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LATIN AMERICAN AND CARIBBEAN FORESTRY COMMISSION

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SUSTAINABLE FOREST MANAGEMENT

Secretariat Note

Introduction

1. Forests provide wood, non-wood forest products and environmental services in the interest of local, national, regional and global population. There is increased recognition that forests have multiple functions and should be managed accordingly.
2. Currently, some forests are used only to obtain non-wood forest products and provide environmental services, while a great portion of used forests in many countries in Latin America and the Caribbean continues to be used primarily as a source of wood. In other cases, the wood is just a by-product in the process of clearing of forests and converting the land to other uses, because forestry does not compete economically with other forms of more financially attractive land use.
3. Unless the market for forest environmental services is consolidated and, among other conditions, forest product revenues increase, natural forests outside protected areas will remain threatened. In Latin America and the Caribbean, urbanization, the persistence of poverty, the region's participation in global trade and foreign investment, are some of major socio-economic dynamics that affect forests.
4. This note examines the potential sustainable wood production from forests in Latin America and the Caribbean and presents an analysis of the effect of deforestation on potential wood production along with some of the aforementioned socio-economic dynamics affecting forests.

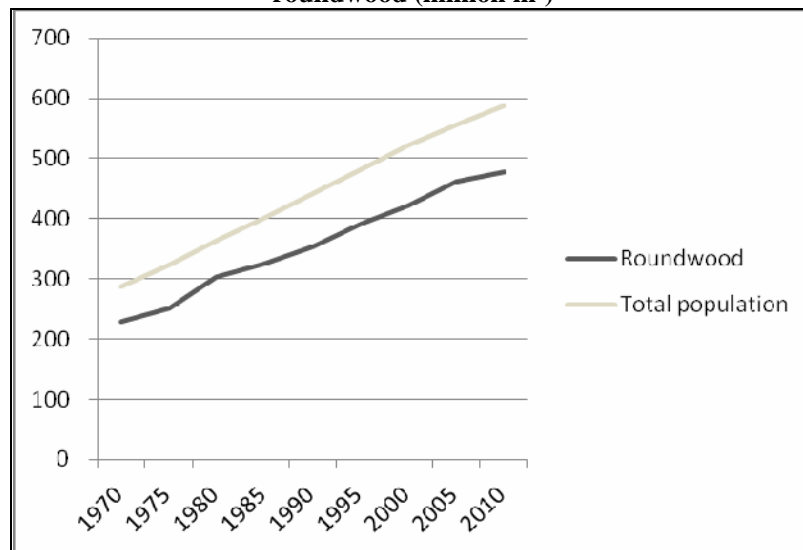
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Sustainable production of wood vs. consumption

5. The population of Latin America and the Caribbean doubled over the last 40 years, going from 286 million people in 1970 to 588 million people in 2010. The domestic¹ demand of roundwood in the same period accompanied the population growth. It grew from 228 million cubic meters in 1970 to 476 million cubic meters in 2010. Thus, the domestic per capita demand of roundwood did not vary substantially over the period because it was about 0.81 m³/person/ year (see Figure 1).

Figure 1. Total population (million persons) and domestic demand of roundwood (million m³)



Source: population data from CEPALSTAT; domestic demand calculated from FAOSTAT.

6. According to FRA 2010 data, there are about 955 million hectares of forest in the Region, of which, 128 million hectares are designated as forest with the primary function of "production", and 18 million hectares classified as planted forests. Assuming that all planted forests are established for wood production purposes, the region has around 110 million hectares of natural forests designated for production of wood and/or non-wood forest products.

7. Considering an average harvesting productivity of 1.5 m³/ha per year only for calculation purposes², the region would have a capacity to produce 165 million cubic meters of wood per year in a sustainable manner from natural forests designated for production purposes, a volume that, in theory, would supply only 35 percent of the domestic demand in the year 2010.

8. These are referential figures and the calculation has not considered social, economic, legal, or access restriction to the areas to be harvested.

¹ The domestic demand is the sum of the volume produced plus the volume imported minus the exported volume.

² According to FRA 2010 data, the forest in Latin America and the Caribbean have approximately 176.15 m³/ha of growing stock. The commercial growing stock is of 50.82 m³/ha. A harvesting productivity of 1.5 m³/ha/year corresponds to harvest 50.82 m³/ha in a period of 33 years. There are huge differences between harvesting productivities depend on forest type and conditions as well as among countries (related to technology, legislation, etc). This value of 1.5 m³/ha/year has been used with an illustrative purpose.

9. FRA 2010 also reports that, in addition to forests designated for "production" as its primary function, there are also forests in the Region for the "protection of soil and water", for "multiple uses" and "unknown use or no designated use" which are or could also be for wood harvesting³, preserving its multifunctionality. This means that 678 million hectares of wood could be legally subject to some timber harvesting in the Region (see Table 1).

Table 1. Forest area in Latin America and the Caribbean per primary function. Potential roundwood production and population to be supplied, 2010.

Primary function	Area (million ha)	Potential production (m ³ /year)	Population supplied (million persons)
Production	110	165	204
Land and water protection	60	90	111
Multiple use	151	227	280
Unknown or no use	357	535	660
Subtotal⁴	678	1 017	1 255
Conservation of biodiversity	133		
Social services	120 ⁵		
Other	6		
Planted forests	18		
Total	955		

Source: FRA, 2010.

Notes: average production value= 1.5 m³/ha/year; domestic per capita demand value= 0.81 m³/person/year

10. Thus, the region would have a capacity for a sustainable wood production from natural forests of about 1.017 billion cubic meters per year, which is equivalent to 2.13 times the estimated aggregated domestic demand in the region by the year 2010.

Deforestation

11. The area covered by forests in Latin America and the Caribbean is declining. It is estimated that the loss of forests in the region is 3.95 million hectares per year (Table 2).

Table 2. Annual change rate of forest cover, 2005 - 2010

	Forest area (1 000 ha)		Annual change rate	
	2005	2010	1 000 ha/year	%
Caribbean	6 728	6 933	41	0.61
Central America	86 233	84 301	-404	-0.47
South America	882 258	864 351	-3 581	-0.41
Total	975 309	955 585	-3 945	-0.40

Source: FRA, 2010.

Note: Central America includes Mexico.

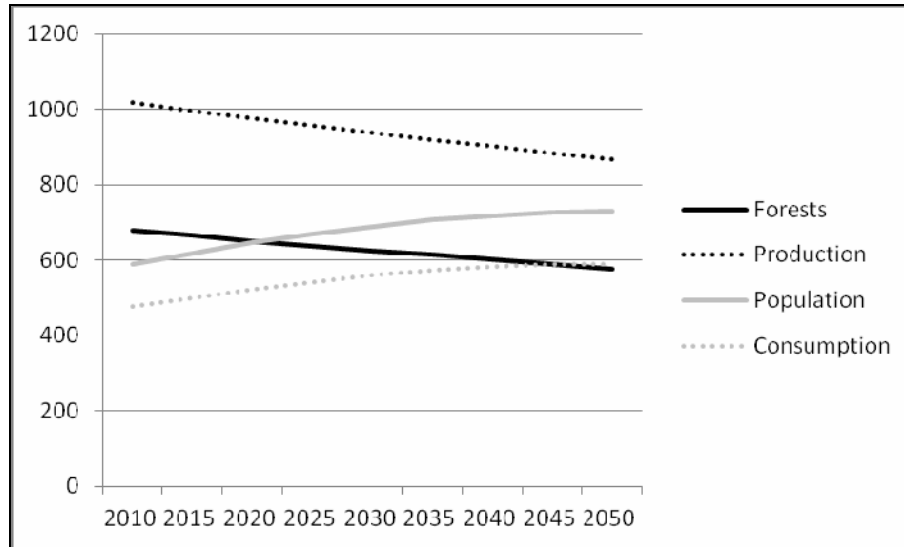
³ In some countries, forest with a primary function of protecting soil and water, cannot be used for timber harvesting activities. In other countries, the wood of these forests can be harvested under special techniques, such as reducing the volume extracted and incorporation of specific techniques to protect soil and water resources.

⁴ Subtotal corresponding to the area of "natural forests with harvesting potential" constituted by forests with a primary function of production and forests for soil and water protection, for multiple uses and with unknown or no designated function.

⁵ Most of this surface has been designated by Brazil for using as community forestry, which may also involve logging, so some of that would clearly also be available for wood supply.

12. Assuming that the trend of land use change is kept at the present pace of -0.40 percent per year, the region would still have 578 million hectares of natural forests with a harvesting potential by the year 2050. From this area, 866 million cubic meters of roundwood per year could be harvested, which is enough to meet the consumption of a population of about 1.069 billion (assuming a per capita consumption of 0.81 m³/year), a figure equivalent to 1.46 times the population of the region estimated at 729 million people by the year 2050 (Figure 2).

Figure 2. Total population (million persons), area of natural forest potentially available for wood supply (million ha), domestic roundwood demand (million m³) and roundwood production (million m³)



Source: population data from CEPALSTAT; domestic demand data from FAOSTAT; forest surface from FRA 2010.

13. On the other hand, the projected population of 729 million people by the year 2050 would require about 590 million cubic meters of roundwood, which could be extracted from 393 million hectares of sustainably harvested forests. Considering the availability of 578 million hectares of natural forests for roundwood by the year 2050, there could still remain 185 million hectares of these forests which would not be needed to serve regional consumption of wood

14. The countries of the Region have designated about 133 million hectares for biodiversity conservation. This corresponds to 14 percent of the total forest area in Latin America and the Caribbean. According to previous estimates, this surface could even be doubled without affecting the supply of roundwood for regional consumption by 2050.

15. The productive potential of natural forests is enough to meet the wood demand at regional level. That is perhaps the reason why the area of planted forests in Latin America and the Caribbean is only 1.88 percent of total forest area in the region. This also considers that planted forest costs have a relatively long payback, which does not happen with the existing natural forest of "immediate availability" in the Region.

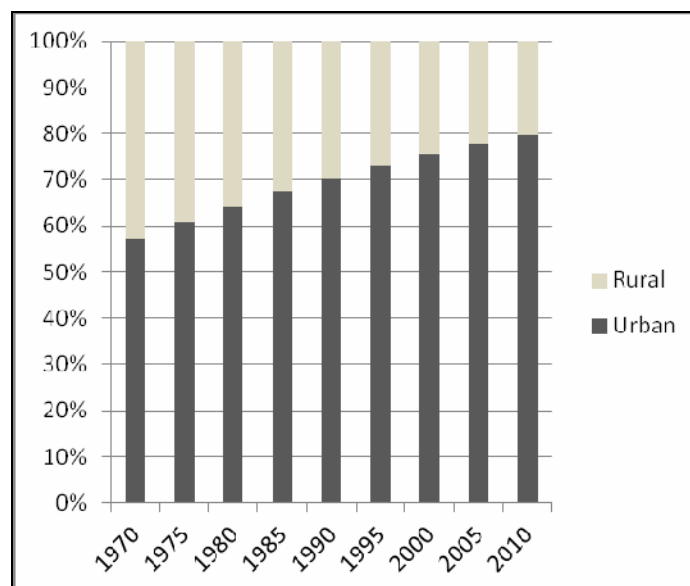
Socio-economic dynamics affecting forests

16. The state of forest resources in the world is the result of a series of factors that put pressure on the use of forests (e.g. timber extraction), pressure on the use of physical space where those resources are located (e.g. expansion of the agricultural frontier) or simply affect forests, without necessarily putting pressure on them (e.g. pollution). The extraction of wood, the expansion of the agricultural frontier and pollution, among other actions that affect forests, are the result of certain socio-economic dynamics, some of which are analyzed below.

Urbanization of the population

17. Latin America and the Caribbean is one of the regions with the highest concentration of population in urban centres. It is estimated that in the year 2010, about 80 percent of the population was already living in cities (see Figure 3).

Figure 3. Urban and rural population (percent of total population)



Source: CEPALSTAT.

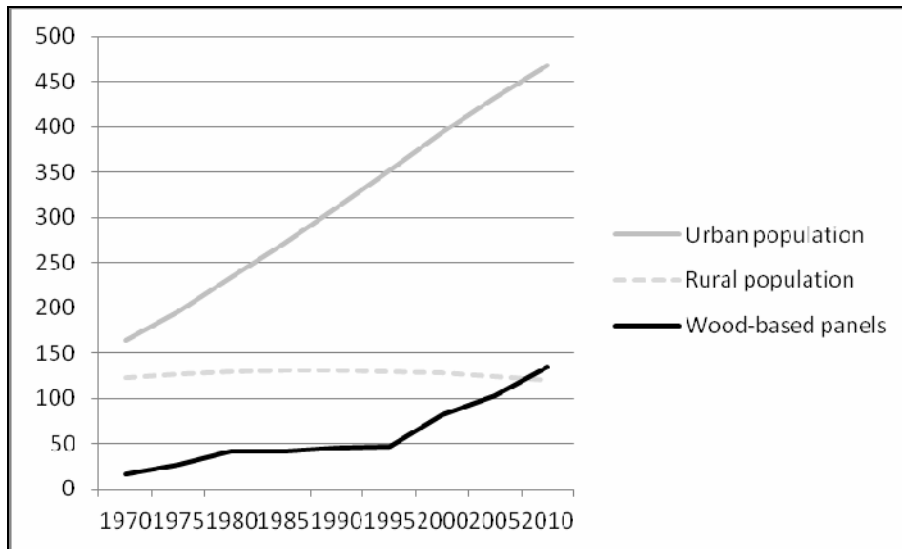
18. The increased consumption of roundwood in the Region, as indicated before, is related to population growth. The migration of population to urban centres has reduced the pressure to occupy forest areas in rural zones, but instead, it may increase the demand for wood for civil construction in the cities and thus, the pressure to extract wood from the forests.

19. As of 1995 a more clear correlation is verified in the Region between urban population growth and the consumption of wood-based panels which is an important material for civil construction. In that year, the urban population exceeded 70 percent of the total population in Latin America and the Caribbean (Figure 4).

20. Urbanization, as a result of internal migration, can also facilitate the process of ownership concentration in rural areas, because people migrating to the cities abandon their land or sell it.

This, indirectly, contributes to the development of extensive agriculture which, in turn, puts pressure on the occupation of forest areas.

Figure 4. Urban and rural population (million persons) and consumption of wood boards (100 thousand m³)

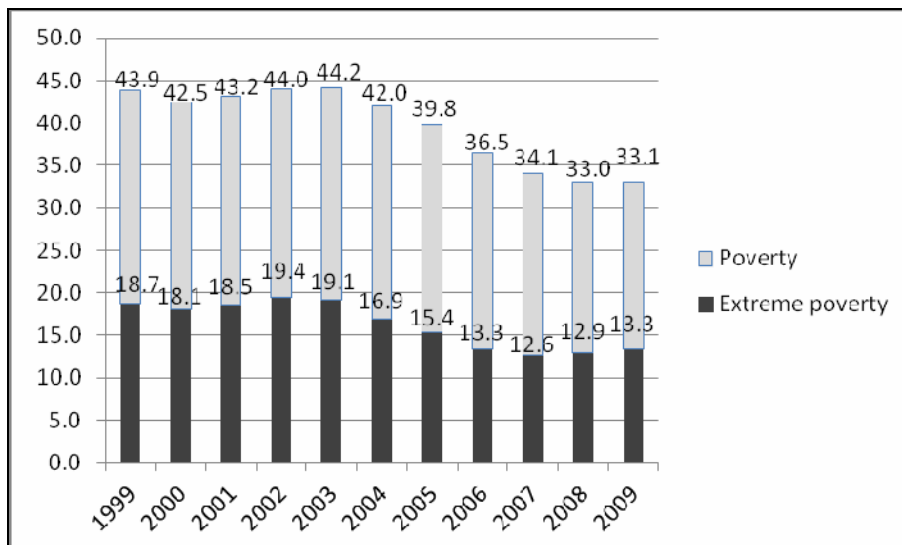


Source: population data from CEPALSTAT; domestic demand calculated from FAOSTAT.

Persistence of poverty

21. One of the main social and economic problems/challenges faced by Latin America and the Caribbean is the high concentration of wealth and the persistence of poverty. While the level of poverty and destitution (abject poverty) has gradually reduced in recent years, this reduction is at a standstill since the global financial crisis in 2008. In 2010, the estimation was that one third of the population of the Region lived in poverty and about 13 percent of the population lived in abject poverty (Figure 5).

Figure 5. Poor population and extreme poverty (percent of total population)

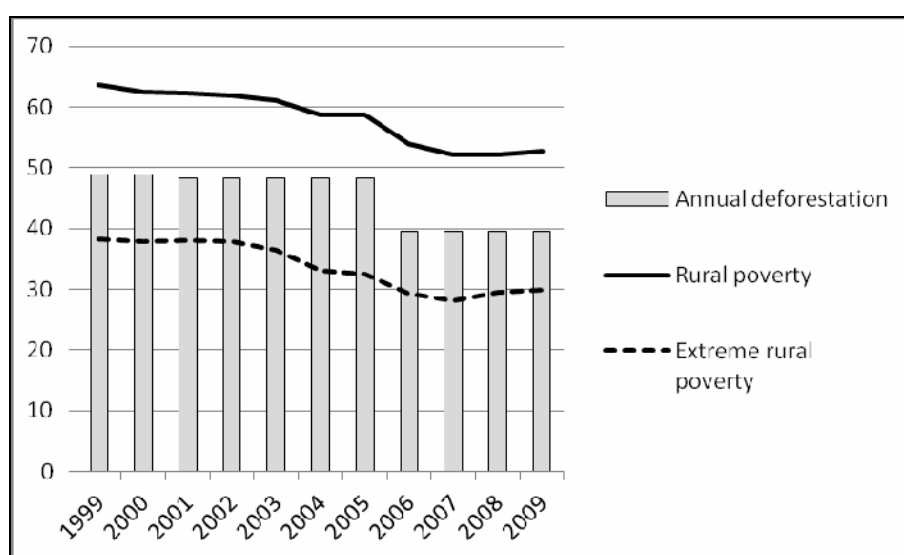


Source: CEPALSTAT.

22. For an individual, family or rural community to be "poor" means there is a need to make use of all possible and available resources to meet basic needs, mainly food. Thus, poverty and destitution in rural areas promotes the extraction of forest resources, mainly wood as a source of income for almost immediate or short term⁶ availability. In general, wood harvesting is done with no consideration of the sustainability of the resource.

23. While not all deforestation can be attributed to poverty and destitution, there is evidence that deforestation is correlated with the level of poverty of the rural population⁷ (Figure 6).

Figure 6. Rural poor population (%) and extreme poverty (%), of total population and annual deforestation (100 000 ha)



Source: population data from CEPALSTAT; calculated deforestation from FRA, 2010.

Note: deforestation was calculated for different periods (1990-2000, 2001-2005, 2006-2010)

24. Thus, efforts to reduce deforestation in the Region face a significant social and economic problem in rural areas, associated with high levels of poverty (over 50 percent) and destitution (about 30 percent).

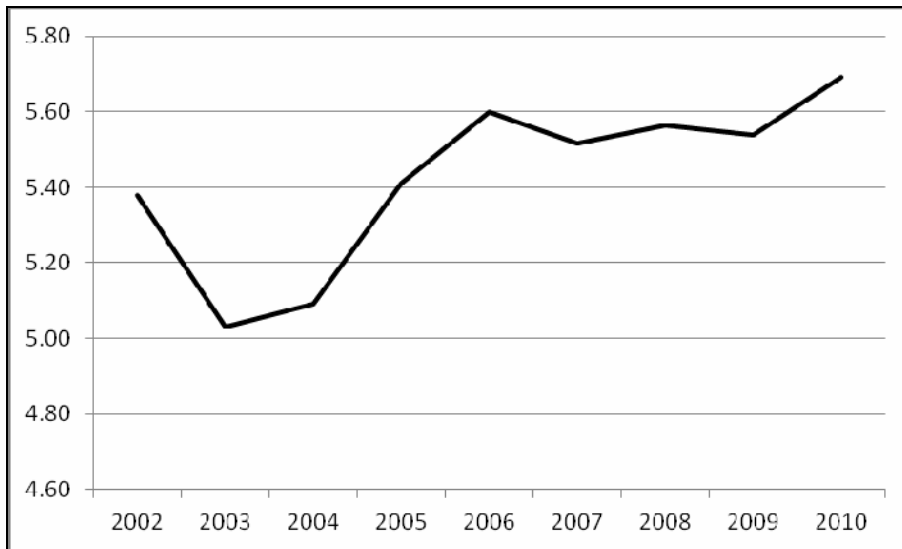
Participation in global trade

⁶ In several countries, a significant proportion of native forests are state property, with little control over its use and therefore, it is considered by population as an open access public good.

⁷ Part of the deforestation is mainly carried out at large scale for conversion into export crops (soya beans) or as pasture for cattle, which needs substantial up-front investment, often by land owners and not directly linked to the rate of extreme rural poverty. In this case also the deforestation presents a social dynamics in which poor people is involved in indirect way. However for a deep analyze will be necessary to look at individual countries or regions since some of them have an increase in forest area and the deforestation may happen in countries where there is limited extreme rural poverty.

25. The Region's participation in global trade is modest. There is a trend towards increasing the value of exports from the Region; however, this value is still below 6 percent of total global exports (Figure 7).

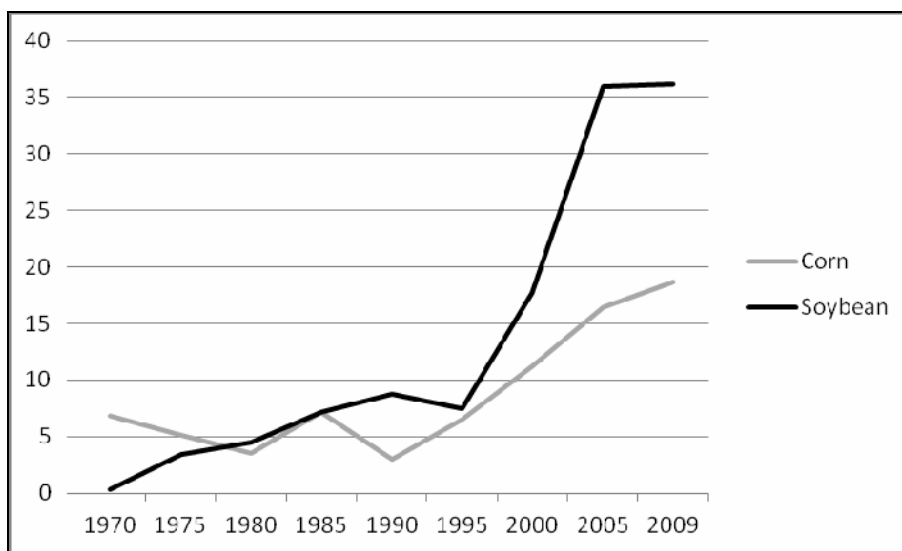
Figure 7. Participation in global exports (percent of total value in USD)



Source: UNSTATS.

26. The aforementioned tendency of increase the exports value can be explained by the increase in price of raw materials, but also by the trend in Latin America and the Caribbean towards the specialization of the exports of these raw materials in response to a growing global demand. This is made clear, for example, in the value of corn and soybean exports in the Region, which are two major agricultural crops in international markets (Figure 8).

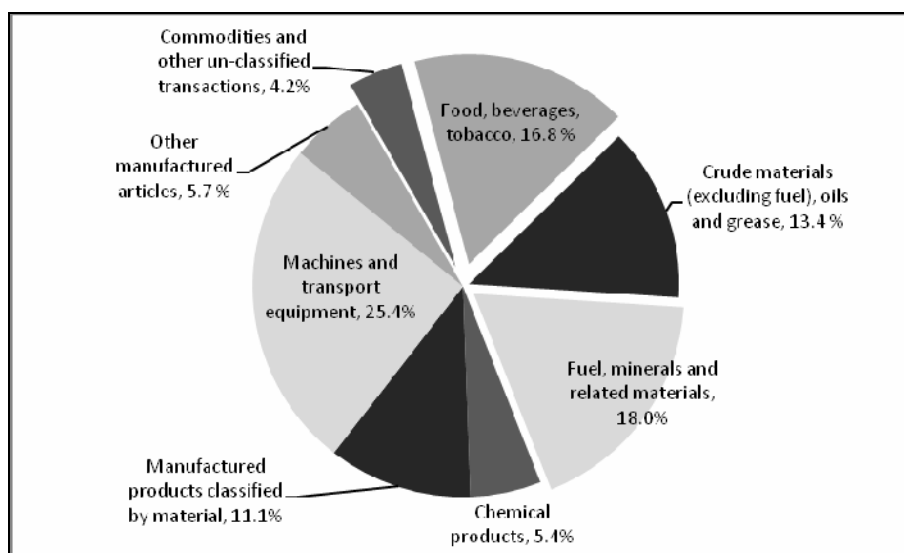
Figure 8. Corn and soybean exports (million t)



Source: FAOSTAT.

27. In 2010, about 35.6 percent of the total value of exports of the Region were represented by the export of primary⁸ goods (Figure 9).

Figure 9. Export products classified per type of product (percent of the total value in USD)



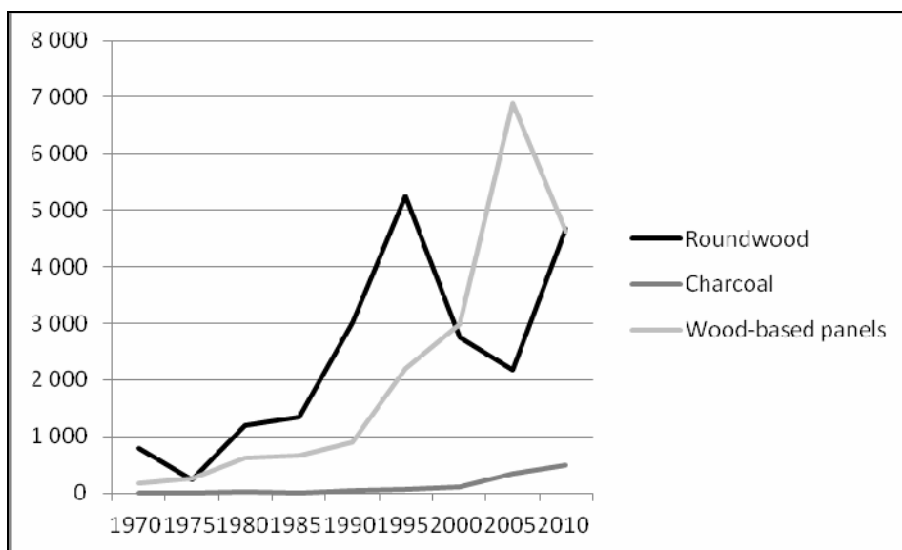
Source: UNSTATS.

28. The regional share of the global value of exports of manufactured products increased from approximately 2 percent in 1990 to about 4 percent in 2007. In recent years, this percentage has dropped to almost the same value that it had 20 years ago.

29. The Region is also specializing in the production and export of primary goods. In the forestry sector, where exports of roundwood, wood-based panels and even charcoal, have substantially increased over the past years, although with significant annual variations (Figure 10).

Figure 10. Export of Roundwood (1 000 m³), wood-based panels (1 000 m³) and charcoal (1 000 t)

⁸ Crude materials, oils and grease, fuel, minerals and related materials, commodities and other un-classified transactions.



Source: FAOSTAT.

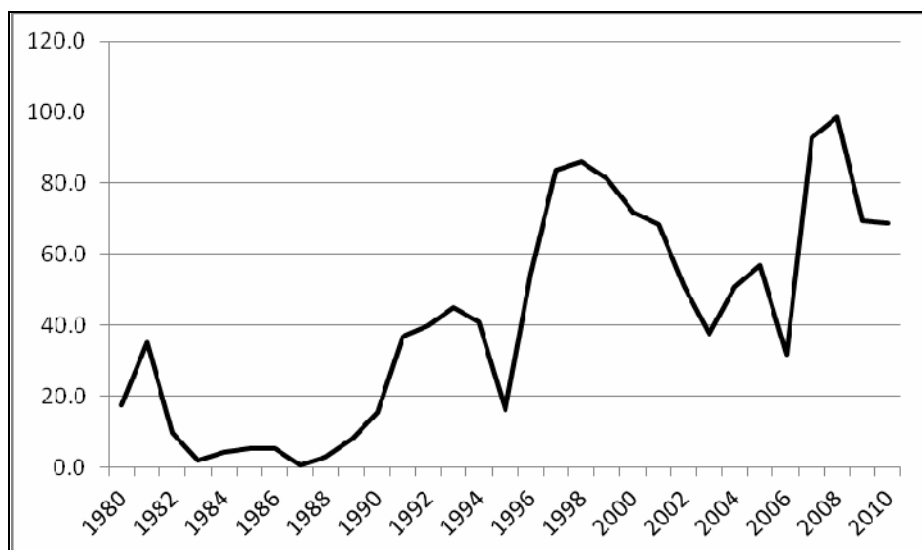
30. The growth of the international market of wood products in Latin America and the Caribbean and the increasing demand for such products opens the possibility of better prices both, locally and domestically. A higher price of wood products, would allow the producer to add some additional costs to improve the practices of the use of forests allowing forests to compete with other land uses; but, at the same time, this would imply a higher pressure on forests, whether to extract more timber per area and/or harvest a larger forest area if not followed by better law enforcement and application. It might also lead to the establishment of more planted forest. Depending on the kind of wood products demanded, this could lead to reduction of pressure over natural forests depending on the scale of those plantations.

31. Therefore, it will continue to be very urgent, that States have a greater capacity to regulate and control the land-use change and the use of forest resources.

Foreign investment in the Region

32. In 2010, developing and transitional economies captured half of the foreign direct investment worldwide. In Latin America and the Caribbean, the net foreign direct investment (NFDI) has increased gradually with significant annual variations. Between 1980 and 2010, net foreign direct investment varied in the range of 500 million dollars and 100 billion dollars a year (Figure 11).

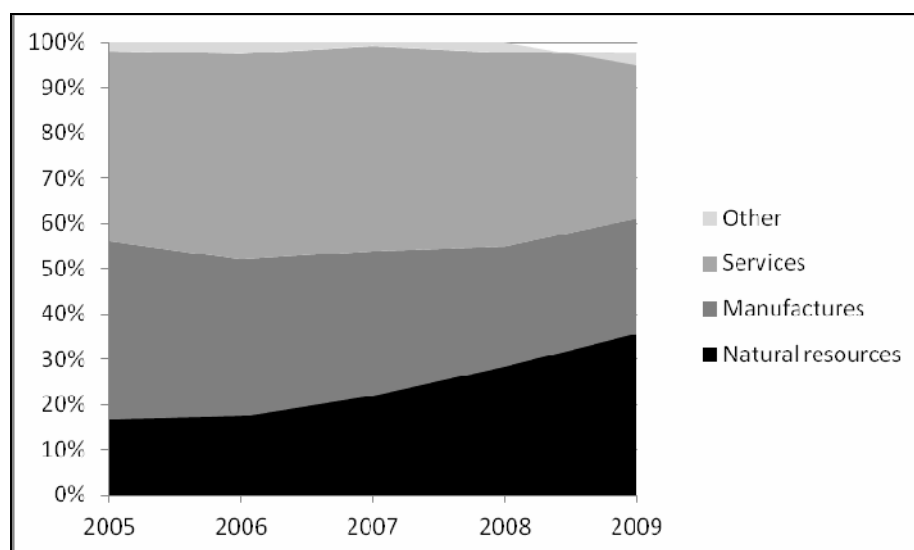
Figure 11. Net foreign direct investment (billion USD)



Source: CEPALSTAT.

33. There is no consolidated data for the entire Region as regards foreign direct investment in the forestry sector. However, from the available data, it is possible to verify a substantial increase in the NFDI related to economic activities based on natural resources. From 2005 to 2009, investment focused on economic activities related to natural resources more than doubled, reaching about 37 percent of the total NFDI in the Region. The NFDI in manufacturing, dropped from 39 percent of total NFDI in 2005 to about 33 percent in 2009 (Figure 12).

Figure 12. Net foreign direct investment per sector of destination (percent of total value in USD)⁹



Source: Direct foreign investment in Latin America and the Caribbean. ECLAC, 2010.

⁹ For better understanding the figure 12 take in consideration that the net foreign investment in “other” was negative in 2009.

34. According the information of the document Direct foreign investment in Latin America and the Caribbean (ECLAC, 2010), in general terms, foreign investments in natural resources have increased mainly in the mining sector, oil and gas extraction, as well as in the expansion of monocultivation agro-industry and plantations for biofuel.

35. To some extent, the increased investment in activities related to natural resources, confirms that Latin America and the Caribbean is gradually specializing in the production and export of primary goods. This specialization may put pressure on forest resources. To a lesser extent, forests also attract investment for their development and use. Forest resources can be also affected by investments in productive activities for the exploitation of other natural resources such as the expansion of the agro industry.

36. However, the investment flow to the Region is a source of resources that could be oriented towards the sustainable use of forests, under proper norms and regulations and an adequate control of the forestry activities.