

# **FORESTS IN THE CHANGING ENVIRONMENT**

**Pan-European workshop as a regional contribution  
to the United Nations Forum on Forests**

**Koli, Joensuu, Finland**

**3-5 September 2008**

**Background document**

***Taina Veltheim  
Ministry of Agriculture and Forestry***

## Acknowledgements

This document is largely based on texts from different sources indicated in each chapter. CIFOR has kindly given the permission to use their publication as a source for this document. Several people have contributed to the work and given valuable comments on it. Special thanks are due to Markku Aho, Ghazal Badiozamani, Malgorzata Buszko-Briggs, Tim Christophersen, Peter Csoka, Heikki Granholm, Eija Einola, Vesa Kaarakka, Aulikki Kauppila, Anniina Kostilainen, Angelica Oppong Adomaa, Catalina Santamaria, Ian Thompson and Tiina Vähänen. The Steering Group of the Koli Workshop has guided the work and commented on it in various phases. I am grateful for the contributions and support of the Steering Group members:

Heikki Granholm (Chair of the Steering Group), *Ministry of Agriculture and Forestry, Finland*

Malgorzata Buszko-Briggs, *Liaison Unit Oslo, MCPFE*

Alain Chaudron, *Ministry of Agriculture, France*

Ingwald Gschwandtl, *Federal Ministry of Agriculture, Forestry, Environment and Water Management, Austria*

Ivonne Higuero, *UNEP / PEBLDS Joint Secretariat*

Leena Karjalainen-Balk, *Ministry of the Environment, Finland*

Tomas Krejzar, *Ministry of Agriculture, Czech Republic*

C.F.L. Prins, *Timber Section, UNECE*

Arne Ivar Sletnes, *Liaison Unit Oslo, MCPFE*

Ilpo Tikkanen, *European Forest Institute*

Helsinki, 27 August 2008

Taina Veltheim

## Contents

### **PART I: INTRODUCTION**

### **PART II: IDENTIFICATION OF ISSUES**

#### **1. Deforestation, forest degradation and desertification**

##### **1.1. Deforestation and forest degradation**

###### **1.1.1. Status and trends of deforestation and forest degradation**

###### **1.1.2. Direct causes of deforestation and forest degradation**

###### **1.1.3. Underlying causes of deforestation and forest degradation**

##### **1.2. Desertification**

##### **1.3. International commitments related to combating deforestation, forest degradation and desertification**

###### **1.3.1. IPF/IFF – UNFF process**

###### **1.3.2. United Nations Convention to Combat Desertification**

###### **1.3.3. United Nations Framework Convention on Climate Change and the Kyoto Protocol**

###### **1.3.4. Convention on Biological Diversity**

###### **1.3.5. International Tropical Timber Agreement**

#### **2. Forests and climate change**

##### **2.1. Role of forests**

###### **2.1.1. Mitigation**

###### **2.1.2. Impacts and adaptation**

##### **2.2. International commitments related to forests and climate change**

###### **2.2.1. United Nations Framework Convention on Climate Change and the Kyoto Protocol**

###### **2.2.2. Other commitments**

#### **3. Forests and biodiversity conservation**

##### **3.1. Status and trends of forest biodiversity**

##### **3.2. International commitments related to the conservation of forest biodiversity**

###### **3.2.1. Convention on Biological Diversity**

###### **3.2.2. IPF/IFF – UNFF process**

###### **3.2.3. Other commitments**

### **PART III: POLICIES AND MEASURES**

#### **4. Policy making and planning**

##### **4.1. Policy frameworks**

##### **4.2. National strategies, programmes and action plans**

###### **4.2.1. National forest programmes**

###### **4.2.2. Cross-sectoral approaches**

##### **4.3. Implementation of international forest-related commitments at the national level**

##### **4.4. Coordination between international conventions, organisations and processes**

### **PART IV: POTENTIAL ISSUES FOR FURTHER CONSIDERATION**

## References

---

**Abbreviations and acronyms**

<b>CBD</b>	<b>Convention on Biological Diversity</b>
<b>CDM</b>	<b>Clean Development Mechanism</b>
<b>CITES</b>	<b>Convention on International Trade of Endangered Species of Wild Flora and Fauna</b>
<b>CMS</b>	<b>Controlled Managed Secondary</b>
<b>CH<sub>4</sub></b>	<b>methane</b>
<b>CO</b>	<b>carbon oxide</b>
<b>CO<sub>2</sub></b>	<b>carbon dioxide</b>
<b>CPF</b>	<b>Collaborative Partnership on Forests</b>
<b>CIFOR</b>	<b>Centre for International Forestry Research</b>
<b>ECOSOC</b>	<b>Economic and Social Council of the United Nations</b>
<b>FAO</b>	<b>Food and Agriculture Organization of the United Nations</b>
<b>FRA</b>	<b>Forest Resources Assessment</b>
<b>GEF</b>	<b>Global Environment Facility</b>
<b>GFIS</b>	<b>Global Forest Information Service</b>
<b>GM</b>	<b>Global Mechanism</b>
<b>Gt</b>	<b>gigatons</b>
<b>ha/yr</b>	<b>hectares per year</b>
<b>IPCC</b>	<b>Intergovernmental Panel on Climate Change</b>
<b>IFF</b>	<b>Intergovernmental Forum on Forests</b>
<b>IPF</b>	<b>Intergovernmental Panel on Forests</b>
<b>ITTO</b>	<b>International Tropical Timber Organization</b>
<b>JI</b>	<b>Joint Implementation</b>
<b>LDCs</b>	<b>Least developed countries</b>
<b>LULUCF</b>	<b>Land use, land-use change and forestry</b>
<b>MCPFE</b>	<b>Ministerial Conference on the Protection of Forests in Europe</b>
<b>NAP</b>	<b>National Action Plan</b>
<b>NAPA</b>	<b>National Adaptation Programme for Action</b>
<b>NBSAP</b>	<b>National Biodiversity Strategy and Action Plan</b>
<b>nfp</b>	<b>national forest programme</b>
<b>NLBI</b>	<b>Non-Legally Binding Instrument on All Types of Forests</b>
<b>PROFOR</b>	<b>Program on Forests</b>
<b>Ramsar</b>	<b>Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention)</b>
<b>RIL</b>	<b>reduced impact logging</b>
<b>SFM</b>	<b>sustainable forest management</b>
<b>TREES</b>	<b>Tropical Ecosystem Environment Observation by Satellite</b>
<b>UNCCD</b>	<b>United Nations Convention to Combat Desertification</b>
<b>UNCED</b>	<b>United Nations Conference on Environment and Development</b>
<b>UNFF</b>	<b>United Nations Forum on Forests</b>
<b>UNFF8</b>	<b>The eighth session of the UNFF (New York, 20 April – 1 May 2009)</b>
<b>UNEP</b>	<b>United Nations Environment Programme</b>
<b>UNFCCC</b>	<b>United Nations Framework Convention on Climate Change</b>
<b>US\$</b>	<b>US dollars</b>

## PART I: INTRODUCTION

### *Background*

In October 2000, the Economic and Social Council of the United Nations (ECOSOC) established the United Nations Forum on Forests (UNFF) with the main objective to promote "... *the management, conservation and sustainable development of all types of forests and to strengthen long-term political commitment to this end...*" based on the Rio Declaration, the Forest Principles, Chapter 11 of Agenda 21 and the outcome of the IPF/IFF processes and other forest-related achievements.

According to the multi-year programme of work of the UNFF, its eighth session in New York on 20 April – 1 May 2009 will address, among other agenda items, environmental issues related to forests under an overall theme *Forests in a Changing Environment*. This will include forests and climate change: reversing the loss of forest cover, preventing forest degradation in all types of forests and combating desertification, including low forest cover countries, and forests and biodiversity conservation, including protected areas.

These topics of the eighth session of the UNFF (UNFF8) are strongly interlinked. Deforestation, forest degradation and desertification contribute to the loss of forest biodiversity and to the climate change. On the other hand, climate change has severe effects on the health and vitality of forests, their biological diversity and ecological functions, and may accelerate the process of desertification.

The topics of the overall theme *Forests in a Changing Environment* are also addressed by other fora, notably the three Rio conventions - United Nations Framework Convention on Climate Change (UNFCCC), United Nations Convention to Combat Desertification (UNCCD) and Convention on Biological Diversity (CBD). Cooperation and fostering synergies between different conventions and processes is essential and is regularly emphasized by their governing bodies.

The UNFF invited at its seventh session relevant regional and sub-regional forest-related mechanisms, institutions, organizations and processes to address issues and agenda items planned for each Forum session and to provide a concise summary of their deliberations.

The Ministerial Conference of the Protection of Forests in Europe (MCPFE) held in Warsaw, Poland in November 2007 welcomed the achievements of the seventh session of the UNFF and highlighted the importance of providing European inputs to the international forest policy dialogue. The European countries committed themselves to developing, in cooperation with other regional bodies, processes and agreements, consistent inputs to the work of the UNFF, *inter alia*, through sharing regional perspectives, approaches and experiences. The Warsaw Ministerial Declaration and the two Resolutions addressed several substantive issues for enhanced collaboration, including:

- Enhancing regional contribution to the achievement of Four Global Objectives on Forests agreed by the UNFF and the implementation of the Non-Legally Binding Instrument on All Types of Forests;
- Role of forests and their products in climate change mitigation and adaptation;
- Role of forests in combating desertification;
- Implementation of the relevant work programmes on biological diversity;
- Joint activities of the forest and water sectors, including mitigation of natural hazards such as floods and droughts;

- Supporting Forest Law Enforcement and Governance -processes; and
- Enhancing the use of wood as a renewable raw material and source of energy.

### ***The Workshop***

As part of the MCPFE Work Programme for 2008 - 2011, the Ministry of Agriculture and Forestry of Finland, with the financial support of the Ministry of the Environment and the Ministry for Foreign Affairs, decided to organise a Pan-European workshop “Forests in the Changing Environment” in Koli on 3 - 5 September 2008. The workshop will provide a forum for discussion and elaboration of a contribution from Europe to the eighth session of the UNFF.

The objectives of the Koli workshop are to:

- Explore what are the priority issues related to the role of forests and sustainable forest management in the changing environment: climate change, loss of forest cover, forest degradation, desertification, biodiversity, protected areas;
- Share views on how to address these priority issues;
- Discuss how to ensure coherent actions at the national, regional and global levels; and
- Provide a basis for a regional contribution to the work of UNFF.

The outcome of the Koli workshop will be presented at the European Forest Week on 20 - 24 October 2008 and at the MCPFE Expert Level Meeting on 12 - 13 November 2008, and forwarded to the UNFF secretariat.

### ***The Background Document***

The purpose of this Background Document is to give a brief overview of the status and trends of issues under the overall theme “*Forests in a Changing Environment*” on the agenda of the UNFF8. To this end, it briefly reviews the direct and underlying causes of deforestation and forest degradation, as well as the role of forests in the mitigation of climate change, impacts of climate change on forests and adaptation of forests to climate change. The document highlights the agreed international commitments related to the issues on the agenda of the UNFF8 and progress made in their implementation. Finally, aspects related to inter-sectoral coordination and cooperation between international conventions, organisations and processes are presented.

This document discusses the topics of the UNFF8 mostly at the global level. The Pan-European achievements, challenges and planned actions in Europe in relation to the issues to be addressed at the UNFF8 are presented in a separate background note prepared by the Liaison Unit Oslo of the MCPFE.

The keynote presentations at the Koli workshop will give further ideas to stimulate the discussions at the workshop. The keynote presentations are:

- Direct and indirect causes of deforestation, forest degradation and desertification  
*Dr. Markku Kanninen, Director, Centre for International Forestry Research (CIFOR), Indonesia*
- Role of forests and climate change: impacts, adaptation and mitigation  
*Dr. Gert-Jan Nabuurs, Associate Professor, Alterra, the Netherlands*
- Role of forests and biological diversity  
*Dr. Elena Kulikova, Forest Programme Director, WWF, Russia.*

## PART II: IDENTIFICATION OF ISSUES

### 1. Deforestation, forest degradation and desertification

#### Box 1. Major problems concerning deforestation, forest degradation and desertification

**Deforestation** continued at an annual rate of 13 million hectares in 2000 – 2005 (the net loss in forest area was 7.3 million hectares).

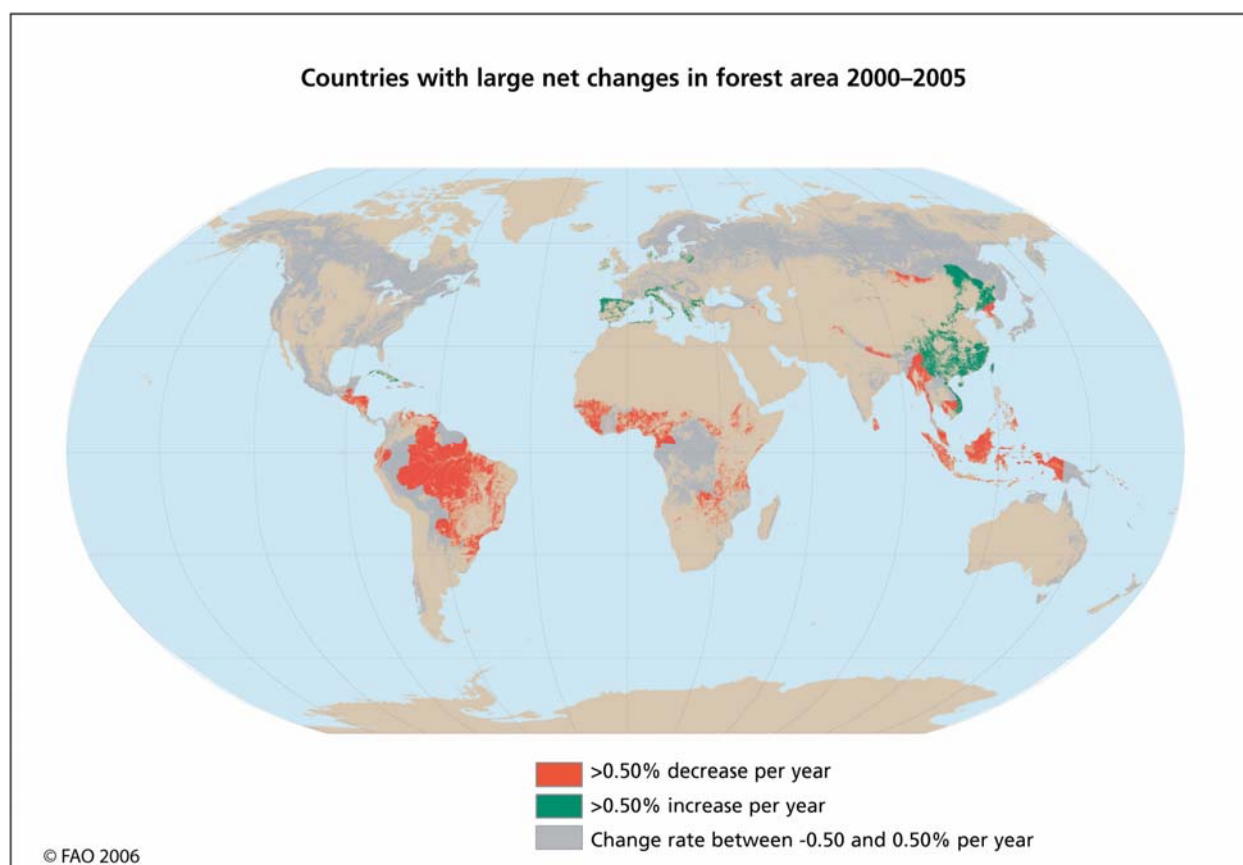
**Forest degradation** continues at an alarming rate.

**Desertification** has potentially devastating effects for about two-thirds of the countries of the world and for more than one billion people.

#### 1.1. Deforestation and forest degradation <sup>1</sup>

##### 1.1.1. Status and trends of deforestation and forest degradation

Deforestation is a significant feature of global environmental change. High rates of deforestation have severe consequences for climate change, loss of biodiversity, flooding, erosion and soil degradation. Further, deforestation poses threats to the livelihoods of the rural poor and cultural integrity of forest-dependent people, and the supply of timber and non-timber forest products for future generations.



**Figure 1. Countries with large net changes in forest area 2000-2005** (Source: FAO 2005)

<sup>1</sup> The text of this section is largely based on FAO (2005), FAO (2007b), FAO (2008) and Kanninen *et al.* (2007).

When speaking about deforestation, we first have to be clear on what we mean by forest. The forest sector widely uses the definition by the Food and Agriculture Organization of the United Nations (FAO) Forest Resources Assessment (FRA). The current FAO FRA forest definition is as follows:

### **Definition 1. Forest**

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

#### Explanatory notes

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

(Source: FAO 2007a)

Although the FRA definition of forest is internationally the most commonly used, many definitions of forest are in use throughout the world, reflecting the wide differences in biogeophysical conditions, social structures, and economies. Lund (2007) listed 70 definitions for international purposes. Together with national definitions, the number of different definitions of forest is well over 200. Most countries have developed very specific definitions that are suitable for their own administrative purposes and reflect their forests' ecological conditions. Countries have defined forests, in terms of (i) legal, administrative, or cultural requirements; (ii) land use, (iii) canopy cover, (iv) carbon density (essentially biomass density) or (v) productivity.

In the reports of the technical expert groups under the CBD, the FRA definition of forest has been used. However, there are some problems with the FRA definition of forest when it comes to addressing or measuring environmental change, including status and trends of biodiversity, and greenhouse gas emissions from forests. Consequently, the most recent forest expert group under the CBD recommended in its final report in 2007 that an agreed global definition of forests (and other forest-related terms) as well as a global forest classification system that reflects forest biodiversity

elements should be adopted. Based on this recommendation, the ninth Conference of the Parties in May 2008 requested the Executive Secretary of the CBD to continue the cooperation with the FAO on clarifying the definitions of forest and forest types that reflect forest biodiversity, taking into account the ongoing dialogue and work.

In the national reporting on greenhouse gases, the UNFCCC encourages countries to use the same definition of forest that they have applied in their reporting to the FRA.

The UN Millennium Ecosystem Assessment in 2005 mainly used the FRA 2000 definition of forest but identified some limitations in the definition. According to the critics, the use of such a low percentage for crown cover (10%) as a minimum threshold conflicts with scientific definitions of “forest” as a vegetation type as well as with traditional use and understanding of the term. Another aspect of the FRA definition of forest which has been criticized is the inclusion of forest plantations into the definition of forest as it affects estimates of net forest loss and obscures the loss of primary<sup>2</sup> forests.

The term “deforestation” is used in various ways in different contexts. FAO uses two different parameters in defining deforestation. First, based on land use, deforestation is defined as the conversion of forest land to another land use. Second, according to crown cover, deforestation is defined as the long-term reduction of this parameter below a 10% threshold. The Kyoto Protocol also includes a definition for deforestation. The key feature of the definition is that the process is directly human-induced.

### **Definition 2. Deforestation**

**Deforestation** is the conversion of forest to another land use *or* the long-term reduction of the tree canopy cover below the minimum 10 percent threshold.

Explanatory notes

1. Deforestation implies the long-term or permanent loss of forest cover and implies transformation into another land use. Such a loss can only be caused and maintained by a continued human-induced or natural perturbation.
2. Deforestation includes areas of forest converted to agriculture, pasture, water reservoirs and urban areas.
3. The term specifically excludes areas where the trees have been removed as a result of harvesting or logging, and where the forest is expected to regenerate naturally or with the aid of silvicultural measures. Unless logging is followed by the clearing of the remaining logged-over forest for the introduction of alternative land uses, or the maintenance of the clearings through continued disturbance, forests commonly regenerate, although often to a different, secondary condition. In areas of shifting agriculture, forest, forest fallow and agricultural lands appear in a dynamic pattern where deforestation and the return of forest occur frequently in small patches. To simplify reporting of such areas, the net change over a larger area is typically used.
4. Deforestation also includes areas where, for example, the impact of disturbance, overutilization or changing environmental conditions affects the forest to an extent that it cannot sustain a tree cover above the 10 percent threshold.

(Source: FAO 2001)

**Deforestation** is the direct human-induced conversion of forested land to non-forested land.

(Source: UNFCCC/Kyoto Protocol)

---

<sup>2</sup> For the definition of “primary forest” see Definition 4 on page 23.

The most widely used global forest cover and deforestation estimates are provided by the FAO FRA. According to the latest FRA, the total forest area in 2005 was estimated to be just less than 4 billion hectares, which represents about 30% of the total land area of the world. Deforestation continued at a rate of about 13 million hectares per year in 2000 - 2005. Due to intensive afforestation mainly in Asia, landscape restoration and natural expansion of forests, the net annual loss of forest area was 7.3 million hectares, down from 8.9 million hectares in 1990 – 2000.

In addition to the FAO FRA, there are other studies that estimate the rates of tropical deforestation. For example, the Tropical Ecosystem Environment Observation by Satellite (TREES) project uses high resolution sample data to estimate forest loss in humid tropical forests. There is rough agreement between these two sources on the magnitude of gross deforestation during the 1990s on two continents, Latin America and Asia. However, the greatest disagreements concern the dry forests and savannas of Africa. Differences in the reported rates of deforestation are due to differences in the definitions and methods used.

**Table 1. Annual changes in forest area by subregion 1990-2005**

Region/Sub-region	1990-2000		2000-2005	
	1 000 ha	%	1 000 ha	%
Eastern and Southern Africa	-1 731	-0.71	-1 702	-0.74
Northern Africa	-1 013	-0.72	-982	-0.73
Western and Central Africa	-1 631	-0.56	-1 356	-0.48
<b>Total Africa</b>	<b>- 4 375</b>	<b>- 0.64</b>	<b>- 4 040</b>	<b>- 0.62</b>
East Asia	1 751	0.81	3 840	1.65
South and Southeast Asia	-2 578	-0.83	-2 851	-0.98
Western and Central Asia	34	0.08	14	0.03
<b>Total Asia</b>	<b>- 792</b>	<b>- 0.14</b>	<b>1 003</b>	<b>0.18</b>
<b>Total Europe</b>	<b>787</b>	<b>0.09</b>	<b>661</b>	<b>0.07</b>
Caribbean	36	0.65	54	0.92
Central America	-380	-1.47	-285	-1.23
North America	17	n.s.	-101	-0.01
<b>Total North and Central America</b>	<b>- 328</b>	<b>- 0.05</b>	<b>- 333</b>	<b>- 0.05</b>
<b>Total Oceania</b>	<b>- 448</b>	<b>- 0.21</b>	<b>- 356</b>	<b>- 0.17</b>
<b>Total South America</b>	<b>- 3 802</b>	<b>- 0.44</b>	<b>- 4 251</b>	<b>- 0.50</b>
<b>World</b>	<b>- 8 868</b>	<b>- 0.22</b>	<b>- 7 317</b>	<b>- 0.18</b>

Note: Percentages represent the proportion of remaining forest area lost and gained each year during the respective period.

(Source: FAO FRA 2005)

Describing the state of forest degradation is much more challenging than describing the state of deforestation. There are many definitions for forest degradation relating to canopy cover, ecological function, carbon stocks, and other attributes of forests. Definitions for forest degradation have been devised e.g. by FAO, the International Tropical Timber Organization, the Intergovernmental Panel on Climate Change (IPCC) and in the context of the work of the CBD and UNFCCC. The expert meeting of the Collaborative Partnership on Forests (CPF) in 2002 recommended a core definition for forest degradation as follows:

**Definition 3. Forest degradation**

Forest degradation is the reduction of the capacity of a forest to produce goods and services. Capacity includes maintenance of ecosystem structure and functions.

(Source: CPF 2002)

The issue of forest degradation has achieved greater attention, *inter alia*, due to the adoption of the 2010 Biodiversity Target by the CBD, adoption of the four Global Objectives on Forests by the UNFF and the on-going discussion on reducing emissions from deforestation and forest degradation under the UNFCCC. While the definition of forest degradation agreed by the CPF in 2002 represents a common ground, it is not operational. Consequently, FAO is just about to launch a special study on forest degradation. The purpose of the study is to expand on the earlier work and to identify existing and promising methodologies for assessing key parameters of forest degradation.

There are no clear descriptions of the state and trends of forest degradation, but usually forest degradation is discussed in the same context as deforestation. Depending on the main focus of the context in which deforestation and forest degradation are considered, the description focuses on the changes in greenhouse gas emissions, change in carbon stock or loss of forest biodiversity. The conclusion is that deforestation and forest degradation continue at alarmingly high rates. The present state and trends concerning the forest biodiversity are discussed under the heading “Forests and biodiversity conservation”.

**1.1.2. Direct causes of deforestation and forest degradation**

The causes of deforestation and degradation can be divided into two categories. The first involves factors that are directly linked to the act of clearing or degrading land, usually referred to as **direct causes**. The second category includes the background societal factors that drive these direct causes, which are referred to as **underlying causes**. Another distinction is between deforestation and degradation driven by causes originating within the forest sector itself (so-called “intra-sectoral factors”) and activities driven by causes originating from other sectors (“extra-sectoral factors”).

The main direct causes leading to deforestation and forest degradation are agricultural expansion (including pasturelands), wood extraction and infrastructure extension. Forest fires also cause deforestation and forest degradation and their frequency and intensity are increasing due to the impacts of climate change.

***Agricultural expansion:***

Agricultural activities that result in the clearing and conversion of forest land include the establishment of permanent cropland, shifting cultivation and grazing. The direct causes that promote the decision to convert forest land include:

- Favourable environmental conditions (e.g. forests in areas with good drainage and soil fertility are more likely to be converted into farmland);
- High prices for agricultural products (more profitable production, and thus more clearing);
- Low wages (lower cost of forest clearing, and thus more deforestation);
- Demographic changes (e.g. population growth and increased rural populations can foster further deforestation);

- Government policies that encourage clearing of lands for agriculture as an attempt to reduce poverty.

**Wood extraction:**

Unsustainable wood extraction is the principal intra-sectoral cause of forest degradation, and can also lead to deforestation, either directly or indirectly. Wood is extracted from forests for timber, pulpwood, fuelwood and charcoal. While poorly designed and conducted logging practices usually degrade forests, proper silvicultural practices will not cause severe degradation or deforestation. A large body of literature on reduced impact logging (RIL) has developed prescriptions for silvicultural and harvesting techniques, as well as pre-harvest and post-harvest operations.

Uncontrolled or under-regulated timber extraction, whether legal or illegal, often leads to degradation and, indirectly, to deforestation. Also, road construction associated with logging frequently leads to deforestation by facilitating immigration and conversion of forests to agriculture in areas where property rights are unclear or poorly enforced. Poor logging practices - which leave behind large volumes of combustible waste - make forests vulnerable to escaped fires that have been set to clear land for commercial or subsistence agriculture, further degrading the forest.

**Infrastructure extension:**

Forests can also be cleared to construct roads, settlements, public services, pipelines, open-pit mines, hydroelectric dams, energy exploration, and other infrastructure. None of these sources tend to be a major factor in terms of the quantitative area of forest land cleared. Indirectly, however, road construction and improvement is by far the element in infrastructure development that contributes the most to deforestation. This occurs when there is a decrease in transport costs, enabling productive activities to take place in remote areas.

**Forest fires:**

350 million hectares of land were affected by fires in 2000, a significant portion of which were forests and woodlands. Recent studies show that the frequency and intensity of fires are increasing, *inter alia*, in the Mediterranean and boreal regions. While fire plays an important and ecologically beneficial role in many forest ecosystems, most fires today are caused by humans to convert forests to agricultural land or for other purposes. A major problem in this respect is what is taking place in tropical forested peatlands in Southeast Asia.

**1.1.3. Underlying causes of deforestation and forest degradation**

The underlying causes of deforestation and forest degradation can be grouped under macroeconomic factors, governance factors and other factors (including demographic, technological and cultural factors).

**Macroeconomic factors:**

The higher profitability of agriculture is the main economic factor underlying the conversion of forests to other uses. Other macroeconomic factors with significant potential to impact deforestation include external debt, foreign exchange rate policy, and trade policies governing sectors linked to deforestation (mainly agriculture and cattle ranching) and forest degradation (mainly timber extraction). The net impacts of such policies on forests are highly variable. For example, a devaluation or currency depreciation will stimulate exports, and the impact on deforestation depends on whether or not export crops are suitable for cultivation on cleared forest land.

Policies supporting the expansion of forest product industries and related debt can be a significant force driving deforestation. Once production capacity is in place, both market and political factors exert pressure to maintain the supply of raw materials from natural forests if plantation-generated supplies are insufficient.

***Governance factors:***

Governance plays a major role in determining the fate of forests. Deforestation and degradation can result from the combined impact of forest tenure and institutions, which in turn determine the set of incentives that leads to overexploitation.

With respect to tenure, deforestation and degradation can occur as a consequence of poorly defined property rights, including systems that reward deforestation with tenure establishment. Where property rights are ambiguous, overlapping or weak, incentives for investing in long-term returns from natural resources are also weak.

Non-transparent decision-making regarding the allocation or conversion of state forest resources, and the associated rent-seeking behaviour, is the second significant factor that drives deforestation and degradation. Ambiguous or overlapping laws, regulations and jurisdictions across sectors, and confusion introduced by incomplete decentralization, all provide opportunities for entrepreneurs to exploit “grey areas” to circumvent forest protection policies. The widespread prevalence of corruption at all levels in many producer countries often allows powerful political and corporate actors to act with minimal levels of public accountability.

A third set of governance factors are inappropriate forest laws and weak law enforcement capacity. Forest laws often define some sustainable forest activities as illegal, while treating certain unsustainable activities as legal. For example, forest laws often consider forest-based sources of income for the poor illegal but, at the same time, the laws can be weak instruments for dealing with large-scale forest crime.

***Other factors:***

**Demographic factors:** Growing rural populations and migration to the agricultural frontier increases the labour force available for deforestation. An increasing population in urban and rural areas also raises demand for food and other land-based commodities, thus requiring more land to produce them. As population growth is often viewed as the main cause of deforestation, it is important to nuance this with the observation that most deforestation is from the conversion of forest to agricultural land – and much of this is from industrialized rather than smallholder agriculture.

**Technological factors:** Technological improvements can affect deforestation rates. The adoption of land-extensive technologies, for example, can result in the expansion of agriculture at the expense of forests. Or, new technology that results in more intensive agriculture can pull resources out of extensive agriculture at the forest frontier and thereby reduce deforestation. Generally, the role of improved agricultural technologies in terms of deforestation is ambiguous, and depends on the relative strengths of two opposing forces. First, new technologies will be adopted if they increase profitability, and higher agricultural profitability makes forest conversion more attractive. Second, the increased supply of products (and demand for inputs like labour) will change prices in a way that dampens - and possibly reverses - the increase in profitability.

**Cultural factors:** Local culture can directly affect the land use of a given area. For instance, sacred forest areas are often protected from land conversion and degradation. However, other cultural factors can exert pressure on forests.

Studies on the direct and underlying causes of deforestation and forest degradation reveal that a complex set of social, economic and political factors lies behind the forest use and conversion to other land uses. Further, the multi-dimensional causal factors can differ significantly across countries and over time, making it difficult to make any generalizations. The research also reveals that the net effect on forests from various underlying causes - macroeconomic factors such as exchange rate changes, and governance factors such as decentralization - is difficult to predict. However, it seems evident that one of the primary causes for the high rates of deforestation and forest degradation is due to current national and global policies and economic frameworks and mechanisms: alternative land uses tend to be more profitable than conserving forests or managing them in a sustainable way.

## 1.2. Desertification <sup>3</sup>

Desertification occurs on all continents except Antarctica and affects the livelihoods of millions of people, including a large proportion of the poor in dryland areas. Desertification takes place worldwide in drylands, and its effects are experienced locally, nationally, regionally, and globally. Drylands occupy 41% of Earth's land area and are home to more than 2 billion people - a third of the human population in 2000. Drylands include all terrestrial regions where water scarcity limits the production of crops, forage, wood, and other ecosystem provisioning services.

### Definition 4. Desertification

Desertification means land degradation in arid, semiarid and dry sub-humid areas resulting from various factors, including climatic variations and human activities.

(Source: UNCCD)

Some 10–20% of drylands are already degraded. Based on this estimate, about 1–6% of the dryland people live in desertified areas, while a much larger number of people are under threat from further desertification. Scenarios of future development show that, if unchecked, desertification and degradation of ecosystem services in drylands will threaten future improvements in human well-being and possibly reverse gains in some regions. By the year 2020, an estimated 135 million people risk being driven from their lands as a result of continuing desertification, including 60 million in Sub-Saharan Africa alone. Consequently, desertification ranks among the greatest environmental challenges today and is a major impediment to meeting basic human needs in drylands.

Persistent, substantial reduction in the provision of ecosystem services as a result of water scarcity, intense use of services and climate change are a much greater threats in drylands than in non-dryland areas. In particular, the projected intensification of freshwater scarcity as a result of climate change will cause greater stresses in drylands. If left unmitigated, these stresses will further exacerbate desertification. The greatest vulnerability is ascribed to sub-Saharan and Central Asian

---

<sup>3</sup> The text of this section is largely based on Millennium Ecosystem Assessment (2005c) and FAO (2007b).

drylands. For example, in three key regions of Africa - the Sahel, the Horn of Africa, and Southeast Africa - severe droughts occur on average once every 30 years. These droughts triple the number of people exposed to severe water scarcity at least once in every generation, leading to major food and health crises.

Human-induced desertification is a result of a long-term failure to balance supply and demand of ecosystem services in drylands. There is an increasing pressure on dryland ecosystems to provide services such as food, forage, fuel, building materials, and water for humans and livestock, for irrigation, and for sanitation. This increase is attributed to a combination of human and climatic factors. The former includes indirect factors like population pressure, socioeconomic and policy factors, and globalization phenomena like distortions to international food markets, and direct factors like land use patterns and climate-related processes. The climatic factors of concern include droughts and projected reduction in freshwater availability due to global warming. While the global and regional interplay of these factors is complex, it is possible to understand them at the local scale.

In spite of the social and environmental impacts of desertification, there is no updated information on the progression of this process. The World Bank has been using the same estimate of annual losses resulting from desertification (US\$42 billion) since 1990. Updated information is a key factor for more effective action. The United Nations Environment Programme (UNEP) has estimated that an effective 20-year global effort to combat desertification would cost in the range of US\$10 to US\$22 billion per year.

Natural vegetation plays a fundamental role in fighting soil degradation, and perennial vegetation guarantees effective and long-lasting soil protection. Deforestation increases the vulnerability of land to desertification. Afforestation and reforestation, within an appropriate landscape approach, are among the most effective ways to counteract desertification.

### **1.3. International commitments related to combating deforestation, forest degradation and desertification**

#### **1.3.1. IPF/IFF – UNFF process <sup>4</sup>**

The issue of deforestation was brought on the international agenda in the late 1980s. The United Nations Conference on Environment and Development (UNCED) in 1992 adopted Chapter 11 “Combating Deforestation” as part of the Agenda 21 and the so-called Forest Principles. The two *ad hoc* bodies of the United Nations – the Intergovernmental Panel on Forests (IPF, 1995 – 1997) and the Intergovernmental Forum on Forests (IFF, 1997 – 2000) – produced more than 270 proposals for action to promote the management, conservation and sustainable development of all types of forests. The United Nations Forum on Forests (UNFF) was established in 2000 as part of a new international arrangement on forests, to carry on the work built on the IPF/IFF processes.

The underlying causes of deforestation and forest degradation were recognised in the work of the IPF and IFF, which gave several proposals for actions addressing the need for identifying the underlying causes of deforestation and forest degradation and highlighting issues like appropriate tenure laws and arrangements, community involvement and capacity building, creation of new forest resources, and rehabilitation of degraded forests.

---

<sup>4</sup> The text of this section is largely based on [www.un.org/esa/forests](http://www.un.org/esa/forests).

The implementation of several other IPF/IFF proposals for action also contributes to reversing the loss of forest cover and preventing forest degradation. For example, the IPF made proposals for action concerning fragile ecosystems affected by desertification and drought, highlighting, *inter alia*, integrated approaches to national forest and dryland policies and programmes, protected areas, involvement of indigenous and local communities, partnerships between governments and stakeholders, international coordination and collaboration, and research on appropriate plant species for land restoration.

Combating deforestation and forest degradation was also on the agenda of the second session of the UNFF in 2002. The meeting adopted a resolution highlighting, *inter alia*, the need for the capacity-building programmes addressing the underlying causes of deforestation and forest degradation, and the importance of addressing domestic law enforcement and illegal international trade in forest products. The resolution addressed the rehabilitation and restoration of degraded lands and the promotion of natural and planted forests. The UNFF also dealt with other issues that have a direct or indirect link to combating deforestation and forest degradation.

At the second session of the UNFF in 2002, Ministers responsible for forests endorsed a Ministerial Declaration and Message from the UNFF to the World Summit on Sustainable Development, inviting the Summit to, *inter alia*, advance sustainable forest management as a critical means to eradicate poverty, reduce land and resource degradation, improve food security as well as access to safe drinking water and affordable energy, and highlight the multiple benefits of both natural and planted forests and trees to the well-being of the planet and humanity. Furthermore, Ministers called especially for initiatives to address the needs of those parts of the world that currently suffer from poverty and the highest rates of deforestation and where international cooperation would be welcomed by affected Governments.

The Non-Legally Binding Instrument on all types of forests (NLBI) adopted at the seventh session of the UNFF in 2007 includes four Global Objectives on Forests. Global Objective 1 specifically addresses deforestation and forest degradation.

#### **Box 2: Shared 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.

(Source: UNFF/NLBI § 5)

The member states of the UNFF have committed to work globally, regionally and nationally to achieve progress towards the achievement of the shared Global Objectives by 2015. The NLBI includes recommendations for policies, measures and actions which the member states and the international community should implement in order to achieve the Global Objectives.

### **1.3.2. United Nations Convention to Combat Desertification <sup>5</sup>**

Chapter 12 of the Agenda 21 adopted at UNCED in 1992 deals with combating desertification. At UNCED it was also agreed to start the negotiation process for the United Nations Convention to Combat Desertification (UNCCD), which was adopted in 1994. The objective of the Convention is “to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa”. To achieve this goal, the Convention calls for action involving international cooperation and a partnership approach. It focuses on improving land productivity, rehabilitation, conservation and sustainable management of land and water resources. Such action should also prevent the long-term consequences of desertification, including mass migration, species loss, climate change and the need for emergency assistance to populations in crisis. The UNCCD acknowledges the role of forests in combating desertification both directly through their effects on soil and water and indirectly through their role in mitigating climate change and supporting biodiversity.

To date, 193 countries have signed the UNCCD. The UNCCD includes regional implementation annexes for Africa, Asia, Latin America and the Caribbean, the Northern Mediterranean and for Central and Eastern Europe. The core of the UNCCD is the development of national, sub-regional and regional action programmes by national governments in cooperation with donors, local communities and non-governmental organisations.

At the eighth Conference of the Parties in Madrid in 2007, the UNCCD decided on a new 10-year strategy to enhance the implementation of the convention, embarking upon a complete reform of the functions and performance of the various bodies of the Convention, such as the Committees of Science and Technology and Review of Implementation. An improved monitoring, reporting and assessment procedure will be taken into use. Stronger synergy and complementarities between other multinational environmental agreements are sought for.

The Global Mechanism (GM) was established as a subsidiary body of the UNCCD, *inter alia*, to promote actions for mobilisation and channelling financial resources to developing countries to combat land degradation and poverty. The GM has recently launched a strategic programme on forestry to address sustainable forest management and sustainable land management together and to garner and harness collective efforts and resources in order to make a positive difference for effective UNCCD implementation from the forestry dimension. The programme will target the mainstreaming of national forest programmes and similar processes into national development processes as the core output.

---

<sup>5</sup> The text of this section is largely based on [www.unccd.int](http://www.unccd.int)

### 1.3.3. United Nations Framework Convention on Climate Change and the Kyoto Protocol <sup>6</sup>

According to the United Nations Framework Convention on Climate Change (UNFCCC), all countries have a commitment to promote sustainable management of sinks and reservoirs of all greenhouse gases, including biomass, forests and other ecosystems. The Kyoto Protocol of the UNFCCC sets commitments to developed countries (so-called Annex I Parties) to stabilize their greenhouse gas emissions in the period 2008 – 2012. A major part of the greenhouse gas emission limitations are expected to take place in energy, industry, transport, agriculture and waste sectors. According to the Protocol developed countries are also accountable for emissions resulting from land use change since 1990 due to afforestation, reforestation and deforestation. This implies that developed countries have a clear incentive to reduce deforestation and greenhouse gas emissions resulting from deforestation.

Discussion concerning forest degradation started in the run-up to the agreement on additional land use activities under the Kyoto Protocol. The concern was that some emissions from forest degradation would be omitted from the accounting system. The Intergovernmental Panel on Climate Change (IPCC) was invited to explore the methodological issues related to forest degradation and devegetation. The IPCC prepared a report *Definitions and Methodological Options to Inventory Emissions from Direct Human-induced Degradation of Forests and Devegetation of Other Vegetation Types* in 2003. The report discusses: (a) alternative definitions and provides possible framework definitions for countries to consider; (b) methodological options to inventory emissions from degradation and devegetation activities; (c) approaches to reporting and documentation; and (d) implications of methodological and definitional options for accounting under the Kyoto Protocol.

From the climate change policy perspective, deforestation results in immediate release of the carbon originally stored in the trees as CO<sub>2</sub> emissions (with small amounts of CO and CH<sub>4</sub>), particularly if the trees are burned, and slower release of emissions from the decay of organic matter. The IPCC estimated in 2007 that emissions from deforestation in the 1990s were at 5.8 GtCO<sub>2</sub>/yr, representing nearly 20% of global CO<sub>2</sub> emissions. The IPCC also noted that reducing and/or preventing deforestation is the mitigation option with globally the largest and most immediate carbon stock impact in the short term per hectare and per year as the release of carbon as emissions into the atmosphere is prevented.

The agenda item on *Reducing emissions from deforestation in developing countries and approaches to stimulate action* (REDD) was first introduced into the agenda of the Conference of the Parties at its eleventh session in December 2005. The governments of Papua New Guinea and Costa Rica, supported by eight other countries, requested for this issue to be taken up on the agenda. This proposal received wide support and there was general agreement on the importance of the issue in the context of climate change mitigation, particularly in light of the need to create incentives to curb the contribution of emissions from deforestation in developing countries to global greenhouse gas emissions

After two years of discussion, the Conference of the Parties in 2007 concluded a decision entitled “*Reducing emissions from deforestation in developing countries: approaches to stimulate actions*”. The decision provides a mandate for several elements and actions by Parties related to reducing emissions from deforestation and forest degradation in developing countries, and opens the door to

---

<sup>6</sup> The text of this section is largely based on [www.unfccc.int](http://www.unfccc.int)

further exploration of a possible incentive mechanism. The decision calls on Parties and other stakeholders to:

- Further strengthen and support ongoing efforts;
- Support and facilitate capacity-building, technical assistance and transfer of technology relating to methodological and technical needs and institutional needs of developing countries;
- Explore a range of actions, identify options and undertake demonstration activities to address drivers of deforestation relevant to each country's national circumstances; and
- Mobilize resources to support the efforts mentioned above.

In 2008 and 2009, policy approaches and positive incentives relating to reducing emissions from deforestation and forest degradation in developing countries and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries will be considered under the UNFCCC process as part of the Bali Action Plan.

#### **1.3.4. Convention on Biological Diversity (CBD)**

The sixth Conference of the Parties of the Convention on Biological Diversity in 2002 adopted an expanded programme of work on forest biological diversity. The programme of work aims at the conservation and sustainable use of forest biodiversity and the fair and equitable use of the benefits arising from the utilization of forest genetic resources. The programme of work proposes 130 activities for parties, governments, stakeholders and the international community under three programme elements: conservation, sustainable use and benefit sharing; institutional and socio-economic enabling environment; and knowledge, assessment and monitoring.

According to the Australian / PROFOR study, fourteen activities of the expanded programme of work on forest biological diversity have direct or indirect links to combating deforestation and preventing forest degradation. For example, issues like forest fragmentation and conversion to other land uses, restoration of degraded forests, unsustainable harvesting of timber and non-timber forest products and related trade, forest law enforcement, illegal activities, and economic failures and distortions are addressed. In general, it can be said that all activities which maintain and enhance forest biological diversity also prevent degradation of forests.

A more detailed discussion on the role the CBD in forest-related matters is presented in chapter 3 "Forests and biodiversity conservation".

#### **1.3.5. International Tropical Timber Agreement (ITTA) <sup>7</sup>**

The International Tropical Timber Agreement (ITTA) was negotiated under the auspices of the United Nations Conference on Trade and Development (UNCTAD) with the aim to provide an effective framework for cooperation and consultation between countries producing and consuming tropical timber, promote the expansion and diversification of international trade in tropical timber and the improvement of structural conditions in the tropical timber market, promote and support research and development to improve forest management and wood utilization, and encourage development of national policies for the sustainable utilization and conservation of tropical forests and their genetic resources and for maintaining the ecological balance in the regions concerned.

---

<sup>7</sup> The text of this section is largely based on [www.itto.or.jp](http://www.itto.or.jp)

The first ITTA was adopted in November 1983, and entered into force in April 1985. The ITTA that eventually came into operation was no conventional commodity agreement. It was, in reality, as much an agreement for forest conservation and development as for trade. The ITTA 1983 established the International Tropical Timber Organization (ITTO), which provides a framework for tropical timber producer and consumer countries to discuss and develop policies on issues relating to international trade in, and use of, tropical timber and the sustainable management of its resource base.

The ITTA has been renegotiated twice, in 1993-1994 and in 2003-2006. The ITTA 1994 incorporated the ITTO Objective 2000 for achieving exports of tropical timber and timber products from sustainably managed sources by the year 2000. The ITTA 1994 also established the Bali Partnership Fund (BPF) to assist producing members in achieving the Year 2000 Objective.

The ITTA 2006 builds on the foundations of the previous agreements and focuses on the world tropical timber economy and sustainable management of the resource base, simultaneously encouraging the timber trade and improving forest management. It also allows for the consideration of non-tropical timber issues as far as they relate to tropical timber. The ITTA 2006 is expected to enter into force in 2008.

## 2. Forests and climate change

### Box 3. Major problems concerning forests and climate change

**Climate change** has severe impacts on forests and the ecosystem services they provide. **Deforestation** contributes strongly to the climate change. Deforestation, especially in developing countries, is estimated to have been the cause of nearly 20% of global annual greenhouse gas emissions in the 1990s.

### 2.1. Role of forests

#### 2.1.1. Mitigation <sup>§</sup>

The world's forests have a substantial role in the global carbon cycle. During the 1990s, deforestation in the tropics and forest regrowth in the temperate zone and parts of the boreal zone were the main factors as regards forest-related emissions and removals of greenhouse gases. In the context of global change and sustainable development, forest management activities play a key role in the mitigation of climate change. The role of forests in climate change mitigation can be described as follows:

#### **Reducing emissions:**

Deforestation, especially in developing countries, is the single most important source of greenhouse gas emissions, with a net loss of forest area of 7.3 million ha/yr between 2000 and 2005, accounting for approximately 20% of global CO<sub>2</sub> emissions. Forest degradation can also result in

---

<sup>§</sup> The text of this section is largely based on Nabuurs *et al.* (2007).

substantial reductions of forest carbon stocks due to selective logging, fire and other anthropogenic disturbances, and fuelwood collection.

**Sequestration:**

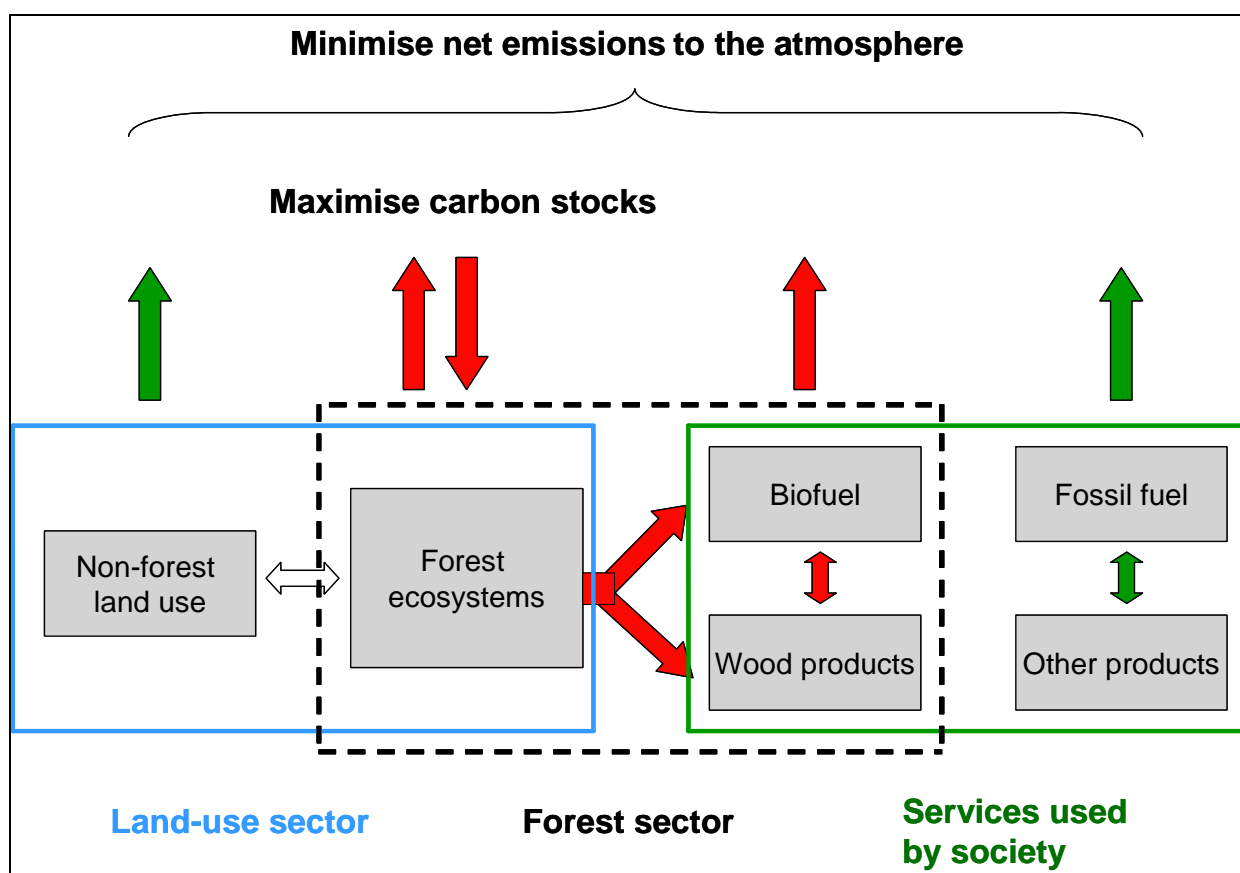
Trees and forests sequester carbon in photosynthesis. A sustainable forest management strategy, complemented by afforestation and reforestation, aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the largest sustained mitigation benefit.

**Storage:**

Trees and forests are also a stock of carbon which has been converted into biomass as a result of photosynthesis. Storage can be maintained in forests for a long time through conservation efforts. When this biomass is harvested and transformed into wood products, a portion of the carbon contained in the biomass remains fixed until the products decay or are burned. Wood products themselves are not sinks of carbon but rather reservoirs to which the carbon resulting from photosynthesis is transferred.

**Substitution:**

Wood and wood-based products can affect the carbon cycle because they store carbon, they are substitutes of materials whose production results in larger fossil fuel emissions, and they are a renewable source of energy. On the other hand, by using wood products as a substitute energy source for fossil fuels, emissions from other sources (such as aluminium, concrete, plastic) could be reduced.



**Figure 2. Role of the forest sector in climate change mitigation** (Source: Nabuurs *et al.* 2007)

When designed and implemented properly, forestry mitigation options (reducing emissions, sequestration, storage and substitution) will have substantial co-benefits, such as employment and income generation opportunities, biodiversity and watershed conservation, and provision of timber and fibre and aesthetic and recreational services.

### **2.1.2. Impacts and adaptation <sup>9</sup>**

The average temperature of the earth's surface has risen by 0.74 degrees C since the late 1800s and it is expected to increase by another 1.8° C to 4° C by the year 2100. The average sea level rose by 10 to 20 cm during the 20th century, and an additional increase of 18 to 59 cm is expected by the year 2100. Extreme weather events are expected to become more frequent. Agricultural yields are expected to drop in most tropical and sub-tropical regions - and in temperate regions, too - if the temperature increase is more than a few degrees C. Drying of continental interiors, such as central Asia, the African Sahel, and the Great Plains of the United States, is also forecast. These changes could cause, at a minimum, disruptions in land use and food supply, while the world's human population, particularly the poor, is vulnerable to climate stress.

Climate change is expected to impact forests and biodiversity and the ability of forests to provide multiple services, such as soil and water protection. The Intergovernmental Panel on Climate Change, IPCC, has identified the key impacts of climate change on food, fibre and forest products (see the following box).

---

<sup>9</sup> The text of this section is largely based on [www.unfccc.int](http://www.unfccc.int)

---

**Box 4. Impacts, Adaptation and Vulnerability; Key findings by the IPCC on food, fibre and forest products**

- In mid- to high-latitude regions [e.g. in boreal and temperate zones], moderate warming benefits crop and pasture yields, but even slight warming decreases yields in seasonally dry and low-latitude regions (medium confidence).
- The marginal increase in the number of people at risk of hunger due to climate change must be viewed within the overall large reductions due to socio-economic development (medium confidence).
- Projected changes in the frequency and severity of extreme climate events have significant consequences for food and forestry production, and food insecurity, in addition to impacts of projected mean climate (high confidence).
- Simulations suggest rising relative benefits of adaptation with low to moderate warming (medium confidence), although adaptation stresses water and environmental resources as warming increases (low confidence).
- Smallholder and subsistence farmers, pastoralists and artisanal fisherfolk will suffer complex, localised impacts of climate change (high confidence).
- Globally, commercial forestry productivity rises modestly with climate change in the short and medium term, with large regional variability around the global trend (medium confidence).
- Local extinctions of particular fish species are expected at edges of ranges (high confidence).
- Food and forestry trade is projected to increase in response to climate change, with increased dependence on food imports for most developing countries (medium to low confidence).
- Experimental research on crop response to elevated CO<sub>2</sub> confirms Third Assessment Report (TAR) findings (medium to high confidence). New Free-Air Carbon Dioxide Enrichment (FACE) results suggest lower responses for forests (medium confidence).

(Source: Easterling *et al.* 2007)

Since major impacts due to climate change now appear inevitable, it is vital for countries and communities to take practical steps to protect themselves from the likely disruption and damage that will result, *i.e.* there is a need to adapt to climate change. There are already examples of action taken: significant research efforts now provide a better understanding of the impacts of climate change, the assessment of vulnerabilities is broadly applied, and national policies and intergovernmental bodies seriously address the challenge of the changing climate. For example, under the UNFCCC framework it is recognized that the least developed countries (LDCs) have a limited ability to adapt to the adverse effects of climate change. The National Adaptation Programmes of Action, NAPAs, provide a process for LDCs to identify priority activities that

respond to adaptation needs. In other countries adaptation is being integrated into everyday operations and national adaptation strategies, plans and programmes are prepared.

Some of the mitigation potential of forests may be counteracted by adverse effects of climate change. Further, mitigation-driven actions in forestry could have positive adaptive consequences (e.g. erosion protection) or negative adaptation consequences (e.g. increase in pest and fires). Similarly, adaptation actions could have positive or negative consequences for mitigation. To avoid trade-offs, it is important to explore integrated approaches to mitigation and adaptation in forest management. Further work is needed on the forestry options to adapt to new climate circumstances at an early stage through anticipatory adaptation.

## **2.2. International commitments related to forests and climate change**

### **2.2.1. United Nations Framework Convention on Climate Change and the Kyoto Protocol <sup>10</sup>**

The objective of the UNFCCC and any related legal instruments is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a timeframe sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner.

The convention recognises the role of forests and other ecosystems in climate change mitigation as important sinks. The UNFCCC defines a sink as any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere. Countries have committed to promote sustainable management of sinks and reservoirs of all greenhouse gases, including biomass, forests and other ecosystems. The development of policy on “sinks” has evolved to cover emissions and removals of greenhouse gases resulting from direct human-induced land use, land-use change and forestry (LULUCF) activities.

Under the Kyoto Protocol several articles make provisions for the inclusion of LULUCF activities by countries as part of their efforts to implement the Kyoto Protocol in 2008 – 2012 and contribute to the mitigation of climate change.

Developed countries (so called “Annex I countries”) must report emissions by sources and removals by sinks of greenhouse gases resulting from LULUCF activities. Net changes in greenhouse gas emissions and removals through direct human-induced LULUCF activities, limited to afforestation, reforestation and deforestation that occurred since 1990, can be used to meet countries’ emission reduction commitments. Furthermore, countries may include additional human-induced activities in their accounting of anthropogenic greenhouse gas emissions and removals for 2008 - 2012. These additional activities are: forest management, cropland management, grazing land management and revegetation. When these LULUCF activities result in a net removal of greenhouse gases, an Annex I country can issue so-called “removal units” on the basis of these activities as part of meeting its commitment.

Countries can use two of the flexible mechanisms under the Kyoto Protocol, the clean development mechanism (CDM) and joint implementation (JI), for the implementation of LULUCF project activities. The clean development mechanism allows for the implementation of afforestation and

---

<sup>10</sup> The text of this section is largely based on [www.unfccc.int](http://www.unfccc.int).

reforestation project activities in developing countries (non-Annex I countries). These project activities assist Annex I countries in achieving compliance with their emission reduction commitments, while assisting non-Annex I countries to achieve sustainable development.

Under joint implementation, an Annex I country may implement LULUCF projects that increase removals by sinks in another Annex I country. The emissions reduction units generated from such a project can be used by the former to meet its emission reduction target.

The Stern Review, a report commissioned in 2006 by the Government of the United Kingdom analyzing the economics of climate change, emphasizes the prevention of further deforestation as one of four “key elements” of future international climate frameworks. The argument for the inclusion of forests in a future climate agreement is twofold: forests are the largest greenhouse gas emitters not included in the current Kyoto agreement and the costs of reduced emissions compare favourably with most other sectors.

Countries agreed at Bali in December 2007 to jointly step up international efforts to combat climate change and get to an agreed outcome in Copenhagen in 2009 (Bali Road Map). This involves elaboration of a future international climate regime that will successfully halt the increase in global emissions within the next 10-15 years and dramatically reduce emissions by mid-century. Among the key questions in international negotiations and cooperation in the future will be the role of LULUCF activities in developed countries and efforts on reducing emissions from deforestation and forest degradation in developing countries.

### **2.2.2. Other commitments**

#### ***Convention on Biological Diversity*** <sup>11</sup>

The impacts of climate change are of great concern to the CBD. At the fifth Conference of the Parties in 2000 the risks of climate change, *inter alia*, to coral reefs and forest ecosystems were highlighted. In particular, attention was given to the serious impacts of biodiversity loss on these systems and livelihoods associated with these. In 2001 an ad hoc Technical Expert Group was established to carry out an assessment of the interlinkages between biodiversity and climate change. A comprehensive report of this expert group was published in 2003 in CBD Technical Series. The seventh Conference of the Parties in 2004 encouraged Parties to take measures to manage ecosystems so as to maintain their resilience to extreme climate events and to help mitigate and adapt to climate change. It was felt that more advice and guidance was needed for promoting synergy among activities to address climate change, to combat desertification and land degradation, and activities for the conservation and sustainable use of biodiversity. Another ad hoc Technical Expert Group studied these issues and produced a Technical Report providing such guidance in 2006.

In 2006 the eighth Conference of the Parties highlighted the importance of integrating biodiversity considerations into all relevant national policies, programmes and plans in response to climate change, and to rapidly develop tools for the implementation of biodiversity conservation activities that contribute to climate change adaptation. The Conference of the Parties also noted the need to identify mutually supportive activities to be conducted by the secretariats of the three Rio conventions (UNFCCC, UNCCD, and CBD), parties and relevant organizations.

---

<sup>11</sup> The text of this section is largely based on [www.cbd.int](http://www.cbd.int).

The ninth Conference of the Parties in May 2008 addressed the options for mutually supportive actions addressing climate change within the three Rio conventions. Furthermore, the Conference of the Parties decided that, when conducting future in-depth reviews of the programmes of work of the convention, climate change considerations should be integrated into each programme of work where relevant and appropriate. The importance of the conservation and sustainable use of wetlands and especially peatlands in addressing climate change was recognised and parties and other governments were encouraged to strengthen collaboration with the Ramsar Convention to contribute to the conservation and sustainable use of peatlands.

The issue of reducing emissions from deforestation and forest degradation in developing countries (REDD) within the UNFCCC was acknowledged in the ninth Conference of the Parties. The Executive Secretary was requested to summarize information on the conservation and sustainable use of biodiversity relevant for the REDD issue and provide this information to the Executive Secretary of the UNFCCC. A new ad hoc Technical Expert Group on biodiversity and climate change was established to provide scientific and technical advice and an assessment of the integration of the conservation and sustainable use of biodiversity into climate change mitigation and adaptation activities. The first meeting of the ad hoc Technical Expert Group will be organised in November 2008.

### 3. Forests and biodiversity conservation

#### Box 5. Major problem concerning forest biodiversity

**Forest biodiversity**, i.e. the diversity in forests within species, between species and of ecosystems, is decreasing at an alarming rate.

#### 3.1. Status and trends of forest biodiversity <sup>12</sup>

Forests are home to the majority of terrestrial species: over two-thirds of the known land-based species live in forests and tropical forests are amongst the world's richest ecosystems. The tropical biome contains 46% of the world's forests and is home to an average of 100 tree species per hectare and an estimated 50-90% of all terrestrial species.

Globally more than one third of all forests are primary forests, which have developed without significant human interference. Other related concepts used in the literature are, *inter alia*, natural forest, virgin forest, old-growth forest, primeval forest, frontier forest and ancient woodland. Since 1990 about 6 million hectares of primary forests have been lost or modified each year and, according to FAO, there is no indication that this rate of change is slowing down. This change is not only due to deforestation, but also selective logging and other human interventions modifying the structure of forests considerably so that they can no longer be considered primary forests.

#### Definition 4. Primary forest

Naturally regenerated forest of native species where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.

Explanatory note

1. Some key characteristics of primary forests are:

- they show natural forest dynamics, such as natural tree species composition, occurrence of dead wood, natural age structure and natural regeneration processes;
- the area is large enough to maintain its natural characteristics;
- there has been no known significant human intervention or the last significant human intervention was long enough ago to have allowed the natural species composition and processes to have become re-established.

(Source: FAO FRA2010)

It is difficult to determine the status and loss of forest biodiversity in a completely quantitative manner because of the problems associated with the assessment at all its levels. For example, there are only a limited number of studies on genetic variation and processes among forest species. Often, there is a lack of baseline data necessary to assess long-term trends in forest biological diversity, and much more information is needed on the biological impacts of fragmentation because of the time delays for organisms to react to changes in their environments. Nevertheless, key publications

---

<sup>12</sup> The text of this section is largely based on Thompson *et al.* (2002) and CBD (2007b).

such as the Millennium Ecosystem Assessment and the Red List of Threatened Species™ indicate that globally a large and increasing number of forest ecosystems, populations and species are threatened or being lost.

The number of threatened and endangered forest species seems to correlate with the size and quality of forest habitats, temporal and spatial continuity in the forest landscape, and the history of forest use. The current extinction rate is far higher (1,000 to 10,000 times) than the rate at which species evolve, and is at a historically high level. The main direct causes of extinctions are habitat loss, due to land conversion and fragmentation of habitats, non-native species invasions, direct exploitation, pollution, and unsustainable harvesting of forest resources, including logging. In the future, climate change may have a major effect as it interacts with existing problems and contributes to extinctions. Tropical moist forests are home to the largest number of threatened species in any biome. It is assumed that numerous, but not yet scientifically described, species are presently being lost together with their tropical forest habitats. Globally, over half of the temperate broadleaf and mixed forest biomes and nearly one quarter of the tropical rain forest biome have been fragmented or removed by humans.

According to the FAO FRA data, the percentage of forest area designated for the conservation of biological diversity has increased significantly between 1990 and 2005, with an estimated 11% of total forest area having this objective as its primary function. This positive trend was observed in all regions with the exception of Northern, Eastern and Southern Africa. However, there is usually no assessment of the effectiveness of biodiversity conservation available, and the location of protected areas does not always reflect areas of particular importance to forest biodiversity.

### **3.2. International commitments related to the conservation of forest biodiversity**

#### **3.2.1. Convention on Biological Diversity <sup>13</sup>**

The objectives of the Convention on Biological Diversity are the conservation of biological diversity, sustainable use of its components, and fair and equitable sharing of the benefits arising from the utilization of genetic resources.

The Conference of the Parties has established seven thematic programmes of work which correspond to some of the major biomes on the planet. Each programme establishes a vision for the future work and basic principles to guide it. They also set out key issues for consideration, identify potential outputs, and suggest a timetable and means for achieving these. The implementation of the work programmes depends on contributions from Parties, the Secretariat, and relevant intergovernmental and other organizations. Periodically, the Conference of the Parties and its scientific and technical subsidiary body review the state of the implementation of the work programmes. As mentioned earlier, the sixth Conference of the Parties in 2002 adopted a programme of work addressing the conservation and sustainable use of forest biodiversity.

The Conference of the Parties has also initiated work on key matters of relevance to all thematic areas. These so-called cross-cutting issues provide bridges and links between the thematic programmes. Some cross-cutting issues directly support work under thematic programmes: for example, the work on indicators provides information on the status and trends of biodiversity for all biomes. Other cross-cutting issues relevant for forests are, *inter alia*, sustainable use of biodiversity,

---

<sup>13</sup> The text of this section is largely based on [www.cbd.int](http://www.cbd.int)

the ecosystem approach, climate change and biodiversity, communication, education and public awareness, the Global Strategy for Plant Conservation, traditional knowledge, innovations and practices, and technology transfer and cooperation. The work done for these cross-cutting issues has led to a number of principles, guidelines, and other tools to facilitate the implementation of the Convention.

The sixth Conference of the Parties in 2002 adopted a strategic plan for the Convention, including the mission, more commonly known as the 2010 Biodiversity Target, to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national levels. This target was subsequently endorsed by the World Summit on Sustainable Development in 2002. The 2010 Biodiversity Target was incorporated as a new target under the Millennium Development Goals by the United Nations General Assembly in 2006.

#### **Box 6. 2010 Biodiversity Target of the Convention on Biological Diversity**

“Parties commit themselves to a more effective and coherent implementation of the three objectives of the Convention, to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on earth.”

(Source: CBD decision VI/26 § 11)

The strategic plan also includes four strategic goals and nineteen objectives. In order to facilitate the assessment of the progress towards the 2010 Biodiversity Target and communicate this assessment, global-level indicators have been developed. These indicators have further been used as a basis for the development of specific indicators for different programmes of work under the CBD.

The ecosystem approach endorsed at the fifth Conference of the Parties in 2000 is the primary framework for action under the Convention. The ecosystem approach, which comprises twelve principles, is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. The ecosystem approach recognizes that humans, with their cultural diversity, are an integral component of many ecosystems.

**Box 7. Principles of the ecosystem approach**

Principle 1: The objectives of management of land, water and living resources are a matter of societal choice.

Principle 2: Management should be decentralized to the lowest appropriate level.

Principle 3: Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.

Principle 4: Recognizing potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context. Any such ecosystem-management programme should:

- (a) Reduce those market distortions that adversely affect biological diversity;
- (b) Align incentives to promote biodiversity conservation and sustainable use;
- (c) Internalize costs and benefits in the given ecosystem to the extent feasible.

Principle 5: Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.

Principle 6: Ecosystems must be managed within the limits of their functioning.

Principle 7: The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.

Principle 8: Recognizing the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for the long term.

Principle 9: Management must recognize that change is inevitable.

Principle 10: The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.

Principle 11: The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.

Principle 12: The ecosystem approach should involve all relevant sectors of society and scientific disciplines.

The twelve principles of the ecosystem approach are complementary and interlinked.

(Source: CBD decision V/6 §§ 6-12)

In applying the twelve principles of the ecosystem approach, the following five points are proposed as operational guidance:

1. Focus on the functional relationships and processes within ecosystems;
2. Enhance benefit-sharing;
4. Carry out management actions at the scale appropriate for the issue being addressed, with decentralization to lowest level, as appropriate; and
5. Ensure intersectoral cooperation.

After the endorsement of the ecosystem approach, there was a lot of debate on the relationship between the ecosystem approach and sustainable forest management. The seventh Conference of the Parties in 2004 noted that sustainable forest management, as developed in the IPF/IFF – UNFF process, can be considered as a means of applying the ecosystem approach to forests.

Establishing and maintaining protected areas is considered essential for achieving the objectives of the Convention and contributing to the achievement of the 2010 Biodiversity Target. The seventh Conference of the Parties in 2004 adopted a specific programme of work on protected areas, but the programme of work on forest biological diversity also proposes activities concerning forest protected areas. The eighth Conference of the Parties in 2006 adopted a set of outcome-oriented targets to be included in the programme of work on forest biological diversity, including a quantitative target of conserving effectively at least 10% of each of the world's forest types. Importance was also given to areas of particular significance to forest biodiversity which should be protected in the most threatened and vulnerable forest ecosystems.

The agenda of the ninth Conference of the Parties in 2008 included forest biodiversity for in-depth consideration, based on the review of the implementation of the programme of work on forest biological diversity. Among the most contentious issues in the meeting were the use of genetically modified trees, control of illegal harvesting and related trade of timber and other forest products, and references to the role of forests in climate change mitigation and impacts of climate change on forest biodiversity. The use of bioenergy, especially biofuels, was another topic with conflicting views and it was discussed under several agenda items, *inter alia*, forest biodiversity and agricultural biodiversity. The conflicting views on the use of bioenergy and on references to climate change were moderated among the ministers during the high level segment of the meeting.

The ninth meeting of the Conference of the Parties decided to continue and strengthen the implementation of the programme of work, and set out a range of priority topics for implementation, including human-induced threats to forest biodiversity such as climate change, habitat fragmentation, unsustainable use of forest products and resources (including unsustainable hunting and trade of bushmeat and their impacts on non-target species), illegal land conversion, environmental degradation, forest fires, and invasive alien species.

### **3.2.2. IPF/IFF – UNFF process <sup>14</sup>**

Several IPF/IFF proposals for action address forest conservation and protected areas, highlighting issues such as appropriate planning and management strategies, partnership mechanisms to involve stakeholders, financing and implementing cross-sectoral policies to support forest conservation, methodologies to assess the adequacy, consistency, condition and effectiveness of protected areas and their management, and joint protected areas of transboundary forests.

Forest conservation and protection of unique types of forests and fragile ecosystems was on the agenda of the second session of the UNFF in 2002. The meeting adopted a resolution highlighting, *inter alia*, national assessments of protected areas, effectiveness of the management of protected areas, and financing and donor coordination for forest conservation.

---

<sup>14</sup> The text of this section is largely based on [www.un.org/esa/forests](http://www.un.org/esa/forests).

The first and the third Global Objectives on Forests of the NLBI (see Box 2) address sustainable forest management, forest conservation and protected areas. In particular, the third Objective calls for a significant increase of the areas of protected forests and other areas of sustainable managed forests. The NLBI includes three specific provisions on protected areas under the heading *National policies and measures* for member states:

- Analyzing the causes and threats to forest health and vitality;
- Creation, development or expansion, and maintenance of networks of protected areas; and
- Assessment of the conditions and the management effectiveness of existing protected areas.

In addition, the NLBI addresses cross-cutting provisions linked to promoting forest conservation regarding criteria and indicators of SFM, cross-sectoral policy and programme coordination among sectors affecting and affected by forest policies and management, and support to education, training and extension programmes involving local and indigenous communities, forest workers and owners to reduce pressure on forests, fragile ecosystems in particular.

Furthermore, under the heading *International cooperation and means of implementation*, the NLBI calls for the development and establishment of positive incentives, *inter alia*, to increase the area of protected forests.

### 3.2.3. Other commitments

#### *Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention)* <sup>15</sup>

The Convention on Wetlands of International Importance especially as Waterfowl Habitat, more commonly known as the Ramsar Convention, was signed in Ramsar, Iran in 1971. The Ramsar Convention provides a framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently 158 Contracting Parties to the Convention, with 1 755 wetland sites of a total of 161 million hectares designated for inclusion in the Ramsar List of Wetlands of International Importance.

The Ramsar Convention and the CBD have a joint work plan for years 2007 – 2010. The goal of the joint work plan is the conservation and sustainable and wise use of biodiversity especially in wetlands, helping to assure the full achievement of the 2010 Biodiversity Target. The joint work plan lists some indicative activities, but the Parties may identify specific national actions depending on the circumstances of each country. The national focal points of the two conventions should cooperate in a proactive and flexible way to implement this work programme.

Significant proportions of forests are wetlands, but the Ramsar Convention is not well known in forestry sector. The ninth Conference of the Parties of the CBD requested the Executive Secretary to solicit advice from the Scientific and Technical Review Panel of the Ramsar Convention on the relevance of the joint work plan and the suite of guidelines adopted by the Ramsar Convention to the implementation of the CBD programme of work on forest biodiversity. This information will be made available to the Parties later on.

---

<sup>15</sup> The text of this section is largely based on [www.ramsar.org](http://www.ramsar.org) and CBD decision IX/5.

***Convention on International Trade of Endangered Species of Wild Flora and Fauna (CITES)*** <sup>16</sup>

The aim of the Convention on International Trade of Endangered Species of Wild Flora and Fauna (CITES) is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. CITES was drafted as a result of a resolution adopted in 1963 at a meeting of members of the World Conservation Union (IUCN). The text of the convention was finally agreed at a meeting of representatives of 80 countries in Washington DC., United States of America, in 1973. There are presently 173 Contracting Parties to the Convention.

Because the trade in wild animals and plants crosses borders between countries, the effort to regulate it requires international cooperation to safeguard certain species from over-exploitation. CITES was conceived in the spirit of such cooperation. Today, it accords varying degrees of protection to roughly 5,000 species of animals and 28,000 species of plants, whether they are traded as live specimens, fur coats or dried herbs. They are listed in the three CITES Appendices.

***United Nations Convention to Combat Desertification***

A joint work programme between the UNCCD the CBD on dry and sub-humid lands was drafted by a liaison group, which consisted of national focal points of both conventions and the convention secretariats, and it was finalised by the Ad Hoc Technical Expert Group on Dry and Sub-Humid Lands. The joint work programme was acknowledged by the Conference of Parties of both conventions in 2003-2004 and they invited Parties and relevant stakeholders to contribute to its implementation, particularly at the local level. The joint work programme recognizes that the biodiversity loss can be both a cause and a consequence of desertification. The programme seeks to address the multiple and increasing threats to the biodiversity of dry and sub-humid lands, including climate change.

***International Tropical Timber Organization (ITTO)*** <sup>17</sup>

In the early 1990s, ITTO worked with the World Conservation Union (IUCN) to develop the ITTO guidelines for the conservation of biological diversity in tropical production forests. The guidelines were published in 1993. The guidelines provide advice on planning at the landscape level, such as linking reserves with corridors of natural forest to allow wildlife to move between reserves. At the field level, they present principles and actions to maximise biodiversity conservation during management activities.

ITTO's action program takes a dual approach to the conservation of biodiversity. First, it aims to reduce the loss of biodiversity associated with the extraction of forest products and services, particularly timber, through improved forest management. Second, it assists member countries to set aside and manage totally protected areas. In particular, ITTO supports more than 10 million hectares of transboundary conservation areas, in which two or more countries cooperate in the management and conservation of ecologically important areas straddling borders.

---

<sup>16</sup> The text of this section is largely based on [www.cites.org](http://www.cites.org).

<sup>17</sup> The text of this section is largely based on [www.itto.or.jp](http://www.itto.or.jp).

---

***United Nations Framework Convention on Climate Change and the Kyoto Protocol***

Forest biodiversity conservation has been given some considerations in the climate change negotiation process. Under the clean development mechanism (CDM), it is expected that the project design document for reforestation and afforestation projects should give information on environmental impacts of the project, *i.e.* impacts on biodiversity and natural ecosystems.

## **PART III: POLICIES AND MEASURES**

### **4. Policy making and planning**

#### **4.1. Policy frameworks**

It has been recognized that the challenges facing forests today cannot be solved by the forest sector alone. What we need is formulation and implementing of appropriate forest and other policies, recognizing their interlinkages, as well as the follow-up of these policies. Policy frameworks, in general, comprise societal conditions and processes. The forms of the instruments in the individual countries vary according to their specific conditions and needs. The following interrelated forest policy frameworks and instruments can be identified at the national level:

- Legal / regulatory frameworks
- Institutional frameworks
- Economic / financial frameworks, and
- Informational needs.

Various international conventions (e.g. UNFCCC) and bodies (e.g. UNFF) have recognized the need to develop and implement policies and measures to address the specific issues – and countries are committed to implement these. For example, the NLBI identifies 25 national policies and measures and 19 action items related to international cooperation and means of implementation.

Cross-cutting policies and measures in the NLBI can be clustered as follows:

- Strengthening political commitment to sustainable forest management
- Financing sustainable forest management
- Capacity building and technology transfer
- Stakeholder participation
- Enhanced international cooperation.

Topical policies and measures in the NLBI can be clustered as:

- Forest law enforcement and governance
- International trade in forest products
- Protection of forests
- Science and research
- Public awareness and education
- Private sector and industry
- Indigenous and local communities.

## 4.2. National strategies, programmes and action plans

Various conventions and forest-related policy processes have identified national strategies, programmes and action plans as an effective means for implementation at the national level.

### Box 8. National strategies, programmes and action plans under various conventions and processes

national forest programme – nfp	(IPF-IFF-UNFF)
National Adaptation Programme for Action – NAPA	(UNFCCC)
national climate and energy strategies	(UNFCCC)
National Biodiversity Strategy and Action Plan – NBSAP	(CBD)
National Action Plan - NAP	(UNCCD)

Guidelines for the preparation of national strategies, programmes and action plans for different purposes emphasize, *inter alia*, holistic, multi-disciplinary and inter-sectoral approaches and participatory processes involving stakeholders. Coordination, coherence and integration between these different policy strategies, programmes and action plans have been recognised as essential by several governing bodies of various conventions and processes. Furthermore, the broader context of national frameworks for sustainable development has been emphasised and sectoral strategies, programmes and action plans should be mainstreamed in the wider national sustainable development strategies, including poverty reduction strategy papers.

### 4.2.1. National forest programmes

The IPF-IFF process developed several proposals for action concerning the formulation and implementation of national forest programmes (nfps). The IPF and IFF concluded that nfps are viable frameworks for addressing forest sector issues, including the implementation of relevant IPF/IFF proposals for action, in a holistic, comprehensive and cross-sectoral manner.

The Forum's multi-year programme of work for 2000-2005 included discussion on national forest programmes as a common item at each session of the Forum, and in 2002 the Forum addressed nfps as a specific agenda item. The experiences from countries showed that nfps were being developed and implemented in a variety of contexts and through different types of processes, depending on such factors as the macroeconomic context, level of socio-economic development, the government structure and the type and conditions of the forest resource. The IPF/IFF proposals for action were also increasingly taken into account in the development and implementation of national forest programmes. Furthermore, in developing countries, policies, strategies and programmes related to the goal of reducing poverty and hunger by half by the year 2015 influenced the focus of all development efforts, including national forest programmes, to an increasing extent.

In the Forum's multi-year programme of work for 2007-2015, discussion on national forest programmes and other sectoral policies and strategies has been included under the overall theme "*Forest and economic development*" in the Forum session in 2013. Moreover, the NLBI also contains provisions to further strengthen the role of nfps as an overall framework for addressing

forest sector issues and the integration of nfps into national strategies for sustainable development, relevant national action plans and poverty reduction strategies.

Several organisations support the development and implementation of national forest programmes. The National Forest Programme Facility, hosted by FAO, was founded in 2002 to help countries develop and implement national forest programmes. It is a partnership between developing countries, donors, FAO and other international organisations to help countries ensure that their national forest programmes effectively address local needs and national priorities through informed participation of civil society, while reflecting internationally agreed principles. Its support is directed towards building consensus on addressing forest-related issues at the national level, integrating sustainable forest management into broader intersectoral processes with a focus on poverty reduction, and translating commitments at the international level into national forest policies. In addition to funding workshops, training, policy analysis and studies, the Facility supports information collection and management worldwide both through its website ([www.nfp-facility.org](http://www.nfp-facility.org)) and through regional workshops, networks and communities of practice.

FAO and the National Forest Programme Facility have produced substantial training material for the development of national forest programmes. The most recent one is entitled *Understanding national forest programmes*, published in 2006. In the publication, the IPF/IFF proposals for action concerning national forest programmes have been clarified, streamlined and grouped into three core clusters in order to enhance their practical value. The core clusters are: national sovereignty and country leadership, consistency within and integration beyond the forest sector, and participation and partnership.

European Concerted Research Action, designated as COST Action E19, was established in 1999 to assist and facilitate the national forest programmes in the European context. The main objective of this COST Action E19 was to provide policy-makers in Europe with improved means for formulating and implementing national forest programmes by, *inter alia*, setting up a network of European researchers who deal with the socio-economic aspects of sustainable forest management and policy planning in forestry, specifying the commonalities and differences of the operational definitions of sustainable forest management at the national and sub-national levels in European countries, and specifying the existing understanding and definition of national forest programme in European countries. The COST Action E19 lasted for four years, until June 2003.

At the fourth Ministerial Conference on the Protection of Forests in Europe in Vienna, Austria in 2003, the ministers agreed on an MCPFE approach to national forest programmes in Europe. It is a common understanding among the European countries that national forest programme constitutes a participatory, holistic, inter-sectoral and iterative process of policy planning, implementation, monitoring and evaluation at the national and/or sub-national level.

The EU Forest Action Plan was adopted in June 2006 by the European Council. The overall objective of the EU Forest Action Plan is to support and enhance sustainable forest management and the multifunctional role of forests. In the Action Plan national forest programmes are considered to set a suitable framework for implementing international forest-related commitments.

#### 4.2.2. Cross-sectoral approaches

On the request of the FAO Committee on Forestry in 2001, with the aim to assist countries in incorporating linkages between sustainable forest management and other sectors, the FAO initiated a series of studies on available information and research needs and developed country case studies, and organised a technical meeting on the topic. The findings and conclusions of the initiative were summarized in 2003 in the FAO Forestry Paper 142 *Cross-sectoral policy impacts between forestry and other sectors*.

The importance of integrated approaches was also recognised in 2002 by the sixth Conference of the Parties to the CBD, which requested the Executive Secretary to prepare a toolkit for building capacity in integrated approaches and planning. In 2008 the secretariat of the CBD published the *Cross-sectoral toolkit for the conservation and sustainable management of forest biodiversity*, which summarises information on policy approaches that aim to minimize the negative impacts of other sectoral policies on forests and forest biodiversity. The publication draws on work done earlier by, *inter alia*, FAO and the Centre for International Forest Research (CIFOR), and the results of projects funded by the Global Environment Facility (GEF). A web-based tool is also under development.

Enhanced cooperation and cross-sectoral policy and programme coordination have been central to the work of the UNFF. With respect to the NLBI, several provisions under “*International Cooperation and Means of Implementation*” call specifically for bilateral, regional and international cooperation and partnership for strengthening the capacity of countries to combat forest-related challenges, as well as to promote south-south cooperation and triangular cooperation in the field of sustainable forest management.

#### 4.3. Implementation of international forest-related commitments at the national level

The implementation of international commitments at the national level is regularly reviewed as part of the monitoring, assessment and reporting activities of various conventions, organisations and processes. The conclusions are usually based on voluntary national reports. Often only few countries provide these reports. However, some general conclusions can be made, based on various sources.

##### *Six-Country Initiative during the Intergovernmental Forum on Forests* <sup>18</sup>

During the work of the Intergovernmental Forum on Forests (IFF), the so-called Six-Country Initiative studied how the proposals for action of the Intergovernmental Panel on Forests (IPF) had been implemented in six countries: Finland, Germany, Honduras, Indonesia, Uganda and the United Kingdom. A guide to assess the IPF Proposals for Action was developed and six country case studies were carried out. The outcomes were summarised in a Synthesis Report, which served as background material for the International Expert Consultation which met in Baden-Baden, Germany in July 1998.

---

<sup>18</sup> The text of this section is largely based on ECOSOC (1998).

The outcome of this Initiative revealed, *inter alia*, that

- A systematic assessment as developed by the Initiative was found to be an important tool for implementing the proposals for action at the national level;
- The relevance of the proposals has to be determined at the national level according to national priorities and constraints;
- National forest programmes, as defined by IPF, are seen in many countries as the most important vehicle for the implementation of the proposals at the national level;
- Adequate mechanisms for broad and effective stakeholder participation are vital elements for the implementation of the proposals;
- Awareness building and communicating the outcome of international processes in a clear and operational manner are essential to ensure that all relevant stakeholders understand the contents, significance and implications of the proposals;
- The international community should establish well-coordinated, efficient and effective means to assist developing countries and those with economies in transition in initiating the analysis of the proposals and in establishing innovative financing mechanisms for their implementation;
- Interlinkages with other international instruments and initiatives should be promoted to bring together the various disparate approaches influencing forests and forestry.

### ***Review of the effectiveness of the International Arrangement on Forests in 2005*** <sup>19</sup>

The multi-year programme of work for UNFF for the period of 2000-2005 included the review of the effectiveness of the international arrangement on forest, which was conducted in 2005. The reports and/or responses to the questionnaire from 46 countries, from the European Union, from 10 other relevant organizations and forest-related processes, and from CPF members jointly provided the basis for the review. Being mindful of the limited sample of responses in drawing conclusions, the reports nevertheless provided valuable information on experiences relating to the implementation of the IPF/IFF proposals for action.

According to the review, the greatest progress had been made in relation to the development and implementation of national forest programmes or similar frameworks, extending stakeholder participation, and in the development of criteria and indicators for sustainable forest management. The review also drew attention to areas in which further efforts are to be made. It is clear that, in many parts of the world, there are still serious challenges to be met, in particular, in terms of combating deforestation and addressing the problems associated with illegal forest activities. Moreover, the countries that struggle the most to secure adequate means of implementation are often those which face the severest challenges in pursuing sustainable forest management, with a complex interaction of difficult social, economic and environmental factors.

The review also recognized the often crucial impact on forests of other policies and economic pressures (e.g. those relating to trade, agriculture, energy and development of human settlements). A fundamental challenge marked for the future was to ensure that society places a proper value on forests, reflecting their non-market, public good outputs, as well as financial returns. Other priorities identified in the reports included the need to develop effective institutional frameworks, with good governance, to safeguard the rights of people whose daily livelihoods depend upon forests, and to establish stronger cross-sectoral links with other areas of national policy processes, such as poverty reduction strategy papers.

---

<sup>19</sup> The text of this section is largely based on ECOSOC (2005a and 2005b).

***Experiences from national forest programmes*** <sup>20</sup>

National forest programme (nfp) processes have been initiated in more than 130 countries. Information on national experiences from 91 countries (see table 2) is available at the FAO website *National forest programme update - 2008*. The nfp focal points provide information to this website on a voluntary basis.

Only few European countries and developed countries in general have provided information to the FAO website. According to the national reports provided by European countries in the context of the preparations for the fifth Ministerial Conference on the Protection of Forests in Europe, held in Warsaw, Poland in November 2007, at least 20 of the 44 MCPFE participating countries were formulating or implementing a national forest programme in line with the MCPFE approach. Five countries (Austria, Belgium, Estonia, Finland, Greece) reported that they were implementing a national forest programme or an equivalent forest policy framework that was under review. Three countries (Norway, the United Kingdom, Sweden) reported that they elaborate forest policies in a continuous process or through other means which have characteristics similar to a more formal nfp process.

An issue of FAO's journal *Unasylva* in 2006 was devoted to national forest programmes. Case studies from Canada, Guatemala, Kyrgyzstan, the Philippines and Senegal give examples of how these countries have approached the nfp process. Two articles examine regional initiatives from Latin America and the Caribbean and from Central Africa for strengthening national forest programmes as a bridge between the national and international levels. The case from Senegal is presented below in box 9 as an example.

---

<sup>20</sup> Text of this section is largely based on BMZ (2004), FAO (2006) and MCPFE *et al.* (2007).

---

**Table 2. Countries which have provided information on national forest programmes to the FAO website *National forest programme update - 2008*.**

Africa	Asia	Europe	North and Central America	Oceania	South America and Caribbean
Angola	Armenia	Belarus	Costa Rica	Palau	Barbados
Benin	Azerbaijan	Bulgaria	Guatemala	Papua New Guinea	Bolivia
Botswana	Bangladesh	Croatia	Honduras		Brazil
Burkina Faso	Bhutan	Czech Republic	Nicaragua		Chile
Cameroon	Cambodia	Finland	Panama		Colombia
Central African Republic	India	Latvia			Cuba
Chad	Indonesia	Lithuania			Grenada
Congo, Dem. Republic of	Iran, Islamic Republic of	Russian Federation			Jamaica
Congo, Rep. of	Jordan	Serbia			Paraguay
Côte d'Ivoire	Kazakhstan	Slovakia			Peru
Guinea	Korea, Republic of	Ukraine			Saint Vincent/Grenadines
Kenya	Kyrgyzstan				Suriname
Lesotho	Laos				Trinidad and Tobago
Liberia	Lebanon				Venezuela, Bolivar Rep. of
Madagascar	Moldova, Republic of				
Malawi	Mongolia				
Mali	Myanmar				
Morocco	Nepal				
Mozambique	Pakistan				
Namibia	Philippines				
Niger	Sri Lanka				
Nigeria	Syrian Arab Republic				
Rwanda	Tajikistan				
Senegal	Thailand				
Sierra Leone	Turkey				
South Africa	Uzbekistan				
Sudan	Viet Nam				
Swaziland					
Tanzania, United Rep. of					
Togo					
Tunisia					
Uganda					
Zambia					
<b>Σ 33</b>	<b>Σ 27</b>	<b>Σ 11</b>	<b>Σ 5</b>	<b>Σ 2</b>	<b>Σ 14</b>

(Source: [www.fao.org/forestry/30514/en/ago/](http://www.fao.org/forestry/30514/en/ago/))

**Box 9. Senegal's national forest programme: achievements and outlook**

First under the Forest Development Master Plan, then the Forest Action Plan and now the national Forest Policy, Senegal with the support of international cooperation has devised and implemented major programmes and projects to combat desertification, curb the negative trend of biodiversity loss and soil degradation, and generally improve people's livelihoods.

The national forest service, along with the other services of the Ministry of Environment and Nature Protection, has undertaken about 30 natural resource management projects and programmes in the six ecogeographical zones, in partnership with local people and communities, which have had a positive impact on the environment, natural resources, people and institutions.

Several successful projects that are meeting the expectations of development partners and the needs of local populations have been implemented, covering issues like integrated ecosystem management, improvement in rural people's livelihoods and living conditions, agroforestry, joint management of protected areas, rehabilitation and reforestation of overgrazed lands, fixation of coastal and inland dunes, participatory monitoring and evaluation, regulation of fuelwood collection, and cooking energy demand.

Furthermore, the Ministry of Environment and Nature Protection is testing a new planning tool, the Medium-Term Expenditure Framework. Under this framework planning is carried out every three years and includes a clear statement of objectives, the expected results, the definitions of programmes, projects and activities, the identification of the institutions or organizations responsible for undertaking the activities, the time frame, and performance indicators to monitor progress. This tool, after testing, evaluation of its advantages and disadvantages, and inclusion of any necessary improvements, is expected to provide better directing of resources to essential activities.

**Conclusions and lessons learned**

Senegal's national forest programme is based on a well-designed planning process, the support of government officials, the funding and assistance of many countries (*inter alia*, Germany, Japan, the Netherlands) and international agencies such as FAO, and the collaboration of all actors or stakeholders, including populations and local communities, NGOs, forest industries, professional organizations, private forest investors and others. Although the total numbers of projects and programmes have declined through time, the Government has put a strong emphasis on environmental protection and natural resources conservation and management.

With the decentralization reform, the Government of Senegal took decisive steps to give local governments (rural communities, mayors, regional councils) powers to take matters of natural resources conservation and environmental protection into their own hands by devolving to them the power to make decisions and take action. Senegal's national forest programme is building capacities to enable them to carry out their role effectively, while linking decentralization to poverty reduction and socio-economic development.

(Source: FAO 2006)

In 2004 the German international cooperation enterprise (Gesellschaft für Technische Zusammenarbeit, GTZ) conducted an assessment of national forest programmes and German assistance in selected countries (Bulgaria, Brazil, Cambodia, Cameroon, Chile, China, Ecuador, Honduras, Indonesia, Malaysia, Paraguay, Tanzania, Tunisia, Uganda, Vietnam) and three regions (the Southeast Asian Region – ASEN, the Amazon region and the Congo Basin) .

According to the assessment, successful processes in partner countries are characterised by the following three principal elements:

- The governments' commitment to the implementation of the agreed fields of action of the national forest programme process;
- Formulation of well-focused objectives and strategies; and
- Long-term commitment of support by the donor community.

Nfps or similar forest policy processes are currently running in several developed and developing countries, but with different entry points and approaches. In some countries the process is limited to the forest sector, reflecting its importance to the economy. In others it is much more integrated into environmental and rural development policies and programmes, demonstrating the fundamental role of forest policy in the fight against poverty and environmental degradation.

The principles and elements set out by the IPF focus mainly on the underlying qualities of the nfp process, but they provide little guidance on how to structure it and what benchmarks to set. This leaves considerable scope for country-level interpretation and for different perceptions of what really makes a national forest programme. For some it is an action plan, while for others only a broadly-based societal dialogue merits the expression “national forest programme”. At the same time, nfp-like processes are not always called “national forest programmes”; there are many different names for country-led forest-relevant processes.

The German assessment on nfps revealed that countries do not yet fully use the potential of IPF/IFF proposals for action as a comprehensive set of agreed guidelines on their way towards sustainable forest management. On the other hand, whenever countries link their existing efforts towards better forest governance to the IPF/IFF proposals as a whole and use them as a kind of checklist in monitoring and evaluation and deriving further action from there, this can clearly enhance the nfp process. Some research is still needed on why the IPF/IFF proposals are not yet fully used and what can be done to overcome the constraints. How much and what kind of international guidance is needed and useful, and what is the best way of organising support for national implementation? These are questions for the international community as a whole and, specifically, for the negotiators in the international forest dialogue.

The importance of conservation and sustainable use of forests to achieve macro-economic goals is widely acknowledged. However, many countries lack the important linkage of national forest programmes with macro-economic approaches, such as Poverty Reduction Strategies (PRS). There is a need for a good diagnosis of the contribution of forests to poverty alleviation, a better recognition of subsistence values and the role of forests as safety nets, and an analysis of the risks and potentials of sector-related measures. Countries, therefore, need to screen the PRS process in terms of whether and how the way of identifying priorities really reflects the interests and needs of people towards improved livelihoods without compromising the long-term potential of forests to provide essential functions. Also, the more donors put their support into PRS processes, the more they need to consider the implications for the forest sector and the millions of poor depending on forests.

**Progress towards SFM based on FRA information**

In the FAO FRA 2005 final report the progress made towards sustainable forest management at the global level was presented in the following table format:

**Table 4. Trends towards sustainable forest management at the global level**

Trends towards sustainable forest management at the global level					
Thematic element	Trends in FRA 2005 variables or derivatives	Data availability	1990–2005 Annual change rate (%)	1990–2005 Annual change	Unit
Extent of forest resources	● Area of forest	H	-0.21	-8 351	1 000 ha
	● Area of other wooded land	M	-0.35	-3 299	1 000 ha
	● Growing stock of forests	H	-0.15	-570	million m <sup>3</sup>
	● Carbon stock per hectare in forest biomass	H	-0.02	-0.15	tonnes/ha
Biological diversity	● Area of primary forest	H	-0.52	-5 848	1 000 ha
	● Area of forest designated primarily for conservation of biological diversity	H	1.87	6 391	1 000 ha
	● Total forest area excluding area of productive forest plantations	H	-0.26	-9 397	1 000 ha
Forest health and vitality	● Area of forest affected by fire	M	-0.49	-125	1 000 ha
	● Area of forest affected by insects, diseases and other disturbances	M	1.84	1 101	1 000 ha
Productive functions of forest resources	● Area of forest designated primarily for production	H	-0.35	-4 552	1 000 ha
	● Area of productive forest plantations	H	2.38	2 165	1 000 ha
	● Commercial growing stock	H	-0.19	-321	million m <sup>3</sup>
	● Total wood removals	H	-0.11	-3 199	1 000 m <sup>3</sup>
	● Total NWFP removals	M	2.47	143 460	tonnes
Protective functions of forest resources	● Area of forest designated primarily for protection	H	1.06	3 375	1 000 ha
	● Area of protective forest plantations	H	1.41	380	1 000 ha
Socio-economic functions	● Value of total wood removals	L	0.67	377	million US\$
	● Value of total NWFP removals	M	0.80	33	million US\$
	● Total employment	M	-0.97	-102	1 000 pers. yrs
	● Area of forest under private ownership	M	0.76	2 737	1 000 ha
	● Area of forest designated primarily for social services	H	8.63	6 646	1 000 ha

H = High (reporting countries represent 75–100% of total forest area)  
M = Medium (reporting countries represent 50–75% of total forest area)  
L = Low (reporting countries represent 25–50% of total forest area)

● = Positive change (greater than 0.50%)  
● = No major change (between -0.50 and 0.50%)  
● = Negative change (less than -0.50%)  
– = Insufficient data to determine trend

© FAO 2006

(Source: FAO 2005)

However, a definite answer to the question whether there is progress towards sustainable forest management at the global level cannot be given. There are many good signs and positive trends, like the increase of areas of forests designated primarily to the conservation of biological diversity and to social services, as well as the increase in the value of total wood and non-wood removals. However, many negative trends remain, like the decrease of the area of primary forests and decrease of total employment in the forest sector.

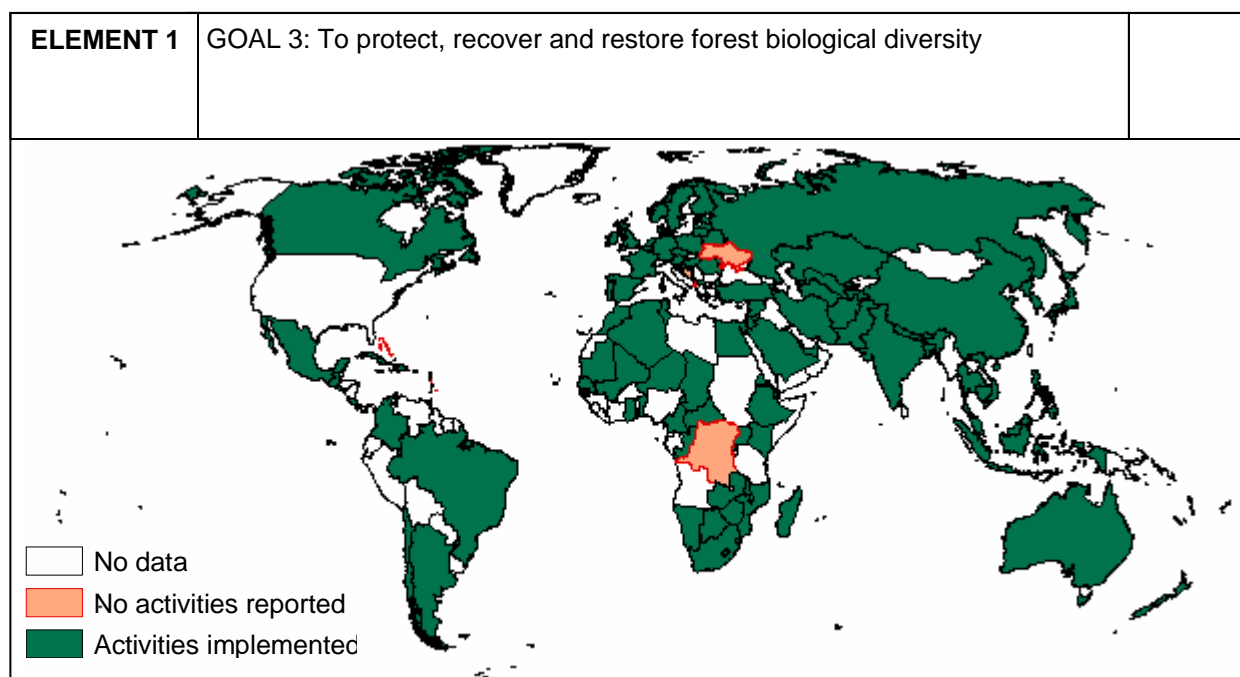
***Review of the implementation of the CBD programme of work on forest biodiversity <sup>21</sup>***

The review of the implementation of the programme of work on forest biological diversity made in 2007 highlighted, *inter alia*, that

- Notable progress in reducing the rate of deforestation has been made by some countries. However, at the global level, deforestation and conversion of primary and modified natural forests continue unabated, and have accelerated in some regions;
- The coverage of forest protected areas has increased considerably in recent years. However, the target of conserving at least 10% of all forest types by 2010 has not yet been reached in some forest biomes and types, e.g. forested wetlands, and protected areas often lack connectivity;
- The protection, recovery and restoration of forest biodiversity is often severely hampered by a lack of funding, particularly in developing countries;
- Exchange of experience on the implementation of programme activities at the regional and global level appears to be limited. However, a number of the programme areas are implicitly discussed and supported by various global and regional organizations, processes and networks. Successful examples include the activities of the Collaborative Partnership on Forests, and regional processes such as the Conference of Ministers in Charge of Forests in Central Africa (COMIFAC), the Puenbo Initiative, the Ministerial Conference for the Protection of Forests in Europe (MCPFE), and the initiatives on forest law enforcement and governance (FLEG);
- Despite the importance of forest biodiversity for the economic and spiritual well-being of indigenous and local communities, forest decision-making processes often do not take their rights and concerns sufficiently into account; and
- The available information on the potential impacts of genetically modified trees in the long term is largely confined to hypotheses at this stage. Considerable scientific uncertainty remains in this rapidly developing area, and some countries are recommending the application of the precautionary approach.

---

<sup>21</sup> The text of this section is largely based on CBD (2007a) and CBD (2007b).



**Figure 3. Activities reported on goal 3 *To protect, recover and restore forest biological diversity* of programme element 1 *Conservation, sustainable use and benefit sharing* of the CBD programme of work on forest biological diversity.**

(Source: CBD 2007a)

Constraints to the implementation of the programme of work could be grouped broadly into

- 1) Information gaps in the assessment and monitoring of forest biodiversity; and
- 2) Other constraints, mostly connected to the lack of resources, political leverage, and coordination.

The most commonly mentioned constraint for developing countries was the lack of capacity (financial and human). In addition, international organizations suggested in their reports that the lack of good governance in general, and of law enforcement in particular, were key obstacles to the implementation of many goals and objectives of the programme of work. Corruption, illegal logging, and unresolved land tenure issues were also amongst the most commonly mentioned obstacles.

#### **4.3. Coordination between international conventions, organisations and processes**

The need for better coordination and collaboration has been recognized by the governing bodies of international forest-related conventions, organisations and processes. Collaboration is specifically mentioned in convention texts of the UNFCCC, CBD and UNCCD. One of the principal functions of the UNFF is to enhance cooperation as well as policy and programme coordination on forest-related issues among relevant international and regional organisations, institutions and instruments, and contribute to synergies among them. In addition, several declarations, conclusions and decisions call for coordination, closer collaboration and fostering synergies among the respective processes.

Examples of mechanisms that have been established to facilitate coordination and collaborative activities are:

- The **Collaborative Partnership on Forests (CPF)** was formed in 2001 to support the work of the UNFF and enhance cooperation and coordination on forest issues, with the aim to promote the management, conservation and sustainable development of all types of forests. The CPF is an informal, voluntary arrangement for cooperation among 14 major forest-related international organizations, institutions and convention secretariats. The CPF is chaired by FAO.
- The **Joint Liaison Group** of the secretariats and the officers of the scientific subsidiary bodies of the CBD, UNCCD and UNFCCC was established in 2001. Its purpose is to improve the exchange of information, explore opportunities for synergistic activities and increase coordination among the three conventions and their secretariats. To date, collaborative activities have included in the development of joint programmes of work of the secretariats, preparation of technical reports and involvement in outreach activities.
- The **Biodiversity Liaison Group** of the heads of the secretariats of the five biodiversity-related conventions (CBD, CITES, Ramsar, Convention on Migratory Species, World Heritage Convention) was established in 2004 to enhance coherence and cooperation. The International Treaty on Plant Genetic Resources for Food and Agriculture joined the Liaison Group in 2004. Cooperative activities have included, for example, compilation of case-studies, joint work plans of the convention bodies (secretariats and/or bureaux) and development of indicators for assessing the achievement of the 2010 biodiversity target.

The following initiatives are examples of enhanced collaboration on specific issues of common concern and interest to international forest-related conventions and processes:

- The CPF established in 2002 a task force on **streamlining forest-related reporting** in order to reduce the reporting burden on countries and improve the efficiency of reporting. The task force has analysed the opportunities and obstacles for streamlining reporting. As its first concrete product towards the joint information framework, the task force launched a web portal [www.fao.org/forestry/cpf-mar](http://www.fao.org/forestry/cpf-mar). It helps users find national reports and reporting guidelines related to forests for various international organizations, institutions and instruments.
- Similar effort to **streamline reporting among the biodiversity-related agreements** has been conducted by the UNEP World Conservation Monitoring Centre. A web-portal [www.informea.org](http://www.informea.org) allowing access to key documents of biodiversity-related agreements has been developed and was launched at the ninth Conference of the Parties of the CBD in May 2008. In the longer term, a strategy on knowledge management for the biodiversity agreements will be developed, viewing the efforts as part of the UN System-wide approach to synergies.
- A **joint questionnaires** has been developed, *inter alia*, by the Intersecretarial Working Group on Forest Sector Statistics comprised of forest statistics experts of the UNECE, FAO, ITTO and the Eurostat of the EU. Through a joint questionnaire, data on timber production and timber product exports is collected for the use of all these organisations. This has considerably decreased the reporting burden of countries.
- Since 2002, the CPF initiative on the **harmonization of forest-related terms and definitions** has aimed to achieve more consistency in the use of forest-related definitions. Harmonising is not easy as definitions are often agreed in international negotiations to meet political and practical ends. Changing these to conform with definitions used in other processes is not feasible. Nevertheless, illuminating the differences between definitions is useful. Terms that

have become more commonly understood through this initiative include forest improvement, forest fragmentation, natural forests, planted forests, forest plantations, trees outside forests, managed forests and unmanaged forests.

- **Global forest resources assessments**, coordinated by FAO, have been carried out at five to ten year intervals since 1946. It is the most comprehensive forest related data collection exercise at the global level. The scope and content of the global assessments have evolved over time to respond to changing information needs. In the past, studies on timber supply trends dominated the FRAs. From the 1970s until FRA 1990, environmental dimensions of forest resources were in focus, in particular, the rate of deforestation. Preparations for FRA 2010 are currently taking place. FRA 2010 will continue to use the thematic elements of sustainable forest management as the reporting framework, but this time information is also collected on the legal, policy and institutional frameworks, which were not included in FRA 2005. FRA 2010 will also provide the forest-related information needed for the assessment of progress towards the 2010 biodiversity target of the CBD, the Global Objectives on Forests of the UNFF and the Millennium Development Goals.
- The CPF has developed, in collaboration with the National Forest Programme Facility, a **Sourcebook for Funding for SFM**, which is an electronic database of more than 650 funding sources. The CPF also publishes an electronic newsletter providing information on funding opportunities as they arise and hosts an electronic discussion forum on related topics.
- The CPF launched in 2005 the **Global Forest Information Service (GFIS)**, which is an internet gateway providing easy access to information supplied by partner institutions on forest conservation, management and use. The GFIS team is working continually to expand its network of information providers and provides training on how to use the GFIS.
- An **initiative on science and technology** was established by the CPF in 2007 to support the UNFF and other intergovernmental processes by assessing available scientific information and providing reports on issues of high concern. After consultations with policy makers, the initiative has identified adaptation of forests to climate change as the issue to be examined and a report for the use of the UNFF at its eighth session, and also by the UNFCCC and CBD, is now under preparation. An Expert Panel on Adaptation of Forests to Climate Change led by IUFRO has been established to draft an assessment report to be ready by early 2009.
- CPF's latest joint effort is to develop a **coordinated forest sector response to the climate change agenda**. This strategic framework aims to facilitate countries in the preparations for the post-2012 climate regime through information, contribute to the implementation of the UNFCCC, UNFF and other relevant agreements, enhance coordinated action on the ground, including integration of relevant climate change aspects into sustainable forest management, as well as assist in informing donors. The strategy will include both mitigation and adaptation. It will give particular attention to the specific needs related to the reduction of emissions from deforestation and forest degradation (REDD) as expressed in the UNFCCC's Bali Action Plan. The strategy will be made available at the 14<sup>th</sup> Conference of the Parties of the UNFCCC (December 2008), FAO Commission on Forestry meeting (March 2009), UNFF8 session (April 2009), as well as meetings of the governing bodies of other CPF member organizations.
- The **clearing house mechanisms** put in place by the conventions are useful tools for information sharing. The CBD has established a clearing house mechanism, using internet technology, to facilitate access to information and technologies related to biodiversity. Similarly, the UNFCCC has also developed a technology information clearing house.
- The sixth Conference of the Parties of the CBD in 2002 requested the Executive Secretary to undertake, in collaboration with the Coordinator and Head of the UNFF, members of the CPF and other relevant bodies, institutions and processes, an assessment of **the relationship between the IPF/IFF proposals and the activities of the expanded programme of work on**

**forest biological diversity.** A note by the Executive Secretary was prepared in 2003 (UNEP/CBD/SBSTTA/9/INF/31) showing that, overall, ninety out of 130 activities within the expanded programme of work showed some correspondence to a given IPF/IFF proposal for action, while the extent of such correspondence varied widely. The topic was to be discussed also at the fourth session of the UNFF in 2004 but that session failed to address the issue. A similar comparison has been made by, *inter alia*, the Department of Agriculture, Fisheries and Forestry of Australia and the Program on Forests (PROFOR) of the World Bank in 2003.

- Within the CBD promoting **synergies among the three Rio conventions** (CBD, UNCCD, UNFCCC) has also been dealt with under the theme *Biodiversity and climate change*. The ninth Conference of the Parties in 2008 adopted a decision including several proposals for activities for Parties to promote synergies among the Rio conventions. The decision emphasises, *inter alia*, collaboration amongst national focal points, cooperation on national level planning, and climate change adaptation planning. Collaboration with the UNFF focal points is also supported and included in the decision.
- A **joint work plan/programme** has been prepared, *inter alia*, between the Ramsar Convention and the CBD, and between the UNCCD and the CBD. The relevance of the joint Ramsar-CBD work plan to the implementation of the CBD work programme on forest biological diversity is currently being studied. A joint work programme between the UNFF Secretariat and the CBD Secretariat is to be developed according to the decision of the ninth Conference of the Parties to the CBD.
- The Joint Liaison Group of the three Rio conventions (CBD, UNCCD, UNFCCC) held a workshop in Viterbo, Italy in 2004 to assess the **interlinkages between the conventions**, and to identify and promote synergies concerning forests and forest ecosystems. The Viterbo workshop discussed ways and means for planning and implementing plans and programmes that coherently address the provisions of all three conventions regarding forests and forest ecosystems. The workshop encouraged, *inter alia*, development of joint pilot projects, efficient communication between the national focal points of the three Rio conventions and other relevant processes and organisations (particularly UNFF and GEF), and sharing of information including collection of case studies, success stories and lessons learned by countries. National forest programmes were recognised as a fundamental mechanism for synergy in many countries.

## **PART IV: POTENTIAL ISSUES FOR FURTHER CONSIDERATION**

The keynote presentations at the Koli workshop and the workshop participants are expected to give further ideas to stimulate the discussions at the workshop. The key note presentations are:

- Direct and indirect causes of deforestation, forest degradation and desertification  
*Dr. Markku Kanninen, Director, Centre for International Forestry Research (CIFOR), Indonesia*
- Role of forests and climate change: impacts, adaptation and mitigation  
*Dr. Gert-Jan Nabuurs, Associate Professor, Alterra, the Netherlands*
- Role of forests and biological diversity  
*Dr. Elena Kulikova, Forest Programme Director, WWF, Russia.*

External professional facilitators will guide the discussions of the working groups during the Koli workshop. Various participatory techniques will be used to make the work active and dynamic. In the following list there are some potential issues for further consideration, which the participants might wish to reflect on in advance.

### ***The most urgent issues under the overall theme Forests in a changing environment***

The agenda of the eighth session of the UNFF includes two overall themes: 1) *Forests in a changing environment* and 2) *Means of implementation for sustainable forest management*. The Koli Workshop will only focus on the first overall theme. Under this theme there are several broad environmental sub-themes: a) Forests and climate change, b) Reversing the loss of forest cover, preventing forest degradation in all types of forests and combating desertification, including low forest cover countries, and c) Forests and biodiversity conservation, including protected areas. In order for the UNFF8 session to produce some meaningful outcomes, the most urgent and important issues should be selected for further consideration.

- **What are the most urgent and important issues under each of the sub-themes to be further considered at the eighth session of the UNFF?**
- **What would be the role of the UNFF and the NLBI in furthering these issues?**

### ***The “climate change hype”***

The current “REDD-discussion” under the UNFCCC on reducing emissions from deforestation and forest degradation in developing countries and the large amount of anticipated financing in REDD activities have drawn a lot of interests from many governmental and civil society experts. Direct and underlying causes of deforestation and forest degradation and the means to combat them have been addressed for decades by several international fora.

- **How to ensure that the lessons learned from other international processes will be taken into account in the development of a possible “REDD-regime”?**
- **How to promote the use of existing tools and decades of experience in SFM?**
- **What could be role of the UNFF and the NLBI in the development of a possible “REDD-regime”?**

Measures for the post-Kyoto climate change regime are under negotiations. The developed countries might be able to continue with clean development mechanism, joint implementation and LULUCF category/activities to fulfil the provisions of the convention.

- **How to ensure that forests under clean development mechanism, joint implementation and LULUCF category/activities will be managed bearing in mind their multiple functions including their role in, *inter alia*, water management, biodiversity conservation, and other environmental, social, cultural and spiritual services?**

#### ***Threats of increased use of bioenergy***

As a consequence to the efforts to mitigate climate change, the use of bioenergy has increased considerably in recent years. Although the use of bioenergy provides interesting opportunities to widen the product base, for example, in forestry and agriculture, it has also resulted in negative impacts. In some countries primary forests and peatlands are converted to plantations for biofuel industry. In others, not enough decaying wood important for many insects, plants and fungi is left in forests in harvesting operations. There are also trade-offs for water and nutrient levels and carbon storage in forests.

- **How to ensure that increased use of bioenergy does not threaten other functions and benefits of forests including the social structures and livelihoods of forest-dependent communities?**

#### ***Cross-sectoral approaches and inter-sectoral collaboration***

Studies on the direct and underlying causes of deforestation and forest degradation reveal that a complex set of social, economic and political factors lies behind how forests are used and converted for other land uses. Often, activities in other sectors outside forestry lead to deforestation. Hence, strengthening cross-sectoral approaches and collaboration and coordination between forest sector and other sectors have been emphasised in various fora.

- **How to ensure that these approaches are really taking place?**
- **How to strengthen inter-sectoral collaboration at all levels (international, regional, national)?**

#### ***Land tenure and property rights***

Deforestation and land degradation are often connected to poorly defined land tenure and property rights, including systems that reward deforestation with tenure establishment. Where property rights are ambiguous, overlapping or weak, incentives for investing in long-term returns from natural resources are also weak. Land tenure and property rights issues fall strictly in the sovereignty of governments and most governments repeatedly refuse to discuss these issues in international fora.

- **How to tackle and promote progress in these politically sensitive issues?**
- **How to promote the rights of the indigenous and local communities?**

#### ***Illegal harvesting of timber and other forest products and related trade***

Illegal harvesting of timber and other forest products and related trade have been identified as important causes for deforestation and forest degradation in many countries. The issue is regularly brought to the negotiations in various forest and environmental fora. The issue is very sensitive for some governments in such an extent that complicated euphemisms like “forest law enforcement, governance and trade” has to be used in final decisions. Usually many governments refuse to discuss trade issues at all in forest and environmental fora.

- **How to promote progress and coherent actions in these politically sensitive issues?**

***Monitoring, assessment and reporting***

The UNFCCC and its Kyoto Protocol make a clear exception for developed countries as national reports, including greenhouse gas inventories, are reviewed by external experts, and the compliance mechanism is developed. Most other forest-related conventions and processes lack an effective compliance mechanism. Even providing national reports on the implementation of the commitments is often voluntary. Conclusions based on reports provided by very few and often developed countries might be biased. Furthermore, the ever-increasing reporting burden has created frustration in conscientious countries. However, reasonable monitoring, assessment and reporting are prerequisites for further decision-making both at the international and national level. Development of indicators has become very popular in various international conventions and processes. The forest sector has been a forerunner in the development of indicators. Criteria and indicators for sustainable forest management have received considerable attention both at the international and national level. There is a risk that the development of indicators in other sectors does not take into account the vast experience gained in the forest sector and overlapping, partly conflicting systems will be created.

- **How to create reasonable monitoring, assessment and reporting mechanisms taking into account the existing global and regional systems?**
- **How to ensure the consistent development of indicators for monitoring purposes?**

***Strengthening the information base***

Updated information is a key factor for more effective action. Information is especially poor concerning, *inter alia*, forest and land degradation, desertification, greenhouse gas emissions and removals, value of total wood removals and the extent of illegal activities. Many countries lack the capacity to implement forest inventories and collect reliable forest-related data systematically. New technologies, *inter alia*, based on remote sensing, provide new opportunities for global level data collection. However, national and sub-national level data is a prerequisite for effective policy making, planning and monitoring. Reliable national level data and information are also essential for reporting to international conventions and processes.

- **How to promote cost-efficient data collection systems?**
- **How to strengthen the capacities to implement forest and related inventories?**

***Focus on sustainable forest management***

Deforestation is critical but usually beyond the control of forest sector as the underlying causes lie mostly outside the forest sector. Reducing forest degradation would contribute to positive progress in different developments of international forest-related conventions and processes. Should the focus be put more on active, sustainable management of forests?

- **A final question could be simply: how and where does SFM fit in all these developments of international forest-related conventions and processes?**

**REFERENCES***Main references used for the background document*

BMZ. Federal Ministry for Economic Cooperation and Development (Germany). 2004. National forest programmes – instruments for improving sector governance? Experiences of German development cooperation. Edited by Göllner-Scholz, A., Thies, W., von Pfeil, E. & Reiche, M. BMZ Information Materials.

Buck, A. 2005. Forest Restoration in International Forest Related Processes and Potential Synergies in Implementation. In Veltheim, T. & Pajari, B. (eds.). *Forest Landscape Restoration in Central and Northern Europe*. European Forest Institute. (EFI Proceedings No. 53).

CBD. 2003a. Forest biological diversity: Relationships between IPF/IFF proposals for action and activities in the expanded programme of work on forest biological diversity. UNEP/CBD/SBSTTA/9/INF/31.

CBD. 2003b. Interlinkages between biological diversity and climate change. Advice on the integration of biodiversity considerations into the implementation of the United Nations Framework Convention on Climate Change and its Kyoto Protocol. Convention on Biological Diversity. CBD Technical Series No. 10.

CBD. 2004. Thematic programmes of work: progress reports on implementation and consideration of proposals for future action: Biological diversity of dry and sub-humid lands. Joint work programme on the biological diversity of dry and sub-humid lands between the Convention on Biological Diversity and the United Nations Convention to Combat Desertification. Convention on Biological Diversity. UNEP/CBD/COP/7/INF/28

CBD. 2006. Guidance for promoting synergy among activities addressing biological diversity, desertification, land degradation and climate change. Convention on Biological Diversity. CBD Technical Series No. 25.

CBD. 2007a. Background document for the review of implementation of the expanded programme of work on forest biological diversity. Convention on Biological Diversity. UNEP/CBD/SBSTTA/13/INF/5.

CBD. 2007b. In-depth review of the expanded programme of work on forest biological diversity. Convention on Biological Diversity. UNEP/CBD/SBSTTA/13/3.

CPF. 2004. International Forest-related Reporting: a Review and Comparative Analysis. CPF Task Force on Streamlining Reporting. (Working Paper 1).

Department of Agriculture, Fisheries and Forestry – Australia (AFFA) & Program on Forests (PROFOR) at the World Bank. 2003. Implementing the Proposals for Action of the Intergovernmental Panel on Forests and the Intergovernmental Forum on Forests.

Easterling, W., Aggarwal, P., Batima, P., Brander, K., Erda, L., Howden, S., Kirilenko, A., Morton, J., Soussana, J.-F., Schmidhuber, J. & Tubiello, F. 2007: Food, fibre and forest products. In Parry, M., Canziani, O., Palutikof, J., van der Linden, P. & Hanson, C. (eds.). *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, UK.

ECOSOC. 1998. Report of the Secretary-General on Promoting and facilitating the implementation of the proposals for Action of the Intergovernmental Panel on Forests and reviewing, monitoring and reporting on progress in the management, conservation and sustainable development of types of forests: monitoring progress in implementation. United Nations. Economic and Social Council. E/CN.17/IFF/1998/2

ECOSOC. 2005a. Report of the Secretary-General on the Review of the effectiveness of the international arrangement on forests. United Nations. Economic and Social Council. E/CN.18/2005/6.

ECOSOC. 2005b. Report of the Secretary-General on the Review of progress and consideration of future actions. United Nations. Economic and Social Council. E/CN.18/2005/8.

ECOSOC. 2007. United Nations Forum on Forests. Report of the seventh session (24 February 2006 and 16 to 27 April 2007). United Nations. Economic and Social Council. E/CN.18/2007/8.

FAO. 2001. Global Forest Resources Assessment 2000. Main report. App. 2. Terms and definitions. Food and Agriculture Organization of the United Nations. (FAO Forestry Paper 140).

FAO. 2002. Proceedings. Second Expert Meeting on Harmonizing Forest-Related Definitions for Use by Various Stakeholders. Food and Agriculture Organization of the United Nations.

FAO. 2003. Cross-sectoral policy impacts between forestry and other sectors. Food and Agriculture Organization of the United Nations. (FAO Forestry Paper 142).

FAO. 2004. Global Forest Resources Assessment Update 2005, Terms and Definitions (Final Version). Food and Agriculture Organization of the United Nations. Forestry Department. Forest Resources Assessment Programme. Working Paper 83/E.

FAO. 2005. Proceedings. Third Expert Meeting on Harmonizing Forest-related Definitions for Use by Various Stakeholders. Rome, 17-19 January, 2005. Food and Agriculture Organization of the United Nations.

FAO. 2006. Unasylva, No. 225. Vol. 57. 2006/3. Food and Agriculture Organization of the United Nations.

- FAO. 2007a. Global Forest Resources Assessment 2010. Specification of National Reporting Tables for FRA 2010. Food and Agriculture Organization of the United Nations. Forestry Department. Forest Resources Assessment Programme. Working Paper 135.
- FAO. 2007b. State of the World's Forests 2007. Food and Agriculture Organization of the United Nations.
- FAO. 2008. Draft Concept Note. Special Study on Forest Degradation.
- Indufor. 2004. Assessment of National Forest Programmes and German Assistance in Selected Countries. (Unpublished manuscript).
- IPCC. 2000. Land Use, Land-Use Change, and Forestry. A special report of the Intergovernmental Panel on Climate Change. Edited by Watson, R., Noble, I., Bolin, B., Ravindranath, N., Verardo, D. & Dokken, D.
- IPCC. 2002. Climate Change and Biodiversity. Edited by Gitay, H., Suárez, A., Watson, R. & Dokken, D. IPCC Technical Paper V.
- IPCC. 2003a. Definitions and methodological Options to Inventory Emissions from Directs Human-induced Degradation of Forests and Devegetation of Other Vegetation Types. Edited by Penman, J., Gytarsky M., Hiraishi T., Krug, T., Kruger, D., Pipatti, R., Buendia, L., Miwa, K., Ngara, T., Tanabe, K. & Wagner, F. IPCC National Greenhouse Gas Inventories Programme. Institute for Global Environmental Strategies IGES.
- IPCC. 2003b. Good Practice Guidance for Land Use, Land-Use Change and Forestry. Edited by Penman, J., Gytarsky M., Hiraishi T., Krug, T., Kruger, D., Pipatti, R., Buendia, L., Miwa, K., Ngara, T., Tanabe, K. & Wagner, F. IPCC National Greenhouse Gas Inventories Programme. Institute for Global Environmental Strategies IGES.
- Kanninen, M., Myrdiyarso, D., Seymour, F., Angelsen, A., Wunder, S. & German, L. 2007. Do trees grow on money? The implications of deforestation research for policies to promote REDD. Centre for International Forestry Research (CIFOR). (Forest Perspectives 4).
- Lund, H. Gyde (coord.) 2007. Definitions of Forest, Deforestation, Afforestation, and Reforestation. [Online] Gainesville, VA: Forest Information Services. Available from the World Wide Web: <http://home.comcast.net/~gyde/DEFpaper.htm>. Misc. pagination.
- MCPFE , UNECE and FAO. 2007. State of Europe's Forests 2007. The MCPFE report on sustainable forest management in Europe. Jointly prepared by the MCPFE Liaison Unit Warsaw, United Nations Economic Commission for Europe and Food and Agriculture Organization of the United Nations. Published by the Ministerial Conference on the Protection of Forests in Europe.
- Millennium Ecosystem Assessment. 2005a. Ecosystems and Human Well-being: Biodiversity Synthesis. World Resources Institute, Washington, DC.
- Millennium Ecosystem Assessment. 2005b. Ecosystems and Human Well-being: Current State and Trends. Volume 1. Edited by Hassan, R., Scholes, R. & Ash, N. Island Press, Washington, DC.

Millennium Ecosystem Assessment. 2005c. Ecosystems and Human Well-being: Desertification Synthesis. World Resources Institute, Washington, DC.

Millennium Ecosystem Assessment. 2005d. Ecosystems and Human Well-being: Synthesis. Island Press, Washington, DC.

Nabuurs, G.J., O. Masera, K. Andrasko, P. Benitez-Ponce, R. Boer, M. Dutschke, E. Elsiddig, J. Ford-Robertson, P. Frumhoff, T. Karjalainen, O. Krankina, W.A. Kurz, M. Matsumoto, W. Oyhantcabal, N.H. Ravindranath, M.J. Sanz Sanchez, X. Zhang. 2007. Forestry. In: Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

National Forest Programme Facility & FAO. 2006. Understanding national forest programmes. Guidance for practitioners. Food and Agriculture Organization of the United Nations.

Thompson, I. & Christophersen, T. (eds.). 2008. Cross-sectoral Toolkit for the Conservation and Sustainable Management of Forest Biodiversity. Secretariat of the Convention on Biological Diversity. (CBD Technical Series no. 39).

Thompson, I., Patterson, G., Leiner, S., Nasi, R., Nieto de Pascual Pola, C., Sigaud, P., LeDanff, J.-P., Mulongoy, K. J. & Toivonen, H. 2002. Review of the status and trends of, and major threats to, the forest biological diversity. Secretariat of the Convention on Biological Diversity. (CBD Technical Series no. 7).

UNCCD. 2003. Review of activities for the promotion and strengthening of relationships with other relevant conventions and relevant international organizations, institutions and agencies, in accordance with article 8 and article 22, paragraph 2(i) of the convention. ICCD/COP(6)/4

### **Websites:**

CITES [www.cites.org](http://www.cites.org)

Collaborative Partnership on Forests <http://www.fao.org/forestry/cpf/en>

Convention on Biological Diversity [www.cbd.int](http://www.cbd.int)

FAO Forestry Department [www.fao.org/forestry/home/en/](http://www.fao.org/forestry/home/en/)

International Tropical Timber Organization [www.itto.or.jp](http://www.itto.or.jp)

The Ramsar Convention on Wetlands [www.ramsar.org](http://www.ramsar.org)

United Nations Convention to Combat Desertification [www.unccd.int](http://www.unccd.int)

United Nations Forum on Forests [www.un.org/esa/forests](http://www.un.org/esa/forests)

United Nations Framework Convention on Climate Change [unfccc.int](http://unfccc.int)

## Annex 1. Tentative Workshop Schedule

### 2 September

- 15:00 - 20:00 **Registration to the workshop** (Hotel Lobby)  
 19:00 - 21:00 **Ice-breaker Party** (Hotel Lobby Bar)  
 20:30 - 22:00 **Sauna** (Hotel ground floor)

### 3 September

- 08:00 - 09:00 **Registration to the workshop** (Hotel Lobby)  
 09:00 - 09:45 **Opening of the workshop** (Auditorium)
- Welcome address by Finland  
*Mr Jouni Lind - Secretary of State, Ministry of Agriculture and Forestry, Finland (MAF)*
  - Opening Remarks by MCPFE  
*Mr. Knut Øistad, Deputy Director General, Ministry of Agriculture and Food, Norway*
  - Opening remarks by the UNFF Secretariat  
*Mr Peter Csoka, Officer-in-charge, Secretariat of the United Nations Forum on Forests*
- 10:15 - 12:30 **Introduction to the theme: "Forests in the changing environment"** (Auditorium)
- Key note presentation on the direct and indirect causes of deforestation, forest degradation and desertification  
*Dr. Markku Kanninen, Director, Centre for International Forestry Research (CIFOR)*
  - Key note presentation on the role of forests and climate change: impacts, adaptation and mitigation,  
*Dr. Gert-Jan Nabuurs, Ass. Prof., Alterra, the Netherlands*
  - Key note presentation on the role of forests and biological diversity,  
*Dr. Elena Kulikova, Forest Programme Director, WWF, Russia.*
  - Presentation on the Pan-European commitments, achievements and plans for future implementation concerning forests in the changing environment,  
*Mr. Arne Ivar Sletnes, Head of the Liaison Unit Oslo, MCPFE*
- 12:30 - 13:30 **Lunch** (Hotel Restaurant)  
 13:30 - 15:50 **Working group session I** (Auditorium and Meeting rooms 1 and 2)  
 15:50 - 17:30 **Plenary Session: Reporting back to Plenary and discussion** (Auditorium)
- 17:45 - 19:00 **Scenery hiking**  
 19:15 - 21:30 **Dinner**, hosted by *Mr. Aarne Reunala, Director General, MAF*

### 4 September

- 08:30 - 11:15 **Working group session II** (Auditorium and Meeting rooms 1 and 2)  
 11:15 - 13:00 **Plenary Session: Reporting back to Plenary and discussion** (Auditorium)  
 13:00 - 14:00 **Lunch** (Hotel Restaurant)  
 14:00 - 19:15 **Excursion**  
 19:15 - 21:30 **Dinner**, hosted by *Mr. Ilkka Heikkinen, Director, Ministry of the Environment Finland*

### 5 September

- 08:30 - 09:00 **Presentation of the workshop report** (Auditorium)  
 09:00 - 10:30 **Discussion**  
 10:30 - 12:00 **Discussion and concluding remarks**  
 12:00 - 13:00 **Lunch and check out from the hotel**  
**Departure**

