



Chapter 1

Introduction

Global forest resources assessments, coordinated by FAO, have been made at five to ten year intervals since FAO was established in 1945.¹ The mandate for these assessments is found in the FAO Constitution, which states that “The Organization shall collect, analyse, interpret and disseminate information relating to nutrition, food and agriculture. In this Constitution, the term ‘agriculture’ and its derivatives include fisheries, marine products, forestry and primary forestry products.” (Article I, Functions of the Organization, paragraph 1) (FAO, 2000).

The Global Forest Resources Assessment 2010 (FRA 2010) was requested by FAO member countries during the eighteenth session of the FAO Committee on Forestry (COFO) in March 2007 (FAO, 2007a). It is the most comprehensive assessment to date, both in terms of content and contributors. More than 900 people have been involved in the country reporting process alone, including 178 national correspondents and their teams, an advisory group, international experts, FAO staff, consultants and volunteers from around the world.

The scope and content of the global assessments have evolved over time to respond to changing information needs. The main concern driving the first FAO-led assessment was well expressed in the first sentence of its report: “The whole world is suffering from shortages of forest products” (FAO, 1948). Studies of timber supply trends dominated FRAs through the 1960s. From the 1970s through FRA 1990 environmental dimensions of forest resources were in focus, in particular the rate of deforestation. FRA 2000 was designed to cover a wider range of forest benefits and functions, but severe information shortages made reporting on key trends difficult. In addition, users and the media still appeared to be primarily interested in forest area and area change (Holmgren and Persson, 2002).

The reporting framework for FRA 2005 was based on the concept of sustainable forest management, encompassing social, economic and environmental dimensions of forest resources. Further, the FRA 2005 process involved countries to a much higher degree than previous assessments, leading to a higher response rate and quality control of information at the national level.

FRA 2010 continued this broader, more participatory approach and, for the first time, covered the legal, policy and institutional framework guiding forests and their management and use. Close collaboration with other reporting processes sought to avoid duplication of effort for variables that are reported to several agencies. For example, further streamlining of reporting to FAO and to the International Tropical Timber Organization (ITTO) and the Ministerial Conference for the Protection of Forests in Europe (now Forests Europe) was achieved; new variables were included in FRA 2010 to enable the assessment of progress towards the 2010 Biodiversity Target of the Convention on Biological Diversity (CBD) and towards the four Global Objectives on Forests of the Non-legally Binding Instrument on all Types of Forests adopted by the United Nations General Assembly at its 62nd Session (UNGA, 2008); and methods for reporting on variables related to forest biomass and carbon were harmonized with the latest specifications and guidelines of the Intergovernmental Panel on Climate

¹ The reporting years have been as follows: 1946–1948, 1953, 1958, 1963, mid-1970s (regional assessments), 1980, 1988, 1990, 1995, 2000 and 2005.

Change (IPCC, 2006). The proportion of land area under forests, reported to FAO as part of FRA 2010, is also used as one of the indicators of progress in reaching the Millennium Development Goals (United Nations, 2008). Efforts have continued to establish and maintain globally consistent definitions in the FRA process, in order to ensure consistency over time and reduce the overall reporting burden on countries.

The present report provides a comprehensive overview of the results of FRA 2010 grouped according to seven themes, covering key aspects of sustainable forest management:

- Extent of forest resources
- Forest biological diversity
- Forest health and vitality
- Protective functions of forest resources
- Productive functions of forest resources
- Socio-economic functions of forests
- Legal, policy and institutional framework

In each chapter, an overview provides an introduction to the theme including a list of the relevant variables included in FRA 2010, key findings and the main conclusions. This is then followed by separate sections for each of the variables, highlighting the availability of information, current status and trends.

In Chapter 9, an attempt is made to synthesize the results and highlight key trends that illustrate progress towards sustainable forest management at subregional, regional and global levels.

Chapter 10 offers the main conclusions of the FRA 2010 reporting process and its results. This chapter is followed by the bibliography and annexes providing country statistics and other background material.

More information on the content and structure of the report and on the FRA 2010 process is provided below.

THE REPORTING FRAMEWORK

Sustainable forest management and FRA 2010

The term ‘sustainable forest management’ can be traced to the non-binding ‘Forest Principles’ and Chapter 11 of Agenda 21, which were prominent outputs of the United Nations Conference on Environment and Development (UNCED) in June 1992.

The guiding objective of the Forest Principles is to contribute to the management, conservation and sustainable development of all types of forests and to provide for their multiple and complementary functions and uses. Principle 2b specifically states, “Forest resources and forest lands should be sustainably managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generations.”

The concept of sustainable forest management dates back much further and has continued to evolve since 1992 through international forest policy dialogue within the Intergovernmental Panel on Forests (IPF), the Intergovernmental Forum on Forests (IFF) and the United Nations Forum on Forests (UNFF) – and through a large number of country-led and ecoregional initiatives aimed at translating the concept into practice. These include the development of criteria and indicators of sustainable forest management supported by international organizations including FAO, the International Tropical Timber Organization (ITTO), the United Nations Environment Programme (UNEP) and other members of the Collaborative Partnership on Forests (CPF).

Sustainable management of forests and trees is also the strategic objective of the FAO Strategy for Forests and Forestry (FAO, 2010a).

Despite, or perhaps because of, the long maturation process of the sustainable forest management concept, it is difficult to explicitly define sustainable forest management. The Non-legally Binding Instrument on all Types of Forests, the most

recent agreement related to forests, lists the following seven thematic elements of sustainable forest management and suggests that member states should consider these as a reference framework:

1. Extent of forest resources
2. Forest biological diversity
3. Forest health and vitality
4. Productive functions of forest resources
5. Protective functions of forest resources
6. Socio-economic functions of forests
7. Legal, policy and institutional framework

FRA 2005 covered the first six of these thematic elements. Following an evaluation of FRA 2005, the fifth Expert Meeting on Global Forest Resources Assessments, held in Kotka, Finland in 2006 (Kotka V), recommended that the FRA process should continue to use the sustainable forest management concept as a reporting framework and that FRA 2010 should cover all seven thematic elements.

The participants at this Expert Consultation also recommended that FRA 2010 should (FAO 2006a):

- employ 1990, 2000 and 2010 as the main reporting years;
- provide the forest-related information needed for the assessment of progress towards the 2010 biodiversity target of the CBD;
- use country reports submitted by individual countries as the basis;
- include a remote sensing component as a complementary part of FRA 2010. It should provide information on the spatial distribution of forests and forest land cover, and land-use change dynamics, such as deforestation, afforestation and natural expansion of forests, at the biome, regional and global level;
- maintain and strengthen the network of national correspondents, including support to regional networks. Collaboration among focal points for various forest-related reporting processes within countries should be encouraged;
- maintain and enhance collaboration with forest-related organizations, e.g. members of the CPF, criteria and indicator processes and the remote sensing community with a view to pooling resources and expertise and reducing the reporting burden on countries;
- provide a global platform for reporting on core, quality-controlled information on forest resources, which can be used by a wide range of international and national processes and which can contribute to an assessment of progress towards sustainable forest management.

At its 18th session, COFO reviewed the Global Forest Resources Assessment 2005 and recognized the considerable progress that had been made in harmonizing national information in a global synthesis and in using a participatory process. The Committee recommended that FAO continue to collaborate with Members, CPF members, and regional partners in global forest resources assessments. It also endorsed the recommendations of the International Expert Consultation on Forest Resources Assessments (Kotka V) as a basis for FRA 2010. The Committee further requested that FRA 2010 should fully reflect the four Global Objectives on Forests (see Box 1.1).

Based on this guidance, the reporting tables for FRA 2010 were developed in collaboration with the FRA advisory group and national correspondents.

THE SCOPE OF FRA 2010 FRA 2010 reporting tables

Seventeen reporting tables were developed to address the thematic elements of sustainable forest management (Table 1.1). The tables, including variables and definitions, were subject to intensive review by the FRA advisory group and national correspondents. Detailed specifications of the tables, variables and definitions, as well

BOX 1.1
The Global Objectives on Forests

Global Objective 1

Reverse the loss of forest cover worldwide through sustainable forest management, including protection, restoration, afforestation and reforestation, and increase efforts to prevent forest degradation.

Global Objective 2

Enhance forest-based economic, social and environmental benefits, including by improving the livelihoods of forest-dependent people.

Global Objective 3

Increase significantly the area of protected forests worldwide and other areas of sustainably managed forests, as well as the proportion of forest products from sustainably managed forests.

Global Objective 4

Reverse the decline in official development assistance for sustainable forest management and mobilize significantly increased, new and additional financial resources from all sources for the implementation of sustainable forest management.

As part of UNGA resolution 62/419 Member States reaffirmed their commitment to work globally, regionally and nationally to achieve progress towards the achievement of these four objectives by 2015.

Source: UNGA, 2008

TABLE 1.1
FRA 2010 reporting tables and links to the thematic elements of sustainable forest management

Reporting table	Thematic elements						
	Extent of forest resources	Forest biological diversity	Forest health and vitality	Productive functions of forest resources	Protective functions of forest resources	Socio-economic functions of forests	Legal, policy and institutional framework
1. Extent of forest and other wooded land	✓	✓		✓			
2. Forest ownership and management rights						✓	✓
3. Forest designation and management		✓		✓	✓	✓	✓
4. Forest characteristics	✓	✓		✓	✓		
5. Forest establishment and reforestation	✓	✓		✓			
6. Growing stock	✓	✓	✓	✓			
7. Biomass stock	✓	✓		✓			
8. Carbon stock	✓			✓			
9. Forest fires	✓	✓	✓	✓	✓		
10. Other disturbances affecting forest health and vitality	✓	✓	✓	✓	✓		
11. Wood removals and value of removals				✓		✓	
12. Non-wood forest products removals and value of removals				✓		✓	
13. Employment						✓	
14. Policy and legal framework							✓
15. Institutional framework							✓
16. Education and research							✓
17. Public revenue collection and expenditure						✓	

as the guidelines for reporting, are available online in English, French, Spanish, Arabic and Russian (FAO, 2007b,c,d). Countries were asked to provide information for the 17 tables for four points in time: 1990, 2000, 2005 and 2010 (with the exception of a few variables for which forecasting to 2010 was inappropriate).

Countries and areas included in FRA 2010

A total of 233 countries and areas are included in FRA 2010. This is based on the list used by the United Nations Statistics Division (UNSD) (United Nations, 2010a). Four reporting units included in the UNSD list were excluded from FRA 2010:

1. Aaland Islands (included under Finland);
2. Hong Kong Special Administrative Region of China (included under China);
3. Macao Special Administrative Region of China (included under China);
4. Channel Islands (listed separately as Guernsey and Jersey in FRA 2010).

Compared with FRA 2005, four reporting units were excluded from FRA 2010 (British Indian Ocean Territory, Channel Islands, Serbia and Montenegro, and South Georgia and the South Sandwich Islands) and eight were added (Guernsey, Jersey, Montenegro, Norfolk Islands, Saint Barthélemy, Saint Martin (French part), Serbia, and Svalbard and Jan Mayen Islands).

For each of the 233 countries and areas a country report has been prepared and issued as an FRA 2010 working paper.

Regions and subregions

Reporting for FRA 2010 is broken down into six regions. These regions are the same as those used in other FAO publications, including FRA 2005, and follow well-established delineations. However, because of the difference in size of individual countries, this breakdown means that the results in some regions are dominated by one or a few countries. The Russian Federation is included in Europe and dominates those statistics; the Caribbean and Central America are combined with North America and tend to be overshadowed by Canada and the United States of America; Brazil dominates the regional results from South America, and Australia those from Oceania.

A further breakdown was created to provide more detail for three of the regions: Africa, Asia, and North and Central America. Each of these regions is divided into three subregions, bringing the total number of reporting groups to 12.² The subregional divisions are somewhat arbitrary, but are intended to represent areas with similar environmental and socio-economic conditions. Table 1.2 summarizes key statistics for the regions and subregions, and Figure 1.1 provides a graphic illustration of the countries included in each.

THE PROCESS

FRA 2010 started with the Kotka V Expert Consultation on Global Forest Resources Assessments in June 2006 (FAO, 2006a) and so far has taken four years to implement (Figure 1.2). The outputs include the release of the key findings and the 233 reports (March 2010) and the launch of the present report in October 2010. The results of the global remote sensing survey and the special studies will be released during 2011.

FRA 2010 was coordinated by the Global Forest Assessment and Reporting Team at FAO headquarters in Rome. Six staff members, including project and administrative staff, were engaged full time throughout the country reporting process and acted as focal points for each region in order to facilitate communications between the national correspondents and FAO.

² In some instances, the value for the Russian Federation differs substantially from that for the rest of Europe. In these cases the results for 'Europe excluding the Russian Federation' are shown separately from results for Europe as a whole in order to highlight the variation in the region.

TABLE 1.2
Key statistics for regions and subregions used in FRA 2010

Region/subregion	Number of countries and areas	Land area (million hectares)	Population 2008			
			Total (million)	Annual growth rate (%)	Density (population/km ²)	Rural (% of total)
Eastern and Southern Africa	23	1 000	368	2.4	37	69
Northern Africa	8	941	209	1.7	22	49
Western and Central Africa	26	1 033	410	2.6	40	59
Total Africa	57	2 974	987	2.3	33	61
East Asia	5	1 158	1 547	0.5	134	53
South and Southeast Asia	18	847	2 144	1.4	253	66
Western and Central Asia	25	1 086	385	1.8	35	40
Total Asia	48	3 091	4 075	1.1	132	59
Total Europe	50	2 215	732	0.1	33	28
Caribbean	27	23	42	0.8	182	34
Central America	7	51	41	1.7	80	45
North America	5	2 061	454	1.0	22	19
Total North and Central America	39	2 135	536	1.0	25	23
Total Oceania	25	849	35	1.3	4	30
Total South America	14	1 746	385	1.2	22	17
World	233	13 011	6 751	1.2	52	50

FIGURE 1.1
Regional and subregional breakdown used in FRA 2010

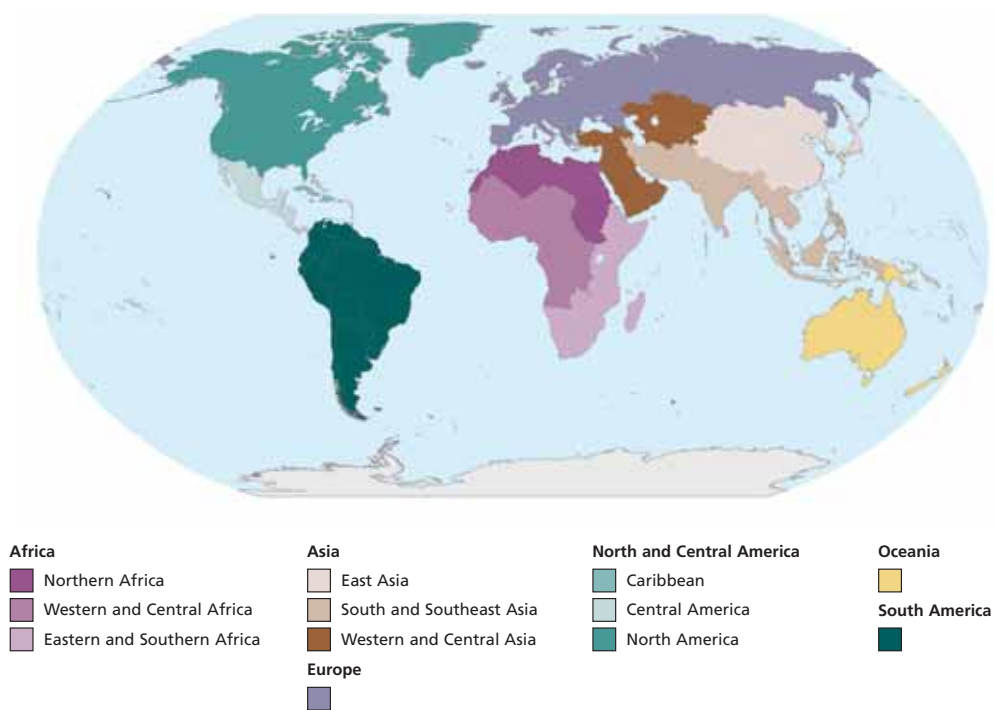
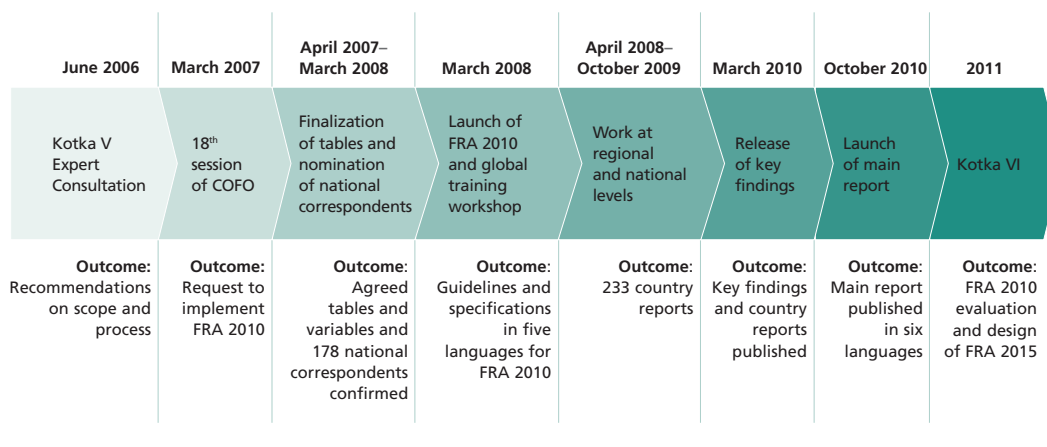


FIGURE 1.2
FRA 2010 timeline



Besides the core staff, a large number of FAO staff, consultants and volunteers were engaged in various phases of FRA 2010 as specialists within specific subjects, as assistants in the preparation of reports for countries and areas without a national correspondent and as regional staff in decentralized offices. The United Nations Economic Commission for Europe/FAO Timber Section (now UNECE/FAO Forestry and Timber Section) in Geneva was a key institutional partner, handling communications and support to several countries in Europe and Central Asia.

An FRA advisory group provided guidance and support throughout the process. Members of the group represent partner institutions, including ITTO, the Ministerial Conference for the Protection of Forests in Europe (MCPFE – now known as Forest Europe), representatives from the secretariats of CBD and UNFCCC, the UNEP World Conservation Monitoring Centre (UNEP-WCMC), the International Union for Conservation of Nature (IUCN) and the World Resources Institute (WRI), as well as a range of countries from all regions (See Annex 1 for the full list of members). The advisory group has been instrumental in the development of FRA 2010, as well as fulfilling a valuable oversight and review function.

In line with recommendations from Kotka V and COFO 2007, FAO requested countries to officially nominate a national correspondent to the FRA 2010 process. The response to this request has been very strong from practically all countries. At present, 178 national correspondents are confirmed. These correspondents, and their respective professional networks in the countries, represent a tremendous strength of the FRA 2010 process, and were responsible for coordinating inputs and preparing country reports according to a standard format in English, French or Spanish. A training session, attended by 265 forest assessment specialists, including representatives from 154 countries and 14 key forest-related organizations, was held in March 2008 in Rome, and detailed guidelines, specifications and reporting formats were provided.

The reporting format required countries to provide the full reference for original data sources and an indication of the reliability of the data for each of these, as well as definitions of terminology. Separate sections in these reports deal with analysis of data, including any assumptions made and the methodologies used for estimations and projections of data to the four reference years (1990, 2000, 2005 and 2010); calibration of data to the official land area as held by FAO; and reclassification of data to the classes used in FRA 2010. Comments attached to the tables yield additional information,

particularly where countries have experienced difficulty in matching national classes to those used in FRA 2010.

Regional focal points at FAO headquarters and its regional and subregional offices were in regular contact with national correspondents throughout the process. A list of frequently asked questions were provided on the FRA 2010 web site to further facilitate the reporting process.

Once received, the draft country reports underwent detailed reviews to ensure completeness and correct application of definitions and methodologies – including the reclassification of national data into the FRA 2010 classification system. Internal consistency was checked and a comparison made with information provided for FRA 2005, the FAO/UNECE/ITTO/Eurostat Joint Forest Sector Questionnaire and other published sources of information.

A total of ten regional and subregional workshops were held to review the draft reports (see Annex 5 for details). These workshops provided an opportunity to share experiences and to address specific questions and issues related to data availability and interpretation. The final reports are thus the result of an iterative process and a collaborative effort.

The data were then entered into FAO's Forestry Information System (FORIS) and global tables were generated. Subject specialists at FAO analysed these tables and prepared subregional, regional and global overviews for each topic of the main report. Before publishing the key findings and the global tables, all country reports were sent to the head of forestry in the respective country for final validation.

THE OUTPUTS

In addition to the present report, other major outputs of FRA 2010 include:

- **Country reports.** A total of 233 detailed reports have been prepared, listing the data sources and original data, and describing the methodologies used for estimation, forecasting and reclassification, as well as any assumptions made. These reports are available on the FAO Forestry web site (www.fao.org/forestry/fra2010) in English, French or Spanish. Hard copies are available upon request.
- **An interactive database.** All data have been entered into a database and a user interface has been deployed for easy retrieval of these statistics. Available on the FAO Forestry web site.
- **Global tables.** A set of 40 global tables have been compiled based on the information provided by the countries. Twenty of these can be found in Annex 3 and the full set is available on the FAO Forestry web site.
- **Key findings.** The key findings of FRA 2010 were released in March 2010 (FAO, 2010a). A flyer describing these is available in English, French, Spanish, Arabic, Chinese and Russian on the FAO web site or in hard copy upon request.
- **A global remote sensing survey.** Together with key partner organizations and with the involvement of remote sensing specialists in around 150 countries, a global remote sensing survey of forests is being carried out as part of FRA 2010. Results are expected at the end of 2011. Box 2.3 in Chapter 2 describes this survey in greater detail.
- **Special studies.** A number of thematic studies provide complementary information on specific topics: forest degradation; trees outside forests; forests, poverty and livelihoods; forest genetic resources; and forests and forestry in small islands. Each of these studies involves additional specialists and will be published separately.
- **Working papers.** A number of FRA working papers have been prepared as part of the FRA 2010 process. They can be found at <http://www.fao.org/forestry/fra/2560/en/> and are listed in Annex 4.