should be reported as “Unknown ownership”. Special cases should be documented in detail in appropriate comment field to the table.
- Q: Do public lands include leased lands?**
A: They should be reported as “public” ownership in table 4a. What category to assign in table 4b depends on the length and other characteristics of the lease.
- Q: Should indigenous territories be considered private (indigenous) or public with community user rights?**
A: It depends on the national legislation and to what extent it grants legal rights to the indigenous people that correspond to the FRA definition of “ownership”, i.e. rights to “freely and exclusively use, control, transfer, or otherwise benefit from a forest. Ownership can be acquired through transfers such as sales, donations and inheritance.” The country should assess whether this is the case and report accordingly.
- Q: How to report public forests that are under co-management agreements (public administration + NGO or Community)?**
A: In table 4a, report them as “Public”. In 4b, report them under “Other” and explain in “comments to data” how this co-management agreement is set up.

TABLE 6b

- Q: The concept of Permanent Forest Estate (PFE) does not fit into the national context. How should I report?**
A: If the concept of Permanent Forest Estate does not fit in the national context then select “Not applicable”.

TABLE 7

- Q: Can we include services, such as water, ecotourism, recreation, hunting, carbon, etc., in the NWFP table? In other contexts we report on non-wood goods and services where these are included.**
A: No, NWFPs are limited to goods only, defined as “tangible and physical objects of biological origin other than wood”.

- Q: How should we report on production of ornamental plants and crops growing under tree cover?**
- A:** They should be included if collected in the wild. If planted and managed they should not be included as in such case they are not derived from forest but from an agricultural production system.
- Q: How do we report on Christmas trees?**
- A:** In FRA Christmas tree plantations are always considered as forests, consequently Christmas trees should be considered as NWFP (ornamental plants).
- Q: What about products from multi-purpose trees often growing in agroforestry systems – should they be included as NWFPs?**
- A:** The specifications and the definition of NWFP states that only non-wood products derived from forests should be included. So if the particular agroforestry system is considered to be “forest”, the non-wood products derived from multi-purpose trees are NWFPs and should be included in the reporting.
- Q: We only have a commercial value of processed products. How should we then report on value?**
- A:** In general, the value should refer to the commercial value of the raw material. However, sometimes raw material value is not available and in such cases you may report on the value of a processed or semi-processed product and clearly note this in the respective comment field.
- Q: Are animals which are produced inside the forest considered NWFP?**
- A:** Yes, bush meat species production should be considered NWFP. Domesticated animals should not be included as NWFP.
- Q: Can grazing be considered as fodder and therefore as a NWFP?**
- A:** No, grazing is a service while fodder is a tangible good. So include fodder collected from the forest, but exclude grazing.

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