



PROMOTING THE FURTHER PROCESSING OF TROPICAL TIMBER IN AFRICA



THE AFRICAN TIMBER ORGANIZATION MINISTERIAL CONFERENCE PROPOSAL FOR ACTION

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The African Timber Organization Ministerial
Conference proposal for action

Developed under ITTO pre-project PD 15/98 Rev. 2.
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Foreword

Sustainable forest management implies the sustainable utilization of forest resources for the benefit of communities and states. The concept not only aims to maintain the value of forest resources, it also has a huge potential for creating employment, income and wealth for the populations and states concerned.

The industrialization of the timber industry in general and the processing of timber into value-added products in particular are essential elements for realizing this potential. However, African tropical countries are not yet benefiting fully from the sustainable use of their considerable forest resources. A survey of further timber processing in International Tropical Timber Organization (ITTO) producer member countries carried out in 2002 by ITTO in collaboration with the International Trade Center showed that exports of further-processed timber products totalled US\$3.5 billion in 1998, of which the African share was only 1%.

Clearly, African countries are missing out on development opportunities offered by their forest resources. At the request of the Government of Gabon and the African Timber Organization (ATO), therefore, the International Tropical Timber Council decided to approve and finance a pre-project designed to organize a conference to address and promote the further processing of African tropical timber.

In the first instance, a technical conference was held on 26–28 September 2001 in Libreville, Gabon. This was followed on 26–27 March 2003 by a larger conference that brought together representatives of all ATO member countries, including six ministers and representatives of the private sector, non-governmental organizations, finance agencies and regional and international organizations and institutions. The Action Plan for the Industrialization of Tropical Timber in Africa contained in this document is one of the key outcomes of these conferences. Another complementary outcome is the General Policy Declaration adopted by Ministers and Heads of Delegations at the Conference, whereby the signatories adopted the action plan and reaffirmed their commitment to promoting the development of industries adapted to available resources and the requirements of local and international markets, and requested the support of the international community to this end.

In order to broaden the discussion and consultation base, the action plan was adopted through a participatory process: national experts from nine ATO member countries were recruited to draft a paper reviewing the status of further timber processing, highlighting opportunities and constraints and proposing national-level strategies and actions aimed at promoting further timber processing.

Workshops were held at the national level to discuss the paper with various stakeholders. A regional consultant, Dr Timothée Fomete, was responsible for the supervision of work undertaken in each country and for producing a discussion paper to be submitted to the second conference. Dr Markku Simula assisted the process.

The action plan covers a period of ten years, from 2004 to 2013. Its main elements are: a general description of the further-timber-processing context in African countries; an analysis of constraints and different industrialization policies; a national and regional strategy proposal including recommendations; a set of actions relating to identified strategies along with recommendations; and, finally, a proposal for monitoring the implementation of the action plan.

The care with which this work was undertaken and the commitment of forestry ministers of the countries concerned to implementing the actions and recommendations of the action plan herald a new era in African timber industrialization. However, the conceptual work must lead to concrete action for the people, states and forests to feel its benefits, and the support of the international community is vital. With the best efforts of all those involved, it is our hope that this action plan will lead to a significant increase in the forest sector's contribution to sustainable development in general, and to the well-being of ATO and ITTO member country populations in particular, over the period of the plan and beyond.

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Acronyms

ADIE	Association pour le droit à l'initiative économique	FOSA	Forestry Outlook Study for Africa (FAO)
AFD	Agence française de développement	FPTP	Further processed timber product
ATIBT	Association Technique Internationale des Bois Tropicaux (International Technical Tropical Timber Association)	GTZ	Gesellschaft für Technische Zusammenarbeit (Germany)
ATO	African Timber Organization	IFIA	Inter-African Forest Industry Association
CAR	Central African Republic	ITTO	International Tropical Timber Organization
CAEMC	Central African Economic and Monetary Community	IUCN	World Conservation Union
CEFDHAC	Conférence sur les écosystèmes de forêts denses et humides d'Afrique centrale	MINDIC	Ministry of Industrial and Commercial Development
COMIFAC	Conférence des Ministres en charge des forêts d'Afrique centrale	MINEF	Ministry of the Environment and Forests
CPB	Centre pluridisciplinaire de bilans	NIE	Newly industrialized economies
CRESA	Centre régional d'enseignement spécialisé en agriculture	NEPAD	New African Development Partnership
DRC	Democratic Republic of the Congo	NGO	Non-governmental organization
ECOWAS	Economic Community of Western African States	OECD	Organisation for Economic Cooperation and Development
EU	European Union	SME	Small-to-medium-sized enterprise
FAO	Food and Agriculture Organization	RIFFEAC	Réseau des institutions de formation forestière et environnementale d'Afrique centrale
FAWAG	Furniture and Wood Products Association of Ghana	SNBG	Société nationale des bois du Gabon
FCFA	African Financial Community Francs	US	United States of America
FOB	Free on board	WWF	World Wide Fund for Nature

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Executive summary

Forest resources

African Timber Organization (ATO) member countries (see Annex 1) represent approximately 86% of Central and West Africa's forests and 15% of the world's tropical forests. Their size varies greatly: the forest cover of the Democratic Republic of Congo (DRC) alone is equal to that of all other ATO member countries put together. Although African forests contain a wide diversity of species, logging and timber processing focus on only a limited number of marketed species (sipo, sapelli, mahogany, ayous, okoume, iroko, azobe), which means a subsequently high per-hectare cost for the production of logs.

Lesser-known species are increasingly used domestically in countries where high-value species are rare. Although countries aim to increase the export of these species, there is no consistent strategy for their development. Their further processing tends to be the result of the disappearance of more popular species.

Further-processed timber industry development

Forest industry development in Africa is dominated by the mechanized processing of timber into sawnwood, veneer and plywood (primary processing). More than 90% of timber processing units in Central Africa are sawmills. In many cases, though, the sawmill is established by the concessionaire simply to comply with regulations, with few high-value outputs and with the knowledge that greater profit margins can be obtained by exporting logs.

The further processing of timber into value-added products (secondary and tertiary processing) is currently only a small – albeit expanding – part of African industry. In several countries, even primary processing into sawnwood is still little developed.

The domestic market structure for further-processed timber products (FPTPs) is very informal and does not provide a sound basis for production that complies with international requirements and standards. In most countries, secondary or tertiary timber processing is in an embryonic stage; the industry is most developed in West African countries such as Ghana, Côte d'Ivoire and Nigeria. Countries of the Congo Basin lag behind, except in the production

of mouldings, floorings and other dry and profiled timber, which has expanded in Cameroon during the last five years.

The domestic further-timber-processing industry is dominated by small scattered units in urban centres, with very basic machine tool equipment. It supplies mostly local consumers, who have low purchasing power.

Governments offer few incentive schemes for the further processing of timber and the further industrialization and added-value objective often takes the form of an increase in primary processing.

FPTP markets

An analysis of world trade in further-processed timber shows that in 2000 the value of exports for all ITTO producer countries (see Annex 1) combined was about US\$5 billion, 83% of which originated in countries in the Asia-Pacific region, 16% in Latin America, and only 1% in Africa. The trade in furniture, flooring, doors and windows is also dominated by Asia-Pacific countries. Ghana and Côte d'Ivoire make almost 80% of the contribution of African countries to the further-processed-timber trade.

World trade is gradually progressing from mouldings, flooring and other processed timber products to furniture. In 2000 almost 60% of trade was in furniture, building materials represented about 30%, and the rest comprised mostly planed timber. Trade in further-processed products by African countries is dominated by the latter category. Planed timber represented 65% of the trade of African ITTO member countries in 2000, while furniture exports increased significantly during the last five years, their share in African timber trade increasing from 10% to 30% between 1997 and 1999. This increase is due mainly to the increased production of garden furniture, on which African producers have concentrated.

For West African and Central African countries, the main traditional market for tropical timber products is Europe, even though other outlets have been discovered in Asia in the last few years. In 1998, Africa supplied 99% of the tropical logs and 53% of the processed tropical timber imported by Europe. Europe remains the only viable market for FPTPs from African producer countries. Italy, France and the United Kingdom absorb the greater part of the limited volume of FPTPs produced in Africa.

Local markets are characterized by low purchasing power, despite rapidly growing populations in large cities. Intra-African markets are developing, including export markets to Maghreb countries (Egypt, Algeria, Libya), Nigeria, Chad and South Africa.

Constraints to further processing in Africa

The development of forest industries and, in particular, of investment in processing facilities has been slowed down in several countries by social and political conflicts. Four out of the nine countries studied here (Angola, Cameroon, Central African Republic – CAR, Côte d'Ivoire, Democratic Republic of Congo, Gabon, Ghana, Nigeria and Republic of Congo) are either at war or have recently been so. In the absence of serious progress in establishing peace and without guaranteeing the security of goods and people, no significant investment in further processing can be envisaged.

Fiercely competitive international markets require production and marketing organization methods for which African producers still have little expertise. The forest industry is characterized by outdated, often ill-maintained equipment, with low efficiency. Moreover, there are few appropriate financing mechanisms available for small and medium secondary timber-processing production enterprises.

Further-processing policies

The industrialization policy objective of all ATO member countries favours the development of a high added-value and diversified industrial sector. However, countries with specific further-processing policies are rare.

Log export restrictions are currently being applied, in the form of a total or partial export ban (Nigeria, Ghana, Côte d'Ivoire, Cameroon) or the setting of a local log-processing quota (minimum processing quota) in order to ensure the supply of the industry (CAR, Gabon, Congo).

Industrial investment incentives have been applied in all countries; measures related to forest resource access, industrial free zones, investment codes and differentiated taxation schemes for processed timber products have been introduced.

The granting of forest concessions subject to the establishment of processing units has been applied

in some countries as a main measure for attracting foreign investment. In Cameroon, this has led to an industrial boom that has created an established processing capacity of 2.7 million m³ per year, which exceeds the forest production potential (2 million m³).

Proposed further-processing development strategies

Develop a sustainable forest resource base and secure the supply of raw material. In particular:

- promote forest management;
- promote reforestation and the improved development of plantation timbers in strategic locations allowing downstream further processing investment; and
- facilitate trade in raw materials between producer member countries and resource-poor countries.

Promote coordinated policies and regulatory incentives: in trade and industry, investment charts aiming to attract new investments are tools which, along with industrialization master plans, must insist on technology transfer and the development of further timber processing.

Build institutional capacity. In particular:

- strengthen the human capacity and financial resources of administrations in charge of industry, trade and forests;
- improve coordination between administrations in charge of forests and those of industry, trade and investment;
- provide training for administration and company personnel; and
- support the development of specialized organizations targeted at the development of forest industries.

Develop African domestic, regional and international markets for African timbers by:

- promoting timber utilization for African public works;
- developing policies to promote FFTP exports;
- reducing or eliminating inter-regional trade barriers; and
- promoting the utilization of lesser-known species.

Encourage and develop small-to-medium-sized timber-processing enterprises and develop the informal sector.

Create a healthy and favourable climate for investment in further timber processing.

Recommendations

The following recommendations are addressed respectively to governments, ITTO and ATO, and forest industries and trade.

To governments:

Further processing would benefit from the fulfillment of the following conditions:

- socio-political and macroeconomic stability as an investment prerequisite;
- the formulation and implementation of national export strategies and further-processing promotion programs and master plans;
- preferential taxation on further-processing operations;
- improvements in communication infrastructure and basic services (electricity, water, etc) responding to the needs of further-processing industries;
- effective enforcement of quotas and other log export restriction when appropriate and economically justified; and
- the establishment of targeted investment and guarantee funds for small-to-medium-sized enterprises (SMEs).

To ITTO and ATO:

ITTO and ATO support could be considered in the following areas and at the following levels:

At the international level and in the areas of market intelligence and export development:

- provide up-to-date information on markets, prices and quality of the main FPTPs and on final markets, including those within the African region;
- organize international and regional seminars on relevant aspects of further processing (technology, markets, policies); and
- support initiatives to promote the increased utilization of lesser-known species.

At the national level:

- encourage coordination and cooperation between governments, industries and national organizations working for further-processing development;
- improve information exchange among government agencies, forest industries and market intermediaries on all aspects of further processing;
- support national reporting on the status and development prospects of further processing;
- support the formulation of national strategies for industrialization and export development;
- assist the establishment of appropriate forest-industry training programs; and
- assist development support programs for SMEs and the organization of national processor networks in order to improve competitiveness in exports.

At industry level:

- support the development and implementation of management plans;
- encourage private-sector participation in the formulation of further-processing sectoral development strategies and plans; and
- improve access and knowledge of appropriate value-added processing technologies and markets.

To forest industries and trade organizations:

- contribute to the improvement and development of the brand image of further-processing companies;
- support manufacturers and their organizations in promoting their interests, including through consultations with governments;
- promote compliance with international market requirements and quality standards applicable to value-added products; and
- strengthen human resources and research and development efforts.

Specific activities to implement these strategies and recommendations are outlined in Table 11 of the main report.

1 Introduction

The countries of West and Central Africa have identified timber industry industrialization as a major forest-sector development priority. The further processing of timber is today considered to be a tool for socioeconomic development and sustainable tropical forest management. This assertion is based on the following considerations:

- the development of forest resources is still a key to the prospects for sustainable socioeconomic development¹. For most countries of the region, the revenue generated by utilizing forest resources is an essential element of national accounts. Furthermore, forest industries establish socioeconomic infrastructure such as roads, schools and hospitals and generate much urban and rural employment;
- the strengthening of regional cooperation (African Timber Organization – ATO, the International Tropical Timber Organization – ITTO, etc) could give a new impetus to industrialization, whereby industries, local communities and the state participate in the rationalization of harvesting; and
- the industry could make a valuable contribution to sustainable forest management² when state/manufacturer collaboration is based on clear regulations that ensure the effective participation of local communities and there is compliance with these regulations.

¹ In 1987, the World Commission on Environment and Development, referred to as the Brundtland Commission, defined sustainable development as : " ...development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

² Sustainable forest management is defined by ITTO as the process of managing forest to achieve one or more clearly specified objectives of management with regard to the production of a continuous flow of desired forest products and services without undue reduction of its inherent values and future productivity and without undue undesirable effects on the physical and social environment.

The creation of employment, the development of local raw material added-value, and better forest resource management are classic benefits quoted by all. In practice, however, such benefits do not always materialize: in some countries, the industrialization of the forest industry has been achieved solely in order to comply with regulations, with few high-value outputs and with the knowledge that greater profit margins can be obtained by exporting logs.

When there is processing, it is often limited to primary processing into sawnwood, veneer and plywood. Further processing, which develops the raw material and creates broader socioeconomic benefits, remains, on the whole, little developed. Only certain countries, particularly Ghana and Côte d'Ivoire, have developed secondary and tertiary processing production for the international market.

The share of African countries in the processed-product market remains low, highlighting the limitations of isolated initiatives in each country. In such a context, a concerted approach at the regional level may be essential to clear some of the main policy, institutional, capacity and investment bottlenecks and to set African countries on the way to developing high-value-added industries and market shares in both traditional and new niches. Such an approach is feasible through the development, adoption and implementation of a regional strategic action plan for the development of forests and forest products.

Objectives

The action plan for the industrialization of tropical timber in Africa proposes activities to be undertaken in order to achieve the priority objectives shared by all ATO member countries (listed in Annex 1). These activities should help remove identified obstacles to the development of further timber processing in Africa.

Methodology

The action plan was developed on a participatory basis under an ITTO pre-project (PPD 15/98 Rev. 2) by a team of national consultants in each of the following ATO member countries: Angola, Cameroon, Central African Republic (CAR), Congo, Côte d'Ivoire, Democratic Republic of the Congo (DRC), Gabon, Ghana and Nigeria; all but Angola are also members of ITTO (the African producer members of which are listed in Annex 1). The national consultants worked in collaboration with a regional consultant, and the process was assisted by an international consultant.

Each national consultant made a diagnostic review of the forest industry in his country and proposed development strategies. National workshops were organized in each country, attended by representatives of governments and the industrial and financial private sectors. During these workshops, challenges and opportunities were identified, and the national reports were reviewed and revised.

Working under the supervision of the international consultant, the regional consultant used the national reports and reviewed available international literature on the subject (see bibliography). The literature review was supplemented by a number of interviews targeting three categories of actors representing governments, forest-industry economic operators, and international organizations.

The data were obtained from sectoral study reports, projects and databases (ITTO, FAO) and from the report of the survey undertaken by ITTO/ITC (2002) on the status of further processing in ITTO producer member countries.

2

2 Current status of and prospects for further processing

Analysis of industrialization and further timber processing in Africa

Primary processing

The African timber industry is mainly characterized by primary processing: sawnwood, peeling, and slicing for the production of plywood and veneer. The growth in the number of units by processing type over the last two decades (cf. Annex 2) shows that the development of sawmills was stimulated by a reduction in the forest resource in Nigeria, Ghana and Côte d'Ivoire.

A comparative analysis of the number of sawmills, production and exports (Table 1) indicates that most ATO countries do not yet have a well-developed sawnwood primary-processing sector. This first processing level is the starting point for upstream processing.

Four countries (Nigeria, Gabon, Cameroon and Côte d'Ivoire) represent about 80% of log production in ATO member countries. Most countries only use a small proportion of their established industrial capacity. According to various expert estimates, Gabon uses about 70% of its established capacity, Cameroon 75% and Nigeria 62%, while the figures for Ghana and Côte d'Ivoire are even lower due to supply difficulties. If they could overcome existing technical, economic, financial and socio-political obstacles, African countries would therefore be

in a position to increase their processed timber production significantly.

Technically, sawmills are antiquated, with a high frequency of power cut-outs and workers having to be laid off while waiting for spare parts. Sawmills are mainly supplied with poorer quality logs with a low efficiency rate, which itself is justified by the poor quality of equipment and the insufficient skills of machine operators. Many timber companies have established sawmills solely to comply with regulations, with no obligation to be cost-effective, in the knowledge that greater profit margins can be obtained by exporting logs.

However, an informal sawnwood production sector is developing rapidly in rural areas along with small joinery or woodworking industries in urban areas. This sector has grown all the more rapidly as the economies concerned have been in recession and, consequently, purchasing power is low. Local consumption therefore is mainly supplied by informal-sector producers.

A review of national forest industries shows that status and levels of development vary greatly by country; from those countries with a more established industry (Ghana, Côte d'Ivoire) to those of the Congo Basin where timber industries are most recent. The latter still have abundant industrial timber resources that could enable them to intensify industrialization.

Among the countries of the Congo Basin, Cameroon has the most diversified industry; during the past five years, sawnwood production there has expanded greatly and has contributed to the beginnings of secondary and tertiary processing. Gabon specializes

Table 1 Log production, number of sawmills, sawnwood production and exports in selected African countries, 2000

Country	Log production ('000 m ³)	Number of sawmills	Sawnwood production ('000 m ³)	Sawnwood exports ('000 m ³)
Angola	150		50	
Cameroon	2700	64	1150	1000
CAR	750	8	150	76
Congo	680	22	125	70
DRC	258	50	70	20
Côte d'Ivoire	2054	100	600	475
Gabon	3000	34	93	57
Ghana	1189	104	480	240
Nigeria	3700	2600*	2711	0

* The Nigerian data include industrial sawmills and mobiles sawmills in the informal sector, 200 of which are considered to be successful

in the production of okoume logs and plywood; the last few years saw a downturn in sawnwood production, followed by the development of large industrial plants, providing Gabon with an increased potential to participate in the further-processed timber product (FPTP) trade.

The Congolese timber industry has experienced some deterioration over the last few years as a result of transportation constraints and a weak local market, which do nothing to encourage the emergence of local timber processing. Moreover, socio-political instability has seriously slowed down industrial activity. Efforts to revive the national economy have attracted new investors in the forestry sector following the granting of large concessions in the north of the country. Both CAR and DRC are characterised by transportation constraints and socio-political instability that discourage investment.

A typology and structuring of national timber industry operators indicate that the industry is dominated by a few large groups who are responsible for most of the production and most exports from ATO member countries. A dozen large European, Lebanese and Asian firms are responsible for almost all the industrial timber production in Central Africa. The share of national operators has remained marginal despite numerous incentives and other measures taken by countries, including the issuing of reserved logging permits and numerous concessions.

Further timber processing

Further timber processing in the form of secondary and tertiary processing (such as the manufacture of mouldings, flooring, furniture and joinery) –

the stages that generate most added value and employment – is only at an embryonic stage in most countries. Statistical data are scarce and not easily captured by existing information systems.

Secondary and tertiary timber processing are most developed in the countries of West Africa: Ghana, Côte d'Ivoire and Nigeria. The Congo Basin countries lag very much behind, with the exception of the production of mouldings, flooring and other dry and profiled timber, which has expanded in Cameroon during the last five years.

In the move towards further processing, long-established operators have tended to adopt a strategy which involves extending the sawnwood production system by adding secondary production chains based mainly on the recovery of sawn timber. The prior establishment of drying units encouraged the development towards more downstream processing.

A few large secondary-processing plants required the mobilization of many foreign experts from companies with marketing networks for products from African subsidiaries (Cameroon, Côte d'Ivoire). In Côte d'Ivoire, integrated companies supply FPTPs from various processing units in Abidjan and San Pedro. In Cameroon, the largest FPTP producers are subsidiaries of European groups (Rougier, Bolloré, GWZ, Thanry, etc) with processing plants such as TIB, IBC, SEFAC, SFID, Patrice Bois and WIJMA.

In Ghana, around 50 exporters are responsible for 80% of product exports. Ghana is the number-one producer of garden furniture in West Africa, with a turnover of about US\$7 million. Furniture and profiled wood producers in Accra and Takoradi have regrouped in industrial organizations (eg the

Table 2 Number and type of further-processing units in Ghana, 1990 to 2000

Type of operation and industry category	Number of companies			
	1990	1995	2000	% Expansion
Forest operators	350	140	70	-80
Processing				
Sawnwood	102	110	104	+20
Veneer and plywood	9	13	21	+175
Particleboard	1	1	2	+100
Further processing				
Furniture, doors, etc	300	300	150	-50
Informal	3800	4000	1500	-60

Source: Ghana Forestry Commission, Wood Industry and Log Export Ban Study, May 2001

Furniture and Wood Products Association of Ghana – FAWAG – and the Ghana Timber Millers Organization). Table 2 shows the number and type of further-processing units in Ghana.

At the present stage of processing development, African FPTP producers do not have the capacity to supply finished interior furniture; garden furniture constitutes a transition towards that objective.

Markets and the marketing of further-processed tropical timber

An analysis of world trade in further-processed timber shows that in 2000 the value of exports for all ITTO producer countries combined was about US\$5 billion, 83% of which originated in countries in the Asia-Pacific region, 16% in Latin America, and only 1% in Africa. The trade in furniture, flooring, doors and windows is also dominated by Asian countries. Ghana and Côte d'Ivoire alone make almost 80% of the contribution of African countries to the further-processed timber trade.

World trade is gradually progressing from mouldings, flooring and other processed timber products to the furniture trade. In 2000 almost 60% of trade was in furniture, building materials represented about 30%, and the rest comprised mostly planed timber. Trade in further-processed products by African countries is dominated by the latter category. Planed timber represented 65% of the trade of African ITTO member countries in 2000, while furniture exports have increased significantly during the last five years, their share in the region's timber trade increasing from 10% to 30% between 1997 and 1999. This increase is due mainly to the increased production of garden furniture, on which African producers have concentrated.

FPTP market prospects vary significantly from one country to another in terms of the ability to harness the potential benefits of high-value-added production. Certain countries, such as Malaysia, Thailand, Indonesia and the Philippines, are well established in export markets. Furthermore, these countries have developed large domestic markets and have a well-developed primary-processing industry.

The three main factors supporting the production and export of high-value-added wood products in Asian countries are the domestic market, the primary-processing industry and the presence of export markets. Moreover, Asian countries have the

benefit of uniform raw materials from plantations, in particular rubberwood; promotion efforts backed by research and development have also furthered the expansion of Asian countries.

Many African countries are still experiencing difficulties in developing a successful primary-processing sector, consolidating weak domestic value-added timber product markets and reversing the non-sustainable log export trend. These factors have seriously hindered opportunities for developing value-added timber exports.

Main FPTP markets

Imports of FPTPs are concentrated in three large markets: the European Union, the United States of America (US), and Japan. Imports comprise furniture, joinery and carpentry wood, and the main decorative products.

The European Union (EU) is the largest furniture market in the world (see Annex 4), with a total consumption of US\$70.4 billion in 1998. Within the EU, the main importing countries are Germany, France, the United Kingdom, Italy, Spain and the Netherlands, which account for about 84% of total EU consumption. Wood furniture represents 40% of all furniture consumption in the EU.

US furniture imports totalled US\$8 billion in 1999, more than half of which originated in emerging furniture-exporting countries; trade is mainly with China, Taiwan Province of China, the Philippines and Brazil.

Japan is the largest consumer in the world of timber for flooring and timber in general; the Japanese market includes a great diversity of furniture pieces, in modern and classical, traditional and contemporary Japanese and occidental styles.

Main FPTP suppliers

In the furniture sector, by far the largest product category by value, a handful of developing countries dominate the market. In 1999, China alone supplied 28% of furniture from small-to-medium enterprises (SMEs) to OECD (Organization for Economic Cooperation and Development) markets. China's expansion in this sector was sparked by the development of furniture manufacturing joint ventures with European and Asian partners. Other suppliers of furniture include Southeast Asian countries such as Indonesia, Malaysia and Thailand, and Taiwan Province of China. In the

1990s, trade was concentrated in a small number of dominant exporting countries: in 1999 the ten largest exporters supplied 92% of OECD furniture imports from developing countries, against 85% in 1992. No African country other than Egypt (US\$34 million) and Ghana (US\$7 million) was represented in the top 20 developing-country exporters.

Regarding joinery and carpentry wood products, Indonesia is by far the largest exporter to OECD markets, with US\$300 million of deliveries in 1999, followed by Malaysia, then Brazil, China, Mexico and Costa Rica.

Similar to the case of furniture, the ten largest exporting developing countries represented 90% of all OECD market imports for joinery and carpentry. The main African exporters were Côte d'Ivoire and Zimbabwe, each with US\$3–4 million of exports.

Africa's prospects as a supplier of FTPs

Resource status

ATO member countries contain approximately 86% of the forests of Central and West Africa and 15% of the world's tropical forests. Their size varies greatly: the forest area of DRC, for example, is larger than the combined forest area of the seven other countries listed in Table 3. Although African forests contain a wide diversity of species, logging and timber processing are centred around a limited number of marketed species (sipo, sapelli, mahogany, ayous, okoume, iroko and azobe), thus greatly restricting the logged volume per hectare and increasing unit costs for the production of logs.

While sawnwood, veneer and plywood products depend on the species used, further-processed

timber products are not necessarily species-specific, their sale depending more on appearance, quality and price. Certain products such as flooring, garden furniture and high-quality furniture require the species to be identified.

Following a period of stagnation in African log production in 1993–1997, the arrival of Southeast Asian buyers on the West African market in 1998–99 rapidly increased log production and exports, particularly in Gabon. Four countries (Gabon, Cameroon, Côte d'Ivoire and Ghana) represent 80% of total log production in African ITTO producer member countries (see Annex 3 for production data). Because DRC is still a small producer, its log production is not proportional to its current forest area.

Compared to other continents, the growth of plantation silviculture in Africa has been low. This low level of plantation establishment and management is a major concern for the future development of African forest industries and is due to the availability of low-cost products from natural forests, a lack of control over plantation costs, etc. Furthermore, local regulations, in particular the land tenure system, tend to deter investment.

The development of plantations is necessary to secure a long-term supply. Experiences in industrial plantation establishment and management do exist, as well as improved technology for the further utilization of plantation timber.

Larger-scale acceptance of lesser-known species could supplement future timber supplies. Such species represent an increasingly large percentage of authorized logging due to the great diversity of species in most African countries and the impoverishment of residual primary forest.

Table 3 Forest area in selected African countries

Country	Forest area (million hectares)		Potential wood raw material supply in 2010 compared to 1996 potential
	Natural	Plantations	
Côte d'Ivoire	5.403	0.066	Slight decline
Ghana	8.969	0.014	Slight decline
Cameroon	19.582	0.023	Increase
DRC	109.203	0.042	Clear increase
Congo	19.500	0.037	Clear increase
Gabon	17.838	0.021	Slight increase
CAR	29.924	0.006	Slight increase
Nigeria	7.500	0.230	Possible increase, on a plantation basis only

Source: ITTO/ITC 2002

Whilst international log marketing is limited to a number of well-known species, the sale of manufactured products is based on technical characteristics or aesthetic considerations, for which the use of specific species is not necessary; although a well-known species can be an advantage for these products, it is not a necessary condition. Further processing could give lesser-known species new uses. However, this requires a substantial change in market acceptance and commercial flows, and none of these can happen without the cohesive efforts of the industry.

Export structure

Sawn timber is one of the main export timber products from tropical Africa. It constitutes the first stage of further processing as well as the first component of more sophisticated products, from sauna laths to furniture. Almost all these products need to be kiln-dried, with the exception of outdoor furniture materials.

Furniture exports have increased both relatively and absolutely from a low 10% to a more creditable 23% share of all exports. The value of exports increased from US\$1.4 million in 1989 to US\$9.7 million in 1998, the most significant growth occurring between 1997 and 1998 and consisting mainly of garden furniture destined for foreign furniture markets. The main species used was iroko and the main supplier was Ghana. Joinery-part exports have decreased in all African ITTO member countries.

Table 4 FPTP exports in ITTO African producer member countries, 1998

Product category	Total export value (US\$ million)
Wood parts and furniture	9.7
Construction joinery parts	5.4
Profiled wood (including mouldings)	27.6
Total	42.7

Source: ITTO/ITC 2002

Table 5 Export distribution by FPTP type, 1998

ITTO member country	Total export value (US\$ million)	Wood furniture and accessories (% of FPTP)	Joinery parts (% of FPTP)	Profiled timber (including mouldings) (% of FPTP)	
Côte d'Ivoire	21.5	3	18	79	
Ghana	14.2	61	4	35	
Cameroon	2.8	7	10	83	
DRC	2.6	1	–	99	
Congo	1.6	1	53	46	
Togo	0.074	7	18	75	
Gabon	0.087	76	–	24	
CAR	0.046	100	–	–	
Liberia	0.014	57	43	–	
Total	42.8	22.8	12.8	64.4	
African FPTP export destinations in 1998					
Country	Wood furniture and accessories	Joinery parts	Profiled timber (including mouldings)	Total	% share
US\$ million					
Italy	0.02	1.90	19.5	21.4	50
United Kingdom	7.70	0.25	1.06	9.01	21
France	0.14	2.11	0.49	2.74	6.4
Germany	0.22	0.23	0.97	1.41	3.3
Finland	–	0.06	1.71	1.76	4.1
Spain	0.08	0.03	1.38	1.5	3.5
Portugal	0.01	0.30	0.88	1.19	2.8
Others	1.57	0.61	1.61	3.79	8.9
Total	9.74	5.49	27.6	42.8	100
% share	22.8	12.8	64.4	100	

Sources: COMTRADE (UNSO), COMEXT (EU)

Table 4 shows the total export value of three categories of further-processed products from ITTO African producer member countries in 1998. FFTP export configurations vary significantly between countries. Among the main exporters, Ghana's exports consist mainly of furniture, compared to Côte d'Ivoire, Cameroon and DRC, where exports are dominated by profiled wood (Table 5).

Exports by country

Two countries, Côte d'Ivoire and Ghana, had an early start in the manufacturing and export of FFTPs, representing 83% of total exports from African ITTO member countries in 1998 (Table 5). Following the enforcement of a log export ban, Cameroon is broadening its range of exports; its sawnwood exports doubled between January 1999 and January 2002.

Export trends by product

The main joinery products are flooring and doors, whilst furniture exports consist of a diversity of products such as garden and exterior decorative furniture. Seats and their spare parts are a new export product category for African ITTO producer countries.

Africa's largest markets

Export markets

Europe is the main traditional tropical timber product market for West and Central African countries, although new outlets have emerged in Asia in the last few years. In 1998, Africa supplied 99% of tropical logs and 53% of processed timber imported by Europe. As for FFTPs, African suppliers have a very minor role in regional trade relations.

Europe is currently the only significant market for African FFTPs. In 1998, Italy and the United Kingdom consumed FFTPs from most African ITTO producer countries (Table 5), while France was the largest market for joinery products.

Close coordination with distribution chains is vital to a further-processing project geared to export. In the specific area of further processed timber products, there is no simple or direct access to distribution chains, as these change according to the nature of products, species and their characteristics. This means that a partnership with an experienced foreign company, which already has access to distribution chains, may be necessary.

Local and regional markets

The size of African domestic markets is highly variable; they are relatively large in the West African capitals and in other large cities, and smaller in countries such as Gabon or CAR.

Very few studies have been carried out on the number and quality of local further-processed product markets and raw materials. Some products are sold at very low prices on local markets or in neighbouring countries. Despite such low prices, these markets are important for the 'informal' sector of small, independent suppliers. Integrated further processing could enable these materials to be developed and to provide foreign currency from exports. Domestic markets for further-processed products that comply with international trading standards are small.

On the other hand, there is an opportunity to strengthen south-south trade, particularly between Central and West Africa and North Africa. Target markets could include those in Nigeria, Egypt, Libya, Chad and South Africa.

The development of an intra-African trade will be facilitated by the increasing needs of West African countries (Ghana, Côte d'Ivoire, Nigeria), which have limited forest resources from which to supply their processing units. Given the relatively rich resources of the supply countries, trade among African countries will probably focus on primary rather than further-processed products.

Trade between African countries would be facilitated by the removal of barriers to trade such as those posed by tariffs (between monetary zones) and infrastructure (or the lack of it). Standardizing the framework of such trade is one of the objectives of regional organizations such as the Central African Economic and Monetary Community (CAEMC), the Economic Community of West African States (ECOWAS) and ATO. The development of inter-state trade in Africa could lead to the establishment of a policy of cooperation and regional development based on the restructuring of trade. Increased direct trade with Maghreb countries such as Egypt, Algeria and Libya would help change the current trade flows, which are currently predominantly via third-party countries in Europe.

Imports of joinery parts and mouldings are low in African ITTO producer countries (Table 6). The situation is completely different regarding furniture,

Table 6 *FPTP imports in selected African countries*

Country	Wood furniture and accessories	Joinery parts	Profiled timber (including mouldings)	Total	% share
	US\$ million				
Cameroon	2.81	0.059	–	2.87	16.7
Côte d'Ivoire	4.93	0.12	0.04	5.09	29.7
Gabon	5.73	0.26	0.08	6.07	35.4
CAR	0.11	–	–	0.11	0.7
Congo	3.01	–	–	3.01	17.5
Total	16.6	0.44	0.12	17.2	100
% share	96.6	2.6	0.7	100	

where most countries are significant importers. Overall, net trade is negative, with imports totalling US\$16.5 million against US\$9.5 million in exports. The furniture demand among the well-to-do urban elite and imports by hotels, restaurants and administrations contribute greatly to this import volume. However, local producers find it difficult to tap into this sizeable market due to quality and design constraints.

At first, the fact that countries like Cameroon and Côte d'Ivoire are net importers of furniture may seem paradoxical. The answer lies in the quality of locally manufactured furniture, which is inferior to imported furniture due to a lack of appropriate equipment and skills.

3 Identified constraints

Main constraints by country

Table 7 lists the main constraints to the development of further-processing industries. For each constraint, the countries to which it applies are identified. Although this presentation method does not show the relative importance of each constraint or make it possible to compare countries accurately, it has the advantage of highlighting common problems and thereby pinpointing areas where common strategies may be required.

Analysis of main constraints

Further-processing problems can be grouped under the following headings:

- securing the supply of raw materials;
- the political and legal framework and the socioeconomic environment (incentives, infrastructure, services);
- institutional and organizational capacity (human resources, training, research, sectoral cooperation and coordination); and
- the small size of local and regional markets.

Securing supply sources

The factors that seem to encourage enterprises to progress towards sustainable forest management are:

i) stricter forest legislation with a greater presence of the forestry administration on the ground;

ii) improving the brand image of certain large groups who are sensitive to pressures from environmental groups; and iii) the potential benefits of opening new tropical timber markets through forest certification. The supply problem is mainly related to species' quality and quantity, and many so-called lesser-known species are still little developed. A strategy for their utilization is compatible with the expansion of further processing.

Further processing is supplied by the products of primary industrial processing; thus, a significant development of the sawnwood sector would facilitate the establishment of secondary and tertiary processing.

Investment climate

The investment climate depends on existing conditions in the country, which influence the extent of risks that must be taken by investors. This climate is of great concern in many ATO member countries and is of a nature unlikely to attract many new investors at present. However, several operators that have been working in the region for several decades do have the capacity to ensure the balanced development of further timber processing – given the right incentives.

The development of further processing in Africa will to some extent depend on the infrastructure of small operators in the informal sector, a group that is rarely taken into account in government programs. This sector is also hindered by the absence of an appropriate financing system, the lack of organization among operators, and the absence of a link with the primary industrial sector.

Table 7 Main constraints to further processing

Constraints	Country
1 Serious supply difficulties for log-processing units	Ghana, Nigeria, Côte d'Ivoire, Cameroon
2 Equipment in disrepair	CAR, DRC, Cameroon, Côte d'Ivoire, Congo
3 Inadequate transport infrastructure and poor services	CAR, Congo, DRC, Gabon
4 Political instability and social conflicts	DRC, Congo, CAR, Côte d'Ivoire, Angola
5 Lack of concerted and coherent national strategy for forest industry development or non-implementation of existing strategies	Gabon, Cameroon, CAR, Congo, Nigeria, Angola
6 Absence of adequate financing mechanisms for the further-processing industry	DRC, Congo, CAR, Côte d'Ivoire, Angola
7 Multinational company strategies based on intra-enterprise transfers	DRC, Congo, CAR, Côte d'Ivoire, Cameroon, Gabon
8 Lack of qualified and experienced personnel in further-processing planning, management and product marketing	Ghana, Nigeria, Côte d'Ivoire, Cameroon, CAR, Gabon, DRC, Congo
9 Limited domestic further-processed product market and foreign imports	Gabon, Cameroon, Côte d'Ivoire, CAR
10 Non-compliance with legal processing rates by operators	Gabon, CAR, Congo

Industrial and commercial policies will need to address the strategic importance of SMEs as a source of employment and income. These enterprises have often been neglected because they operate largely in the informal sector. However, labour intensity in this sub-sector makes it a major contributing element to socioeconomic development.

Legislation surrounding timber industrialization is either of a prohibitive or an inductive nature. The main challenge is the effective implementation of planned measures and the capacity of administrations to prevent the different actors from circumventing these obligations.

Local markets are characterized by low purchasing power, despite rapidly growing populations in large cities. Intra-African markets are developing, including export markets in Maghreb countries (Egypt, Algeria, Libya), Nigeria, Chad and South Africa. Highly competitive markets require modes of production organization and marketing which African producers do not yet have.

Personnel training

Training is essential to industrial development and should be a priority. Most African countries with forest resources have schools, training centres and assistance and training programs. However, an analysis of supply and demand shows that, in secondary processing industries, the availability of trained personnel, the range of available training courses and the quality of the scarce training courses actually provided are all seriously deficient.

Most training is provided by the industries themselves. ‘Technology transfer’ is, more often than not, limited to machinery start-up with the very brief assistance of suppliers and to the rapid training of machine operators. A number of recent studies (eg FAO/FOSA, RIFFEAC/CEFDHAC) have identified worldwide training needs in the forest sector and it would be desirable to apply

their recommendations, in particular the strengthening of training structures and the provision of technical assistance for further timber processing in ATO member countries.

Comparative advantages of African producers

There is a closer physical and economic link between primary processing (sawnwood and plywood production) and forest management than between primary processing and further processing, due to the large volume and low value of timber raw materials in the former. Semi-finished products such as planed sawnwood and ordinary plywood can be transported economically over long distances and then processed.

For this reason, African timber-producing countries should base their competitiveness in value-added products on the following factors: the availability and excellent quality of several types of timber which lend themselves well to further processing; the low cost of certain local inputs (timber and labour) to compensate for the high cost of imported products; and efforts to achieve higher quality of well-finished products.

This approach is by no means a panacea, as the relatively low costs of raw material and labour do not suffice to ensure the competitiveness of further-processed products. Low labour productivity and low raw material recovery rates, added to transport costs, tend to cancel out the initial advantages of African producers. Table 8 compares furniture production costs in developed and African countries.

It should be noted that furniture selling prices are lower for the African company, not only because of high transport costs but also because of managerial weaknesses, the quality of finishing and other factors such as the uncertainty faced by producers as world market suppliers.

Table 8 Comparative furniture production costs

Cost factor	Company in developed country	Company in African country
Selling price	US\$100	75
Labour	5 hrs @ US\$6/hr 30	20 hrs @ US\$0.8/hr 16
Raw material	14 bd.ft @ US\$1.5/bd.ft 21	18 bd.ft @ US\$0.9/bd.ft 16.2
Other charges	30	36
Total costs	81	68.2
Profit margin	19	6.8

4 Policies

Industrialization policies in African countries

A large number of instruments have been used to stimulate industrialization and further timber processing in African countries. The most common of these are:

- log export bans;
- minimum quotas for local log processing;
- the granting of large forest concessions;
- industrial investment tax incentives (industrial free zones); and
- the establishment of specialized institutions.

Table 9 describes, by country, the main measures and policies for promoting further timber processing that have been tried or are currently in force. It shows that most provisions relate to the utilization of forest resources as an incentive for industrial investment.

These measures have had varying results.

For example, total log export bans imposed in Ghana, Côte d'Ivoire, Nigeria and more recently Cameroon have led to a universal significant increase in primary timber-processing capacity. Investors reacted to this measure in several ways: by establishing new units, by increasing the capacity of existing units, or by adding recovery units or secondary processing units to existing production chains. However, this sort of policy approach can lead to over-capacity in relation to forest potential, a situation that threatens the sustainability of industrial development processes unless corrective measures are taken.

The private-sector response has not been uniform: some operators have adapted by building up added value, but a large number has disinvested and diverted activities to countries where regulations are more flexible.

A government policy of setting local log-processing quotas constitutes an intermediary step towards a total export ban and its purpose is to force concessionaires to invest in further processing. Local processing quotas are therefore a first step towards a total log export ban.

The main problem posed by the quota system is that of compliance by operators who prefer to stay focused on the often highly profitable export of logs. The commitment of states to an eventual log export ban is therefore the only option likely to stimulate the development of a diversified further-processing industry.

Industrial free-zone schemes have also been promoted as a way of encouraging large investments. In the timber sector, the implementation of industrial free zones was followed by the development of primary processing (sawnwood, peeling, slicing). However, the secondary processing resulting from these measures in industrial free zones remained low, particularly in countries with abundant forest resources.

The granting of large concessions to encourage industrialization is a classic measure which has been used by all tropical forest countries, although the actual result varies greatly among ATO member countries. The maximum size of concessions is limited to 200,000 hectares in Cameroon, while in the Congo and in CAR it can exceed 500,000 hectares. In principle, the large size of concessions facilitates their management and provides the investor with sufficient incentive to commit investments that may only be redeemed in the long term.

Table 9 Further-processing promotion policies in Africa

Country	Advocated policy and measures
Cameroon	Forest concessions granted with the obligation to establish industrial processing units
	Establishment of a Directorate for the Promotion and Processing of Forest Products in 1998, with the following mandate: develop and implement a timber marketing policy, promote modern timber-processing crafts and techniques, followed by timber processing and exporting unit activities
	Establishment of a standardization and quality unit responsible for drafting national standards (Decree n°98/313 of 9 December 1998) Establishment of a timber promotion centre for training and the promotion of lesser-known species (since 1970)
	Development of an investment code (1990)
	Development of an industrialization master plan (1990)
	Adoption of an investment charter (2000)
	Introduction of an industrial free zone scheme as a major industrial incentive instrument (in 2000, out of 44 companies registered in the Scheme, 33 belonged to the forest industry)
	Export quotas
	Progressive surtax on log exports
	Law 94/01 of 20 January 1994 regulating forestry, fauna and fisheries
	Establishment of a research and industrial prospects committee responsible for preparing institutional reforms and investment incentive measures, and for drafting a forward-looking document on national industrial policy
	First draft of the government bill on the Republic of Cameroon Investment Charter (2000)
	Law No 96/11 of 5 August 1996 on standardization, and the establishment of 20 technical committees responsible for developing standards, including a committee on timber, silviculture and environment
Congo	Forest operators under obligation to develop and implement sustainable management plans in their concessions.
	Withdrawal of simple logging permits
	Consolidation of small concessions into large forest areas
	Granting of large and long-duration concession permits
	Removal of charges on logs entering factories
	Introduction of an export tax on processed products on a sliding scale according to processing level
	High tax on log exports
	Introduction of an import tax on finished wood products and wood-based products
DRC	Log export quotas according to established processing capacity
	Setting of a local processing rate
	Different taxation for logs and processed timber
CAR	Large forest concessions with a long duration
	Setting of local processing rate
	Revision of permit-granting criteria
	Tax incentives and other benefits
Cote d'Ivoire	Total ban on log exports
	Wood in the rough and sawnwood export quotas
	Differentiated tax and duties on logs, sawnwood and plywood
	Tax relief on industrial equipment Management scheme
Gabon	Introduction of industrial permits
	Export tax exemption on processed products
	Tax on log exports
	Establishment of the Interministerial Commission on Industrialization (1995)
	Revision of Forestry Law (1982)
	Introduction of tax incentives: no value-added tax on specific wood-processing equipment
	Increase in local log-processing rate
	Promulgation of an investment charter as a general framework for all institutional, taxation and financial company improvement provisions
	Granting of large logging concessions conditional on an industrialization plan
	Granting of Agence française de développement (AFD) credit
	Restrictions on log exports
	Establishment of a Forest Industry Activity Support Fund

Table 9 (continued)

Country	Advocated policy and measures
Ghana	The 1994 Forest Policy focused on further processing, with the following objectives:
	<ul style="list-style-type: none"> • restructure the forest industry for the efficient utilization of timber from sustainably managed forests • promote secondary and tertiary processing • reduce over-capacity in sawnwood processing in favour of modernizing processing units that can be renovated • improve processing and added-value efficiency • improve plantation timber-processing capacity
	Promote local demand for processed timber
	Discourage the establishment of new factories
	Promote recovery to encourage secondary and tertiary processing
	Industrial free zones aimed at promoting investment in the production of re-export ATO member-country products and the use of established over-capacity
	Institutional strengthening
Nigeria	Log export ban since 1976
	Sustainable management of state reserved forests
	Improvement of timber recovery in secondary processing units
	Various incentives aimed at industries producing finished and semi-finished products
	Forest-sector recovery strategy through a revision of the law and forest industry support action
	Promotion of reforestation

Policy development prospects

It should be noted that significant further-processing policies and measures are often promulgated under non-forest sectors or ministerial departments. For example, industrial and commercial development or regional development activities are often responsible for the further-processing industry. The forest administration, which manages the upstream part of the sector, may not coordinate actions that have a direct impact on downstream processes. In this case, the development of inter-sectoral coordination and cooperation is vital for facilitating the development of further-processing industries.

Although the timber industry has been addressed in various development policies and programs, further-processing development policy has only emerged as a consequence of declining forest resources. Whilst a number of policies on local further timber processing have been developed, they have often lacked an exhaustive analysis of

the elements required for defining a cohesive and well-developed strategy in consultation with other stakeholders. The cottage-industry sector has a certain impact on the development of further timber processing, but it is rarely taken into account in programs.

It is generally recognized that forest administrations do not have sufficient capacity to monitor and control the implementation of further-processing development strategies. Furthermore, the strategies and/or capacities of timber companies have not always been favourable to the development of further timber processing.

New policies have adopted an integrated approach to the forestry sector with the aim of promoting the sector's contribution to sustainable development. Table 10 shows the comparative characteristics of some ATO member countries, in particular their regulatory frameworks and forest management and industrialization provisions.

Table 10 Comparative characteristics of the forest sectors of selected African countries

	Cameroon	Congo	Gabon	DRC	CAR
Date of forest law	1994	2000	2001	1949 (being revised)	1990
Land allocation by zoning	Yes	No	Being developed	No	Planned
Permanent forest estate (legally established/not established)	Systematic classification began in 2000, but progress is slow	No, but forest classification is planned	No (few forests are classified)	'Permanent production forests' are planned in a government bill	No (no classified forests)
Concession allocation system (negotiated contract/call for tenders/call for tenders with financial component)	Call for tenders with technical short list and technical and financial offers	Call for tenders. Technical criteria, including industrialization	Negotiated contract	Negotiated contract A call for tenders procedure combining technical and financial criteria is planned in a government bill	Negotiated contract
Duration of concessions	15 yrs renewable	15 or 25 yrs renewable	Rota (generally 30 yrs) renewable	25 yrs, mentioned in the government bill	For the life of the company
Management obligation for concessions	Yes (partially applied)	Yes (new law)	Yes (partially applied)	In future law	Yes (little applied so far)
Percentage of logs to be processed locally	100% local processing for category-1 species and export permitted on payment of a surtax on category 2 and 3 species. Annual export quotas planned for ayous and azobe	60% (could be increased to 85%)	No legal restriction, but increase in local processing objective	Annual export quota provided for in government bill	60% with permits. Theoretical export ban on logs since 1995, but systematic derogations
Area under management	15 management plans submitted and under review for more than 1 million hectares (two accepted, including one for a local forest)	Process initiated for over 6 million hectares	Process initiated for over 6 million hectares	None	Process initiated in one or two concessions. One public management unit established three years ago
Certified concessions	No	1 (Keurhout system – now dissolved)	1 (Keurhout system – now dissolved)	No	No
Maximum concurrently held concession areas	200,000 hectares per company (some groups hold more)	No ceiling	600,000 hectares	500,000 hectares	No ceiling
Log export percentage/ official production (estimates)	13%	40% (excluding <i>Eucalyptus</i> plantations), 62% with plantations	85% (70% according to informal estimates)	Not available	28% in 1999
Approximate average tax levied per m ³ produced (FCFA/m ³)	1,385 (1999/2000)	6120 (2001)	7105 (1999)	Not available	11 ,227 (1999)

Table 10 (continued)

	Cameroon	Congo	Gabon	DRC	CAR
Land charge (concessions)	Minimum: 1,000 FCFA/hectare Average: 3,000–5,000 FCFA/hectare January 2002 allocation (15 concessions): 4100 FCFA/hectare	Provided for in new bill. Amount not set	In 2003: 1,000 FCFA/ha 50% reduction for three years for companies preparing a management plan	0.00143 US\$/hectare Should increase to 0.5 US\$/hectare in 2003	300 FCFA/hectare/yr
Export duty on logs	17.5% of FOB value + surtax according to species	2–7%, according to species, areas (8) and quality	15% of FOB (approx. 90,000 FCFA/m ³ for quality okoume sold by SNBG)	Minimum 10% FOB value	10.5% of FOB value (reduced FOB), in fact 18% (including reforestation tax)
	Approx. 18,130 FCFA (ayous)	Approx. 5400 FCFA (sapelli)	Approx. 13,500 FCFA (okoume)		11,769 FCFA (sapelli)
Export duty on processed products	Replaced by a tax on logs entering the factory	Non-existent (factory entry tax was recently abolished). Will be introduced soon	Suspended since their introduction	Approx. 8% of FOB value	4.5% of FOB value on certain species only
Community or local forestry	Community forests (5000 hectares max) Local forests (one to date)	Nothing specific planned	Community forests provided for in law voted in 2001	'Local community forests' recognized. No size ceiling. 'Decentralized entities' will also be able to obtain forests	Nothing specific planned

Sources: FAO (2000): Forest Resources Assessment. FAO, Rome, Italy; CUREF project for Equatorial Guinea; national reports

5

5 Proposed strategies

The objective of the proposed strategies presented here is to promote a shift from unsustainable harvesting and primary processing to sustainable forest management and the further industrial development of timber, through diversification that takes into account market conditions. These strategies can be adopted at the national level, where they represent the efforts of individual countries, and at the regional level, incorporating objectives of integration and cooperation.

National level

At the national level, the proposed further timber-processing strategies include:

- the establishment of a favourable economic, taxation and institutional climate for industrial investment. In this respect, the previously mentioned obstacles preventing industrial investment in general and further processing in particular need to be removed
- Securing infrastructure and basic services (energy, transport, communication) for the development of further-processing industries
- Integrating the forest-sector industrialization plan into the general development plan of each country: forest industrialization frameworks and master plans will need to be developed while ensuring their integration into national development plans
- Promoting industrial or woodworking SMEs whilst ensuring the integration of the informal sector
- Developing products and by-products through recovery and diversification
- Promoting a large number of secondary species to reduce pressure on the main harvested species

- Securing supply for primary processing units established in the country
- Promoting forest management and forest product certification

Regional level

At the regional level, strategies are proposed based on joint action by countries and relate mainly to the definition of a cooperative framework for sustainable management of forest resources and a diversified forest industry. These include:

- The harmonization of industrial and commercial policies for a better regional and sub-regional integration. This strategy does not aim to standardize policies but rather to foster the convergence of different national approaches
- The development of the intra-African forest product market, combined with increasing international market shares
- The role that regional organizations such as ATO, the Conférence des Ministres en charge des forêts d'Afrique centrale (COMIFAC), CAEMC and ECOWAS have to play in the development of a regional approach in the forest industry sector
- The development of business opportunities offered by the New Partnership for African Development (NEPAD) in further-processing timber industries

Strategic recommendations

- 1 Develop a sustainable forest resource base and secure raw material supplies:
 - a. promote forest management;
 - b. promote reforestation and the improved development of plantation timbers in strategic locations allowing downstream further-processing investment; and
 - c. facilitate trade in raw materials between producer member countries and resource-poor countries in Africa.

- 2 Promote incentive-based policies and regulations:
 - a. investment charter:
 - i increase in investment
 - ii technology transfer;
 - b. national industrialization master plans; and
 - c. basic blueprint for further processing.
- 3 Strengthen institutional capacity:
 - a. strengthen the human capacity and financial resources of administrations in charge of industry, trade and forests;
 - b. improve coordination between administrations in charge of forests and those of industry, trade and investment;
 - c. provide training for administration and company personnel; and
 - d. support the development of specialized organizations targeted at the development of forest industries.
- 4 Develop African domestic, regional and international markets for African timbers by:
 - a. Promoting timber utilization for African public works;
 - b. developing policies to promote FPTP exports;
 - c. eliminating or removing inter-regional trade barriers; and
 - d. promoting the utilization of lesser-known species.
- 5 Ensure that primary-processing capacity is adapted to forest production potential.
- 6 Promote and develop small-to-medium-sized timber-processing enterprises and the informal sector.

6

6 Strategic action plan

The development of further timber processing in ATO member countries is possible. It will be based on the sustainable management of forest resources, the manufacture of quality products to meet the needs of national and international consumers, and the establishment of a diversified and performing industrial infrastructure. It will be realized through the adoption and implementation of a strategic action plan over a period of ten years (2004-2013) based both on past and recent experiences and on the options chosen by certain countries, as well as on the actions planned within the framework of regional and international organizations and initiatives (eg ATO, ITTO, COMIFAC, NEPAD). The aim is to combine sustainable forest resource management with the further development of forest products.

The proposed strategic activities that are to form the basis of further timber processing in Africa are centred around the following areas or objectives:

- develop a sustainable forest resource base and secure raw material supplies;
- promote incentive-based policies and regulations;
- strengthen institutional capacity and develop the necessary human resources to meet the needs of timber industry industrialization;
- develop internal and international African timber markets;
- ensure that primary processing capacity is adapted to forest production potential; and
- promote and develop small-to-medium-sized timber-processing enterprises and the informal sector.

These various objectives should be achieved by implementing the strategies and activities detailed in Table 11. For each activity, a completion timeframe (short term (1–2 years), short-to-medium term (1–4 years), medium term (4 years), medium-to-long term (4–10 years) and long term (over ten years) is proposed. The parties responsible for their execution are also identified.

Table 11 Objectives, strategies, activities and timeframes

Develop a sustainable forest resource base and secure a sustainable supply			
1	Implement management plans	1.1 Develop management plans for production forests	
		1.1.1 Carry out forest inventories	short-to-medium term state, private
		1.1.2 Carry out management inventories	short term state, private
		1.1.3 Zone territory	short-to-medium term state, private, partners
		1.1.4 Make approved management plans available	medium term private, state
	1.2 Apply forest management plans	1.2.1 Log concessions in accordance with approved management plans	short-to-medium term private, state
		1.2.2 Ensure control, monitoring and evaluation of management plans	short term state, private
2	Diversify supply sources	2.1 Develop plantations and further develop plantation timber	
		2.1.1 Revise legislation on land tenure, indicating ownership by states of reforestation and plantation areas	short-to-medium term state
		2.1.2 Identify reforestation or plantation species	short-to-medium term state, private, sponsors, ITTO
		2.1.3 Develop appropriate silvicultural techniques	short-to-medium term state, private, ITTO
	2.2 Promote the development of national and regional timber markets	2.2.1 Establish state timber supply and demand control and regulation bodies	short-to-medium term state, CAEMC, ATO
		2.2.2 Develop inter-state timber-trading initiatives	short term state, ATO, COMIFAC,
3	Improve forest productivity	3.1 Promote lesser-known species	short term state, private, ITTO, ATO
		3.1.1 Create a database on the technological properties of the species concerned	short term state, private, ITTO, ATO
		3.1.2 Conduct technological tests on species to be promoted	short-to-medium term state, ITTO, sponsors
		3.1.3 Organize promotional events (fairs, exhibitions)	short term state, ATO, ITTO
	3.2 Develop uses for logging residues	3.2.1 Organize the activity for the benefit of national SMEs ITTO, ATO	short term state, private,
	3.3 Improve felling techniques	3.3.1 Apply appropriate felling techniques	short-to-medium term private, ATO, ITTO
Ensure that further-processing capacity is adapted to forest production potential			
4	Ensure that further-processing capacity is adapted to forest production potential	4.1 Control the development of primary-processing capacity	
		4.1.1 Carry out technical audits of established industries	short term state, ATO, ITTO
		4.1.2 Subject the establishment or extension of processing units to an authorization from the forestry administration	short term state
	4.2 Determine national sustainable harvesting level	4.2.1 Institute a body in charge of monitoring industrial activity at national and regional levels	short term state, ATO, CAEMC, ITTO

Table 11 (continued)

Develop the necessary human resources to meet the needs of timber-industry industrialization			
5	Adapt initial training to industrialization requirements	5.1 Assess existing training capacity in further timber processing in the region	state, private, FAO, IUCN, etc
		5.1.1 Assess training needs	short term
		5.1.2 Evaluate existing infrastructure	short term
		5.1.3 Assess training personnel requirements	short term
		5.1.4 Evaluate current training programs	short term
		5.1.5 Evaluate teaching media	short term
		5.1.6 Assess funds allocated to training	short term
	5.2 Develop a regional action plan for training in further timber processing: wood technology and industry, marketing and management of industries	5.2.1 Organize a regional workshop to identify strategic approaches and a methodology (ensuring it is adapted to all actors identified in the action plan)	short term
		5.2.2 Develop the draft: regional action plan for further timber processing training	short term
		5.2.3 Approve the draft: regional action plan for training in further timber processing	short-to-medium term
		5.2.4 Establish a mechanism for monitoring the regional action plan for training in further timber processing (create, within ATO, a unit responsible for training and build ATO coordination capacity in the area of training and information)	short-to-medium term
	5.3 Implement the regional action plan for training in further timber processing	5.3.1 Develop an innovative and lasting financial mechanism to support training in further timber processing	state, private, ITTO, private
		5.3.2 Implement activities outlined in the regional action plan for training in further timber processing	state, private, sponsors
		5.3.3 Organize monitoring, evaluation and adaptation of the regional action plan for training in further timber processing	state, private, ITTO, ATO, IUCN
		5.3.4 Develop an information system on continuing training	state, private, ITTO, state, private
		5.3.5 Foster partnerships and cooperation among the main industrial training actors	state, private, ITTO, ATO, IUCN

Table 11 (continued)

6	Provide continuing training to personnel working in the timber industry, both public and private sectors	6.1 Develop a system for sharing information on continuing training in further timber processing	6.1.1 Create a page on one of the existing websites (ATO, ITTO, the Gabonese Forestry Department, MINEF Cameroon, etc)	short term	ATO, ITTO
			6.1.2 Collect information on continuing training opportunities (specialized training establishments, roster of experts, financial possibilities, available modules, etc)	short term	ITTO, private, state
			6.1.3 Regularly update website information	short-to-medium term	state, private, ATO, ITTO, IUCN
		6.2 Promote the exchange of experiences at national, regional and international levels	6.2.1 Document and disseminate experiences (publications, videos, etc)	short term	state, private, ATO, ITTO
			6.2.2 Organize study tours	short-to-medium term	state, private, ITTO, ATO
			6.2.3 Promote the expertise available in the region	short term	state, ITTO, ATO, COMIFAC
		6.3 Foster technical and financial partnerships between training establishments, economic operators, public administrations and NGOs	6.3.1 Establish collaboration platforms between different stakeholders at national and regional levels	short-to-medium term	state, ATO, ITTO, COMIFAC
		6.4 Organize continuing training activities for the benefit of private-sector personnel, public administrations and NGOs	6.4.1 Provide training in timber trades, in marketing and in the management skills of industries, SMEs and crafts	short-to-medium term	state, private, ITTO, ATO
Develop African timber markets					
7	Develop African timber markets	7.1 Promote African timber on international markets	7.1.1 Explore promising medium- and long-term markets and market niches	short-to-medium term	ATO, ITTO, International Technical Tropical Timber Association (ATIT), professional associations
			7.1.2 Disseminate information on market developments and trends	short-to-medium term	ATO, ITTO, ATIT, state
			7.1.3 Introduce eco-labelling, certification and chains of custody: – establish a regional working group on pan-African certification – seek funding for preparatory actions to the introduction of pan-African certification – establish national working groups	short-to-medium term short term short term	state, ITTO, ATO ATO ATO
			7.1.4 Improve information and communication (websites, publications, etc)	short term	state, stakeholders
				short-to-medium term	ITTO, ATO

Table 11 (continued)

7.2	Develop local markets	7.2.1 Promote local timber in the construction and civil-engineering sectors	short-to-medium term	state, private sector, architects, NGOs
		7.2.2 Determine a minimum local timber utilization quota in public markets	short-to-medium term	state
		7.2.3 Promote the use of African timber in public establishments and equipment	medium-to-long term	state, private
7.3	Promote knowledge about and utilization of lesser-known species	7.3.1 Determine the technological properties of lesser-known species	medium-to-long term	state, private, research institutions
		7.3.2 Disseminate the results that are currently known to concerned institutions	short term	Concerned institutions
		7.3.3 Promote the utilization of these species	short-to-medium term	state, private
		7.3.4 Build the capacity of national and regional institutions responsible for promoting timber	short-to-medium term	states, ATO, ITTO
7.4	Promote intra-regional trade	7.4.1 Improve communication and transport networks in the region	short-to-medium term	state
		7.4.2 Harmonize customs tariffs on timber products in the region	short-to-medium term	state, CAEMC, ECOWAS
		7.4.3 Harmonize and standardize terms in documents on timber trade in the region	short-to-medium term	state, CAEMC, ECOWAS
		7.4.4 Improve knowledge of potential intra-regional trade (supply and demand)	short-to-medium term	ATO, ITTO
7.5	Promote SMEs	7.5.1 Reduce customs tariffs and import duties on machinery and other inputs	medium-to-long term	state, CAEMC, ECOWAS
		7.5.2 Encourage the establishment of cooperatives and SME networks to facilitate access to bank finance Provide technical assistance to SME promoters in the conquest of international markets	short-to-medium term	state, private
		7.5.3 Create appropriate conditions for the development of SMEs; define, target and implement relevant policy instruments	short-to-medium term	state
		7.5.4 Harmonize SME product and quality specifications for access to the international market	short-to-medium term	Specialized state institutions

Table 11 (continued)

Promote incentive-based policies and regulations			
8	Promote and develop SMEs and woodcrafts	8.1 Ensure the integration of the informal sector	state
		8.1.1 Develop, adopt and disseminate legislation adapted to SMEs and woodcrafts	short term
		8.1.2 Encourage the formation of craft industry associations	short term
		8.1.3 Develop information systems on SMEs and crafts in the timber industry (including a directory of SMEs and craftsmen working in timber processing)	short term
		8.2 Strengthen the technical and managerial capacity of SMEs and woodcrafts.	state, ITTO, ATO, private, partners
		8.2.1 Assess the capacity-building needs of SMEs and woodcrafts	short term
		8.2.2 Establish a technical, managerial and financial research assistance structure	short-to-medium term
		8.2.3 Establish a technical, managerial and financial research assistance structure	ITTO, state, CDI, ATO
		8.2.4 Encourage the exchange of experiences among SMEs and crafts	short term
		8.2.5 Inter-African Forest Industry Association (IFIA), ITTO, ATO, sponsors, state	Inter-African Forest Industry Association (IFIA), ITTO, ATO, sponsors, state
9	Create a healthy and favourable climate for investment in further timber processing	9.1 Introduce incentives for further timber processing	state, sponsors, ITTO, ATO, COMIFAC
		9.1.1 Carry out studies to determine tax incentives for further timber processing	short term
		9.1.2 Define and implement criteria for the harmonization of tax measures	short-to-medium term
		9.1.3 Establish appropriate credit lines for further timber-processing activities	short term
		9.1.4 Create new industrial free zones	state, private, sponsors
		9.1.5 Promote the development of by-products	state
		9.1.6 Facilitate administrative procedures for the establishment of companies	short term
		9.2 Develop financial mechanisms adapted to further timber processing	state, sponsors
		9.2.1 Establish lines of credit with financial institutions, targeted at further timber processing	short term
		9.2.2 Support the purchase of equipment at preferential rates through development banks	short term
		9.2.3 Establish partnerships and sponsorships between economic operators	state, private, ATO
		9.3 Promote new types of finance	state, private, ITTO, ATIBT, IFIA
		9.3.1 Ratify conventions on new types of finance	state
		9.3.2 Disseminate procedures in order to adopt appropriate innovative instruments for the implementation of forest activities	short-to-medium term
		9.3.3 Carry out feasibility studies on innovative financial mechanisms	private, ITTO, ATIBT, ATO
			state, private, partners, ITTO,

Table 11 (continued)

10 Strengthen and control timber-processing activities	10.1 Significantly increase the local timber-processing rate	10.1.1 Strictly comply with minimum processing quotas	short term	state, private
		10.1.2 Take into account factory processing capacity and supply contracts when granting annual allowable cuts	short term	state, private
		10.1.3 Restrict log exports	short term	state, private
		10.1.4 Give priority to the supply of processing units	short term	state, private
	10.2 Ensure effective timber development	10.2.1 Integrate sawwood units and new product promotion units	short-to-medium term	private, ITTO, ATIBT, ATO
		10.2.2 Develop technology and timber utilization laboratories	medium-to-long term	private, ITTO, ATIBT, ATO
	10.3 Promote forest product research and development	10.3.1 Facilitate administrative procedures for the establishment of research and development institutions	short-to-medium term	state, private
Promote and develop SMEs and modernise the woodcraft industry				
11 Promote and develop SMEs and modernise the woodcraft industry	11.1 Establish financial mechanisms for SMEs and the craft industry to increase competitiveness	11.1.1 Assess SMEs and crafts in the timber sector	short term	state, private
	11.2 Promote investment in SMEs and the craft industry in order to increase competitiveness	11.2.1 Reduce customs duties on imported equipment	short term	state, private
		11.2.2 Reduce customs tariffs on processed product exports	short term	state
		11.2.3 Support the purchase of equipment by SMEs and woodcraft industries at preferential rates through development banks and other financial institutions	short-to-medium term	state, private
	11.3 Promote national investment in further timber processing	11.3.1 Facilitate access by national operators to credit lines for the establishment of SMEs	short-to-medium term	state, private

Elements of the strategy

Some of the elements of the strategy are discussed in more detail below.

Secure a sustainable supply for timber-processing units

After political stability as an investment confidence criterion, manufacturers give priority to the security of timber supplies. The forest/factory combination has been encouraged in all ATO member countries. The challenge today is to ensure that processing capacity is adapted to the forest resource potential. The proposed strategy focuses on:

- promoting sustainable forest management by encouraging the general adoption of management plans;
- promoting the use of lesser-known species;
- the development of wood in the rough and sawnwood imports to supply those countries either lacking in timber or with an industrial over-capacity;
- the introduction of forest concession-granting procedures that take into account established factories; and
- the technical audit of established factories.

Sustainable forest management

The strategy aims to promote sustainable forest management as a tool rather than an objective, which can be achieved by adopting the following approaches:

- improved knowledge of forest resources through multi-resource inventories, as an important prerequisite of forest activities;
- the urgent need to carry out land zoning and to define a multiple-use permanent forest estate; and
- the development and utilization of timber and non-timber forest products.

External supplies and the role of plantation products

The manufacture of products using external raw materials should be considered in countries with large installed further-processing capacity (Ghana, Côte d'Ivoire, Nigeria, Cameroon). External supplies can compensate for domestic raw-material deficits.

Plantation forests are an additional source of timber to that of natural tropical forests, but unfortunately there are few in Africa. A strategy to promote private industrial timber species' reforestation, as well as the industrial development of timber from established plantations, should be implemented.

Policy development

National policies should include:

- a rigorous policy aimed at supporting the sustainable supply of raw materials and further processing, rather than regulating them through complex legislation and special restrictions;
- tax concessions or similar tax incentives;
- appropriate export regulations;
- free trade zones (for exports) with conditions corresponding to investors' planning cycles;
- the reduction of import duties on raw materials and equipment;
- the strengthening of the institutional framework supporting industries (associations, research institutes, export promotion agencies, standardization, etc); and
- the organization of a large part of the informal sector and its integration into the formal sector.

Log export policies

Log export bans or discouraging log exports through high tax rates constitute a first significant step towards the development of primary and further processing.

Countries such as Ghana, Côte d'Ivoire and Cameroon have imposed total or partial log export bans and others such as CAR, Gabon and the Congo are about to follow suit. Once primary processing is obligatory, the second step should be to restrict, tax or ban the exports of logs and air-dried or non air-dried sawnwood of the species concerned. Different types of quotas are applicable in this area.

Tax policies

If applied more rigorously, existing tax systems could provide governments with much more revenue. In such cases, the further-processing objective could justify the following measures:

- tax credits for new businesses;

- reduction or abatement of customs duties on imported equipment;
- tax exemption on further-processed products; and
- tax degression according to the level of processing, added value produced, and efficiency.

Industrial policy

In the context of industrial policy, the strategy proposes a sectoral approach to be embodied in timber-industry industrialization master plans, which would be developed and implemented in all countries as a basis of a further-processing development strategy. Such strategies have been developed in some countries (Gabon, Cameroon). We propose that they be updated and more focused on further processing.

Before developing the further-processing industry, industrial policy measures to improve transport, communication and information infrastructure as well as public services need to be put in place.

Investment in further processing could be increased by forming joint-enterprise industrial companies (often identical to those of forest operators) or partnerships between national and international corporations and individual companies.

At the level of regulation, the use of timber in administrative buildings should become a condition of the adjudication of public building construction markets, and economic incentives could protect timber markets against competing materials such as PVC, aluminium and concrete.

Institutional capacity-building

The capacity of stakeholders (administrations, private sector and population) is insufficient in all member countries. Areas where capacity-building is required include: the establishment of support structures, training, funding, industrial planning and management.

Support units should be established to assist further-processing enterprises or to strengthen the quality of existing services in ministries responsible for industrial development, if such units do not already exist. These units should gather all necessary administrative, financial and fiscal information for launching a further-processing enterprise, as well as information relating to trade.

In the area of market promotion, support units could collaborate beyond borders and develop close links with international organizations, government agencies and local employers' associations. The first desirable step in this direction would be to prepare an information package for potential exporters. This could include an 'export guide', which should be drafted jointly and include all products and producer countries. If necessary, the guide could contain information specific to countries, to timber species and to final products. It could also include references to commercial practices and to models and properties of the main products.

The information package, which would be updated according to developments in the international further-processed product trade, should, among other things, indicate:

- main international trade fairs, by product;
- main importers/distributors/buyers, by product;
- main international institutions involved in the further-processed product trade;
- certification institutions and procedures;
- a list of relevant product models; and
- promotional data sheets on models of products.

Joint publicity campaigns could then be designed between tropical African countries and the largest markets. National and regional market distribution chains and those outside the continent could then be integrated.

Development the necessary human resources to meet the needs of the further timber processing industry

Training should be considered a priority, as it is essential to industrial development. To be able to achieve further-processing objectives, training should include at least two streams: initial or formal training provided through traditional channels, and training for workers and technicians.

To which industrial activities should training be geared?

With the exception of sawnwood, the main further processing industrial activities today are the production of pre-sawn timber and semi-finished products, squares and glue-laminated products, joinery parts, mouldings, flooring and parquet framing strips, and indoor and outdoor furniture.

Recurrent technical problems in African further-processing industries are drying, efficiency, productivity, quality management and product design. These cover a long sequence of different circumstantial problems that must be considered separately but which cannot be resolved without training programs. There is a significant gap between the declared quality of some existing training courses and the practical assessment of training by manufacturers.

What types of training?

Training can be classified into three essential and complementary fields:

1. knowledge and preparation of timber as a material (anatomy, conditioning, lesser-known species' utilization);
2. specific timber-processing skills (machine control and operation, saw doctoring, grading); and
3. generic industrial skills (production organization and management, maintenance, information technology).

As training requirements differ according to industry, site and country, they need to be reviewed taking into account the different development stages of particular industries and the social and educational environments. The need for training applies to all levels of industry, from unskilled workers to skilled workers, technicians, senior technicians, engineers and managers.

Depending on the level and type of training, the geographical distribution of training should also be considered. Regional and sub-regional cooperation between the different partners would enable specialized training courses to be developed in certain countries.

The proposed strategy is to:

- support the organization of craftsmen into cooperatives and associations;
- develop these craft industries in the context of professional associations; and
- facilitate technology transfer for the benefit of these small producers.

Which partners?

A great diversity of partners could and should be involved in the process:

- professional organizations and trade-unions: eg the Timber Industry Group of Cameroon, ATO, SPIB (Syndicat des producteurs industriels du bois in Côte d'Ivoire), SYNFOGA (Syndicat des producteurs de bois et industriels du bois au Gabon), Ghana's Forestry Product Inspection Bureau and FAWAG, the IFIA, etc;
- international organizations in the forest/timber sector: ITTO, ATO, ATIBT, COMIFAC, etc;
- manufacturers and suppliers of industrial equipment;
- the ministries concerned (eg of industry, timber, forestry, industrial development, environment);
- Educational establishments such as Gabon's ENEF (Ecole nationale des eaux et forêts), the Regional Centre for Specialised Training in Agriculture (CRESA), the CPB (Centre pluridisciplinaire de bilans), and Ghana's Wood Industries Training Centre, etc;
- The main institutional actors: Agence Française de Développement, European Commission delegates, CDE (Centre pour le développement de l'entreprise), forestry and environment cooperation services, the World Bank, etc; and
- The main NGOs and associations operating in the timber sector, such as WWF, GTZ and ADIE (Association pour le droit à l'initiative économique).

Develop African timber markets

The existence of an important domestic market is a basic condition of investment in further processing. In Africa, the local market problem is due more to the lack of purchasing power than to demography. Most mass urban demand is satisfied today by poor-quality products. In this respect, the strategy is to:

- improve market intelligence;
- promote the use of timber materials in the construction and civil-engineering sectors; and
- promote the development of strategic partnerships.

The collection of data outside the country should be carried out by organizations such as ATO and ITTO that have a sound knowledge of the timber industry. To this end, ATO could publish a schedule of trade fora, fairs and exhibitions organized worldwide for the promotion of further-processed timber forest products. Similarly, national embassies, private operators, NGOs and other relevant associations could all play a vital role.

At a national level, it is important to establish a further-processed product consumer market similar to international markets (Europe, North America). In order to do so, the population should be made aware of, and be open to, timber resource uses other than traditional uses.

At the regional and international levels, partnerships should be agreed between consumer-country companies or technology suppliers and African producers, and south-south cooperation should be increased in order to develop the further-processed timber trade.

With the support of international partners and organizations, governments should encourage the development of appropriate means of communication, and support the establishment of a legislative and regulatory framework, the adoption of an industrialization strategy for the timber industry, and the funding of further-timber-processing development projects.

Technology transfer

Technology transfer applies to both equipment and raw-material processing procedures. Technology transfer activities should be implemented jointly by producers, machinery manufacturers and research centres (eg CIRAD-Forêt, wood technology centres and woodworking centres).

Strategies include:

- adapting equipment to the raw material. By so doing, Asian countries have achieved important technological changes, enabling manufacturers to adapt to new wood properties;
- reducing residues in the forest and upward through the processing chain;
- recovering waste in the forest for specific uses; and
- increasing the utilization of wood residues through associated or joint development of factory residues and by-products and the co-generation of energy (thermal/electrical) to run boilers, for example.

Specific recommendations

The following specific recommendations are addressed to governments, ITTO and ATO, and forest industries and trade organizations.

Governments

Further processing would benefit from fulfillment of the following conditions:

- socio-political and macroeconomic stability as an investment prerequisite;
- formulation and implementation of national export strategies and further-processing promotion programs and master plans;
- integration of secondary and tertiary processing in the informal sector;
- preferential taxation on further-processing operations;
- improvement of communication infrastructure and basic services (electricity, water, etc) responding to the needs of further-processing industries;

- effective enforcement of quotas and other log-export restrictions when appropriate and economically justified; and
- establishment of targeted investment and guarantee funds for SMEs.

ITTO and ATO

ITTO and ATO support could be considered in the following areas and levels.

At the international level and in the areas of market intelligence and export development:

- provide up-to-date information on markets, prices and quality of the main FPTPs and on final markets, including those within the African region;
- organize international and regional seminars on relevant aspects of further processing (technology, markets, policies); and
- support initiatives to promote the increased utilization of lesser-known species.

At the national level:

- encourage coordination and cooperation between governments, industries and national organizations working for further-processing development;
- improve information exchange among government agencies, forest industries and market intermediaries on all aspects of further processing;
- support national reporting on the status and development projects of further processing;

- support the formulation of national strategies for industrialization and export development;
- assist the establishment of appropriate forest industry training programs; and
- assist development support programs for SMEs and the organization of national processor networks in order to improve competitiveness in exports.

At the industry level:

- support the development and implementation of forest management plans;
- encourage private-sector participation in the formulation of further-processing sectoral development strategies and plans; and
- improve access to and knowledge of appropriate value-added processing technologies and markets.

Forest industries and trade organizations

- Contribute to the improvement and development of the brand image of further-processing companies
- Support manufacturers and their organizations in promoting their interests, including through consultations with governments
- Promote compliance with international market requirements and quality standards applicable to value-added products
- Strengthen human resources and research and development efforts

7 Monitoring the action plan

National level

Based on the regional-level action plan, each country will develop a national plan in accordance with priority action guidelines defined at the regional level, in particular those given in Table 11. The national strategic plan should be evaluated regularly by a strategy implementation monitoring/evaluation committee. A focal point will be responsible for the committee and will work in collaboration with the ATO technical director responsible for industrialization. Databases will be developed gradually for the rapid updating of the situation in each country.

Regional level

Monitoring and evaluation of the implementation of strategic action plans will be conducted in the context of ATO conferences. It is proposed that an agenda item of the ATO Conference of Ministers be dedicated to systematically reviewing the progress of further processing in member countries. To this end, each country will be asked to prepare, prior to each conference, an annual review of the situation and an evaluation of further timber processing. A reporting form could be drafted and distributed by ATO to member countries. This initiative could draw upon the experience acquired by ATO and ITTO in the collection of forestry statistics.

The success of such an initiative will depend greatly on the collaboration of the private sector. Economic operators are the source of much economic information, and they are also the main actors in implementing the regulation framework. Their voluntary contribution to the evaluation of the implementation of adopted strategies will yield much of the information required to make any necessary adjustments to the plan.

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Annex 1

Member countries of the African Timber Organization and the International Tropical Timber Organization

ATO: Angola, Cameroon, Central African Republic, Congo, Côte d'Ivoire, Democratic Republic of Congo, Equatorial Guinea, Gabon, Ghana, Liberia, Nigeria, Sao Tome and Principe, Tanzania

ITTO African producer member countries: Cameroon, Central African Republic, Congo, Côte d'Ivoire, Democratic Republic of Congo, Gabon, Ghana, Liberia, Nigeria, Togo

Annex 2

Timber-processing units in African countries

Table 1 Number of timber-processing units in selected African countries, 1975–2002

Country	Sawmills				Peeling and slicing				Plywood and boards			
	1975	1985	1995	2002	1975	1985	1995	2002	1975	1985	1995	2002
Cameroon	58	96	60	64	4	5	5	1	3	4	4	5
CAR	10	12	6	nd	2	1	1	nd	1	1	2	nd
Congo	15	22	26	nd	4	4	4	nd	nd	nd	2	nd
DRC	50	46	68	50	7	7	6	6	4	4	4	nd
Gabon	23	20	11	34	4	4	3	8	1	1	3	3
Ghana	74	86	100	104	7	7	13	21	5	nd	9	21
Nigeria	157	580	1380	nd	4	4	6	nd	4	6	8	nd

Source : Compilation based on national reports and ITTO data

Table 2 Distribution of timber-processing units in Côte d'Ivoire, 1998

Types of processing	Number of units	Types of processing	Number of units
Air-dried sawnwood	48	Parquet strip	34
Kiln-dried sawnwood	36	Finished parquet	9
Kiln-dried and planed sawnwood	28	Mouldings, panelling	19
Peeled veneer	10	Sauna laths	12
Sliced veneer	5	Tool handles and curtain rails	18
Plywood	7	Doors and windows	13
Laminboard	1	Furniture and furniture components	13
Glulam board	5	Construction joinery	2
Laminated joinery components	8	Rail sleepers	2
Laminated beams	4	TOTAL	261

Source: Syndicat des industriels du bois de Côte d'Ivoire 1998

Annex 3

Statistical data on timber and timber product production and exports in selected African countries

Log production ('000 m³)

Country	1997	1998	1999	2000	2001
Cameroon	3000	2895	2655	2720	2700
CAR	461	530	553	703	750
DRC	258	244	170	170	170
Republic of Congo	911	1184	1187	1240	1240
Côte d'Ivoire	2054	2245	2222	2500	2500
Gabon	3000	2400	3635	3715	3225
Ghana	1189	1138	1102	998	1000

Sawnwood production ('000 m³)

Country	1997	1998	1999	2000	2001
Cameroon	560	589	600	1000	1150
CAR	72	91	79	102	150
DRC	90	80	70	70	70
Republic of Congo	64	73	74	93	93
Côte d'Ivoire	613	623	611	603	600
Gabon	26	60	98	88	93
Ghana	575	590	454	475	480

Veneer production ('000 m³)

Country	1997	1998	1999	2000	2001
Cameroon	61	59	53	70	80
CAR	0	0	0	0	0
DRC	10	10	1	1	1
Republic of Congo	46	52	19	10	10
Côte d'Ivoire	252	274	269	297	300
Gabon	20	76	133	91	104
Ghana	75	90	150	245	259

Plywood production ('000 m³)

Country	1997	1998	1999	2000	2001
Cameroon	90	89	92	37	35
CAR	1	1	2	2	4
DRC	10	10	1	1	1
Republic of Congo	3	2	3	1	0
Côte d'Ivoire	61	67	59	80	80
Gabon	60	115	134	104	109
Ghana	65	71	75	90	114

Log exports ('000 m³)

Country	1997	1998	1999	2000	2001
Cameroon	1706	1604	1031	635	381
CAR	110	117	154	250	313
DRC	64	46	49	16	16
Republic of Congo	478	638	645	757	757
Côte d'Ivoire	107	93	105	136	140
Gabon	2720	1773	2338	2584	2199
Ghana	0	0	0	0	0

Sawnwood exports ('000 m³)

Country	1997	1998	1999	2000	2001
Cameroon	356	353	476	850	1 000
CAR	48	72	64	66	76
DRC	21	19	16	20	20
Republic of Congo	16	47	63	70	70
Côte d'Ivoire	493	208	479	460	475
Gabon	3	55	69	79	57
Ghana	270	253	250	243	240

Veneer exports ('000 m³)

Country	1997	1998	1999	2000	2001
Cameroon	32	41	48	70	60
CAR	0	0	0	0	0
DRC	5	5	1	0	0
Republic of Congo	37	46	16	3	3
Côte d'Ivoire	155	156	153	113	120
Gabon	13	40	124	91	104
Ghana	66	84	101	111	116

Plywood exports ('000 m³)

Country	1997	1998	1999	2000	2001
Cameroon	45	41	88	37	35
CAR	0	0	1	0	0
DRC	0	0	0	0	0
Republic of Congo	3	0	0	0	0
Côte d'Ivoire	18	14	22	40	50
Gabon	25	57	77	78	87
Ghana	26	12	25	47	59

Source: ITTO Annual review and assessment of the world timber situation 2001. ITTO, Yokohama, Japan.

Annex 4

Main developing-country furniture suppliers

Table 1 Main developing-country furniture suppliers to OECD countries

Economic zone of origin	US\$ million		% share		1999 index (1996=100)
	1996	1999	1996	1999	
Newly industrialized economies	878.74	879.33	16.4	11.1	100
Taiwan Province of China	677.52	681.30	12.6	8.6	101
Hong Kong	67.79	109.82	1.3	1.4	162
Republic of Korea	58.64	49.15	1.1	0.6	84
Singapore	74.79	39.06	1.4	0.5	52
Other developing market economies	4483.54	7076.04	83.6	88.9	158
China	987.41	2.214.93	18.4	27.8	224
Indonesia	943.44	1.389.26	17.6	17.5	147
Malaysia	682.97	913.68	12.7	11.5	134
Thailand	511.81	603.47	9.5	7.6	118
Mexico	342.35	568.29	6.4	7.1	166
Philippines	21526	30892	4.0	3.9	144
Brazil	263.97	273.42	4.9	3.4	104
Viet Nam	96.37	208.74	1.8	2.6	217
Slovenia	167.08	177.07	3.1	2.2	106
India	35.95	93.37	0.7	1.2	260
Croatia	71.32	60.36	1.3	0.8	85
Honduras	20.03	36.47	0.4	0.5	182
Egypt	22.48	33.75	0.4	0.4	150
Turkey	10.09	30.01	0.2	0.4	297
Chile	22.27	29.21	0.4	0.4	131
Ghana	3.12	7.26	0.1	0.1	233
Others	84.63	120.61	1.6	1.5	143
Total developing market economies	5362.28	7955.37	100	100	148

Source: COMTRADE (UNSO)

Table 2 *Main developing-country suppliers of joinery and carpentry parts to OECD countries*

Economic zone of origin	US\$ million		% share		1999 index
	1996	1999	1996	1999	(1996=100)
Newly industrialized economies	190.03	137.64	14.3	8.5	72
Taiwan Province of China	150.09	94.93	11.3	5.9	63
Hong Kong	30.82	35.85	2.3	2.2	116
Republic of Korea	8.25	5.84	0.6	0.4	71
Singapore	0.87	1.02	0.1	0.1	117
Other developing market economies	1,135.39	1,473.27	85.7	91.5	130
China	555.34	852.01	41.9	52.9	153
Thailand	216.15	231.22	16.3	14.4	107
Indonesia	103.34	114.93	7.8	7.1	111
Mexico	80.46	111.71	6.1	6.9	139
India	37.92	43.59	2.9	2.7	115
Philippines	56.34	42.78	4.3	2.7	76
Malaysia	26.14	17.62	2.0	1.1	67
Viet Nam	13.04	14.11	1.0	0.9	108
Slovenia	9.35	7.06	0.7	0.4	76
Kenya	4.81	5.24	0.4	0.3	109
Ghana	1.23	3.22	0.1	0.2	262
Brazil	3.46	3.19	0.3	0.2	92
Others	27.81	26.59	2.1	1.7	96
Total developing market economies	1,325.42	1,610.91	100	100	122

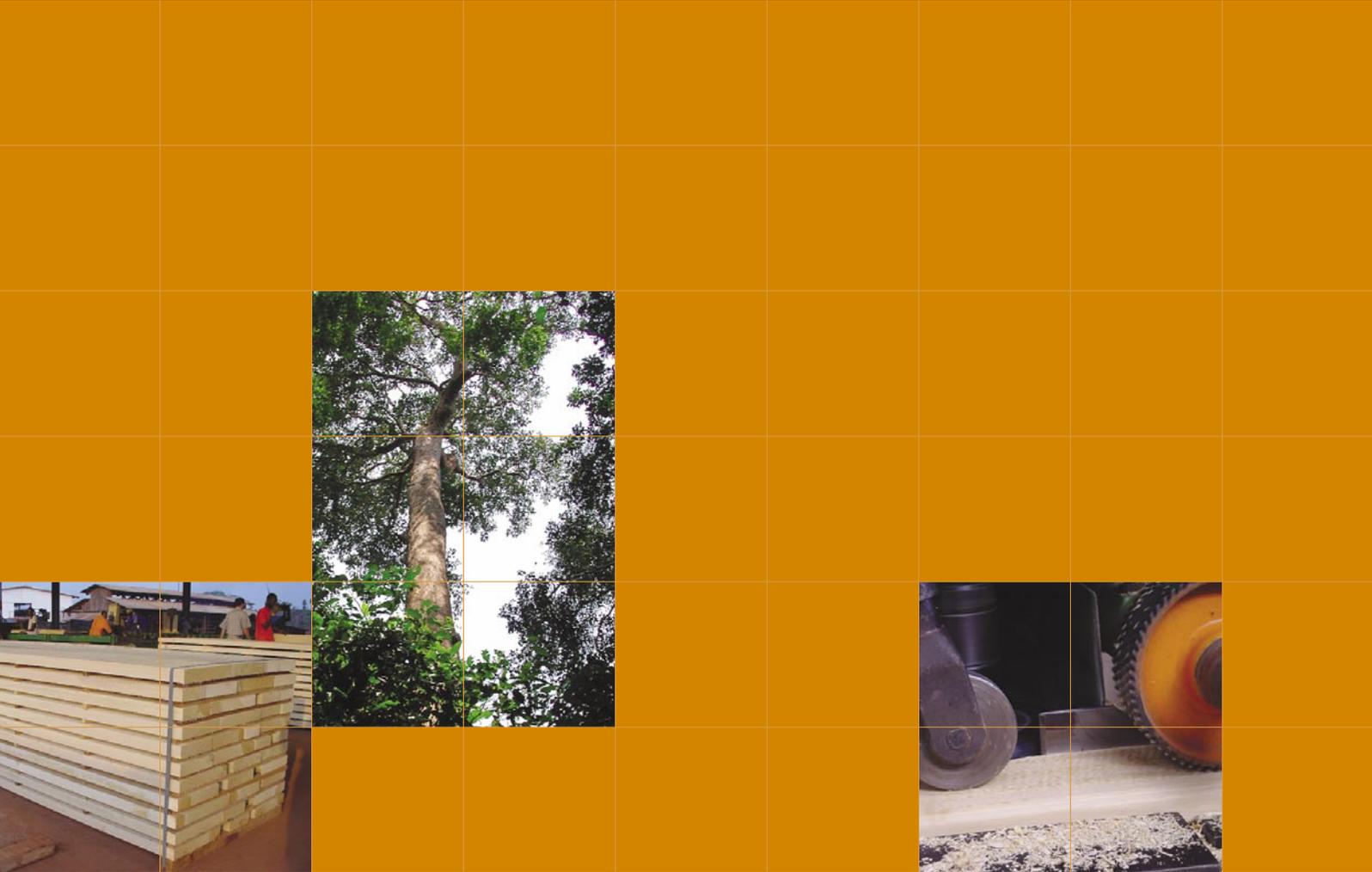
Source: COMTRADE (UNSO)

Annex 5

Constraints to forest industry development in selected African countries

Country	Constraints
Cameroon	
Constraints related to political climate	
Technical constraints	<ul style="list-style-type: none"> • Quality and quantity supply problems: the log export ban has led to an industrialization boom, with the risk of over-capacity • In general, enterprises still see forest management as an administrative constraint and have therefore taken few initiatives to implement it on the ground • Insufficient quality and quantity of raw material for factories; little promotion or use of lesser-known or unknown species • Most established timber-processing units have outdated, inadequate machinery • There is a serious lack of certain specializations such as saw-doctoring • Constraints related to standardization: the sawnwood classification rules adopted by the ATO and introduced in Cameroon in 1990 are not always applied by entrepreneurs • Industrial activity remains limited to primary processing and the vertical integration of processing operations has failed to follow the capacity boom • Companies do not recruit trained forest managers or are only beginning to do so
Economic and natural constraints	<ul style="list-style-type: none"> • Transport costs • Few available appropriate financial mechanisms
Constraints related to company strategy and forestry administration capacity	<ul style="list-style-type: none"> • As a result of legislation, factories are established in order to obtain concessions • Industrial activity seems to be geared solely to export markets, with almost all factory products being exported • Absence of a formal and organized domestic log market for factory supply • Weak domestic processed-timber market; paradoxically for a timber-producing country, there is still a high level of imports of furniture and other wood products • National SME integration into the timber industry remains marginal and limited to a multitude of small-scale woodcraft enterprises developing in an ad hoc fashion
Congo	
Constraints related to political climate	The national economy has been disturbed by frequent socio-political conflicts, leading to an interruption of industrial activity
Technical constraints	<ul style="list-style-type: none"> • Forest potential is not properly known • Unavailability of an adequate quantity of quality raw material • Very poor utilization efficiency • Lack of due professional care among forest operators • Low qualification level in SMEs • Poor transport and services infrastructure • Outdated and obsolete primary-processing equipment in the sawnwood sector Only 30% of sawmills able to give accurate export debit specifications • After Gabon, labour quality and cost are the highest in the region • Rudimentary professional training
Economic and natural constraints	<ul style="list-style-type: none"> • Landlocked country, with long transport distances and poor quality of service by the Congolese transport association • No further-timber-processing financial structure • Very limited domestic market
Constraints related to company strategy and forestry administration capacity	<ul style="list-style-type: none"> • Forest operator strategies aimed at securing raw-material supplies • No clear, consistent and agreed national forest industry development strategy • Lack of forest legislation enforcement • Non-compliance with processing rates • Inadequate timber-processing capacity distribution in national territory • Poor forestry taxation system

Country	Constraints
Democratic Republic of Congo	
	<ul style="list-style-type: none"> • Forest heterogeneity, restricting the range of species available for processing and reducing the timber supply • Distance of forests from market outlet ports • Lack of timber transport structure • Outdated processing equipment • Poor quality of manufactured wood products • Lack of credit for new equipment or the establishment of new processing units • As a result of the existing capital investment and African tropical timber product trade structure, forest operators are focused on extraction • Lack of national private investment • Low human resource capacity
Central African Republic	
	<ul style="list-style-type: none"> • Landlocked country with poor infrastructure • High transport costs • Weak and outdated industrial infrastructure • Very limited domestic market • Low level of investment and lack of national private investment • No human resource development program • Low utilization efficiency • No cross-sectoral integration policy in ministerial departments
Côte d'Ivoire	
	<ul style="list-style-type: none"> • Scarcity of raw materials; lack of quality species • Proliferation of small-scale sawmills • Outdated primary-processing infrastructure • Informal and disorganized primary and secondary production • Lack of technical equipment • Lack of skilled labour • Socio-political conflicts
Gabon	
	<ul style="list-style-type: none"> • Low harvesting and processing rate of a single species: okoume represents more than 80% of total harvested timber, which restricts product diversification and competitiveness • Limited domestic market • Inadequate taxation: no control of taxation or incidental taxation • Tax on processed products probably unjustified in relation to government objectives • Outdated processing equipment • High transport costs; little or undeveloped and very low-quality road system and lack of national highways program • Disastrous train freight system • Inadequate port infrastructure • Insufficient investment in sector development • Uncertain, poorly distributed and costly power supply • High finance costs due to inadequate banking and financial conditions • Inability of state to enforce compliance with regulations: control measures and means are often lacking, forestry administration personnel is often limited; lack of funding for the forest management department • Low domestic processing rate • Foreign private-sector industry is dominant • Insufficient and very costly labour (45,000 FCFA minimum wage, average salary ranges from 80,000 FCFA to 90,000 FCFA in logging industry)
Ghana	
	<ul style="list-style-type: none"> • Factory timber-supply problems • Low timber recovery rate in factories • Low abilities and skills among personnel • Outdated equipment • Inadequate infrastructure • Poor credit access for further-processing funding
Nigeria	
	<ul style="list-style-type: none"> • Very serious processing unit supply problems • Outdated and inefficient equipment • Secondary processing units are scattered



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