HITTING THE TARGET

Timber consumption in the Brazilian domestic market and promotion of forest certification

Friends of the Earth
Amigos da Terra
Programa Amazônia

Imaflora

IMAZON
Instituto do Homem e Meio Ambiente da Amazônia

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1. Executive Summary

The greatest and most intensive consumption of tropical timber in the world is concentrated in the southern and southeastern regions of Brazil, which together consume more than twice the total amount imported by the 15 countries of the European Union. Of every five trees cut down in the Amazon, one is sold on the market in the state of São Paulo.

The shortage of reliable data on timber consumption resulting from several factors (among which is the very high percentage of illegal extraction) has helped hide this reality and deflect the attention of policy makers and civil society organizations, both Brazilian and international. Due to this phenomenon, the main focus of policy and campaigns has been limited to the timber export business, which accounts for only 14 per cent of the total volume extracted in the Amazon. This document represents a first attempt to describe commercial flows and consumption of Amazon timber.

It is true that market strategies aimed at promoting sustainable forest management, such as voluntary certification based on environmental and social standards within the framework of the Forest Stewardship Council (FSC), can concretely influence exploitation practices - but only to the degree that they are able to affect the domestic market, especially in the South and Southeast of Brazil.

All indications are that to date this enormous consumer market has not even been touched by a concern with the origin of the timber. In spite of research studies which show generalized concern with the environment, a large majority of final and intermediate consumers, with a few notable exceptions, are ignorant of and skeptical about any real possibility of distinguishing between illegally produced timber and that derived from sustainable management.

Nevertheless, an important agreement has just been signed with a retail chain in the furniture and accessories business, seeking to give priority to those timber suppliers able to sell products derived from certified forests.

Friends of the Earth - Amazonia Program, the Institute of Forestry and Agricultural Management (IMAFLORA) and the Institute for Man and the Environment in the Amazon (IMAZON) have also formulated a strategy to foment and stimulate adoption of independent and voluntary certification in Brazil. To that end, the following four main lines of action have been identified: (i) measures and practices within the domain of public policy; (ii) economic and market instruments; (iii) actions directed at the middle man; and (iv) campaigns to raise the awareness of the final consumer.

2. Information Base and Definitions

2.1 The IMAZON Information Base

The main source utilized in this document is a database derived from a field survey carried out by IMAZON in 1997-98, in 75 "timber hubs"[1] located in all nine states of the Legal Amazon Region[2]. These timber hubs are responsible for approximately 95% of all timber production in the region. Interviews were conducted at 1,393 firms and a census in each of the 75 hubs was taken, with field visits to all the areas aimed at identifying the functioning companies, the type of industrial activity (sawmill, veneer producer, plywood factory, etc.) engaged in, their size and the volume of logs processed. As for size, four categories were defined: micro (up to 4,000 cubic meters per year, accounting for 27% of the total number of companies), small (from 4,000 to 10,000, representing 30%), medium (from 10,000 to 20,000, representing 35%) and large (more than 20,000, representing 8%). These data were checked and compared with information obtained from timber associations and the local offices of IBAMA.

Approximately 50% of the companies which had been identified (and considered to be representative of the various categories) were then selected for direct interviewing. The interviewees were appropriately informed that the interview would only be used for statistical purposes and that the information would not be used to harm the company in any way. The interviews, of approximately 30 minutes in length, were conducted with the owner or manager of the firm. The data on timber hubs with a production of less than 100,000 cubic meters were gathered without a field visit. Part of the production of Roraima and Acre is scattered around several municipalities in the interior of the state, which therefore are not included in the hubs. The proportion of timber produced in a diffuse manner is about 50% of the total production of these two states. In the state of Pará, production by isolated centers represents only 4% of total production. Timber production there occurs mainly along the lower

[1] Timber production is concentrated in hubs, defined as cities with annual production of timber in logs equal to or greater than 100,000 m^3. The companies tend to concentrate in hubs because of the avaiability of services, infrastructure (power, communications, health services, banking system) and manpower (see Veríssimo, et al., 1992: 1995; 1998; Uhl, et al., 1997).

[2] The Legal Amazon (referred to in the rest of this document as "the Amazon") includes the northem region and a large part of the states of Maranhão (in the Northeast region) and Mato Grosso (in the Centerwest region). The data related to production and consumption in these two states as a whole are therefore included in those for the Legal Amazon, except when data are presented by region.

Araguaia and Xingú rivers. In Amazonas, the portion of the timber derived from the Purus, Juruá and Alto Solimões represents ca. 8% of the production of the state. The confidence intervals are not large (less than 500,000 cubic meters in logs, or 2% of the total).

The processing and comparisons that made it possible to use the raw survey data for the diagnosis presented in this document were done by Friends of the Earth - Amazonia Program, IMAFLORA and IMAZON. The following coefficients were used for conversion into logs: (i) sawn wood: 2.8; (ii) plywood: 2.5; (iii) veneers: 2.5; timber products: 2.5.

2.2 Statistics from the International Tropical Timber Organization (ITTO)

The data on international consumption utilized in this document are derived from official statistics prepared by the International Tropical Timber Organization (ITTO) for 1997. It should be pointed out that ITTO itself acknowledges the existence of innumerable limitations regarding the reliability of these data, which are consolidated annually in the ITTO Forecasting and Statistical Enquiry. To be more specific,

- ITTO points out that the statistics related to production are, "in many producing countries, weak or non-existent," and that the main reliability problem in the producing countries is the lack of a regular system of surveys based on industrial enterprises; while in the consumer countries, the most common difficulty is with reference to the distinction between tropical and non-tropical imports.

- "Apparent domestic consumption" is defined as production + imports - exports, without taking into account variations in stock, as used to be done. In the past, most countries omitted or erroneously reported such variations. Thus, as of 1997, the ITTO Technical Working Group on statistical affairs recommended that stock variations no longer be calculated.

- In 1997 and in most previous years, the governments of Brazil and India did not supply ITTO with any data on production. Therefore, ITTO stated that it utilized "other sources" to estimate production data for these two countries, but it maintains confidentiality with regard to the identity of the sources utilized. This is a peculiar and unusual situation, considering that the statistics have been compiled by an official international organization of which these two countries are members. ITTO restricts itself to admitting that this situation may have led it to overestimate these two countries' production, through inclusion of "some" non-tropical timber.

2.3 Definitions of Tropical Timber

The definition of tropical timber adopted in this document is taken from Chapter II, Article 2 (1) of the International Tropical Timber Agreement (ITTA), as revised in 1994. The definition includes "non-coniferous tropical timber for industrial uses, which grows or is produced in the countries located between the Tropic of Cancer and the Tropic of Capricorn. The term refers to logs, sawn timber, veneers and plywood. Plywoods which to some degree include coniferous species of tropical origin are also included."

However, the above definition has certain inconsistencies and inadequacies. The main one is that many producing countries, including Brazil, are located partly in the tropical zone and partly in the subtropical. In this case, a definition of tropical and non-tropical based on the biome and/or sub-region of origin of the timber would be more appropriate.

In the guidelines circulated by ITTO to the producing countries, it is also recognized that the question of inclusion of conifers growing in tropical regions is not clear; the member countries are requested to clarify exceptions which may be anticipated in the calculation of statistics based on the definition cited above.

In the case of data from the Food and Agricultural Organization (FAO), tropical timber is defined as "non-coniferous, broad-leaved hardwood from tropical countries."

The data on domestic consumption presented in this document (from the IMAZON database) refer exclusively to production of tropical timber in the nine states of the Amazon; thus, they do not include consumption of tropical timber from other states, particularly from the Northeast, Southeast and Centerwest. Limited as such production may be, it makes it necessary to take into account that real tropical timber consumption in the principal Brazilian consumer states is actually a little greater than the consumption of Amazon tropical timber documented here.

2.4 Methodological Note

Besides the databases referred to (which have been utilized for the statistics on production and sales), several interviews were conducted at the principal processing and consumption centers, especially in the state of São Paulo, as well as with representatives of official agencies, research institutes, NGO's, corporate associations, etc.[3]. It should be stressed that the interviews and visits have

[3] A complete list of sources in Chapter 6.

made possible only a partial description of the market mechanisms; and that unlike the data from the diagnosis, the conclusions related to market dynamics are of a qualitative rather than quantitative nature.

It should also be mentioned that the ITTO consumption data for Brazil are utilized particularly in the comparisons with other countries (i.e., with other data from the same source), while the IMAZON data (which are more reliable, and the methodology for the gathering of which is known) are used mainly for analysis of domestic and regional flows within Brazil.

3. Production and Consumption of Amazon Timber

3.1 Timber Production in the Amazon

In 1997, production of timber in logs in the Amazon came to approximately 28 million cubic meters. Of this (see Figure 1), more than three fourths was extracted in the states of Pará and Mato Grosso; Rondônia stands out as the third largest producer. Among the states with production levels which are still relatively limited, Amazonas and Acre will tend to increase their share in the coming years. In the case of Amazonas, for example, one may foresee a trend toward increased exports because of the recent devaluation of the real; while in the case of Acre, both expansion of illegal activities along new stretches of highway and new production through management of public forests are possible. In Pará, there is a tendency for many timber activities to migrate to the west of the state, due to the low resource prices and the relatively easy access to the market; total production may possibly increase. In Rondônia, exploitation of resources in certain accessible regions is theoretically impossible because of territorial land use regulations, but so far these have hardly been implemented. In the states of Mato Grosso, Maranhão and Tocantins, the trend is toward progressive exhaustion, with a possible fall in production.

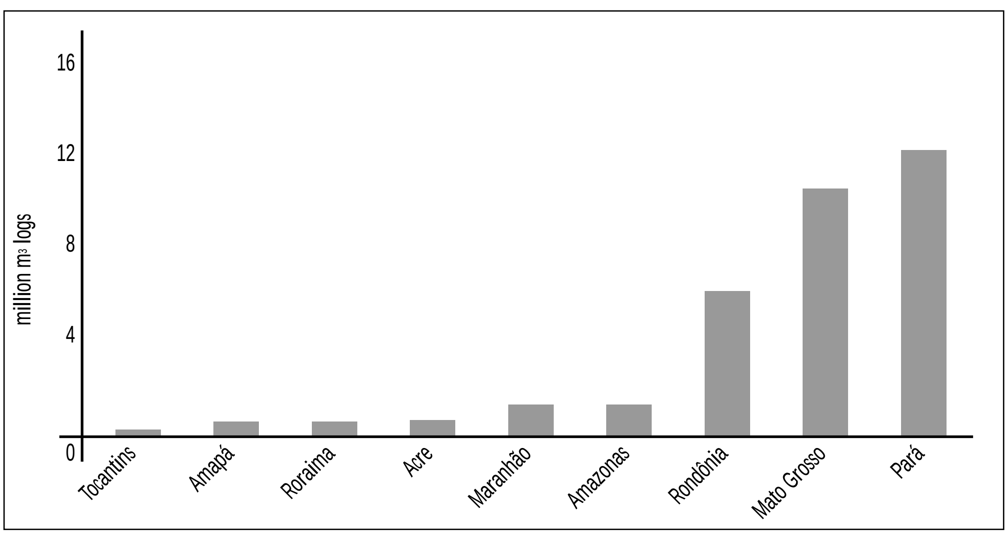

Figure 1 - Production of logs by state, 1997

Friends of the Earth / Imaflora / Imazon, 1999 - Source: Imazon

3.2 Brazilian Consumption of Brazilian Timber

Internal consumption in the nine states of the Legal Amazon represents only 10% of consumption of all Amazon timber. In terms of quantity, the entire consumption of the nine states of the Amazon could be supplied from Rondônia's current production alone. Thus, although per capita consumption is relatively high, provision of timber to meet the region's demand requires a quite modest total volume of extraction.

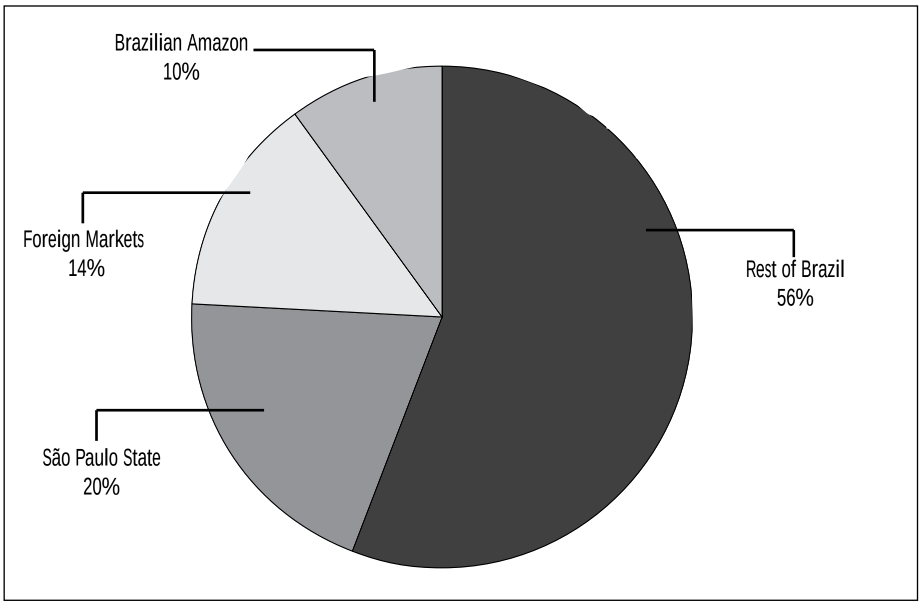

Figure 2 - Consumption of Amazon timber, 1997

Friends of the Earth / Imaflora / Imazon, 1999 - Source: Imazon

The information on consumption of Amazon timber and its main commercial destinations, both domestic and foreign, is summarized in *Figure 2* and in *Table 1*.The data on the states of the Northeast are shown for the region as a whole, because the raw data do not permit a reliable breakdown by state of sales to that region. The top six consumer states, all in the southeastern and southern regions, stand out from the others and represent priority targets for any effective strategy to influence the demand for Amazon timber.

Region	Timber in Logs (millions of m^3)	Share %
Legal Amazon		
Total	**2.7**	**9.7**
Center-west (without Mato Grosso)		
Goiás and Federal District	1.0	3.6
Mato Grosso do Sul	0.5	1.8
Total	**1.5**	**5.4**
North-east (without Maranhão)		
Total	**4.0**	**14.4**
South-east		
São Paulo	5.6	20.1
Minas Gerais	2.6	9.4
Espirito Santo	0.4	1.4
Rio de Janeiro	1.8	6.5
Total	**10.4**	**37.4**
South		
Rio Grande do Sul	1.2	4.3
Santa Catarina	1.5	5.4
Paraná	2.5	9.0
Total	**5.2**	**18.7**
Foreign		
Total	**4.0**	**14.4**
Total	**27.8**	**100.00**

Table 1 - Destination of Amazon timber, 1997

Friends of the Earth / Imaflora / Imazon, 1999 - Source: Imazon

The regional differences in consumption of Amazon timber are significant. *Figure 3* shows the share of each Brazilian macro-region in the total consumption of timber from the Amazon, by percentage. The share of the Southeast (the region which includes the biggest, the second and fourth largest consumer states) is almost half of the total consumption. The states of the South also have a very high share in absolute terms; relative to its population, that region has the highest share in Brazil.

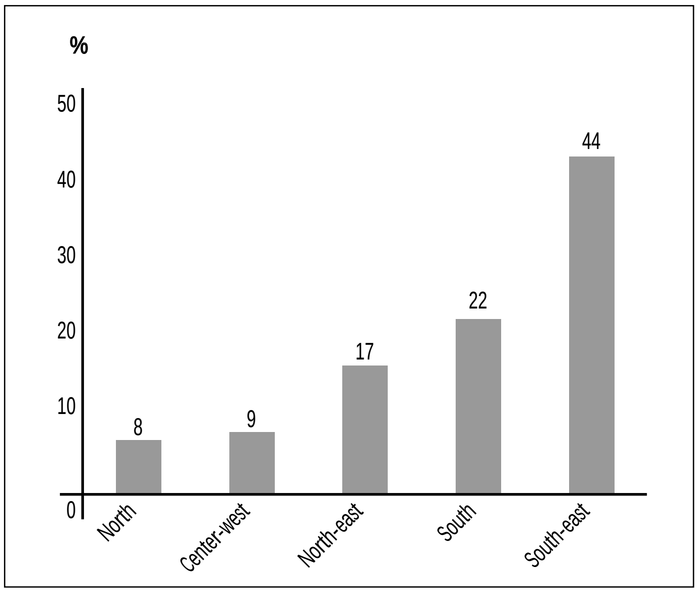

Figure 3 - Share of Amazon timber consumption by Brazilian region, 1997

Friends of the Earth / Imaflora / Imazon, 1999 - Source: Imazon

Figure 4 compares two estimates of the share of exports in total consumption of timber from the Amazon, the first based on IMAZON data and the second on the ITTO data. The IMAZON data show a higher percentage going to exports (14%) than do the ITTO data (10%). Figure 5 compares the two institutions' estimates of volume of logs. Here, the difference is more substantial, with ITTO showing a larger volume of timber produced (see 2.2). It should be recalled that according to the FAO estimate, Brazilian production of tropical timber in logs in that same year, 1997, was approximately 32 million cubic meters, which is a value intermediate between the IMAZON and ITTO data.

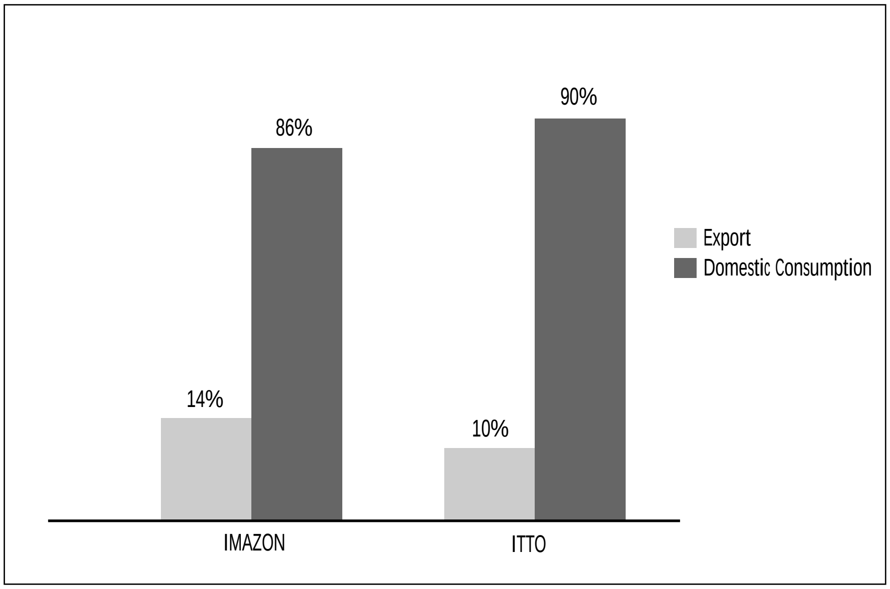

Figure 4 - Exports vs. domestic consumption of Amazon timber, 1997
Friends of the Earth / Imaflora / Imazon, 1999 - Source: Imazon and ITTO

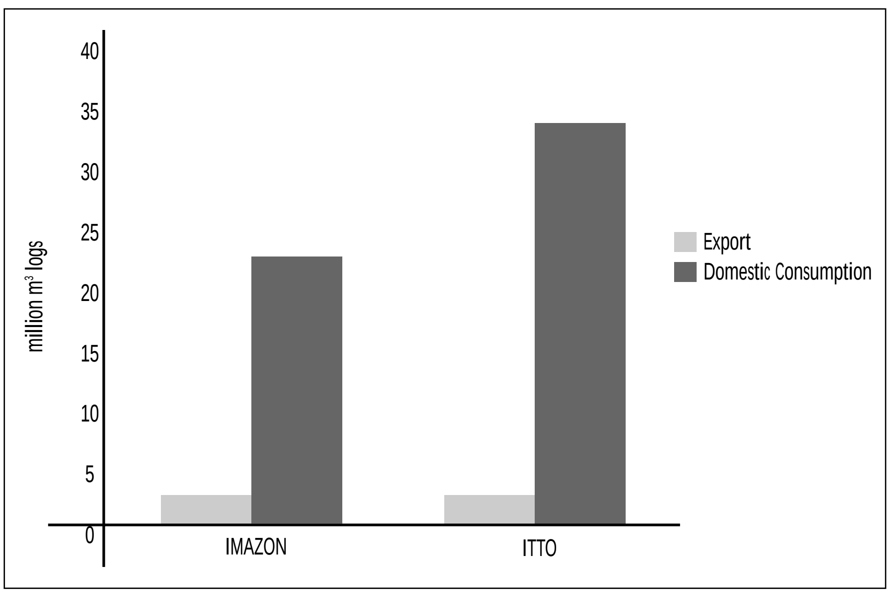

Figure 5 - Exports vs. domestic consumption of Amazon timber, 1997
Friends of the Earth / Imaflora / Imazon, 1999 - Sources: Imazon and ITTO

3.3 Brazilian and Worldwide Consumption of Tropical Timber

Figure 6 shows consumption of tropical timber in the major consumer countries, according to ITTO data, including those which are only importers and those which are both importers and exporters. India is not included in this table, having been excluded by the authors of this document due to an obvious inconsistency involving the ITTO data on its domestic consumption. Observe that ITTO itself admits that there are serious errors in the data related to India. It should be pointed out that the data show no variation in the course of five consecutive years, indicate enormous volumes of consumption of sawn non-coniferous woods (and practically no consumption of coniferous woods), and even blur the distinction with firewood consumption. These major inconsistencies make credible comparison with the other countries impossible.

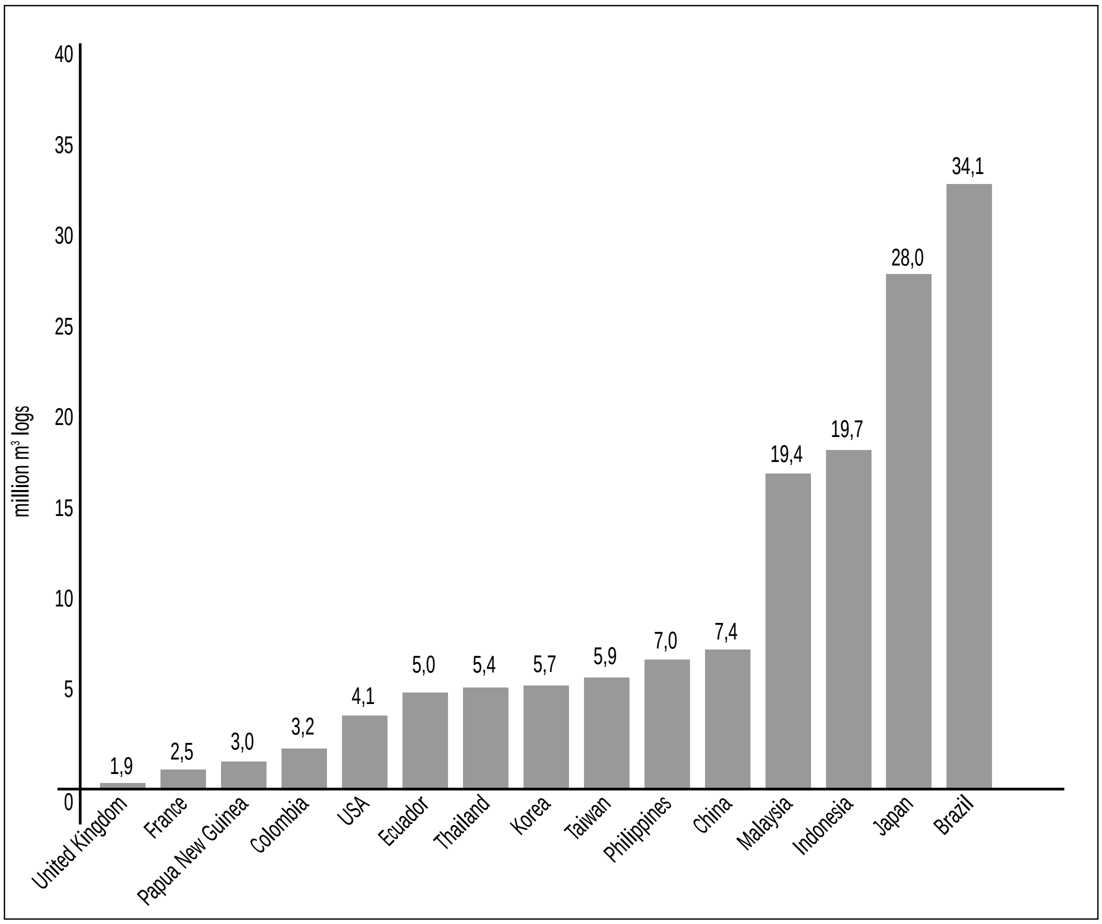

Figure 6 - Consumption of tropical timber by the major consumer countries, 1997
Friends of the Earth / Imaflora / Imazon, 1999 - Source: ITTO

Thus, according to these data - and with the necessary reservations with regard to consistency - Brazil is the largest consumer of tropical timber in the world. It is clear, therefore, that Brazil should be given priority in any international strategy aimed at influencing patterns of consumption of tropical timber.

Consumption of tropical timber by the Brazilian Southeast and South may be compared to that of the main importing countries, for in both regions the raw material comes from outside its territory. In Figure 7, these two regions together are considered as though they were an importing country. The data utilized for total consumption of tropical timber are those of the ITTO, while the calculations for the regional divisions within Brazil are based on the IMAZON indexes of production destination shown above. Thus, even using the IMAZON data, which are considerably more conservative that the ITTO data with regard to consumption, it may be observed that the South-Southeast of Brazil would be the second biggest importer in the world were it to be considered as a country. With the exception of Paraná, domestic production in the states of these two regions, including tropical and non-tropical timber, is quantitatively insignificant. Therefore, strategies aimed at influencing consumption in these regions should be designed in accordance with the experience and characteristics peculiar to import markets.

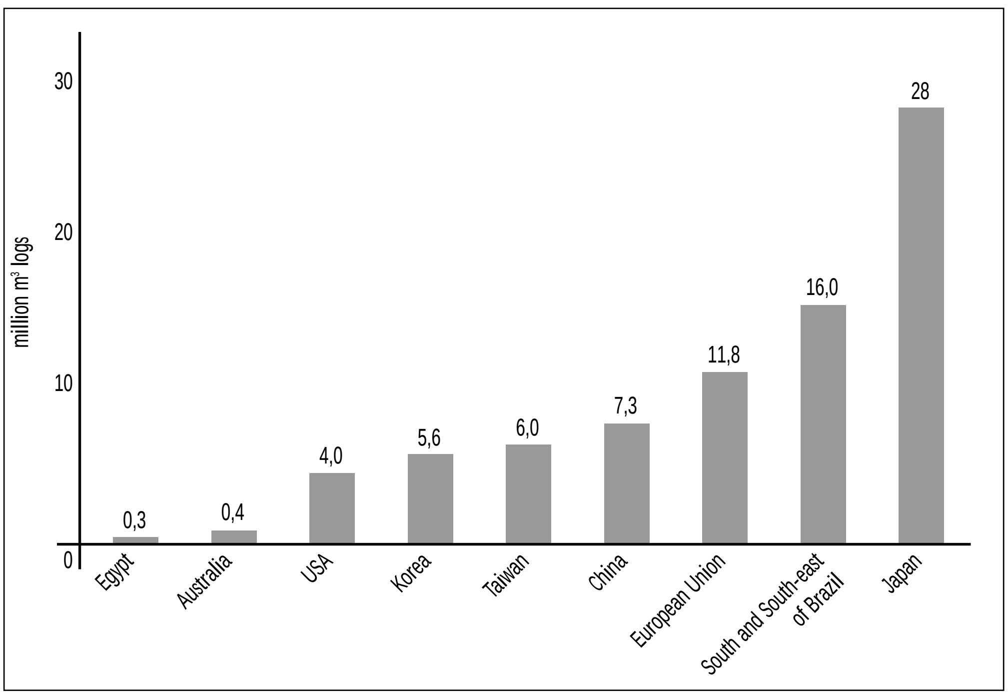

Figure 7 - Comparison of tropical timber consumption between the Brazilian importing regions and the major importing countries, 1997

Friends of the Earth / Imaflora / Imazon, 1999 - Sources: ITTO, and Imazon for the Brazilian South and Southeast

The state of São Paulo by itself consumes more than twice as much tropical timber as France, the main consumer among the countries of the European Union (the total consumption of which is approximately 2/3 that of the southern and southeastern regions of Brazil). *Figure* 8 presents specific comparisons with the European countries, including the 15 members of the European Union as well as Norway and Switzerland.

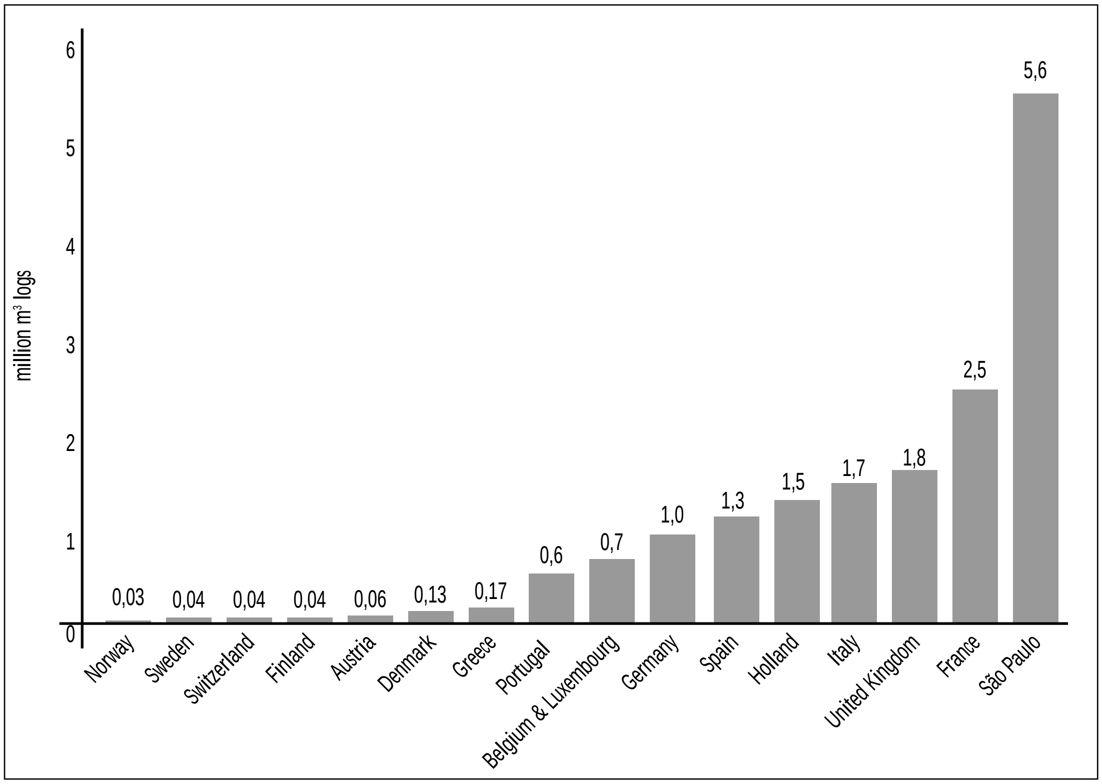

Figure 8 - Comparison of consumption of tropical timber between São Paulo and the main European importing countries, 1997

Friends of the Earth / Imaflora / Imazon, 1999 - Sources: ITTO, and Imazon for São Paulo

3.4 Commercial flows of Amazon timber among the states of Brazil

Table 2 breaks down the destination of timber production from each Amazon state, providing information on the total supply to each of the Brazilian states, for export and for internal consumption within the producing state, based on the IMAZON survey. Each datum is provided as a percentage of the state's production.

With this information at hand it is possible to identify commercial flows among states and to advance in the direction of a definition of priorities and specific actions for implementing a strategy of promotion of certified forestry products, which is the purpose of this document. For example, based on the data presented here one may conclude that in the case of the states of Amapá and Roraima, a certification promotion strategy focusing on consumption in the southern and southeastern regions would not be justified. However, these states account for just a little over 1% of Amazon timber production.

Producer States	Acre	Amapá	Amazonas	Maranhão	Mato Grosso	Pará	Rondônia	Roraima	Tocantins
Production million m^3	0,3	0,2	0,7	0,7	9,8	11,9	3,9	0,2	0,1
Supply (as % of production)									
Federal District	—	—	—	1	1	2	1	—	—
Espirito Santo	—	—	—	—	1	2	3	—	—
Goiás	—	—	—	1	3	2	2	—	—
Mato Grosso do Sul	—	—	—	—	2	2	—	—	—
Minas Gerais	2	—	—	3	9	8	19	—	—
Paraná	6	—	2	—	12	5	19	—	—
Rio de Janeiro	7	—	—	3	8	5	11	—	—
Rio Grande do Sul	—	—	—	11	2	6	5	—	—
Santa Catarina	—	—	—	2	11	1	7	—	—
São Paulo	9	—	3	25	33	12	19	—	—
North-east States	—	—	—	29	3	28	2	—	23
Exports	7	—	77	1	9	19	6	40	—
Internal Consumption	69	100	18	24	6	8	6	60	77
Total	100	100	100	100	100	100	100	100	100

Table 2 - Production in million m^3 and supply of Amazon timber, as percentage of state production, 1997
Friends of the Earth / Imaflora / Imazon, 1999 - Source: Imazon

3.5 Share of the São Paulo Market

Figure 9 portrays the origin of the Amazon timber supplied to the state of São Paulo, the principal Brazilian consumer state. Here, Mato Grosso (the second largest producer in absolute terms) is the main supplier, ahead of Pará, while Rondônia makes a sizeable contribution. In designing a strategy to influence the São Paulo market, it will be of fundamental importance to assign priority to the producers and middlemen from Mato Grosso.

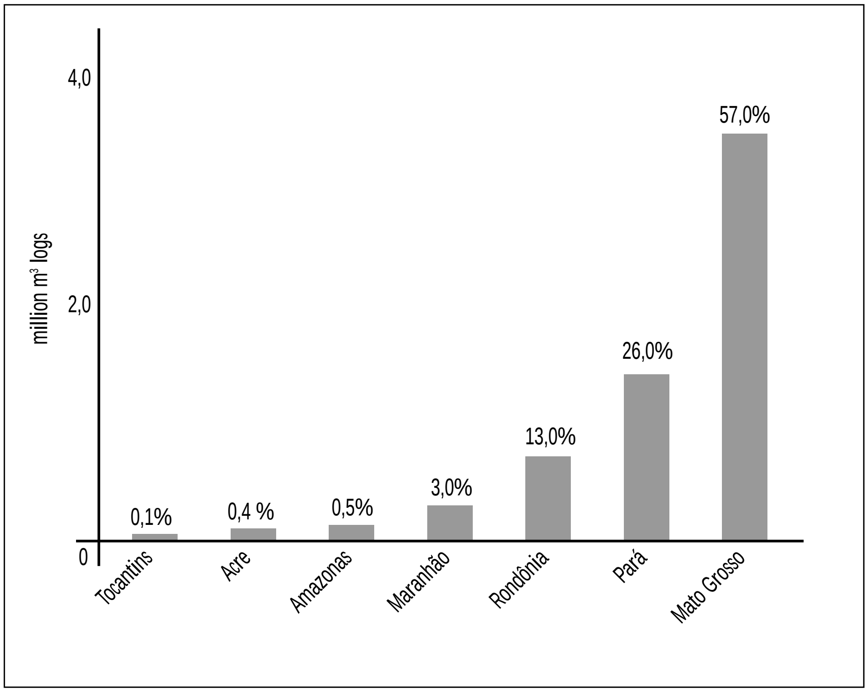

Figure 9 - States supplying the state of São Paulo, 1997

Friends of the Earth / Imaflora / Imazon, 1999 - Source: Imazon

Through interviews conducted in 13 companies representative of the various sectors in the Greater São Paulo and Tietê hubs in the state of São Paulo, it was possible to obtain the following information with regard to the preferred woods on the São Paulo market:

- cabinetmaking (*sawn wood*): cedar, "ivorywood" and "peroba" (*A. polyneurum*)
- laminated woods: mahogany
- ties: garapa (*Apuleia eiocarpa*)
- treads and floors: ipê (Tabebuia spp.) and jatobá (*Hymenaea courbaril*)
- doors, windows and garniture: mahogany, "freijó" (*Cordia sagoti*), cherry (*Torresia acreana*), American muskwood, "angelim pedra" (*Hymenolobium spp.*)
- plywoods: "curupixá" (*Micropholis meliniana*), pink virola, kapok ceiba (*Ceiba pentandra*), achichá
- building industry: "cedrinho" (*Scleronema micranthum*) and "peroba" (*A. polineurum*)

3.6 The Species of Greatest Mean Value

Price	Common Name	Scientific Name	Sawn Timber R$ per m^3 [4]
Low [5,6]	Mandioqueira	*Qualea spp*	135
	Abiu	*Pouteria spp*	140
	Cambará	*Moquina polymorpha*	140
	Quarauba	*Vochysia maxima*	140
	Tachi	*Sclerolobium goeldianum*	140
	Breu	*Protium spp*	145
	Cedrinho	*Scleronema micranthum*	145
	Copaiba	*Copaifera spp*	145
	Maçaranduba	*Manilkara huberi*	150
	Acapú	*Vouacapoua americana*	150
	Marupá	*Simaruba amara*	150
	Piquiarana	*Caryocar glabrum*	150
	Guajurá	*Neoxythece robusta*	151
	Andiroba	*Carapa guianensis*	154
	Jatobá	*Hymenaea courbaril*	160
	Piquiá	*Caryocar villosum*	160
	Kapok Ceiba	*Ceiba pentandra*	160
	Angelim pedra	*Hymenolobium spp*	162
	Muiracatiara	*Astnium lecointei*	190
Medium [7]	Curupixa	*Micropholis meliniana*	250
	Pau amarelo	*Euxylophora paraensis*	250
	Roxinho	*Peltogyne maranhensis*	250
	Tatajuba	*Bagassas guianensis*	280
	Cherry	*Torresia acreana*	340
	Angelim Vermelho	*Dinizia excelsa*	356
	Cumaru	*Dipteryx odorata*	360
	Freijó	*Cordia sagoti*	360
	Yellow Ipê	*Tabebuia spp*	365
	Cedar	*Cedrela odorata*	370
	Louro	*Nectandra pichurim*	375
	Itaúba	*Mezilaurus itauba*	380
High [8]	Mahogany	*Swietenia macrophylla*	900

Table 3 - Average local price of sawn timber in the Amazon, 1997

Friends of the Earth / Imaflora / Imazon, 1999 - Source: Imazon

[4] The average price of saw timber directly negociated locally with the owner of the sawmill.

[5] Approximately 350 species are logged in the Amazon region. Listed species are those more frequently mentioned during interviews.

[6] Low price species are below R$200 per cubic meter (exchange rate as of June, 1999: US$ 1.00 is equivalent to R$ 1.75.

[7] Medium price species are in a range between R$ 200 and 500 per cubic meter.

[8] High price species are higher tha R$ 800 per cubic meter.

The Amazon species which attained in 1997 the highest, mean sale prices (sawn) for domestic consumption are listed in Table 3. This is the "loaded on truck" price at origin. Prices for sale in São Paulo had, until the recent devaluation of the real, almost reached the level of the export prices. In the IMAZON survey, price data were gathered on a total of 137 species. Those 31 listed above, with mean prices equal to or greater than 135 reais per cubic meter, are the best known and most appreciated today by the consumer market, and not necessarily those of superior quality. It was extremely difficult to survey price information on the species, because in many cases the same names are used to indicate similar species, or as a way to mask the true species and sell species of lower commercial value at a higher price. Among other species, this happens frequently with amescla, cedar and peroba.

The figure shows that the prices of even the most expensive species - with the exception of mahogany - are relatively cheap, because of the "low cost" of widespread illegality. In promoting a strategy for certification, it will be necessary to identify the additional value that the certified product may acquire on the market through increased demand. The tendency will be for this value to be at first lower than the additional cost represented by certification. It will tend to be equal to or greater than that cost to the degree that the market increases its demand for certified products.

4. The Demand for Certification in the Brazilian Market

4.1 The Principal Public and Private Bodies Dealing with Certification in Brazil

In Brazil, there exists a formal legal framework that provides for certification. It is called SINMETRO, a system consisting of public and private organizations active in areas related to "metrology, standardization, industrial quality and certification of conformity [with the applicable regulations]." SINMETRO was created by Law 5966, of 11 December 1973, to establish an infrastructure of technological services capable of evaluating and certifying the quality of products, processes and services through certification bodies, a network of testing and calibration laboratories, training organizations, proficiency testing bodies and inspection agencies, all credentialed by INMETRO (see below).

This structure, supposedly formed to meet the needs of industry, commerce, government and the consumer, actually lacks wide scale market recognition and has not contributed significantly to the growth of certification in Brazil.

The SINMETRO normative body is the National Council of Metrology, Standardization and Industrial Quality (CONMETRO), which is an inter-ministerial collegiate body; its executive secretariat is exercised by the Institute of Metrology (INMETRO), an semi-autonomous federal public body ("autarquia") tied to the Ministry of Industry and Commerce.

The mission of INMETRO, which replaced the former National Institute of Weights and Measures, is ambitious and comprehensive. It is defined as follows: "to work for the socioeconomic development and improved quality of life of Brazilian society, contributing to the country's international competitiveness and scientific and technological progress and to the protection of its citizens, especially in those aspects related to health, security and the environment."

There is, no doubt, a real need to guarantee the performance of certain functions inherent to the public authorities through bodies of this type (although with more streamlined and less bureaucratic structures). Aspects related to implementation of legislation, industrial inspection, legal metrology, issuance by governmental organizations of technical regulations, and even encouragement of research in the metrological area can fall within an official framework. On the other hand, in the opinion of the organizations which produced this document, the task of creating and administering stamps and seals with credibility among the general public can only be upheld within the domain of civil society, perhaps with some forms of acknowledgement or credentialing by the public authorities. Below is presented certain information on the principal bodies dealing with independent certification.

The Brazilian Association of Technical Norms (ABNT) is a private not for profit body founded in 1940. It was the first Brazilian institution involved in certification. Its objectives, among others, are to promote the drafting of technical norms and encourage their use in the scientific, technical, industrial, commercial, agricultural, service and related areas, as well as granting (either directly or through third parties) seals of approval and other certificates related to "prevailing sectoral acceptance." ABNT is the representative in Brazil of the International Standards Organization (ISO). ISO certification has increased a great deal in Brazil since 1996. Such certification is solely related to the internal management process within companies, with objectives the companies themselves set; and its significance is generally unknown to the consumers. Nevertheless, trademarks with the ISO seal of approval have been relatively successful, and are widely cited in advertising. In general, there is a tendency to suggest, implicitly or explicitly, an association between the ISO seal and a general "standard of superior quality" for the company's products which exhibit it.

In the opinion of ABNT, Brazilian consumers are neither familiar with the seals nor aware of their significance; but once informed, they are willing to give preference to these "differentiated" products. However, such preference depends upon the credibility of the certifying institution. According to ABNT, the main conditions for winning consumer confidence are the transparency of the process and the active participation of civil society.

With regard to strategy for reaching the final consumer, the conclusion is that it is necessary to transmit very clear messages to the public regarding the meaning of the certificate, as well as to identify different publics in order to adapt the message to each. Specific and directed forms of publicity should be used. One example cited was the seal of the Abrinq Foundation's "Friend of the Child Company" (see below), which reportedly has not obtained good results because the consumer doesn't know what being a "friend of the child" means.

Another issue stressed by ABNT is product availability. If the consumer doesn't have access to certified products, the promotional campaigns will not be effective, and may even have undesirable effects. This problem must be taken into account in the case of certification with the FSC seal (see 4.2), because there are limited prospects for product availability. There is a risk, therefore, than insufficiently structured campaigns or those which focus only on the final consumer as the target population may generate an unmet demand, and consequently a loss of interest on the part of the consumer, with a potential loss of credibility of the whole process.

Founded in 1989, the Organic Agriculture Association (AAO) today has more than 1,400 members, including farmers, agronomists, liberal professionals and consumers. Its main objective is to seek out measures to encourage production of healthy foods with techniques that do not harm the environment, as well as to insert these products into the market. The association participates in the work of the International Federation of Organic Agriculture Movements (IFOAM), an international network based in Germany, but it does not explain whether it utilizes the standards of that institution. Its activities are aimed at promoting technical knowledge on the part of producers; since late 1996, it has been promoting a seal of quality in certain businesses in Greater São Paulo.

The Biodynamic Institute acts in Brazil to certify organic agricultural products using the IFOAM standards. The products certified by the Biodynamic Institute are mainly intended for the external market. The institute's strategy is to only certify for purchasing firms, not for the final consumer. Therefore, it has not endeavored to publicize the certification among the general public, but rather limited itself to producing promotional material for companies, which constitute potential clients. This also applies to plans for the future, which are giving priority to investing in upgrading the technical quality of the service.

In the Institute's opinion, greater social awareness of environmental problems does contribute to the development of certification, although the most important aspect is the growing concern with personal health, which is more individualistic in nature.

Other indicators do confirm that foodstuffs have the greatest potential for development of environmental certification, because of their appeal to consumer health. A survey done by Friends of the Earth and IMAFLORA in the last week of January, 1999, in three major supermarkets (*Carrefour*, *Sé* and *Pão de Açucar*) and in the biggest store specializing in foodstuffs in the city of São Paulo (*Empório Santa Luzia*), made possible identification of 36 different fruits and vegetables on the shelves. The labels asserted that the products were "organic," "biological," "without chemical products" or "without agro-toxins." However, only two of these products showed any seal of certification, while the others merely showed a voucher or allegation of proof presented by the producer. That same week, in visits to two open markets on the streets of the capital, it was found that several stalls offered "organic" produce, also not backed up by any seal.

The ABRINQ Foundation, tied to the toy producers' association, created and administers the seal "Friend of the Child Company," which vouches for the fact that the certified company does not use child labor and offers support services to children and adolescents. The campaign was born in 1996. According to the institution, it has so far not had the expected results, for two main reasons: (i) insufficient publicity in the media, and (ii) the fact that the availability of certified products on the market is very limited.

According to informal data gathered by the foundation in a sporadic manner, the reaction of the public indicates that the seal is implicitly associated with a concept of superior quality, and that this element is fundamental to a change in consumer behavior. That is, if the consumer confirms by experience that the certified product is also of superior quality, he will tend to prefer it.

The companies that show interest in this type of certification are mainly those that reach foreign markets and that are facing accusations of child labor. These include the sugar cane, footwear and charcoal industries. Recently, there have also been cases of companies with more direct contact with the consumer and which have their products on supermarket shelfs as well. The foundation's objective is to certify 3,000 companies by the year 2000. The peculiar nature of this model should be pointed out: the certification is administered by an association which reflects the interests of the producers of a good (the toys) utilized by the very public which is the intended beneficiary of the seal.

4.2 Certification and the Forestry Sector

In June 1998, an opinion poll by the Brazilian Public Opinion Institute (IBOPE), commissioned by the National Confederation of Industry (CNI) found that among the environmental concerns of Brazilians, "devastation of the forests" was given top priority, with 35% selecting it. Next in order were water pollution (18%), air pollution (14%) and urban sewerage (13%). Furthermore, 68% of those interviewed stated that they would be willing to pay an additional price for products compatible with environmental protection.

Thus, according to IBOPE, the potential for developing a demand for products certified on the basis of environmental criteria would be considerable. However, in spite of the data presented in that research, the interviews conducted within the scope of this document point to a much more complex reality - as confirmed by the information presented in 4.1. This information is derived from interviews with the principal certifying institutions and consumer defense organizations, as well as certain timber trading companies.

As documented above, in Brazil independent certification is still incipient, and the number and variety of experiments are not yet great enough to make it possible to evaluate public receptivity. Most of the opinions gathered are, therefore, based on suppositions or very limited experience, from which it is difficult to draw lessons for a market of the scope and diversity (both social and regional) of the Brazilian one.

After the failure of many governmental initiatives to generate less predatory forms of forest exploitation, forestry certification emerged as a tool of civil society to promote sustainable management. Among the various certification initiatives in this area, the only one to have won significant recognition is the Forest Stewardship Council (FSC).

In 1992, the American organization Rainforest Alliance (owner of the SmartWood seal, which was later to be recognised by FSC) certified the first Brazilian company (the third in the world at that time). The company in question was Amacol, an Amazon timber company, which later (in 1996) lost its certification. In subsequent years IMAFLORA, created in 1995 as the first southern hemisphere certifying institution in the forestry sector, began to develop certification standards for the trumpet tree (caixeta) in the Atlantic Rainforest and for Brazil nuts and rubber in the Amazon.

Being planned at that same time was the Certificate of Origin of Forest Products (CERFLOR), which had been created in 1992 by the Brazilian Silviculture Society (SBS), but which has still not been structured. CERFLOR, which was supposed to serve the needs of Brazilian silviculturists, in 1996 came to be administered by ABNT. In August 1998, ABNT opened a process of consultation with regard to the criteria to be adopted; according to the available information, there was no significant participation on the part of the interested sectors. However, new public meetings are announced in the course of the coming months.

Socio-environmental forest certification applying the international principles and criteria of the FSC began to be utilized in Brazil in 1997. The FSC is the first institution to bring together, on an equal basis, representatives of the business, environmental and social sectors. Also in 1997, the Brazilian Working Group of the FSC was created, with the aim of drawing up national principles and criteria for the various types of forest in the country. WWF-Brazil is currently hosting the Working Group's executive secretariat. Criteria for certification of planted forests and dry land Amazon forests are at an advanced stage of discussion, ready for field test; their definitive formulation is expected in the second semester of 1999.

So far, certification has been mostly developed in the states of the South, notably Paraná and Santa Catarina, and for planted forests. To date, 17 companies have received the FSC seal of certification in Brazil. Of these, only one is an Amazon timber producer: Mil Madeireiras, in the state of Amazonas, which belongs to the Swiss group Precious Woods, and is active in an 81,000 hectare area. Mil is also the only certified Brazilian company operating with management of natural forests. It should be recalled, however, that there is one prefab housing company (*Bird Estruturas Espaciais*), one wooden flooring block manufacturer (*MW Florestal, of Itacoatiara*) and one producer of laminated wood and plywood (*Gethal do Amazonas S.A.*), which have certification for chain of custody, utilizing raw material from Mil. According to the information gathered, six certification processes are underway in the Amazon region, including one relative to a major commercial firm and five others for community management experiments in indigenous or extractive reserves. According to IMAFLORA, the main FSC certifying body in Brazil (through SmartWood), a big increase in demand for certification in natural forests may be anticipated throughout the year 2000.

5. Toward a Strategy to Stimulate Demandfor Certified Products

5.1 Initial Experiences: the Tok & Stok Agreement

Friends of the Earth - Amazonia Program and IMAFLORA have, as part of a strategy to stimulate demand for products certified in Brazil, reached a first agreement which is to serve as a test and a model to be adopted with companies of different types and sizes.

Tok & Stok, which was created in 1978 and grossed approximately US$140 million in 1998, does not manufacture the products it sells. Rather, it places exclusive orders for the more than 10,000 pieces of furniture and accessories for home and office, which it sells in its 16 big stores. The company has more than 800 suppliers, of which 54 supply timber. They are called upon to meet the requirements of a rigorous system of quality control, due to the need to standardize the products acquired through outsourcing and to maintain a stock of replacement parts over a period of time. The Tok & Stok stores are located in the cities of São Paulo (4); Tamboré, SP; Campinas, SP; São José dos Santos, SP; Rio de Janeiro (3); Niterói, RJ; Porto Alegre, RS; Curitiba, PR; Londrina, PR; Belo Horizonte, MG; Vitória, ES and Brasilia, DF. The company also markets its products through a catalogue, approximately one million copies of which are distributed.

Tok & Stok was selected as an ideal case in the Brazilian market to test a strategy of collaboration aimed at stimulating demand for certified timber. Its structure offers a number of comparative advantages:

- its system of quality control, already well developed, makes it possible to more easily introduce an additional requirement for the suppliers;

- its suppliers are not sporadic, and generally have a long term relationship with the company, which makes them more amenable to accepting conditions such as certification;

- the company has good brand recognition because its products are consistent with the firm's typical design, selling as it does exclusive products, and on account of the fact that it reaches many consumers through catalogues;

- the company mainly appeals to a relatively youthful public, which is receptive to novelty and trends and has medium to high purchasing power, i.e., a clientele, which is more receptive to the relatively sophisticated message implicit in socio-environmental certification;

- its marketing network is concentrated in the biggest timber consuming areas in the country.

The Amazonia Program of Friends of the Earth and IMAFLORA proposed that Tok & Stok enter into a model agreement providing for the signing by the company of a declaration of commitment, as well as terms of reference to govern the manner in which the commitment is implemented and monitored. The company showed great interest, and after long negotiations, the proposal was signed on November 25, 1998. The rationale for the commitment is based on the premise that today the market does not permit a Brazilian medium or large-scale business to depend exclusively on certified timber. To put into place a scenario in which that is possible, it is necessary for the companies with influence on the supplier market to begin to generate that kind of demand, in order to persuade the producers that supplying certified timber represents a comparative advantage, not only for exporters, but also for those firms which supply the big consumer markets in the South and Southeast.

Grounded in this logic, the commitment is based on the fact that Tok & Stok will give preference to those suppliers which offer certified timber. Formation of a producers' cartel opposed to certified timber is unlikely, because there is little intercommunication or structured venues within a sector like that of native timber, where informality prevails. Therefore it may be anticipated that, within one or two years, the producers may be strongly encouraged and also that competing firms may be stimulated to adopt similar measures.

In line with the strategy developed by Friends of the Earth - Amazonia Program, IMAFLORA And IMAZON, the intention is to work to reproduce agreements of the type described here, introducing variations in accordance with the specific characteristics of each company and sector. The following text will serve as a model:

1. Tok & Stok *commits itself to supporting independent systems of certification based on standards to foment sustainable development. To that end, the principles of the Forest Stewardship Council (FSC), which address issues related to the environment, bio-diversity and social and economic development, shall be utilized.*

2. Tok & Stok *commits itself to gradually increase its purchasing of certified forest products, in line with market availability, with the ultimate aim of consuming only products with the FSC seal.*

3. Tok & Stok *has the intention of giving preference in its purchasing to certified forest products derived from well managed forests, certified by institutions accredited by the FSC.*

4. *Tok & Stok commits itself to encourage its suppliers to obtain certification for its products or to consume certified products.*

5. Tok & Stok *commits itself to publicize to its consumers, through its promotional materials and other means of communication, the concept of FSC certification and the importance of consumption of these products for forest conservation.*

6. *Monitoring of the implementation of this commitment by* Tok & Stok *will be conducted by the monitoring committee, constituted by the Institute of Forest and Agricultural Management and Certification (IMAFLORA) and Friends of the Earth - Amazonia Program.*

The terms of reference provide for mechanisms of transparency and monitoring in order to put the agreement into effect, through providing pre-service and in-service training on socio-environmental certification for company employees (these began in December, 1998) and suppliers. Reproduced below is the section of the terms of reference referring to the functions of the tripartite committee, which consists of the company and the two organizations:

- *To provide orientation to Tok & Stok and, indirectly, to its suppliers and consumers, providing information regarding possibilities of increased use of certified raw materials and on persuasion and education initiatives. To that end, the committee makes interviews and visits, draws up questionnaires and writes up their results, proposes communication or marketing initiatives and their modes, provides information on market opportunities and prices, and suggests contacts with potential suppliers, etc.*

- *To evaluate the performance of Tok & Stok toward accomplishment of the objectives of the declaration of commitment. To that end, the committee interviews employees, visits sales locations, analyzes advertising materials, draws up consumer questionnaires, checks supply sources, etc. Based on these activities, it prepares confidential reports, which may be utilized by Tok & Stok in its public communications, provided the said utilization, in whole or in part, is previously approved by the committee.*

This agreement is undoubtedly a new first in Brazil and probably has few precedents anywhere in the world, and has the potential of paving the way for concrete innovation. The organizations promoting this endeavor understand that it will be of fundamental importance in the coming years to prioritize those initiatives which reach the intermediaries between producers and final consumers, because it would be very difficult and risky to directly stimulate consumer demand while there is a shortage of products on the market.

5.2 Initial Experiences: Small Scale Intermediaries

The aim of the Tok & Stok agreement is to influence the suppliers' market and, at the same time, utilize the company's relationship with its consumers to raise their awareness (this will take place, at least at the beginning, through valuing the company's commitment). Meanwhile, it is necessary to also work out agreements with small companies with quite specific market niches and a direct link to the consumer. This applies to small businesses dedicated to producing advanced and exclusive design furniture, and in some cases to designers or specialized cabinetmakers. There are two reasons for involving these actors: on the one hand, they generally play an important role in trend-setting; and, on the other, they usually need for small scale supply, using a greater variety of species, etc. The first of these characteristics is of fundamental importance in influencing opinion leaders and thus having a snowball effect, while the second is ideal for making possible community level and small scale experiments in sustainable management.

One company which has already expressed interest in immediate establishment of commercial relations with producers involved in community management in the Amazon is Básica Design, which has its headquarters in Greater São Paulo and markets its products exclusively through its store in the state capital. Its consumption of solid woods is approximately 15 cubic meters per month. It is willing to pioneer in using species which are less well known on the market. In its marketing strategy, in addition to the environmental appeal, it intends to utilize a social argument: ("a product using Brazilian raw materials and a design that benefits the Amazon communities and the environment"). A new line of certified products is also about to be launched by the Etel Carmona company, with its factory and store in São Paulo; it is considered a leading trend-setting firm.

Friends of the Earth - Amazonia Program and IMAFLORA have contacted other designers and small businessmen interested in acquiring certified products. One example is a producer-merchant installed in a small hub where, in recent years, high quality furniture production has been developed (using, among other materials, wood salvaged from the demolition of big old farms and colonial houses). This hub is the small historic city of Tiradentes, in the south of Minas Gerais, which serves mainly a São Paulo clientele. Francisco Rodriguez, who has invested a great deal in the refinement of manufacture, has expressed great concern with the future of local production in the face of the exhaustion of sources of timber, and strong repudiation of the traditional market for timber of predatory origin. A similar predisposition has been found among other designers and cabinetmakers, such as André Marx, of São Paulo, who sells his furniture to four or five stores specialized in minimalist design in that city.

5.3 Strategic Lessons Based on Survey Carried Out for this Document

From statistical surveys and the countless interviews conducted during the course of this study, certain strategic lessons related to identification of target populations, regions and cities of the country which should be given priority for specific actions, as well as to potentially vulnerable market mechanisms and opportunities for development of awareness-raising and promotional initiatives, may be learned. Examples may include the following:

- The lack of reliable information is, in part, related to the widespread illegality. Strong resistance was found on the part of producers, middlemen and merchants to supplying information on species and quantities consumed, their origins and transportation routes. To conduct specific activities, it will be necessary to regularly invest in the monitoring of informal flows. This will require development of an investigative capacity similar to that already utilized in the early nineties to monitor illegal extraction in the Amazon (*see the Friends of the Earth reports listed in Bibliography*).

- Uncertainty regarding the continuity and regularity of supply tend, especially in the São Paulo market, to foment demand for alternatives such as plantation timbers, plywoods and slabs. The fact that these kinds of wood are normally supplied by larger companies, with guaranteed delivery deadlines, legal origin and quality standards, is seen by the buyers as a means for making negotiation simpler and faster. This may lead to a willingness to pay higher prices, and also represent a potentially important comparative advantage for certified products. It should also be noted that because the Amazon companies normally contract for freight services, the buyer has no way to negotiate freight prices or routes.

- Many processing firms from the South and Southeast which used to own forests in the North have abandoned production and turned their efforts toward buying timber from sawmills in the Amazon region. In other cases, the buyer companies, which used to frequently visit the producing region, tend to prefer to buy by telephone. In general, these phenomena make it necessary for the buyer companies to acquire more confidence in the suppliers. This is an opportunity to be seized for promotion of certification.

- Despite the traditional demand on the part of buyers from the South and Southeast that the timber be supplied dry, this is often not complied with; and the buyers are obliged to incorporate a drying process. This is another quality problem, which may help increase the appeal of certified timber, normally produced by companies capable of guaranteeing basic processes such as drying.

- There is certain confusion among consumers and many middlemen, as well as observers and journalists, regarding the general concept of "ecologically correct." Specifically, there is a tendency to confound management with tree planting, and therefore to consider eucalyptus, or planted forests in general, as the environmental solution; the same association is not made in relation to management of natural forests, however.

- Even more than the furniture industry, the building industry tends to utilize a very few native species, such as cedrinho (*Scleronema micranthum*), pink peroba, jatobá (*Hymenaea courbaril*) and ipê (*Tabebuia spp.*). Sometimes alternative species are marketed under these names, betting on the consumers' scant knowledge. This type of fraud, which is very common, can be avoided or greatly reduced through utilization of the certificate of origin. This, therefore, is one more argument to be used in the strategic awareness raising activities.

- In the case of the furniture and decoration markets, it is important to bear in mind the great influence of opinion leaders such as designers, architects and decorators. These professionals dictate styles and utilize the specialized media. For example, the current fad is dark woods, following a long period when light-colored woods prevailed. Before that it was the redwoods (and mahogany still retains its strong appeal). Specific programs will be required to inform these professionals and get them involved. Certification should be presented to them as an opportunity to stand out and compete in a very tight market.

- The furniture market seems to be the most susceptible to a strategy of promotion of certification; it also has the greatest potential for involvement of the final consumer. However, its timber consumption is quantitatively lower than that of the building industry, which in turn is most resistant to adoption of the concept of certification. It will therefore be necessary to define specific instruments for the building industry market, such as utilization of famous architects who might start to only sign projects using certified timber. It should be noted that almost all the new constructions advertised in the São Paulo newspapers for sale in the design phase are signed by a famous architect.

- More than 80% of all Brazilian production for offices is located in the state of São Paulo; more than 50% of furniture exports are from Santa Catarina; and a large part of the cheaper and rectilinear furniture production is concentrated in the furniture hub of Bento Gonçalves, in Rio Grande do Sul. These geographic aspects constitute fundamental strategic considerations and must be taken into account in drafting a program of action. It will be necessary to build partnerships with organizations that get involved in the campaign through specific tasks, such as working with local niches of great overall impact.

- The principal processing hubs meriting special attention include, besides the metropolitan region of São Paulo, Tieté, Votuporanga and Mirassol, in the state of São Paulo; Bento Gonçalves and Lagoa Vermelha, in Rio Grande do Sul; Arapongas, in Paraná; São Bento do Sul, in Santa Catarina; Ubá and Bom Despacho, in Minas Gerais; and Linhares, in Espírito Santo.

- Examples of companies that may be of strategic importance in influencing the market and might be contacted about adopting initiatives similar to that undertaken with Tok & Stok include (i) *Carraro*, a Rio Grande do Sul firm with capacity to product 300,000 pieces of furniture per month and gross earnings of US$71 million; (ii) *Todeschini*, also in Rio Grande do Sul, with production of 5 to 6 thousand pieces of furniture per day and gross earnings of US$51 million (this is one of the companies with the greatest gross profit margin - 43.6% in 1996); (iii) *Pastore*, the biggest company in Amazonas and the only major corporation in the northern region, with gross earnings of US$28 million and specialization in modular furniture; (iv) *Rudnick*, in Santa Catarina, with gross earnings of US$ 26 million, also active in the modular furniture business; (v) *Giroflex*, a big office furniture company in the state of São Paulo with gross earnings of US$15 million; and (vi) *Bergamo*, a residential furniture manufacturer in the state of São Paulo with gross earnings of US$ 38 million.

- Although quantitatively smaller, the export timber market must not be underestimated in outlining a strategy for promoting certification, for two reasons: (i) some foreign markets have a great influence on the exploitation of certain species, playing a "pioneering" role in the dynamics of exploitation of new areas and in orienting timber company investments (this applies to the US and UK markets for mahogany); (ii) in bringing about the certification of an export firm, one is implicitly engendering certification of the raw material (normally second or third class) reserved for the domestic market. It should be stressed that the recent ca. 50% devaluation of the real may help increase exports in the coming years. In this area, it will be important to strengthen certain strategic collaboration agreements with partners in those countries which are capable of influencing the dynamics of consumption (within the framework of the activities undertaken by Friends of the Earth in England, Wales and Northern Ireland) or representing the more aware importers (such as the Timber Trade Federation in the United Kingdom).

6. Sources of Information

6.1 Official Institutions

- BANCO DO BRASIL S. A.
- BNDES - National Bank for Economic and Social Development
- IBAMA - Brazilian Institute of the Environment
- MINISTRY OF INDUSTRY, COMMERCE AND TOURISM
  Secretariat of Foreign Trade (SECEX)
  Department of Foreign Trade Operations (DECEX)
- MINISTRY OF EXTERNAL RELATIONS (MRE)
  Department of Commercial Promotion (DPR)

6.2 Non-governmental Institutions

- ABIMÓVEL - Brazilian Furniture Industry Association
- ABIMCI - Brazilian Plywood Industry Association
- ABIPA - Brazilian Wood Panel Industry Association
- ABPM - Brazilian Timber Producers' Association
- AIMEX - Timber Export Industry Association of the State of Pará
- Carpentry and Sawmill Industry Union
- Cabinetmaking and Wood Furniture Industry Union
- FUNATURA - Pro-Nature Foundation

- National Building Materials Commercial Association
- National Federation of Timber Workers
- SBS - Brazilian Sylviculture Society
- SINDUSCON - Plywood Industry Union
- Timber Industry Association of Santa Catarina

6.3 Certifying Institutions

- ABNT - Brazilian Association of Technical Norms
- ABRINQ Foundation
- Biodynamic Institute
- IDEC - Consumer Defense Institute

6.4 Companies

- Avedissian Ind. de Móveis Ltda. (Basica)
- Casema
- Engeverde
- Indusparquet
- Léo Madeiras
- Madeireira Cartescos
- Madeireira Gasômetro
- Madeireira Santa Rita

- Pranchados Ilha Bela
- Sapélli Lâminas
- Uliana

6.5 Companies with the Potential to Make Commitments in Favor of Certification

- André Marx
- Avedissian Ind. de Móveis Ltda. (Basica)
- Casema
- Etel Carmona
- Francisco Rodriguez
- Indusparquet
- Uliana

6.6 Websites

Banco do Brasil
http://www.bancodobrasil.com.br/

CDP Docas do Pará
http://www.cdp.com.br/

FAO Organização das Nações Unidas para a Alimentação e a Agricultura
http://www.fao.org/

IBAMA Instituto Brasileiro de Meio Ambiente
http://www.ibama.gov.br/

INPA	Instituto Nacional de Pesquisas Amazônicas *http://www.inpa.org.br/*
ITTO	International Tropical Timber Organization *http://www.itto.or.jp/*
MICT	Ministério da Indústria, Comércio e Tecnologia *http://www.mict.gov.br/*
MMA	Ministério do Meio Ambiente http://www.mma.gov.br/
UFMT	Universidade Federal do Mato Grosso *http://www.cgi.ufmt.br/*
UFPA	Universidade Federal do Pará *http://www.ufpa.br/*
UFPR	Universidade Federal do Paraná *http://www.inf.ufpr.br/*
UNICAMP	Universidade Estadual de Campinas *http://www.unicamp.br/*
USP	Universidade de São Paulo *http://www.usp.br/*

6.7 Bibliography

FRIENDS OF THE EARTH - AMAZONIA PROGRAM. *Forest Management at Loggerheads - Update report on Illegal Logging in the Brazilian Amazon*. São Paulo, 1997. 80 p.

____. *Planafloro - Um Ano Depois*. São Paulo, 1997. 64 p.

ANGELO, H. *As Exportações Brasileiras de Madeiras Tropicais*. Curitiba: UFPR, 1998. 129 p. (Doctoral dissertation)

ASSOCIAÇÃO DAS INDÚSTRIAS EXPORTADORAS DE MADEIRAS DO ESTADO DO PARÁ - AIMEX. *Estatísticas das Exportações dos Produtos Serrados e Manufaturados de Madeira.* Belém: [s.n.], 1997. 4 p.

____. *Informativo AIMEX*. Belém: [s.n.], n.4, 1998. 8 p.

CACEX. *A Importância do Design. Revista Comércio Exterior.* n. 20. [S.I.:s.n.], [1998?] http://www1.bancobrasil.com.br/novidades/rev/rev20/tema.htm

EDITORA SETORIAL. *Perfil e Cadastro Brasileiro da Madeira.* 94. ed. Curitiba: Setorial, 1994. 309 p.

Fundação Pró-Natureza - FUNATURA. *Projeto Mogno - Sumário Executivo. Brasília,* 1993. 106 p.

____. *Diagnóstico e Avaliação do Setor Florestal Brasileiro*. Projeto no ITTO/167/91 (M). [S.I.:s.n.] 1997.

GAZETA MERCANTIL. *Balanço Anual 98 - Nacional.* [São Paulo]:Ano XXII, n. 22, 1998. 402 p.

GORINI, A. P. F. Panorama do Setor Moveleiro no Brasil, com Ênfase na Competitividade Externa a partir do Desenvolvimento da Cadeia Industrial de Produtos Sólidos de Madeira. *BNDES Setorial.* Rio de Janeiro:[s.n.], n. 8, p. 3-58. set. 1998.

INTERNATIONAL TROPICAL TIMBER ORGANIZATION - ITTO. *Annual Report - 1997.* http://www.itto.or.jp

INSTITUTO DE GESTÃO AMBIENTAL. *Diagnóstico e Avaliação do Setor Florestal Brasileiro - Região Sudeste.* Projeto nº ITTO/167/91. [S.I.:s.n.],1995. 48 p.

MAY, P. H.; MOTTA, R. S. da. Valorando a Natureza - Análise Econômica para o Desenvolvimento Sustentável. [S.I.]: Campus, [199-].195 p.

PATRI CONSULTORIA E ASSESSORIA LIMITADA. *Dicas de Brasília* - 97. 13. ed. [Brasília]: Linha Gráfica, maio de 1997. 297 p. il.

REVISTA DA MADEIRA, ano 6, 1998.

SECRETARIA DE POLÍTICA INDUSTRIAL - MINISTÉRIO DO DESENVOLVIMENTO, INDÚSTRIA E COMÉRCIO. *Ações Setoriais para o Aumento da Competitividade da Indústria Brasileira XVI - Moveleiro. wttp://www.mict.gov.br/spi/asac/asac0516.htm*

SOCIEDADE BRASILEIRA DE SILVICULTURA - SBS. *O Setor Florestal Brasileiro - Fatos e Números.* São Paulo:[s.n.], 1998. 18 p.

TOMASELLI, I. Mercado Nacional de Madeiras Tropicais. *Cadernos FBDS:* Workshop - *Forest Policies and Sustainable Development in the Amazon*. Rio de Janeiro:[s.n.],1997. 41 p.

TOMASELLI, I.; SCHEFFLER, L. F. Contribuição da Madeira Tropical à Economia. *Informativo STCP*. n.1, p. 24, 1997.

TSUTYIA, R. K.; BACHA, C. J. C. A Evolução das Serrarias no Brasil. *Informe - GEP/DESR* Piracicaba: ESALQ, v. 7, n. 10, out. 1994. 16 p.

TUOTO, M. *Mercado Internacional de Produtos Florestais. Seminário Nacional de Florestas Renováveis*. Belo Horizonte: [s.n.], 1997.