

Forest designation, management and use

Background paper to the Kotka V Expert Consultation

1 Introduction

An assessment of the different functions and uses of forests and their management status cuts across many of the thematic elements. No single variable is available to allow an assessment of how well the world's forests are managed.

This paper deals with different aspects related to the designation, management and use of forests.

2 FRA 2005 variables

In FRA 2005, countries were asked to classify their forests according to their designated function.

Six classes were used: **productive, protective, conservation, social services, multiple use and no or unknown designated function.**

To illustrate that many forests are managed for multiple uses and values even though one use may be predominant, two measures were used: **'primary function'** and **'total area with function'**. Forest areas with a specific, designated function considered to be significantly more important than other functions are reported as 'primary function'. All forest areas with a designated function (not necessarily primary) are reported under 'total area with function'.

This table was one of the new tables compared to FRA 2000 and was, in part, designed to overcome problems related to the reporting on forest areas under management and forest areas in protected area systems (see later sections). The classification used builds, to a large extent, on information requested for the Montreal Process.

2.1 Definitions

Designated function: For the purpose of FRA 2005, the designated function refers to the function or purpose assigned to a piece of land either by legal prescriptions or by decision of the landowner/manager. It applies to land classified as forest and as other wooded land.

Primary function: A designated function is considered to be primary when it is significantly more important than other functions. This includes areas that are legally or voluntarily set aside for specific purposes.

The category 'multiple purpose' is considered a primary function when legal prescriptions and/or landowner decisions explicitly assign functions that correspond to two or more of the designation categories and where none of these is significantly more important than the others.

Total area with function: Total area where a specific function has been designated, regardless of whether it is primary or not.

The designation categories for total area with function are not exclusive. Hence, areas can be counted more than once, for example: areas with multiple purposes as primary function should be counted once for each specific function included in the multiple purposes; areas with a specific designated primary function should be counted more than once if other, less significant, functions have also been designated.

Production: Forest/other wooded land designated for production and extraction of forest goods, including both wood and non-wood forest products (NWFPs).

Protection of soil and water: Forest/other wooded land designated for protection of soil and water.

Conservation of biodiversity: Forest/other wooded land designated for conservation of biological diversity.

Includes, but is not limited to, protected areas.

Social services: Forest/other wooded land designated for the provision of social services. May include: recreation, tourism, education and/or conservation of cultural/spiritual sites.

Multiple purpose: Forest/other wooded land designated for any combination of: production of goods, protection of soil and water, conservation of biodiversity and provision of socio-cultural services, and where none of these alone can be considered as being significantly more important than the others.

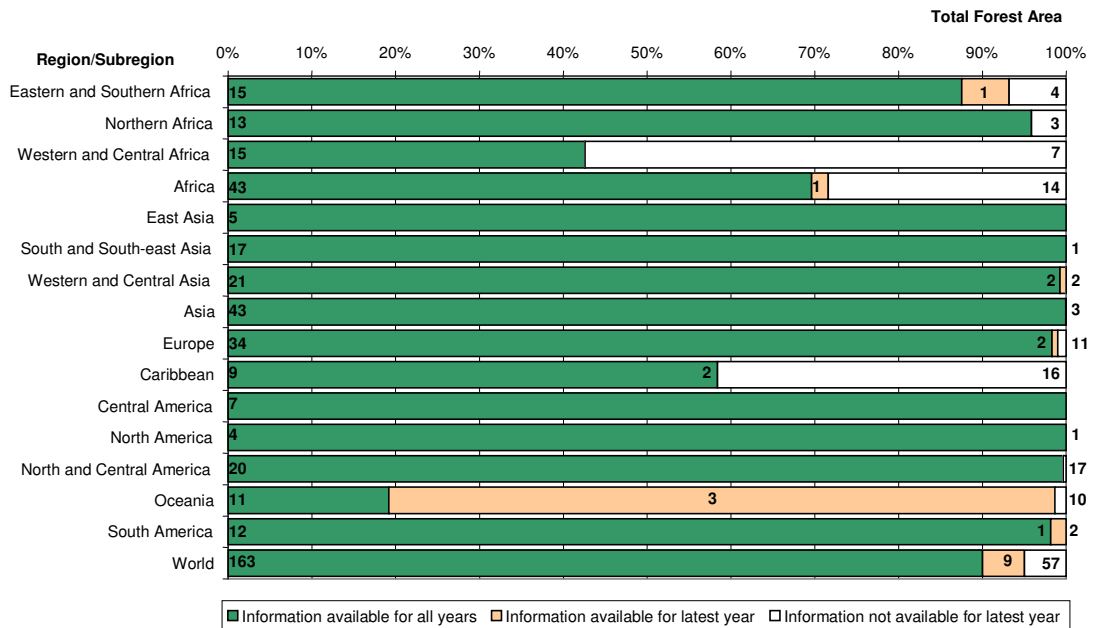
No or unknown function: Forest/other wooded land for which a specific function has not been designated or where the designated function is unknown.

2.2 Data availability

Primary function: Of 229 countries and areas reporting, 172 reported on the designation of their forests. Their combined forest area is equivalent to 95 percent of the total forest area of the world. However, information on all six classes was not always readily available, because countries either did not collect information or used a different national classification system. Proxy values were often used, which made a detailed analysis of status and trends difficult. Information was unavailable for many of the countries in the Congo Basin, the second largest expanse of tropical forest, as well as for many of the Caribbean islands. Trend data were not available for some of the larger countries in Oceania.

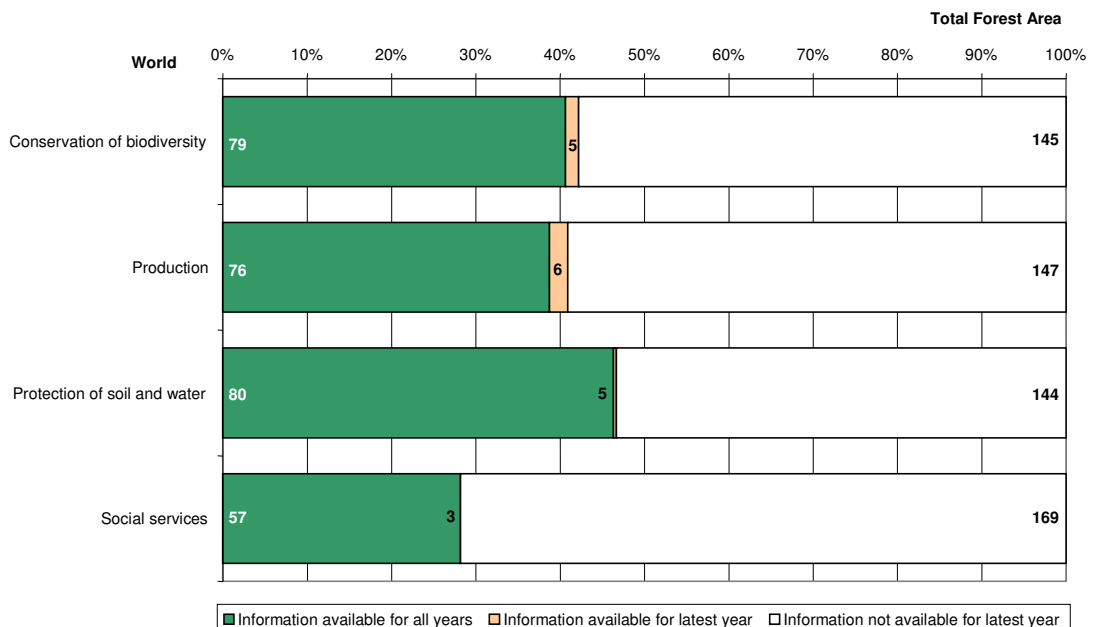
Of the 180 countries providing information on the area of other wooded land, 89 countries provided information on the primary function for at least one variable and one year. Reporting countries represented roughly 55 percent of the forest area 2005 or 48 percent of the area of other wooded land 2005.

Information availability - Primary function



Total area with function: Of 229 countries and areas reporting for FRA 2005, the maximum number of countries providing information on the total area of forests with a specific function was 85 countries (accounting for 46 percent of the total forest area).

Information availability - Total area with function



Forty-seven countries provided information for other wooded land for at least one variable and one year. Reporting countries represented roughly 20 percent of the forest area 2005 or 19 percent of the area of other wooded land 2005.

2.3 Data quality

While many countries keep good statistics of the area of forest designated for productive purposes and, in some cases, on the area of forest designated for conservation purposes (the proxy of forest in protected areas was often used), few countries had information on the area of forest designated for social services.

The quality of the data on designation of other wooded land and the total area with function was particularly weak.

2.4 Methodologies for data collection

The information on forest designation was most frequently collected from management plans, concession agreements and lists of protected areas.

2.5 Issues related to classifications and definitions

This table was one of the new tables compared to FRA 2000. It was, to a large extent, based on the classes used by the Montreal Process on Criteria and Indicators for Sustainable Forest Management and also included variables used by some of the other criteria and indicator processes.

Nevertheless, a large number of countries reported difficulties in filling in this table, as the classes used did not correspond to those used by countries and data were not directly available.

There were large inconsistencies in the interpretation of the categories multiple purpose and social services. Brazil, for example, included all forests allocated to local communities in under social services, whereas most other countries listed only those where efforts were made to encourage recreational or educational use of the forest and conservation of cultural heritage monuments.

The issue of how much of the forest to include under social services was also raised. Only the part where special efforts had been made for recreation or education (picnic areas, marked trails and visitor centres) or the whole forest?

Countries had particular difficulties filling in the table on total area with function. While the total area with a productive function should, in most cases, equal the total area of forest available for wood supply¹, it was not always clear if countries had interpreted it this way.

Many countries listed all their forest areas as having protection of soil and water as one of the functions and the trends in this variable then became an indication of the increase or decrease in forest area rather than reflecting a change of policy. The same was true for the total area of forest designated for conservation of biodiversity and, to a slightly lesser extent, for social services.

¹ The exception being countries where areas of forests classified for production of non-wood forest products are not all available for wood supply

3 Proposals for FRA 2010

The proposals presented below are based on the responses to the FRA 2005 evaluation questionnaire sent to all national correspondents, FAO staff, the FRA Advisory Group and representatives of forest related organisations and reporting processes. Feedback received on the release of the Key Findings of FRA 2005 and the Main Report has also been included where relevant. These proposals have not been prioritised and are presented for discussion by working group participants.

Deletions

Delete other wooded land, as information availability/quality is a serious issue.

The section of the table dealing with total area with a given function was difficult to fill in for many countries and suggestions have been received to delete it.

A suggestion to delete the current table on forest designation in its entirety has also been received.

Additions

A number of proposals have been received for additional variables related to forest management and use:

- The area of forest with a management plan
- The area of forest managed/under management
- The area of forest under sustainable management/use
- The area of forest in protected areas
- The area of forest certified
- The area of forest available for wood supply (...of which planted)
- The area of forest annually logged
- The area of forest with public access (for recreation/education)

Some of these variables were included in FRA 2000. Please refer to Annex 1 for a discussion of these.

Other changes proposed

Others have proposed that the guidelines for this table be improved to make it easier to distinguish between the six classes. (Particularly, guidance seems to be needed on the area of forest designated for social services and on the area of forest designated for multiple use.)

Proposals for how the information should be obtained

Most of the variables above lend themselves best to country reporting – or to information provided by certification processes. The area of forest in protected areas could be obtained through map overlays as done for FRA 2000.

3.1 Summary of proposals

Tables

Current T3:

FRA 2005 Categories / Designated function	Area (1000 hectares)					
	Primary function			Total area with function		
	1990	2000	2005	1990	2000	2005
Forest						
Production						
Protection of soil and water						
Conservation of biodiversity						
Social services						
Multiple purpose				not appl.	not appl.	not appl.
No or unknown function				not appl.	not appl.	not appl.
Total - Forest				not appl.	not appl.	not appl.
Other wooded land						
Production						
Protection of soil and water						
Conservation of biodiversity						
Social services						
Multiple purpose				not appl.	not appl.	not appl.
No or unknown function				not appl.	not appl.	not appl.
Total – Other wooded land				not appl.	not appl.	not appl.

- Keep table as is, but change reporting year 2005 to 2010
- Delete the other wooded land.
- Delete the total area with function.
- Delete the whole table
- Combine current tables T3 and T4 (List designated function according to whether primary forest, forest plantation/planted forest etc.)

Proposed additions:

- Total area available for wood supply (instead of total area designated for production?) and Of which planted
- Total area with public access (for recreation/education) (instead of total area designated for social services?)
- Forest area with a management plan
- Forest area managed/under management
- Forest area under sustainable management/use
- Forest area certified (from certification bodies?)
- Forest area in protected area system
- The area of forest annually logged

ANNEX 1. FRA 2000 variables related to forest management and use

In FRA 2000, the following six variables related to the management and use of forests were included:

- membership of an international initiative to develop and implement criteria and indicators for sustainable forest management
- the area of forest covered by a forest management plan
- the area of forest certified as being under sustainable forest management
- the area of forest classified as protected area
- the area of forest available for woody supply
- the area under approved forest harvesting schemes

1. Membership of criteria and indicator process

Definitions and method of data collection:

Membership of one or more of the nine on-going (eco-) regional criteria and indicator processes.

Representatives of the nine (eco-)regional processes on criteria and indicators provided information on the number of countries that were participating in these processes during a meeting held in Rome in November 2000.

Data availability

Good

Issues

A large number of countries are members of one or more process to identify and implement criteria and indicators for sustainable forest management, but the degree of implementation varies tremendously.

2. Area of forest covered by a forest management plan.

Definitions and method of data collection:

Two different definitions were used:

Developing countries: The area of forest which is managed for various purposes (conservation, production, other) in accordance with a formal, nationally approved, management plan over a sufficiently long period (five years or more)

Industrialised countries: Forest which is managed in accordance with a formal or an informal plan applied regularly over a sufficiently long period (5 years or more). The management operations include the tasks to be accomplished in individual forest stands (e.g. compartments) during the given period.

It was recommended that areas where a decision has been made not to manage them at all should be included in this category.

This information was obtained from countries in reply to the FAO and UNECE FRA2000 questionnaires.

Data availability

Eighty-three countries, including all major industrialized countries, provided national-level information on forest management as part of FRA 2000 reporting. An additional 14 countries supplied comparable information to FAO's Latin American and Caribbean Forestry Commission in 2000. Together, these countries accounted for 72 percent of the total forest area in year 2000.

National figures were missing from a fairly large number of developing countries, including many of the larger countries in Africa and some key countries in Asia. Data were also missing from many smaller countries in Oceania and the Caribbean.

Issues

Disparities in replies from **industrialized countries**, which were not entirely explicable by differences in national situations, suggest that there was **a lack of uniformity in the way in which the definition of forest area managed had been interpreted and applied** – notably in the distinction between management for wood supply only and for all forest functions, and between management according to approved management plans and less formal forms of management. There was also uncertainty as to whether areas where a decision has been made not to manage the area at all had always been included in the “managed” category, as was recommended by UNECE/FAO (2000), so figures may not be directly comparable between countries.

The definition used for **developing countries**, on the other hand, was limited to forest areas subject to a formal and nationally approved forest management plan. This definition appeared to cause fewer difficulties in interpretation and application. However, **some countries did not appear to include protected areas with a management plan**, as the jurisdiction for these were not always with the Forestry Department.

The use of two different definitions precludes a direct comparison of results from developing countries with those from industrialized countries.

The total area reported to be subject to a forest management plan is not necessarily a good measure of the total area of forest under sustainable forest management. This variable does not indicate whether the plan is appropriate, being implemented as planned or having the intended effects. Some areas reported as being covered by a management plan may thus not be under sustainable forest management. Conversely, many areas may be under sustainable forest management without the existence of a formal management plan. Furthermore, remote areas with lack of access or very limited human use may not require a management plan or management activities to achieve a management objective of being safeguarded for the future.

3. Area of forest certified

Definitions and method of data collection:

Area of forest certified by one or more of six existing certification schemes.

This information was compiled through a desk study from a variety of mostly Web-based sources.

Data availability

Good, but mostly limited to production forests.

Issues

Certification is basically a market-based tool, used by forest owners who perceive an economic benefit from undergoing the certification process. Whereas certification implies that an area is well or sustainably managed for wood production, the total area of well-managed forest is not limited to certified areas. Many uncertified forests, including both those managed primarily for wood production and those with other management objectives, may also be under sound management.

4. The area of forest classified as protected area

Definitions and method of data collection:

Two initiatives to assess the status of protected forest areas as of the year 2000 were employed:

The UNEP World Conservation Monitoring Centre (UNEP-WCMC) prepared an updated map of protected forest areas for FAO based on detailed surveys by the World Conservation Union (IUCN) and using IUCN protected area management categories. This map was then overlaid by the new FRA 2000 global forest cover map and a country boundary map to obtain national estimates.

In addition, industrialized countries submitted statistics on protected forest areas in response to a questionnaire prepared by UNECE/FAO. At the global level, the FAO/UNEP-WCMC mapping project indicates that 12.4 percent of the world's forest area is in protected areas as classified by IUCN. However, there are sometimes discrepancies in statistics reported by different agencies within the same country. Continuous improvement is needed in the assessment approaches used by responsible international organizations and by countries.

Data availability

Global coverage for the mapping exercise, although statistics were not generated for countries and areas smaller than 2 500 km² since the classification accuracy would likely be low for relatively small areas.

Only the industrialized countries were asked to provide this information in the country reports.

Issues

Comparison of the country responses and results from the global maps showed considerable discrepancies. Several countries had interpreted the IUCN categories more broadly in the FRA 2000 questionnaires than in the IUCN surveys. In particular, in response to the UNECE/FAO survey, some countries reported all of their forest area as "protected" because they have national legislation regarding the management or protection of all forests. Other agencies within these same countries, however, did not report all forests as "protected" when they responded to separate requests from IUCN for information on protected areas.

5. The area of forest available for woody supply

Definitions and method of data collection:

The extent of forest theoretically available for wood supply.

The study was carried out using global maps and geographic information system (GIS) technology. A spatial model was developed to estimate forest area within varying distances

from major transportation infrastructure, excluding protected areas and forest areas considered to be above an economically exploitable altitude. Adjustments were made for closed and open/fragmented forest classifications, differences among geographic regions and ecological zones, and distortions due to map projection.

Data availability

Global.

Issues

There were some differences in the findings of this study when compared with the information in the UNECE/FAO (2000) report of industrialized countries (based on country reports), due to differences in assumptions and in methodology.

6. The area under approved forest harvesting schemes

Definitions and method of data collection:

Total area under harvesting scheme (short- to very long-term), area actually harvested annually and the harvesting intensity range in volume per hectare.

Information was gathered both through an extensive literature review and through statistical modelling, supplemented by country visits. Analysed data included only commercial and legal utilization of the timber resource from natural broad-leaved forest in the tropics.

Data availability

In-depth analysis on removals and harvesting was carried out for 43 selected tropical countries where detailed country references were available. The selected countries have in common that their forest cover exceeds 5 percent of the total land area or exceeds 1 million hectares. Collectively, the 43 countries accounted for approximately 90 percent of the world's tropical forests.

Industrialized countries responded to detailed questionnaires covering several aspects of harvesting and removals, including breakdown by species and balance among increments, natural losses and fellings. They were not requested to provide information on area under approved harvesting schemes.

Issues

Incomplete data on timber removals and harvesting in tropical countries made it difficult to reach global or regional conclusions.