

Item 4.b. Forests, Deforestation and Forest Degradation. Most frequently asked questions

1. How much of the world is under forest?

- Forest area: about 4 billion hectares (3 952 million hectares or about 40 million km²) or 30.3 percent of total land area;
- Forest area per capita: 0.62 hectares;
- More than half of the world's forest area is found in the Russian Federation, Brazil, Canada, United States and China, combined;
- Ten countries account for two-thirds of the global forest cover;
- Sixty-four countries, mostly in North Africa, West Asia and small islands, have less than 10 percent of their total land area forested;
- American Samoa, Federated States of Micronesia, French Guiana, Gabon, Guyana, Palau, Pitcairn, Seychelles, Solomon Islands, Suriname and Turks and Caicos Islands all have more than three quarters of their total land area forested;
- Forty-five countries have more than 50 percent of their total land area forested.

2. Who are the major producers and consumers of forest products?

In 2006 the major producer countries of forest products, as a percentage of global production, were:

- Woodfuel: India (16 percent); China (11 percent); Brazil (7 percent); Ethiopia (5 percent); Democratic Republic of Congo (4 percent); Indonesia (4 percent);
- Industrial roundwood: United States (26 percent); Canada (12 percent); Russian Federation (9 percent); Brazil (6 percent); China (6 percent);
- Sawnwood: United States (22 percent); Canada (14 percent); Germany (6 percent); Brazil (6 percent); Russian Federation (5 percent); Sweden (4 percent);
- Wood-based panels: China (25 percent); United States (17 percent); Canada (7 percent); Germany (7 percent); Brazil (4 percent); Russian Federation (4 percent);
- Pulp for paper: United States (28 percent); Canada (12 percent); China (9 percent); Finland (7 percent); Sweden (6 percent); Brazil (6 percent); Japan (6 percent), Russian Federation (4 percent);
- Paper and paperboard: United States (23 percent); China (16 percent); Japan (8 percent); Germany (6 percent); Canada (5 percent); Finland (4 percent).

In 2006, the major consumer countries of forest products in percentage of global consumption were:

- Industrial roundwood: United States (25 percent); Canada (12 percent); China (8 percent); Brazil (6 percent); Russian Federation (6 percent); Sweden (4 percent); Finland (4 percent);
- Sawnwood: United States (31 percent); Canada (5 percent); Germany (5 percent); Japan (5 percent); Brazil (5 percent); China (4 percent); India (4 percent);
- Wood-based panel: United States (24 percent); China (23 percent); Germany (5 percent); Japan (4 percent); Russian Federation (3 percent);
- Pulp for paper: United States (29 percent); China (13 percent); Canada (7 percent); Japan (7 percent); Finland (5 percent); Sweden (5 percent);

- Paper and paperboard: United States (25 percent); China (17 percent); Japan (8 percent); Germany (6 percent); United Kingdom (3 percent); Italy (3 percent); France (3 percent).

3. What is the contribution of the forest sector to countries' economies?

- Gross value-added in the forestry sector: US\$354 billion (2000);
- Global trade in primary wood products: US\$186 billion (2005);
- Global roundwood production: 3 503 million cubic meters (2005);
- Countries with the highest contribution of the forestry sector to gross domestic product (GDP): Bhutan, Finland, Malaysia, Baltic States and some African countries;
- Small-scale forest product enterprises are among the top three non-farm rural commercial activities in most countries.

4. How many people live off forests and forestry?

- Globally, over 70 million people live directly off forests;
- Forests contribute considerably to the livelihoods of more than 450 million people;
- Global employment in the formal forestry sector - 13 million people (2000).

5. Do forests contribute to food security?

Forests do contribute directly to food security, for example:

- As food supplements: forest foods provide certain proteins, fats, vitamins and minerals that are not found in many staple crops, and may even stave off hunger and famine when drought, floods or pests and diseases cause crops to fail;
- Half a million pre-school children go blind every year because of vitamin A deficiency. Vitamin A is abundant in many tree foods, such as mango;
- Bushmeat or edible wild mammals, reptiles, birds and insects which live in forests or trees can account for up to 85 percent of the protein intake of people living in or near forests;
- Some 80 percent of the people living in developing countries depend on non-wood forest products, such as fruits and herbs, for their primary health and nutritional needs;
- Natural products are the only source of medicine for 75 to 90 percent of people living in developing countries.

However, forests also provide indirect contributions. For example, they:

- Regulate the water cycle;
- Protect agricultural soils in downhill and down river areas;
- Provide fodder for domesticated animals in silvopastoral systems;
- Provide shade for agricultural crops (e.g. for coffee);
- Provide shade, nitrogen, etc, for agricultural and garden crops in agroforestry systems.

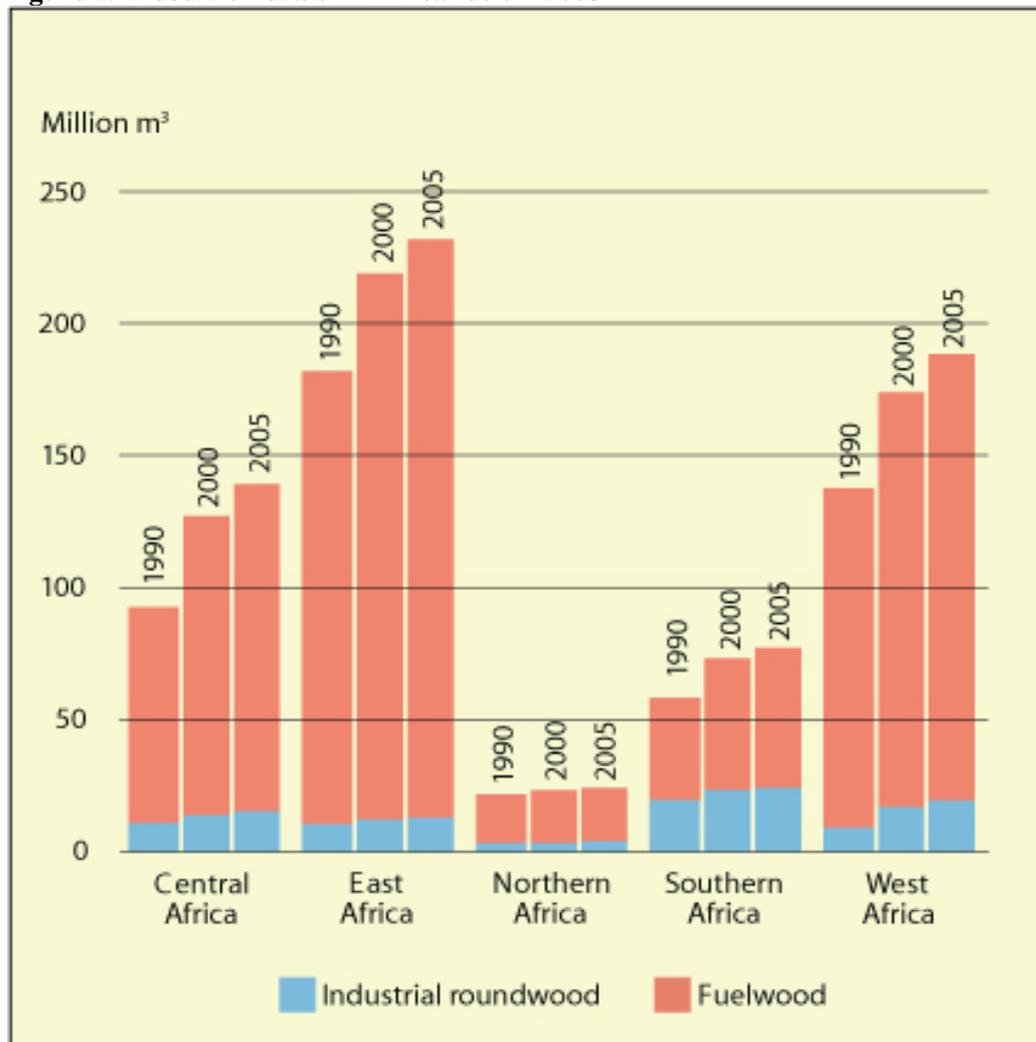
6. What is the role of forests in energy generation?

- Energy from biomass accounts for 12 percent of energy consumed worldwide and up to 90 percent in some developing countries;
- Wood energy accounts for 7 to 9 percent of energy consumed worldwide, and over 80 percent in some developing countries (97 percent in Bhutan ,93 percent in Burundi, 93

percent in the Dominican Republic, 92 percent in Nepal, 80 percent in Paraguay,) (Figure 1);

- Woodfuels account for 60 percent of global forest product consumption;
- More than 2 billion people are dependent on woodfuel for cooking, heating and food preservation; several million people are involved in the production, distribution and sale of fuelwood and charcoal.

Figure 1. Wood Removals in Africa 1990 – 2005



Source: FAO 2007

7. What is the rate of deforestation in the world?

Forests are defined as: land spanning more than 0.5 hectares with trees higher than 5 metres and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ. It does not include land predominantly under agricultural or urban use (FAO, 2006).

Deforestation is defined as the conversion of forests to another land use or the long-term reduction of the tree canopy cover below the minimum 10 percent threshold as defined for forests (FAO, 2000).

- Each year about 13 million hectares of the world's forests are lost due to deforestation, but the rate of net forest loss is slowing down, thanks to new planting and natural expansion of existing forests;

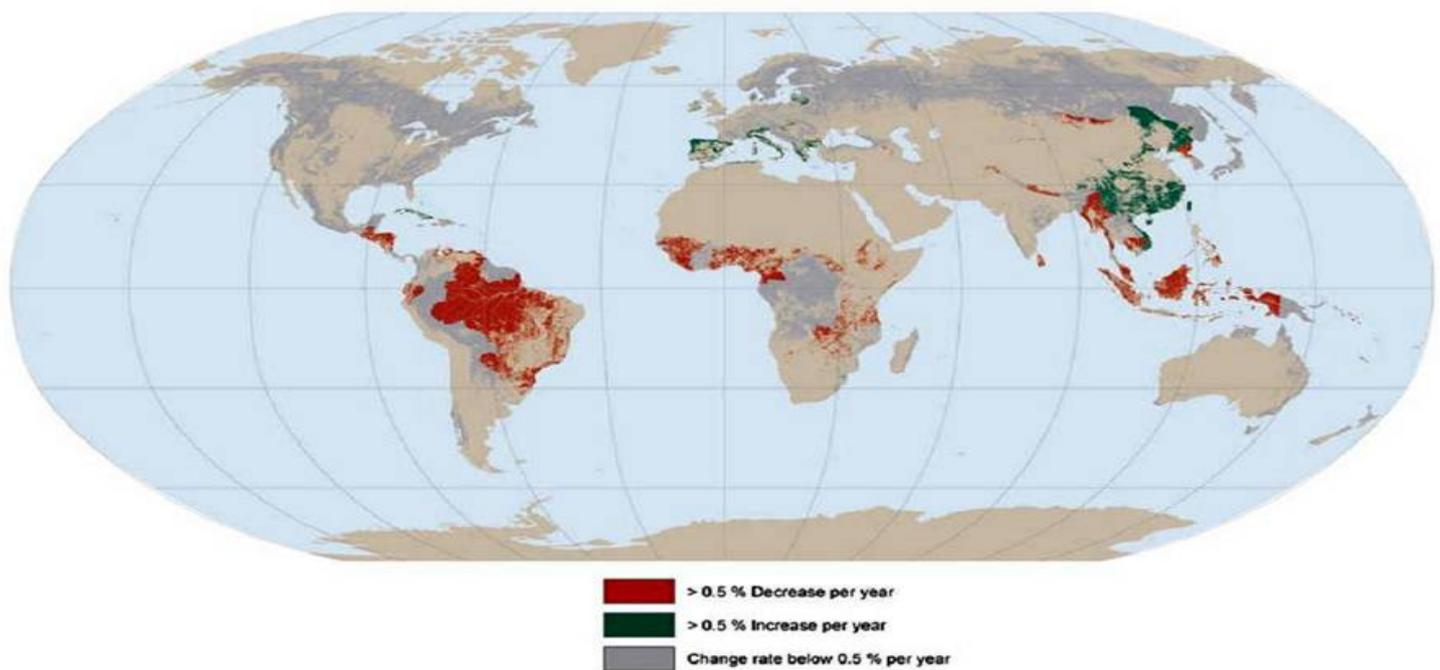
- From 1990 to 2000, the net forest loss was 8.9 million hectares per year;
- From 2000 to 2005, the net forest loss was 7.3 million hectares per year - an area the size of Sierra Leone or Panama and equivalent to 200 km² per day;
- Primary forests are lost or modified at a rate of 6 million hectares per year through deforestation or selective logging;
- Plantation forests are established at a rate of 2.8 million hectares per year.

8. How is deforestation distributed across the world?

Major losses (more than 0.5 percent annually) occur in the tropical forests of West and East Africa, South and Central America and, South East Asia (Figure 2).

- The ten countries with the largest net forest loss per year between 2000 and 2005 (Brazil, Indonesia, Sudan, Myanmar, Zambia, United Republic of Tanzania, Nigeria, Democratic Republic of Congo, Zimbabwe, Venezuela (Bolivarian Republic of)) had a combined net forest loss of 8.2 million hectares per year;
- The ten countries with the largest net forest gain per year between 2000 and 2005 (China, Spain, Viet Nam, United States of America, Italy, Chile, Cuba, Bulgaria, France and Portugal) had a combined net forest gain of 5.1 million hectares per year due to afforestation and natural expansion of forests;
- Thirty-seven countries and territories lost 1 percent or more of their forest area each year between 2000 and 2005, while 20 countries gained more than 1 percent per year due to natural expansion of forests and afforestation.

Figure 2: Regions with large net forest area changes during 2000-2005



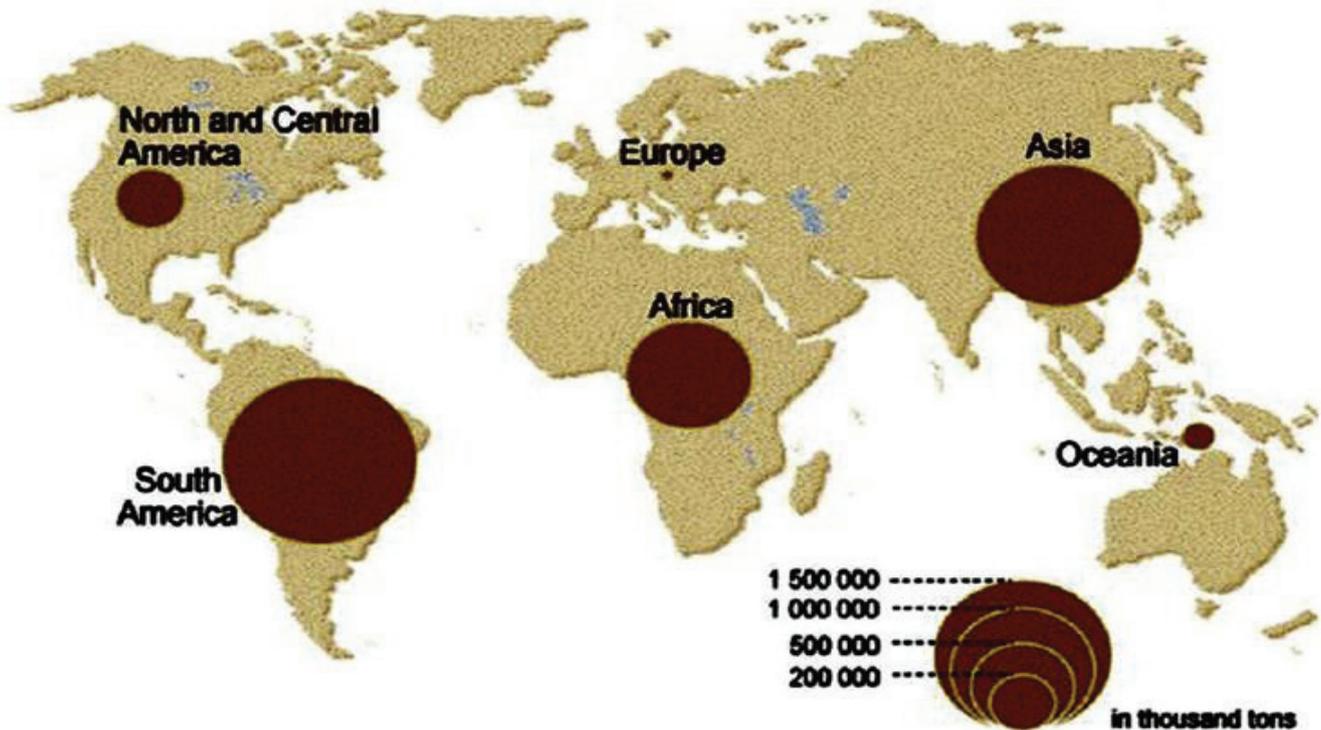
Source: FAO, 2006

9. What are the impacts of this deforestation on climate change?

Since the publication of IPCC's 4th Assessment Report in 2007, unprecedented increases in greenhouse gas emissions are generally accepted to be the major cause for the present climate change.

Amongst these greenhouse gases, carbondioxide (CO₂) is the most important (Figure 3). Deforestation and forest degradation contribute about 17 percent to global greenhouse gas emissions (nearly as much as the transport sector), and over 20 percent to global CO₂ emissions (IPCC, 2007).

Figure 3. CO₂ emissions from Land-use Change



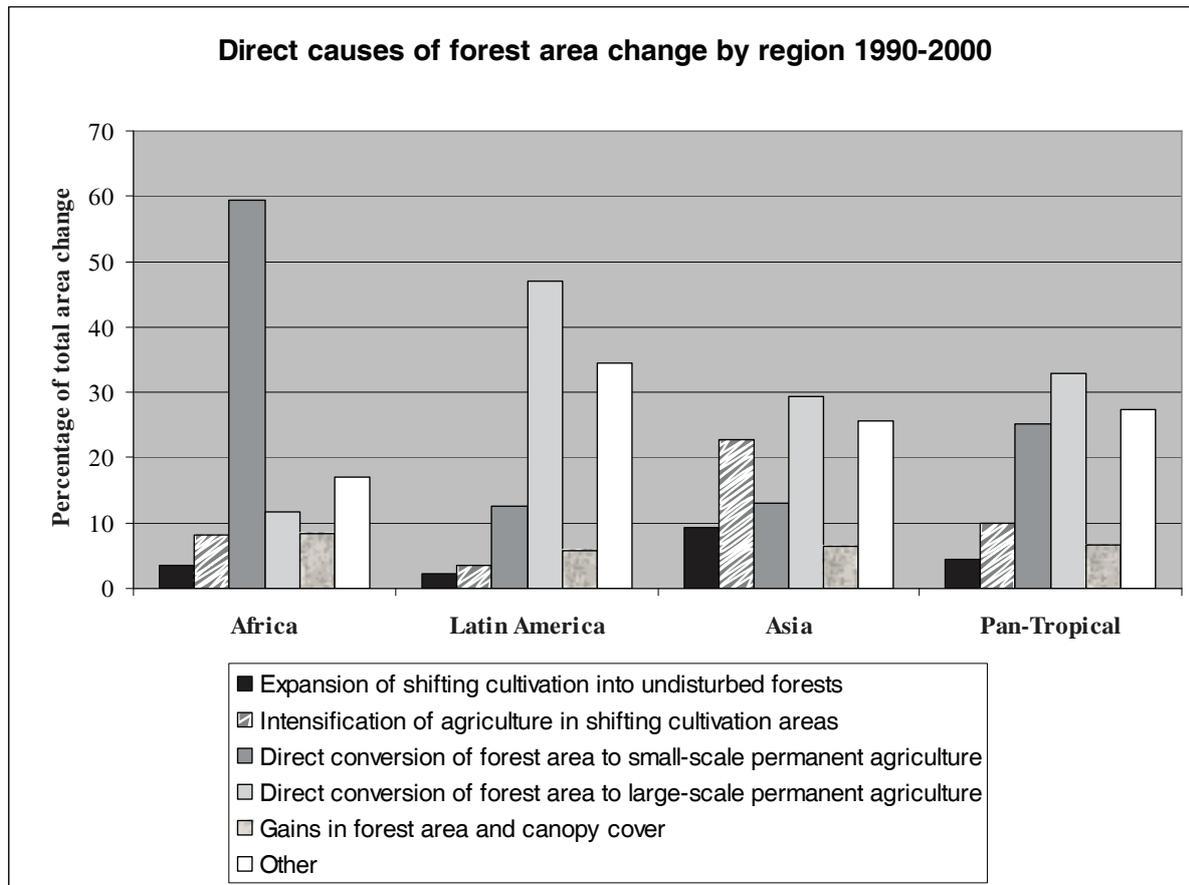
Source: FAO, 2006

10. What are the main causes for deforestation?

Deforestation has direct and indirect causes. As seen above, it is defined as a reduction of tree cover below 10 percent, or a land-use change. Significant forest degradation can take place before crossing the threshold to deforestation. A selective logging operation in the tropics does not usually reduce forest cover to that extent, leading to forest degradation rather than deforestation. However, forest degradation can lead indirectly to deforestation by providing easier access for farmers (Kanninen *et al.*, 2007).

The main driver for deforestation is the conversion of land to agricultural land and to pasture for livestock grazing, Depending on region and location (Figure 4), the cause of deforestation may be land conversion both for subsistence agriculture and for large scale agricultural production. Depending on the source, conversion of forests to agricultural and livestock land accounts for 70 to 90 percent (Kanninen *et al.*, 2007) of global deforestation.

Figure 4. Direct Causes of forest area change by region 1990 – 2000



Source: FAO 2000

Other causes for deforestation are conversion of forests for mining, infrastructure or urban areas.

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