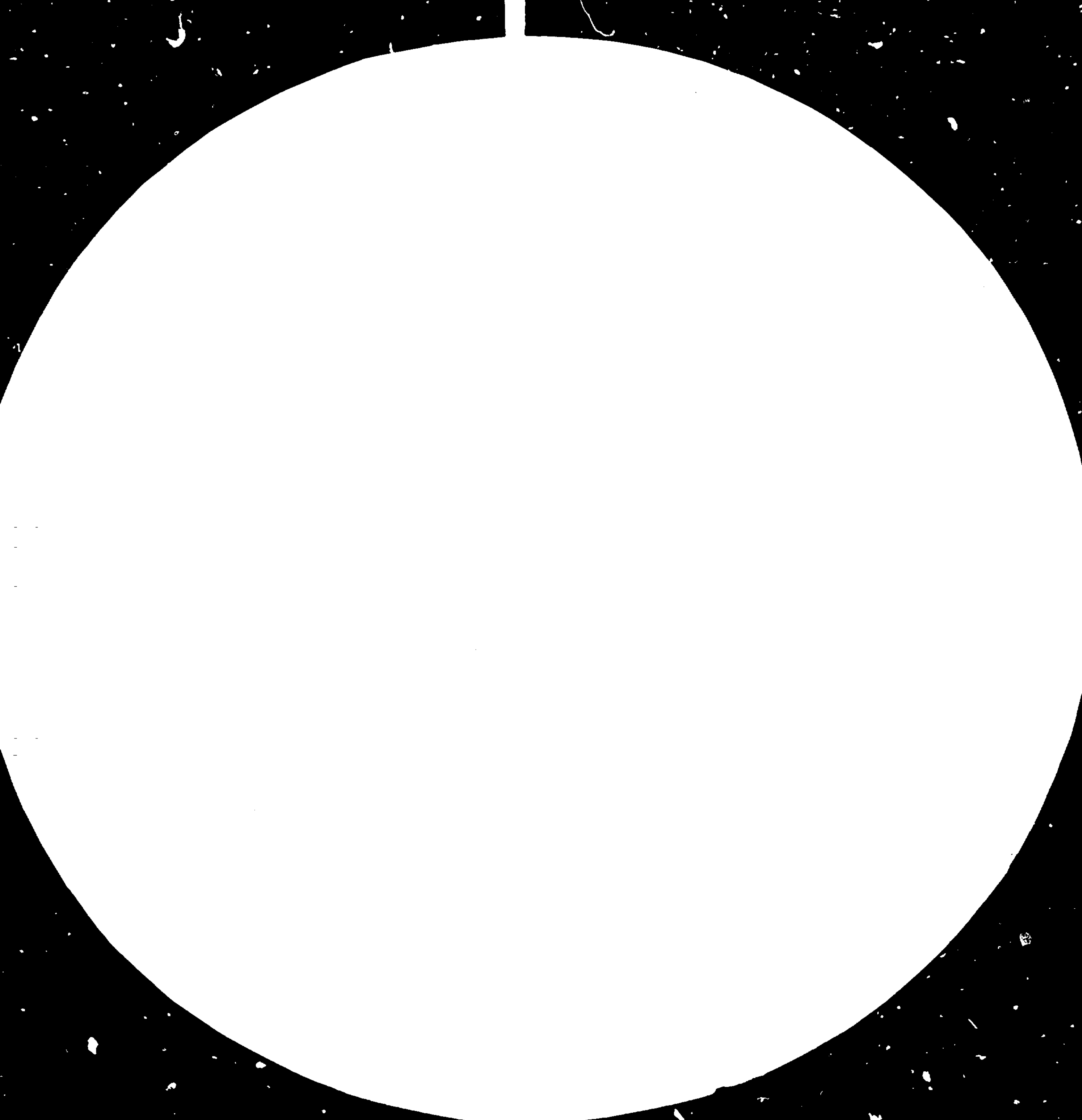

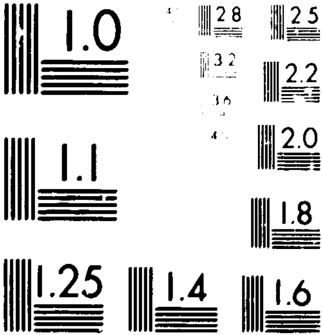

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Regional Meeting for Africa in preparation of the
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PROBLEM AREAS IN THE WOOD AND WOOD PRODUCTS INDUSTRY IN THE AFRICAN REGION *

Report by the
UNIDO secretariat

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INTRODUCTION

1. The Industrial Development Board of UNIDO, at its fifteenth session held from 15 to 30 May 1981, decided to include the First Consultation on the Wood and Wood Products Industry in the programme of Consultation Meetings for the biennium 1982 - 83.

In accordance with the above-mentioned decision the First Consultation on the Wood and Wood Products Industry will be convened in September 1983.

2. The ad-hoc Experts Group Meeting, which took place in Vienna from 5 to 7 October 1981, in order to discuss the work programme for the Consultation, recommended that regional preparatory meetings should be held in Africa, Asia and Latin America. The aim of these meetings is to review the status of the Wood and Wood Products Industry in the region, to identify constraints to the development of this sector in developing countries of the region and to select regional priority issues for discussion at a Global Preparatory Meeting.

3. A Regional Preparatory Meeting for Africa will be held for this purpose in Vienna from 21 to 25 June 1982.

4. The present discussion-paper intends to summarize major trends in world production and trade of the sector. It also proposes major problem areas in which there is scope for international action to overcome constraints to the development of the sector in the African region.

I. PRESENT SITUATION OF THE SECTOR

WORLD RESOURCES AND PRODUCTION

5. About half of the world's area of closed forest and other woodlands - which is presently estimated at about 4.000 million hectares - lies in the developing world. However, the share of developing countries in world production of primary processed wood is only around 15 % for the main products. In world production of unprocessed wood - around 3.000 million m^3 of roundwood per annum - developing countries account for 59 %, but more than 80 % of that production is fuelwood.

6. Production of industrial roundwood, which represents nearly half of the world production of unprocessed wood is mainly located in developed countries (80 %), developing countries accounting for only 20 %. The share of developing countries in world production of primary processed wood is around 18 % for sawnwood and 13 % for wood-based panels. For secondary processing data is not available but the share is probably even lower. The contrast is very striking if per caput consumption of the main processed wood products is considered. Consumption of sawnwood is 15 times higher in developed than in developing countries, whereas for wood-based panels the relation is 50 to 1.

7. Fuelwood represents more than half of the production of unprocessed wood - 1.600 million m^3 in 1980 -. Developed countries consume only 20 % of this total, whereas consumption in developing countries accounts for the rest. Wood, cut and carried home by the family is the only source of domestic energy for millions of the very poor and approximately 2.000 million people presently depend on fuelwood and other traditional fuels for their daily domestic needs.[1/]

8. The potential of this sector in the creation of employment has not yet been effectively realized in many developing countries. Employment in forestry and logging of industrial wood was estimated to have been in 1975 of 2,9 million man-years and of 3,6 million man-years in the primary industries producing sawnwood, panel products and pulp and paper. Any increase in production or shift of production from developed to developing countries would have far reaching effects on employment. This would be specially the case in secondary processing, which is as a whole more labour intensive than primary processing.

1/ Agriculture toward 2000, FAO, C/79/24, Rome, 1979, p.125, and Map of the fuelwood situation in the developing countries, FAO, 1981.

Table 1

Forest Resources

(million ha)

1980

	Africa	Asia	Latin Am.	Developing Countries	Developed Countries	World Total
Closed forest	205	440	680	1.325	1.515	2.840
Other woodland	400	85	180	665	390	1.055
	605	525	860	1.990	1.905	3.895

Source: Agriculture toward 2000, op. cit., p. 130.

Table II

Production of unprocessed wood and primary wood products

(in million CUM)

1980

Production of	Africa	Asia	Latin Am.	Developing Countries	Developed Countries	World Total
Roundwood	380	1.027	362	1.770	1.250	3.020
Fuelwood and charcoal	341	849	285	1.476	150	1.626
Industrial roundwood	39	178	77	294	1.099	1.393
Sawlogs and veneer logs	20	118	51	190	651	841
Sawnwood	6	47	24	77	352	429
Wood-based panels	1	8	4	13	88	101

Source: Yearbook of Forest Products, FAO, 1981.

TRADE

9. Forest products constitute a major component in international trade with certain regions being heavily dependent on imports for their current level of consumption. The current value of international trade of forest products increased from $ 6.700 million in 1961 to $ 58.851 million in 1980. Over the past two decades the volume of trade has grown at 5 per cent per annum.

10. Although around 85 per cent of industrial forest products trade originates and terminates in developed countries, developing countries have assumed a significant position. The value of exports of forest products from developing countries increased from $ 530 million in 1961 to $ 8.682 million in 1980. The bulk of these exports is represented by sawlogs, sawnwood and wood-based panels which amounted to $ 7.472 million in 1980, that is 86 % of the total. In value terms Asia, where there has been a spectacular growth in exports of roundwood, sawnwood and plywood, is the main exporting region, accounting for 70 % of exports from developing countries, followed by Latin America with 18 % and Africa with 12 %.

11. Developing countries are major exporters of hardwoods: exports (fob) of hardwood sawlogs amounted to $ 4.037 million in 1980 and 88,6 % of this value was supplied by developing countries. Imports (cif) of hardwood sawlogs were up to $ 6.065 million in 1980 and developed countries imported 77 % of the total. The difference between fob and cif prices reflects the incidence of high transport costs, a point which will be discussed later in this paper. Developing countries also exported $ 1.769 million of sawn hardwood (60 % of world's total) and $ 1.313 million of plywood (51 % of world's total).

12. Trade of these products is linked to specific markets. Nearly all logs from West Africa and Latin America go to Western Europe, nearly all those from South-East Asia to Japan, who is by far the largest importer in the world of sawlogs and veneer logs both coniferous and non-coniferous species. The market for West African processed wood is Europe which also is the main outlet for sawnwood from Latin America and for plywood from South-East Asia. The structure and changes in developed countries' imports of wood products from developing countries are reflected in table III. The trend seems to be

towards higher stages of processing but the importance of developing countries as suppliers of unprocessed wood remains unchanged.

Table III

	Percentage distribution of wood and wood products' imports in developed countries by stage of processing				Market share of developing countries	
	Average 1970-72		Average 1978-80		Average 1970-72	Average 1978-80
	From developing countries	Total imports	From developing countries	Total imports		
Wood						
1. Wood in the rough	60,9	30,6	55,0	28,6	52,8	52,7
2. Wood, shaped and plywood	36,1	62,3	40,9	62,0	15,4	18,1
3. Manufactures	3,0	7,1	4,1	9,4	11,1	12,0

Source: UNCTAD, The processing and marketing of primary commodities, TD/B/C.1./PSC./23, Geneva 1981.

II. PRINCIPAL PROBLEM AREAS

A. AVAILABILITY OF RAW MATERIAL

13. The total area of tropical Africa's natural woody vegetation has been estimated at around 700 million ha in 1980 2/, representing 36,3 % of developing countries' tropical forest area. Closed broadleaved, coniferous and bamboo forests account for 216 million ha, three-fourths of which are productive and 118 million ha are productive and undisturbed. Most of the undisturbed forests are located in the Cameroon-Congolese forest mass. On the other side, mixed forest-grassland tree formations (open forest) not affected by agriculture are a particular trait of the African tropical scene: they cover 486 million ha and are mainly located around the Western and Cameroon-Congolese blocks of closed humid forest. They are particularly important as a source of fuelwood in the northern Savanna region.

Table IV

Areas of natural woody vegetation in Africa in 1980 (in thousand ha)

1. Closed broadleaved, coniferous and bamboo forests		216.634
Productive closed broadleaved forests	161.746	
Unproductive closed broadleaved forests	52.657	
Coniferous forests	1.120	
Bamboo forests	1.111	
2. Open broadleaved forests		486.445
Productive open broadleaved forests	169.218	
Unproductive open broadleaved forests	317.227	

Source: Tropical Forest Resources, FAO Forestry Paper N, 30, Rome 1982,

2/ FAO, Tropical Forest Resources, p. 50.

14. Forest resources are distributed very unevenly throughout the region and most of the productive closed forest reserves are concentrated in five countries of the central region, which represents 95 % of the productive undisturbed broadleaved forest.

Table V

Undisturbed productive closed broadleaved forest in 1980 (in thousand ha)

Cameroon	7.000
Central African Republic	3.120
Congo	10.330
Gabon	10.655
Zaire	79.740
	110.845
Total of tropical Africa	118.180

Source: Tropical Forest Resources, op.cit.

15. Deforestation is becoming a gro threat to the survival of the African wood resources. During the period 1976-80 mainly as a result of shifting agriculture 1.3 million ha of closed forest and 2,3 million ha of open forest have been cleared annually. Deforestation of closed forests has been taking place at an annual rate of 0,6 %, but not all countries are affected in the same way. Whereas annual deforestation rates have been of 5 % for the whole of western Africa in the last decade, in the low population density countries of central Africa this rate can be as low as 0,1 %. Clearing of mixed tree formations, on the other side, is taking place at an annual rate of 0,5 %. It is a more serious phenomenon in the short term since it affects populated regions and concentrates on zones where natural vegetation is disappearing gradually. In the northern Savanna region for example clearing of open productive forest has been going on at a rate of 5 % annually, with the consequent effects, among others, on the supply of fuelwood.

16. If compared with the deforestation brought about each year, the annual rate of planting in tropical Africa is very low (93.000 ha yearly), For every ha of new plantations 14 ha of closed forest are lost. The total area of established plantations has been estimated at 1.78 million ha in 1980.

997 million ha are of industrial plantations and 783 million ha of so-called non-industrial plantations (aimed at the production of firewood and small wood). The annual rate of planting is obviously insufficient if it is compared with the human populations' requirements of, among others, fuelwood.

17. At present there are only a few tropical African countries with intensively managed forests and as whole only 1 % of the productive forests are under management. To regulate the production of wood on a long term sustained-yield basis stronger forest services will be required. Also, a more rational use of the raw material base will have to be envisaged.

18. Since removals rarely exceed 10 % of the growing stock, the conversion of residues into marketable products either by their use as raw material for semi-finished products (e.g. panels), for the production of energy (in boilers, through charcoal, etc.) or for semi-chemical products (paper pulp) has to be considered. Also for the rational use of the biomass new developments, like for example the production of methanol through gasification of the biomass have to be taken into account.

19. Tropical forests are currently being logged for only a few selected species. Removals of industrial wood from areas being logged in the tropical forest are usually limited to a selected, and often small portion of growing stock, with many species and grades left unharvested. There is agreement about the need to promote the use of lesser known hardwood species, even more considering the fact that some of the better known species are fast being depleted. Promotion of lesser known species will require a deliberate effort from the producing countries, since the logger will not extract them unless there is a demand for them, and logging and transport costs are of the same order of magnitude whatever the specie.

20. The outlook of raw material supply varies according to the regions.

- Countries of the northern Savanna region will continue to rely on imports of wood products to satisfy their domestic needs, and will experience increased hardship in the supply of fuelwood.
- In west African countries like Ghana, Guinea, Sierra Leone and Nigeria forest resources allow for an increased production to meet the increased demand, whereas countries like Togo and Benin will probably increase their imports. In some of the hitherto strong exporting countries (like Ivory Coast) exports will be leveling off or decreasing.

- In central Africa, where the main reserves exist, an increase in production is to be expected in Cameroon and Congo following an improvement of transport infrastructure. In the Central African Republic and Zaire major improvements are also linked to the need of building adequate infrastructure,
- In eastern Africa the emerging pattern is of an increased reliance on plantations to provide raw material.

B. PRIMARY AND SECONDARY PROCESSING: THE NEED TO STRENGHTEN FORWARD INTEGRATION

21. Wood being a bulky commodity with very high transport costs, it is somewhat surprising that processing should still be located mainly in developed countries. The reasons for the present location of processing facilities are of course diverse. Some of them are political and related to the inheritance by independent countries of the traditional colonial pattern or to the political risk involved in the establishment of manufactures. Others are connected with historical situations which tend to accumulate and take the form of external economies like the existence of a more complete range of supporting services and infrastructure or the availability of manpower.

22. However, two factors seem to affect directly the profitability of wood processing industries in developing vis-à-vis developed countries. One is the existence in industrialized countries of markets for residues from processing industries and the other the fact that effective yields and productivity are higher in developed countries.

23. The opportunities for using residues are greater in the industrialized log-importing than in the tropical timber exporting countries, so that processing losses are reduced in the former. Whereas in the developed countries a considerable part of wastes from forest and residues from cutting are used as a raw material, in developing countries their use is still extremely low. Considerable research and adaptation of existing processing methods has yet to be done in order to ensure the widest possible utilization of the available raw material and the integration of different production processes. This will come about by a) the re-utilization of residues of one end product as a raw material for another, b) utilization of semi-finished products out of one production process as base or intermediate product in another process, and c) by recycling wastes and residues to produce energy or other byproducts.

24. Among the various possibilities to turn production residues into new products, the production of particle board and fibre-board are the most interesting ones. The possibility of producing them depends however on the market. In developing countries the use of these products in construction, for furniture and for interior decorations is still very low and exports are not competitive due to high production and freight costs. Other possible uses of residues are cement-bonded particle boards and slabs for construction. Here again the development of the products depends on the domestic market.

25. The conversion of wood residues into marketable products being sometimes difficult in developing countries, the alternative is to use them to provide additional energy. This involves further investment but helps to reduce production costs. Adequate methods have still to be developed for recycling hardwood residues.

26. The development and integration of production processes using as a base or an intermediate product the product of another line would permit the increase of value-added. Also the establishment of a great diversity of production lines like: parquets, panel and flush doors, windows and window frames, furniture, timber engineered products ensures an integrated use of the raw material, since it admits the use of a greater variety of species.

27. Although there is nothing inevitable about it, effective yields in processing units tend to be higher in developed countries than in similar plants in developing countries. This is due to the type of equipment utilized as well as to the more skilled labour force. To be able to compete internationally or to meet national goals, an improvement in productivity is necessary.

28. Training for technicians and supervisory/management personnel seems to be an inevitable prerequisite for an increase in efficieny. An improvement of the skills to run machinery has to go hand in hand with increased capability of managers to choose adequate equipment and to organize the production process and the availability of designers, timber engineers, etc.

29. Much wood processing in developing countries is done in small units which use old, poorly maintained equipment, the result being that production levels are low and wastes unnecessarily high. The provision of adequate improved technology aimed at the reduction of wastes and the improvement of quality seems to be required. In medium or large sized units there seems to be need for an adaptation of the sophisticated methods of processing used in developed countries to local conditions. Productive factor proportions being different in developing countries there is need for more efficient but not necessarily labour saving methods, like Low Cost Automation Systems.

30. The development of industry will call for increased local production of the necessary equipment and ancillary materials (glues, hardware, etc.).

C. TRANSPORT PROBLEMS

SHIPPING

31. Shipping costs make up a remarkably high proportion of export unit values in wood and wood products trade. This is due to the fact that timber is a bulky commodity and that it has to cover comparatively long distances from producing to consuming countries. The ratio of the cif to the fob value, which provides a measure of the incidence of international transport and insurance costs, shows that in the case of industrial roundwood freight rates related to fob prices are between 55 and 77 % in the case of non-coniferous sawlogs. The magnitude of transport payments involved is therefore very considerable. According to available statistics $ 2.500 million annually are involved alone in the non-coniferous sawlog trade.

32. Empirical investigations have shown that liner conference freight rates are administered prices and that the key factor influencing the structure of freight rates is normally "charging what the traffic will bear". In the wood trade this is reflected in two ways. On one side freight rates for similar distances can be completely disimilar and on the other side rates tend to increase with the degree of fabrication and therefore discriminate against the exports of processed products.

33. Since shipping lines are mainly in the hands of importing countries, producing countries do not normally participe adequately in the process of fixing freight charges and in the substantial revenue generated by the trade.

34. Given the expenditures involved in shipping, one of the key questions is how they can be reduced by improving or rationalizing shipping services. For example in Asia, part of the log trade is already being done with purpose-built bulk carriers at considerable saving. However, for the transport of sawnwood, due to the smaller and dispersed nature of shipments conference lines are used with considerable loss for the countries.

35. There seems to be scope for different actions to improve the present situation for example by assisting countries in their negotiations of freight rates, or by the development of transport cost saving methods, like changing from the use of liners to chartering shipping. Port infrastructure will also have to be developed to handle semi-manufactured and manufactured products.

D. MARKET ACCESS AND MARKETING

36. Access to markets is not the only factor affecting the potential for increased processing in developing countries, but it is an important one. Empirical studies have shown that import tariffs for wood products in developed countries tend to escalate with the degree of processing. Primary products such as logs and roughly sawn lumber are generally admitted free of duty. Market access problems appear only when products with a higher degree of processing are imported.

37. GSP schemes, which are designed to encourage trade from developing countries have a series of restrictions for processed wood products. For instance, the GSP in the EEC provides a rather limited duty free quota for plywood, but countries have to face a rather high tariff in terms of effective protection after this quota has been completed. In Japan plywood is not included in the GSP and in the United States plywood of the species produced in South-East Asia is subject to the full MFN rate.

38. Many countries lack the adequate market machinery to be able to promote, sell and distribute their own production. This evidently limits their possibilities to diversify exports, either by the introduction of new species, the inclusion of products with a higher level of processing or the search of new markets.

39. Improvement of trade relations depends in a high degree on standardization of qualities. The need to harmonize grading systems is widely recognized, as well as the necessity that it should enable a maximum utilization of the highly heterogeneous composition of the tropical forest. There seems to be scope for actions towards standardization of grading rules and procedures, including sellers and buyers contracts.

40. No industry, even the most export-oriented, can be profitable without an adequate linkeage with the local market. This is true for the production of panels out of cutting residues as well as for rejects in furniture manufacture, which have to be sold locally. There exists, therefore, a need to strengthen local markets for manufactured products.

E. TECHNOLOGY

41. A large part of the African wood processing industry uses obsolete and poorly maintained equipment and outdated production techniques. In sawmilling, for example, wasteful circular saws and manual handling methods are still used in most of the enterprises and are responsible for low levels of efficiency and productivity. Also, veneer and plywood manufacturers have much to learn about production technology for veneer peeling, veneer drying, gluing and sending as applied to their respective timber species input.

42. Adequate channels should be devised to ensure that technology is transfered from developed countries to developing countries and that it is adapted to local needs and resources. This may come about through assistance in research and development and through joint-ventures in production.

43. There is need to establish or strenghten institutions whose objective is the development of new technologies and the adaptation of existing ones in order to make them more suitable and responsive to the conditions peculiar to each country. Also, more research will be needed in the development of new products adapted to local supply of raw materials (increasing the use of lesser-known species and wastes) and to the local needs. Closer cooperation between research institutions in different countries and better communications between those institutions and the industrial sector will be necessary.

44. Some countries have already started with the local production of m[illegible]ry and equipment for the wood processing industry. The degree of preci[illegible] sophistication is lower than in developed countries, but in many cases the equipment is more adapted to local needs and the cost is considerably lower. This sector gives scope for increased international cooperation with developed countries to ensure the transfer and adaptation of technology.

Annex 1

Table VI

Production of sawlogs and primary processed wood products in selected African countries in 1980

	Sawlogs and Veneer logs	Sawnwood	Plywood
		(in 1.000 CUM)	
Angola	556	160	27
Cameroon	1.600	494	10
Central African Republic	322	73	-
Congo	603	64	-
Ethiopia	195	100	3
Gabon	1.105	108	36
Ghana	2.138	381	40
Ivory Coast	4.980	670	59
Kenya	369	194	20
Liberia	745	142	7
Madagaskar	458	234	-
Nigeria	5.081	2.703	86
Tanzania	290	72	4
Uganda	106	24	-
Zaire	303	90	9
Total Africa	23.775	7.924	433
Percentage of world total	(2,8%)	(1,8%)	(0,1%)
World total	841.481	428.736	40.275

Source: Yearbook of Forest Products, FAO, 1980.

Table VII

Exports of sawlogs and sawnwood
from selected African countries in
1970-75 and 1976-80

	Sawlogs and Veneer logs		Sawnwood	
	1970-75	1976-80	1970-75	1980
	(in 1.000 CUM)			
Angola	150	126	30	37
Cameroon	565	646	75	130
Central African Republic	82	140	27	32
Congo	427	188	18	25
Gabon	1.424	1.188	9	17
Ghana	793	343	219	78
Ivory Coast	2.927	3.120	206	313
Liberia	264	335	6	40
Nigeria	216	13	33	2
Zaire	30	56	32	24
Total Africa	6.995	6.262	991	1.079
Percentage of world total	(10,3%)	(8,3%)	(1,6%)	(1,4%)
World total	67.739	74.904	61.833	76.918

Source: Yearbook of Forest Products, FAO, 1980.