

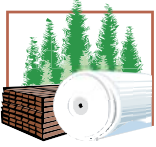
ITEM 5

GLOBAL WOOD AND WOOD PRODUCTS FLOW

TRENDS AND PERSPECTIVES

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SUMMARY

Globalization and economic growth are corroborating to increase international trade of wood and wood products and the flow of capitals into new investments in the forestry sector of emerging economies. Over the last 20 years international trade of forest products (including pulp and paper, solid wood products and secondary processed wood products-SPWP) increased from US\$60 billion to US\$257 billion, an average annual growth of 6.6%, with wood panels and especially SPWP, growing above the average.

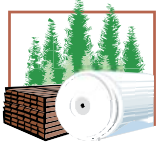
Wood supply from plantations is already quite important. In Latin America and Caribbean region the pulp and the reconstituted panel is almost entirely supplied with plantation wood. Eucalyptus is the most planted species and largely used for pulp production. At moment eucalyptus wood pulp represents around 50% of all short fibre pulp traded in the international market, and this share is expected to increase to 60% within the next few years.

In the future most of the wood supply will come from plantations. Forest plantations in the tropics are expanding rapidly and if current trend is maintained the annual potential sustainable production capacity of plantations will reach in the year 2020 around 1.8 billion cubic meters per year, with more than 80% of this potential located in the tropics and other countries located in the southern hemisphere. This volume would be in principle sufficient to supply most of global wood demand of the industry.

Along the last decades production and trade of wood and wood products have been mostly in the hand of European and North American countries, but this is changing. In the last 15 years China has increased its share in the international trade of wood products from 1.5% to 7.2% mainly due to exports of SPWP. In wooden furniture China displaced Italy, a long time leader in furniture exports. China together with Brazil and Russia are expected to continue to gain market share and most probably will be among the major players in the international market by the year 2020.

Under a conservative scenario wood and wood products trade in the international market will reach around US\$450 billion by the year 2020. This means that countries and companies willing to maintain their market share in the international market will need to double exports in the next 10-15 years. In 2020 a large portion (40% or more) of the international trade is expect to be SPWP.

The general trends and perspectives identified point out that a successful strategy to gain market will need to consider investments in fast growing plantations and value added products, with a focus in the international market. Winners will those operating in regions where wood can be produced at a lower cost and efficient logistics is available.



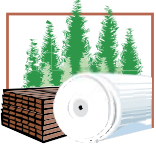
INTRODUCTION

Globalization and the economic growth of the recent years have contributed to increase the global trade and the flow of capitals around the world, and this has been important in the development of several countries. In the forestry sector the increase in the international trade and in investments, together with the environment concerns and other factors, were important in the development of new emerging players.

With economy growing faster more investments (domestic and foreign) are flowing into the forestry sector of emerging economies. Traditional players of the forestry sector have identified that moving into other regions open new market opportunities, and if this can be combined with the production of wood at a lower cost and gains in competitiveness. This helps producers to maintain their market share in traditional markets and contributes to diversity wood supply sources. On the other hand, as global players are involved, it is changing the wood and wood products flows.

This paper was prepared based on a FAO request, to be presented and discussed at the Advisory Committee on Paper and Wood Products-ACPWP meeting to be held in Shanghai on June 6, 2007. The paper analyses some relevant trends in the international wood and wood products trade, and is expected to help in the identification of medium-long term perspectives. To support the identification of perspectives it is also analysed changes on forest resources and industry supply, and the impact of emerging new players in the global wood products market.

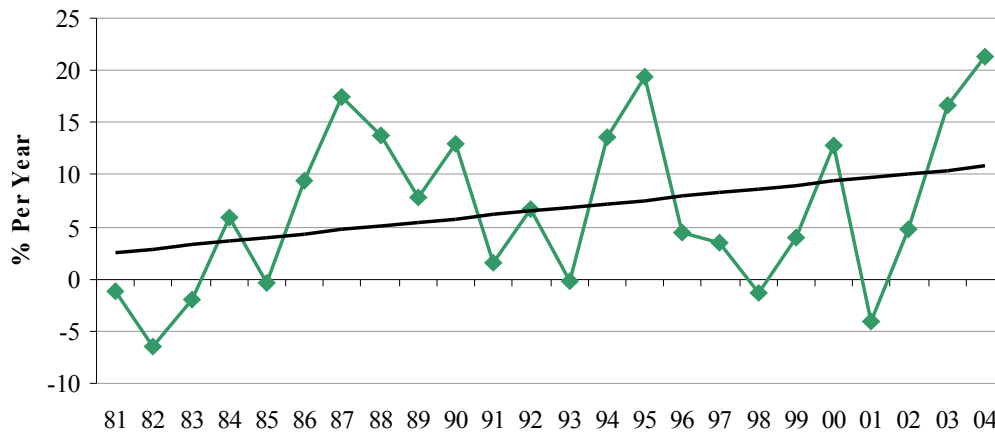
It is expected that the information presented and the perspectives identified will contribute to the discussions of the ACPWP meeting, and also in the efforts of policy makers and of the private sector in developing their strategy and long term programmes.



INTERNATIONAL TRADE

As a result of globalization, improvements in logistics and other factors international trade is growing for practically all products. In the early 1980's total international trade was around US\$2 trillions and in 2005 it surpassed US\$ 10 trillions. Figure 1 presents the annual changes (in percentage terms) of the international trade over the 1981-2004 period. The figure shows that the international trade is accelerating, and when the last ten years is considered the average growth rate reached more than 8% per year.

Figure 1 - Changes in the Global International Trade



Source: WTO 2005 (Adapted by STCP)

Forest products play an important role in the international trade. When considering together, pulp and paper, wood products (logs, wood chips, sawnwood and wood panels) and secondary processed wood products (SPWP) international trade reaches US\$257 (FAO 2006, ITTO 2006). Taking this value into consideration forest products as a group is placed in the 8th position after fuels, transport equipment, office and telecom equipment, chemicals, iron and steel, and clothing.

The international trade of forest products, covering the 1983-2005 period, is presented in figure 2. Over the period the total value of forest products (wood products) traded in the international market increased from around US\$60 billion to US\$257 billion, an average annual growth rate of 6.6%. The fast growth was mostly a result of the developments in the international trade of SPWP (an average increase above 8% per year), particularly wooden furniture. In spite of the high growth rate forest products share in the total international trade declined over the years. In 1983 forest products contributed with 3.3% and is now around 2.5%.

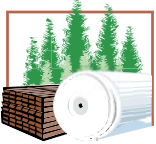
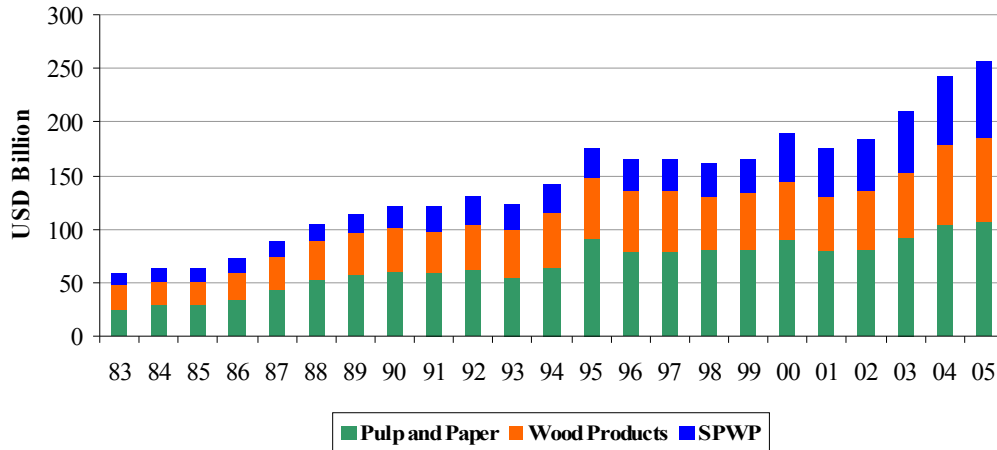


Figure 2- International Trade of Forest Products



Source: FAO 2006; ITTO 2006 (Adapted by STCP)

FOREST RESOURCES AND INDUSTRIAL SUPPLY

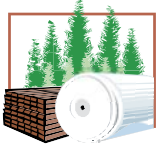
Based on the FAO definition there are around 3.7 billion ha of forests in the world (see table 1). Natural forests represent the large majority, with more than 50% concentrated in South America and Europe, while plantations cover only 187 million ha, representing 5% of the total forested area.

Table 1- World Natural Forests and Forest Plantations Areas
USD Billion

Region	Area Share Natural Forests		Area Share Plantation Forests	
	Area	Share	Area	Share
Africa	642	17%	8	4%
Asia	432	12%	116	62%
Europe	1,007	27%	32	17%
North and Central America	532	14%	18	9%
Oceania	195	5%	3	2%
South America	875	24%	10	6%
Total	3,683	100%	187	100%

Source: FAO 2003; ITTO 2006a.

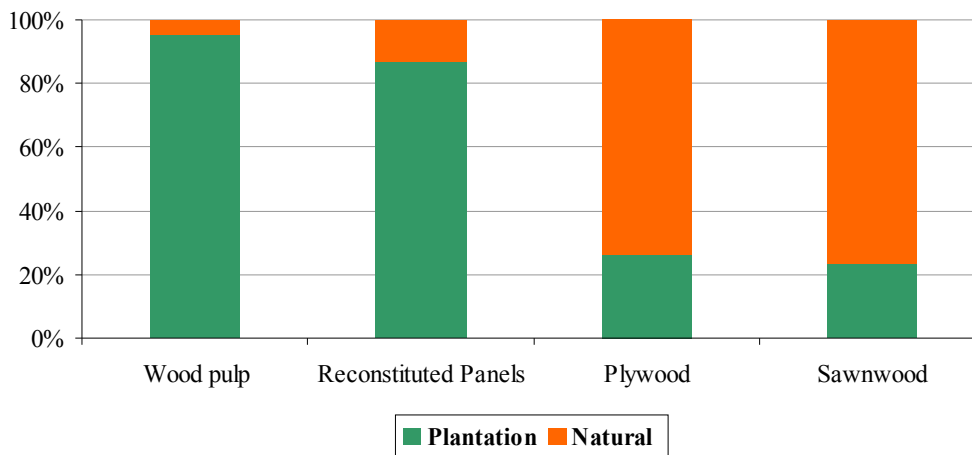
There is no precise information on the forest area that is available to be managed for timber production. A large proportion of the total natural forest area is classified (from the point of view of the industry) as non productive or as economically non accessible. This fact, together with the growing importance of natural forest for biodiversity, and for soil and water conservation, has reduced the importance of natural forests to the industry. To some extent the same applies to forest plantations. A recent study carried out by ITTO (2006a) indicates that out of the 187 million ha only around 50% can be considered as productive forest plantation from the point of view of the industry.



In spite of the relatively small size of the productive forest plantations area supply of industrial wood is now largely dependent on this timber source. Figure 3 presents information available on the share of plantation wood in products marketed by the timber industry operating in the tropics. The information is based on a recent ITTO study (2006b) and covers the three tropical regions (Asia Pacific, Africa and Latin America and Caribbean regions). Similar information was not identified for regions outside the tropics.

As can be notice in figure 3 most of the wood pulp (over 95%), and also of the reconstituted wood panels (over 85%) currently produced in the tropics is based on plantation timber. The share of plantation in the supply of the tropical plywood and sawnwood industry is still small (under 30%), but is growing fast.

Figure 3-Share of Plantation Wood in the Tropical Forest Industry

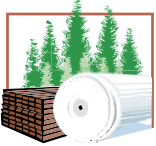


Source: ITTO 2006b

Within the tropics the share of plantation timber used by the industry varies. The Latin American and Caribbean forest products industry is largely concentrated in plantation timber, mainly due to developments in Brazil. In this region practically all pulp production is based on plantation timber, and also at least 97% of the reconstituted wood panels, 70% of the plywood and 30% of the sawnwood are also based in this wood source. On the other side Africa forest products industry is still largely dependent on wood supply from natural forests, specially the plywood industry (100%) and the sawnwood industry (85%).

WOOD AND WOOD PRODUCTS TRENDS

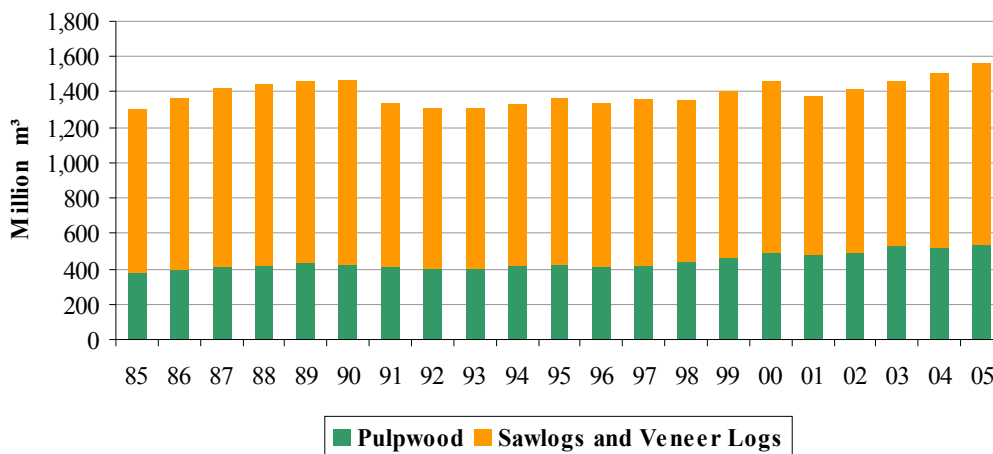
In this paper the analysis of wood and wood products trends is based on two basic aspects: wood consumption and international trade of wood products. It is recognized that there are several other relevant aspects that need to be analysed, in any case for the purpose of this paper, it was considered that these two aspects provide sufficient elements identification and discussions of the main perspectives. Global wood consumption is increasing but at a relatively low pace. In the last 20 years the average global consumption of wood increased on average only 0.3% per year, and the estimated annual wood consumption is now around 3.5 billion cubic meters (FAO 2006). Out of this total volume approximately 50% are classified as industrial logs.



The industrial wood consumption along the last 20 years is presented in figure 4. Total volume consumed in 2005 achieved around 1.55 billion cubic meters, being around 530 billion cubic meters of pulp logs (34%) and around 1,020 billion of sawlogs and veneer logs (66.%). Over the period pulpwood logs consumption increased on average of 1.7% per year while sawlogs and veneer logs increased only 0.6% per year.

In fact the increase in industrial roundwood is below projections made in the past. A FAO study (Whiteman, Brown and Bull, 1999) estimated that the global consumption of industrial roundwood would achieve around 1.9 billion by the year 2010. This most likely will not happen.

Figure 4 - Global Industrial Wood Consumption
Million m³



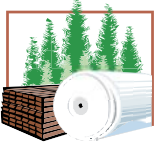
Source: FAO 2006

As early presented international trade of wood and wood products is growing at an average rate of 6.6% per year. The growth rate is not even among the the different products. Table 2 presents the average growth rate and the change in the share in the total international trade for the different wood products considering the last 15 years, in value terms.

Table 2- Growth Rate and Share in the Total Wood Products International Trade

Product	Average Growth Rate (% per year)	Share (%)	
		1990	2005
Logs & Wood Chips	1.9	7.7	4.9
Wood Pulp	1.8	12.3	7.8
Paper	4.2	38.0	34.2
Sawnwood	4.0	14.2	12.0
Wood Panels	6.9	8.4	10.7
SPWP	8.7	16.9	27.7

Source: FAO 2006, Adapted by STCP

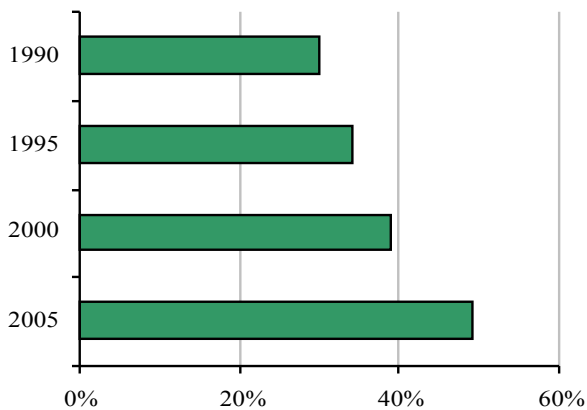


As can be observed when the analysis considers value traded in the international market the fast growing products are wood panels (6.9% per year) and secondary processed wood products (8.7% per year). Logs and wood chips and wood pulp are growing well below the average (2.0%). When the analysis is made based on value terms prices fluctuations of the individual products affect the analysis, and conclusions can change substantially when volumes are taken into consideration. This is particularly the case of wood pulp, a product that faced a significant fluctuation prices over the period. When volumes of wood pulp traded in the international is considered market increased on average 3.6% per year over the period (against 2% in value).

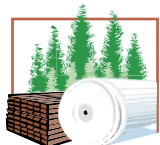
This paper does analyses in details each individual group of products, but within the groups significant variations can take place when a specific product is considered. For instance plywood has lost market shares to reconstituted wood panels and in the wood pulp group some types of short fibre gained more importance.

Figure 5 shows the growing share of eucalyptus pulp in the international trade. Early last decade eucalyptus wood pulp had a share of around 30% and is now around 50%. Producers are projecting, based on the on going and announced investments that eucalyptus wood pulp will have around 60% of the total international short fibre pulp market by the year 2012 (Bracelpa, 2007).

Figure 5 - Share of Eucalyptus in the International Trade of Short Fiber Wood Pulp



Source: Bracelpa 2007



EMERGING AND TRADITIONAL GLOBAL PLAYERS

Along the last decades production and trade of wood forest products have been mostly in hands of European and North American countries. Countries such as Canada, USA, Finland, Germany and Japan have been large producers and important players in the international market.

In spite of the fact these the traditional players are still important, some new emerging players have gained importance in the international market. Table 3 presents information on total exports of wood products of some selected countries (emerging and traditional players) and also their share in the international market considering the last 15 years (1990 to 2005).

Table 3- Exports and Share in the International Trade of Wood Products of Selected Countries

Country	1990 2005 Exports (USD Million)		1990 2005 Trade (%)	
Emerging Players				
Brazil	1,604	8,151	1.3	3.2
Chile	1,010	3,528	0.8	1.4
China	1,848	18,455	1.5	7.2
India	72	688	0.1	0.3
Indonesia	3,530	8,174	2.9	3.2
Malaysia	3,386	6,097	2.8	2.4
Russia	1,715	7,633	1.3	3.0
Vietnam	144	1,612	0.1	0.6
Traditional Players				
Canada	18,375	35,408	15.2	13.8
Finland	9,724	12,912	8.1	5.0

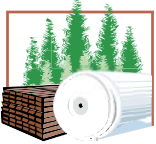
Source: FAO 2006, ITTO 2006 (Adapted by STCP)

As can be observed from the data presented the countries listed as emerging have together increased their share in the international trade of wood products from around 11% to 21% in the last 15 years. Among the emerging global player countries listed the most relevant is China, that has increased its share in the international market from around 1.5% in 1990 to 7.2% in 2005. The country is now exporting over US\$18 billion, mostly represented by SPWP (over 70%). In wooden furniture, for example, China has displaced Italy, a long time world leader in furniture exports.

Brazil and Russia did not have the same performance of China, but were able to increase quite substantially their share in the international market of wood products over the last 15 years. In case of Brazil exports are more evenly distributed among the products (pulp and paper, solid wood primary products and SPWP), while Russia exports is largely concentrated in logs, sawnwood and wood panels.

All other emerging countries have increased their share in the international market. For some emerging countries, such as Vietnam, exports of wood products are still relatively small, but the gains in the international market share have been important. Vietnam, particularly in the last 5 years, have expanded exports of wood products mostly based on SPWP. In 2005 by Vietnam exported 5 times more than in 2000.

On the other hand, traditional players have lost shares in the international market of wood products. Canada and Finland are just examples. In 1990 these two countries together had around 23% of the total international trade and now have a participation of approximately 18%.



PERSPECTIVES

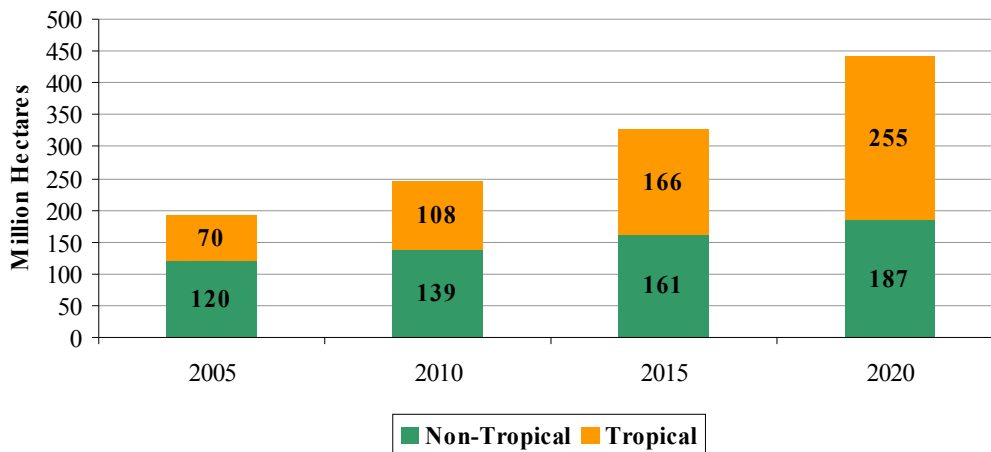
In an conservative scenario wood and wood products trade in the international market will reach over US\$ 450 billion in 2020, but most probably will be higher. This basically means that countries willing to maintain their market share will need to be prepared to almost double their export in the next 10-15 years.

Products share in the international trade will change over the next years. Pulp and paper have now 42% of all exports, but taking into consideration the recent trends the share of SPWP will increase, and most probably will represent over 40% of the total wood based products exports by the year 2020.

Million Hectares

In the future most of the wood supply to the industry will come from plantations. Figure 6 presents the estimates on the increase of forest plantation areas up to year 2020. Taking into consideration the recent trends on forest plantation areas (ITTO 2006a) it is expected total planted area will reach around 450 million hectares by the year 2020, with most of the area expansion in tropical countries and other countries of the southern hemisphere.

Figure 6- Projected Forest Plantation Area

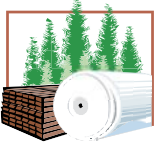


Source: STCP Estimates

Not all the plantations will be for timber production, but even considering that only 50% will be productive industrial plantations, the area expansion together with gains in productivity will allow to produce sustainably around 1.8 billion cubic meters of wood per year (potential sustainable production capacity). This means that in 2020 plantations wood could, in principle, cover the global demand of industrial wood.

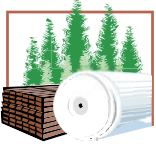
Eucalyptus is currently the main tree planted species in the tropics, and is also among the most productive. The importance of the species for the pulp industry, its potential for the solid wood industry and also the possibilities of further increase the productivity of plantations, indicates that eucalyptus will be the first selection for several investors. By the year 2020 most probably eucalyptus pulp will have over 60% of the international trade of short fibre pulp. Also eucalyptus logs from plantations will have a larger share in the sawnwood and plywood industry, and will take market shares of tropical timber from natural forests.

By the year 2020 emerging countries will have taken over a substantial share of the international trade of wood products. In principle Brazil, China and Russia are expected to be among the world leaders. Other countries that have their relative importance substantially increased are India and Vietnam.



There are not many new frontiers to be open for large scale forestry developments. Most probably along the next 10 to 15 years investors will look for forest development in new countries, and this will be an opportunity for some African countries.

Other important changes will be driven by increasing energy costs. Wood demand for energy is expected to grow fast along the next years, and this is expected to have some effect specially over the wood pulp and reconstituted wood panel industry, as the competition on wood supply will increase affecting log prices and the profitability of these industry. On the other hand energy is also an opportunity for the forest industry, that is expected to increase its contribution to energy generation based on biomass in the future. There are still other changes expected within the next 10-15 years. Aspects as forest certification and social responsibility will gain more importance, and investments to achieve the increasing standards will require cultural changes and new investments. In emerging countries this will be, to some extend, facilitated by a on going process of consolidation and investments of new national and international players.



CONCLUSIONS

All indicates that production of wood products will continue to grow along the next 10 to 15 years at around 1% per year, but international trade of wood products is expected to grow much faster and will most probably double in the next 10-15 years.

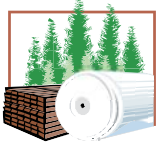
Emerging countries are gaining shares in the international market, and this trend is expected to continue along the next years. Brazil, China and Russia are expected to have their share substantially increased and will probably be among the most important players in the international market by the year 2020.

Pulp and paper are the main product traded in the international market at moment, but secondary processed wood products (wood furniture and other value added wood products) are growing faster. By the year 2020 the participation of SPWP in the international will be most probably higher (in value terms) than pulp and paper

A successful strategy to gain market share in the international market, or even to maintain the current market share, will be most probably associated with investments in fast growing plantation, value added products and international market development. This applies to countries but also can be considered in the definition of strategies at company level.

Winners of the future will be located in countries that have appropriated conditions to produce timber at low costs, and this is largely associated with investments in highly productive plantations and good logistics to reach main markets.

Investments come from the private sector, but considering the perspectives discussed in this paper governments will have an important role in investment attraction. Investments will flow to those countries that will be able to create a good investment climate for the forest industry.



LITERATURE

BRACELPA (2007). Celulose de Fibra Curta Branqueada. Bracelpa Data Bank, not published.

FAO -FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS. FAOSTAT Forestry. Available at: <<http://faostat.fao.org/site/381/default.aspx>>. Last access: May 28, 2007.

FAO -FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS. State of the Worlds Forests 2003. Available at: <<http://www.fao.org/DOCREP/005/Y7581E/Y7581E00.HTM>>. Last access: May 21, 2007.

ITTO - INTERNATIONAL TROPICAL TIMBER ORGANIZATION (2006). Annual Review and Assessment of the World Timber Situation 2005. Document GI-7/06. Trade in Secondary Processed Wood Products. Yokohama, Japan.

ITTO (2006a) Global Study on Forest Plantations: Encouraging Private Sector Investment in Industrial Plantation in the Tropics. STCP Report, in print;

ITTO (2006b) Global Study on Forest Plantations: Market Study on Tropical Plantation Timber. STCP Report, in print.

WHITEMAN, A; BROWN, C AND BULL, G. Forest Product Market Developments: The Outlook for Forest Product Markets to 2010 and Implications for Improving Management of the Global Forest Estate. FAO Forestry Policy and Planning Division, 1999. Rome, 123p.

WTO -WORLD TRADE ORGANIZATION. International Trade Statistics 2005. Selected Long Term Trends. Available at: <http://www.wto.org/english/res_e/statistics/its2005_e/its05_longterm_e.htm>. Last access: May 18, 2007.