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INTEGRATED DEVELOPMENT PROGRAMME FOR THE WOODEN FURNITURE INDUSTRIAL SYSTEM

XP/GLO/93/096

Technical report: Exploratory mission*

Prepared for the Government of Ghana
by the United Nations Industrial Development Organization

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Funds Mobilization Division

* This document has not been edited.

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1. INTRODUCTION

1. The programme concept *"Integrated Development Programme for the Wooden Furniture Industrial System"* (WFIS) was developed in collaboration between the Integrated Programme Support Unit and the Agro-based Industries Branch and endorsed by the Programme and Project Review Committee on 27 May 1993.

Based on a thorough analysis of the system, starting from forest resources and forestry practices through logging, saw milling and further processing to semi-final and final products, an integrated package of activities would be developed including policy advice, technical assistance and investment promotion. The objective of the integrated programme would be to generate maximum overall benefit to the country from the sub-sector on a long-term sustainable basis.

Six countries were pre-selected for this approach in the wood processing subsector, based on the availability of wood resources, government priorities, good investment climate and potential donor interest. Ghana was one of these six countries. Under the project XP/GLO/93/096, short missions are being undertaken to the six countries in order to assess the preconditions for the integrated programme, confirm government and private sector interest in and commitment to the development of the subsector and make initial contacts. The mission to Ghana was carried out by Mr. Adrie de Groot of the Integrated Programme Support Unit and Mr. Michael J. Bond, consultant in wood processing, from 8 to 12 November 1993.

Meetings were held with Government officials, representatives of the industry as well as with local representatives of some major donors. In addition to Accra, the mission could travel to Takoradi and Kumasi, two important centres for the wood industries. The list of persons contacted is given in Annex I. While not all relevant parties could be interviewed - some were not present in Ghana - the mission feels confident that the findings presented in this report reflect the actual situation. Further, a complete in-depth analysis including all parties will be carried out in the analytical phase, if the Government of Ghana officially confirms its interest in the implementation of the programme.

2. GOVERNMENT POLICIES

2.1 Forestry and Forest Management

Forest industries and timber contribute about 6% of the country's total Gross Domestic Product (GDP) and about 11% of total export earnings. The industry is the third most important export earner after cocoa and gold.

Forest industries are recognised as important within the economy as some 70,000 persons are directly employed in the sector. It has been estimated that over 12% of the population depend for their livelihood on the forest resource.

There has been a long history of government involvement since 1906, when a Timber Protection Ordinance was passed, after which the Forestry Department was established. Increasing control of the 'closed' forest areas led to the establishment of regional forest reserves which now total 252, covering 17,000 km^2. The largest proportion of the reserves (70%) are designated 'productive' for forestry use and 30% as 'protected' for water catchment, wildlife reserve and similar measures.

A further 3,500 km^2 resource, in the rainforest region, is outside these reserves and some log production is carried out in these 'unmanaged' areas. This area is expected to be converted gradually into areas where agro-forestry is practised with a mixed use, for agriculture interplanted with trees for fuelwood and log production. It is important to know that cocoa grows best when "protected" by shade and humidity levels created by high tree cover.

In addition to the established forest areas, a Government forest plantation programme has established new areas within the rainforest region. In recent years this programme has slowed down and is now steady at some 1,000 ha per year, from a much higher level of activity (up to 13,000 ha/year) some 20 years ago.

Ghana has started to establish policies to maintain a sustained and sustainable yield from the forest resource and is certainly aware of and sensitive to worldwide concern for the destruction of the tropical forest regions. Several laws have been introduced: for forest protection, trees and timber management and to control bush fires.

The Government, represented by the Timber Export Development Board (TEDB), is also an active member of the International Tropical Timber Organization (ITTO), an organization established to support the interests of the tropical timber countries and to reach agreement on common policies for the future of their forest resources.

The ITTO has established a "Target 2000" initiative, where sustained forest management is intended to be in place by the end of the century. Ghana is planning to reach this target before the set year. Currently the ITTO is supporting work within the Ghanaian timber sector to reduce wastage in logging, extraction and processing.

The Ministry of Lands and Forestry, through the Chief Conservator of Forests (CCF) is responsible for monitoring and enforcing the laws. All forest reserves for timber production are professionally managed by senior government foresters and staff using established forestry guidelines. A "Handbook of harvesting rules - for sustainable management of tropical high forest in Ghana" was published in 1992.

A review of the forestry sector was carried out during the late 1980s within the Global Tropical Forestry Action Plan (TFAP) programme of the FAO, with assistance provided by ODA, IDA and DANIDA. As a result, a Forest Resource Management Project (FRMP) was developed which is currently in progress to improve forest planning, control, harvesting, replanting and conservation. Support and assistance for the FRMP is provided by the ODA.

Information from programmes within the FRMP will be valuable material for an assessment of further requirements for management of the sector and for 'linkage' with other timber and wood user groups. The main objective of the FRMP is to continue the management of the forest on a sustained yield basis and provide appropriate high value industrial materials for further processing within the country.

Controls on chainsaw use have been introduced to prevent indiscriminate and virtually uncontrollable cutting by small operators.

In a recently updated TEDB Report on the industry, "The Ghana Timber Industry - Basic Information, Facts and Figures", page 6, Timber Export Development Board, September 1993, key objectives of the forest policy include:

"develop(ing) the domestic market for our forest products",
and "strengthen and diversify the production base of the industry to eliminate waste and production problems"

According to the government officials interviewed, policies are aimed at a reduction of roundwood (log) exports and the development of sawnwood and further processed wood products. In recent years a number of attempts have been made to control log exports by selective bans as well as export taxes and levies on specific log species.

The success of these policies has been rather mixed. Over the past 5 years there has been some reduction in the volume proportion of log exports, from about 60% to 40%, and a corresponding increase in sawnwood (33% in 1987 to 51% in 1992. However, there has been little change in the main product 'mix' with logs and sawnwood still representing over 90% of exports throughout the 5 year period and only a small 3% growth in further processed products during that time. This pattern continues with a particularly large volume of the lesser known, not banned species of logs exported throughout the summer of 1993 and a large number of logs awaiting shipment at the port of Takoradi towards the end of the year.

2.2 Timber and Wood Industries

Two government agencies are directly involved in the management of the industry, the Timber Export Development Board (TEDB) and the Forest Products Inspection Bureau (FPIB).

The FPIB is responsible for the strict government control on the industry. It monitors log marking and log, sawnwood and veneer grading. The FPIB also compiles the production and export statistics for publication by both organizations. A detailed monthly list is prepared by the FPIB showing the export performance of each exporter by volume, value and product. The timber species and export destinations are also listed. These details are valuable for further analysis purposes.

There is an export ban in force on 19 named (higher value) log species together with strict price controls on others. A current topic is a government proposal to, again, ban the export of logs from January 1994. Export log bans were introduced in the past but had a dramatic effect on export earnings and the policies were reversed. Other policy proposals include a continued export ban on the 19 named log species plus an increase in minimum prices and variable levies on further named species. (Annex II)

Exports of logs, sawnwood, veneers and other processed timber products are directed through the government Timber Export Development Board (TEDB) in Takoradi and London, UK. All exporters and buyers register with the TEDB in order to be able to trade and all export documents are routed through the Boards. Contracts and product details are checked for volume (m^3) and value (DM) before being approved for shipment.

It is unusual for a tropical wood producer country to maintain an overseas office but the Board feels that the office is central to their main markets and they can carry out market intelligence and price negotiations more easily. Operational costs of the TEDB are borne by a levy of 1% of FOB value on exports. About 35% of the levy is used for the London office and promotional activities in export markets.

A "Ghana Hardwoods Trade and Industry Directory" was published in 1991 by the TEDB. This is a comprehensive directory aimed at export markets. In addition, an occasional newsletter "Ghana Gazette", started in 1992 by the TEDB, provides a summary of activities and general industry information.

Government policy is now moving away from public sector involvement towards privatisation of the industry. Nevertheless, some eight large companies with a considerable share in exports, are still government owned. (See Annex III). Private sector competitors claim that these are being given unfair advantages.

Some of the recent policies appear to have created conflicts of interest, for example, between the logging and sawmilling operators and have led to undesired results. The export ban on logs for 19 species for instance has apparently led to a concentration of logging efforts on other species, with the result that shortages of the 19 species developed on the local market, the contrary of what was intended. This is partly caused by the high difference between export and domestic prices (up to a factor 5). Unless policy issues such as these are resolved, exports may be disrupted and development and growth of the tertiary sector could be delayed. Comments have been made about the suitability of the existing industry structure and if it was suitable for encouraging and sustaining growth. These issues require further study during the analytical phase in order to recommend changes and develop policies that ensure a balanced development. For instance, loggers complained of their dependence on the millers to transport the logs from their concessions. Sawmillers owned nearly 80% of the heavy equipment and transport necessary to transport the logs to sawmills or export markets, apparently as new equipment procured a few years ago under a special credit was allocated by the Government to sawmills. These issues are further discussed in the next chapters.

3. SUPPLY OF MATERIALS AND PRODUCTS

3.1 Logs from Forests

From recent work carried out on forest inventories, the volume of mature and marketable trees has been estimated at 102 million m^3. Another 86 million m^3 has been classified as immature. The safe Allowable cut has been estimated to be 1.1 million m^3 per annum, arrived at by the World Bank Forestry Sector Review in 1987.

Log production, for industrial wood, extracted from the reserves and unreserved forest is currently between 1.1 - 1.3 million m^3 per annum. Of this production over 60%, about 770,000 m^3 is for local wood usage with around 40% (500,000 m^3 roundwood equivalent) for export.

In addition to the above, an estimated 11 m^3 million is used annually both locally and in urban areas for fuelwood and charcoal. This is 10 times the volume of logs extracted for timber! Although a good part of this obviously could not be used as logs, it represents a considerable pressure on forest resources. As fuelwood and charcoal account for 80% of the country's energy needs this will have to be taken into account when planning for sustainable forest use.

There are some 60 commercial and "potentially commercial" tree species designated as "Class 1" with about 40 regularly traded. Of these, the following 19 species cannot be exported in unprocessed log form:

Wawa	Utile	Odum	Emeri
Sapele	Afrormosia	Asanfona	Mahogany
Ofram	Danta	Makore	Mansonia
Edinam	Hyedua	Niangon	Kosipo
African Walnut	Avodire	Teak (Plantation)	

All other species can be exported as logs with following being the main ones traded.

Kyere	Ceiba	Bombax	Otie
Guarea	Esa	Abura	Kaku
Kussia	Aprokuma	Chenchen	Dahoma
Canarium	Apa	Ayan	Afina
Albizzia	Wonton	Ogea	Okan
Bubinga	Kokote	Potrodom	Sterculia

The about 200 logging companies work mainly within log concessions allocated by the government. Concessionaire lease agreements are for 5 years but renewable. No renewals are being undertaken at the moment until a new timber law, which is with the Government, has been passed. This is expected to be some time during 1994. The proposed law is contentious, particularly those clauses regarding a new condition - the further processing of logs by the concessionaire in addition to logging and extraction.

The lease agreements include limits on the sizes of logs that can be felled. A minimum of 70 cm to 110 cm log diameter is listed, depending on the species. Some concern had been expressed by foresters about the logging practices in view of the programme to improve forest management. Also, a recent study of felled log sizes by the FRMP team found that many logs were under the allowable logging sizes. It would appear that also the short period of the loggers' concessions does not provide the incentive to leave under-sized trees for future logging nor for replanting.

Loggers also complained about low domestic prices, also of the 19 higher value species that cannot be exported. This is caused partly because they cannot be exported. According to the loggers, domestic prices at around 20,000 cedis/m^3 compare with at least 80,000 for exports. A considerable amount of sawn wood exports are in fact simply sawn "through and through" into "boules" for export. This is a process of simply sawing the log into boards and packaging it in "log" form with very high m^3 yields, but classified as sawn wood. Some export markets, such as Germany, prefer this method of supply for certain species as the colour and texture of the timber is even and the boards are wide. Value added is limited but the process is driven by the difference between local and export prices. It may be doubted that this was the intention of the government when policies were set.

Currently, agro-forestry is being encouraged in unreserved areas to help the rural population with agriculture, and fuelwood and charcoal production. In the medium term, this may be a considerable source of fuel wood as well as some logs. It will however obviously take 10-20 years before this becomes effective.

3.2 Wood Plantation

The total area under forest plantations is recorded as 76,460 ha of which about 50% (38,560 ha) is Tectona granais (teak). Roughly 10,000 ha of the teak is 20 years old. Other species planted include: Cedrela oderata, Eucalyptus, Gmelina arborea, Terminalia ivorensis, Triplochiton scleroxylon and Mansionia altissima. The success rate of new plantation areas is about 60%.

Of the total, about 26,000 ha are commercial timber plantations in the rainforest zone with another approximately 50,000 ha in other areas supplying local needs. Additional plantations are being introduced in the transition zone at about 1,000 ha per annum as part of an FAO/ODA supported plantation programme. The Government would like to "speed up" the plantation programme.

About 3,000 ha of Gmelina species plantation was established at Daboase, Western region, some years ago in anticipation of use for pulp and paper production. Although many feasibility studies for developing the paper mill have been undertaken, down line investment has not progressed and the "growing stock" is now becoming mature. Investment prospects for this resource are again being discussed at government level. A very recent study (by Swedforest) on the Daboase plantation, proposed establishing a sawmill to use the wood for other products such as furniture. Government officials requested UNIDO assistance for a full review of the situation before any investment decision is taken. An official request is expected, for which SIS funding could be suitable.

The industry associations which represent logging, sawmilling and furniture companies, have established a reafforestation fund, based on voluntary contributions by the industry equivalent to 1% of FOB export value. It was said that a total of some 800 million cedis was available. As part of a recent initiative, the fund assisted with an agro-forestry project after a request from the district concerned to a value of 10 million cedis. Some 130 ha were planted with seedlings provided by the fund. A 113 ha tree seed orchard (nursery) has been planted by the Associations providing seedlings mainly for teak, wawa, ofram and in addition, acacia for firewood.

A representative of the Association of logging companies stated that his members intended to increase to 2% their voluntary contributions to the reafforestation fund.

3.3 Other plantations

A non-forest plantation of rubberwood, reported to be about 3,000 ha could become available for industrial wood production as the trees are becoming too old for latex production. It is said that the rubber plantation may be sold to a foreign company partly for the industrial wood.

Other non-forest plantations such as coconut and palm oil and possibly cocoa can be used for their wood when trees become too old. Figures on area under such crops were not available. As production develops and where sufficient volume is grown, coconut palm wood and palm wood should be considered further for use as industrial wood and/or fuel wood.

3.4 Rattan and cane

Rattan is another raw material that grows naturally in the region although information on the volumes available is uncertain. This material has become valuable for use within the furniture sector: for tables, chairs, small cabinets and similar items. Some small scale furniture production by artisans is developing rapidly as evidenced even on the side of Accra roads. Depending on an assessment of volumes available, rattan and cane should be considered further to see if there are opportunities to produce, develop and process this renewable material for a larger scale industrial export.

3.5 Sawnwood

There are just over 100 mainly privately owned sawmills buying "saw logs" on the open domestic market to produce sawnwood (lumber) for export and domestic markets.

Eight of the larger capacity mills are state owned enterprises and some have completely integrated operations. Integrated mills have logging, extraction, transportation, sawmilling, veneer production and some further processing capacity. According to a number of sources, some of the state owned mills achieve low levels of utilization and poor productivity.

A number of the mills are old established companies that were equipped up to 40 years ago. According to many sources, the general state of equipment is poor and considerable investment in new equipment and for rehabilitation of equipment appears to be required.

In 1989 overall capacity utilization was reported to be 60% and sawmill conversion efficiencies (yield from a log) 57%, dramatically improved from a 35% yield 5 years earlier. The improvement in yield was felt to be due to improvements and repairs to equipment together with the addition of re-conversion machinery and facilities. This figure however was doubted by others. It now needs review and updating. In addition a review of the actual condition of the production facilities and equipment appears necessary.

A major development is currently under way which should help expand and improve the marketable value of sawnwood. A joint-venture company, mainly privately funded (by local and international interests) with a 10% interest by the TEDB, has been established to provide additional kiln drying capacity to the industry on a contract basis. Two modern controlled drying facilities are being installed in main centres of the wood industry; 1000 m^3 capacity in Kumasi and 500 m^3 in Takoradi. This development should help sawnwood exports and allow the growth of further local processing of the sawnwood.

Some private sawmilling companies are also expanding and investing in kiln drying and separate new production facilities for the manufacture of further processed wood products such as building products and furniture parts.

3.6 Veneers

There is a small number of mills producing veneers for export and to feed their requirements for plywood manufacture.

Both rotary veneer, where the veneer is peeled from the log, and sliced veneer is produced. The rotary cut veneers are generally thick, for use as "constructional" plys in the centre of plywood and some are exported for industrial production in Europe. Some thinner outer veneers for lower value applications are also "rotary cut". Sliced veneers are generally thin (0.6 mm thick) for decorative use on the outer faces of a substrate. Sliced decorative veneers have a high value in export markets where they are used extensively to provide a decorative wood surface on particle board in furniture and similar applications.

West African tropical wood species are favoured overseas for decorate uses and sliced veneer production provides a good volume of material from the log. This process is also seen by many consumers as a good way to use and conserve more "prized" tropical wood.

Unfortunately, veneer production equipment is reported to be generally old and in poor condition. However the product is likely to have good potential in the longer term, and could provide an important link with furniture manufacture. In view of this, some attention should be focused on sliced veneer (highest value) production.

Veneer "lay ons" are important, more labour intensive further processed products which use sliced veneer laid in a decorate manner. These are used in export markets for decorative products such as flush door facings and panelling.

Some reconstituted veneer "flitches" are manufactured. These are veneers bonded together for turning on edge and re-slicing. The result is smooth, regular straight grain veneers with an even colour. This is the type of product where an analysis of its market potential should be carried out before recommending further investment in the process. Market knowledge is essential. The fashion for this as an exportable product may have passed and the return on any further investment may not be worthwhile.

3.7 Plywood

Plywood is produced by a limited number of companies including some of those which are state owned.

The plywood is reported to be generally of a low quality with glue lines not of the required export standards. However, the standard specifications produced may be suitable for some applications and markets.

A lot of the equipment in use is said to be due for major repairs or replacement. Replacement may be difficult to justify as modern plywood manufacture is rather capital intensive.

Plywood, as a product group, represents the smallest proportion of exports. Prospects for further "added value" are poor unless quality can match market requirements. This situation is partly due to the highly competitive nature of international plywood trading and a large production capacity from Far Eastern producer countries. In addition, the pattern and use of plywood is changing as consumer countries substitute their plywood use for domestically produced wood particle or fibre based alternatives.

3.8 Machined Timber and Building Products

The capacity for producing further processed products is understood to be much smaller than for sawnwood and limited in scope at the moment. Controlled wood drying capacity, which is necessary prior to machining, is limited and machining for export is only carried out by a small number of companies. Some of the production is for internal consumption with sawmill output being used to make wood parts, building products and to supply small urban workshops and artisans who make products to order. Some production of door and window framing as well as solid doors exists but distribution within the urban areas may be a limiting factor and quality currently is too low for export.

3.9 Industrial products

Transmission poles for electricity distribution are one of the main industrial wood products produced for export and internal use. These are mainly produced from teak which is removed as small diameter poles from the teak plantations in the necessary thinning process as the plantation matures.

Broomsticks have been manufactured for export over a number of years. This shows the potential market for this type of product, used throughout the world in large quantities. Similar products such as tool and implement handles which could be manufactured in volume for local and export markets are not currently manufactured in any volume. An advantage of producing more of these products is the utilization of smaller wood sections which otherwise would largely be wasted. This can increase sawnwood yields and provide good returns from the timber. Many other industrial and consumer products could be considered including kitchenware and decorative items but some research may be required on the wood species suitable for different end uses.

3.10 Furniture and component parts

Furniture and furniture parts are manufactured in volume by a few companies with one producer (Scanstyle Mim) responsible for most of the exports. Garden furniture is one of the successful items.

There is a feeling of confidence within this sector, probably due to the publicity generated by the one main successful producer and exporter. The company, originally established by a foreign entrepreneur to use the off-cuts of a large sawmill, is frequently mentioned and in a positive way.

It would be particularly important to evaluate the structure, organization and management methods of this main exporter. They are known to be closely linked with their main markets and this may provide a model for other companies. It is important to know that the company employs some key expatriate staff.

Furniture manufacturers are reported to have spare capacity and are actively trying to expand their marketing arrangements and opportunities. Production capacity is however only one aspect, their design, product development, marketing and management skills may need to be strengthened. Several expressed interest in various forms of partnerships with foreign companies to ensure quality and facilitate market access.

One problem is that currently most furniture producers are producing "everything". No specialisation or cooperation exists, little dedicated equipment exists. This obviously does not promote quality or productivity. Currently, an EEC funded project works with six selected furniture manufacturers, trying to bring them to export standard through intensive support by expatriate experts.

International publicity for furniture and woodworking has been carried out via trade exhibitions over a number of years. These have largely been held to generate interest for overseas buyers and to develop trading relationships for production equipment, tooling, materials and associated technologies. The 5th Ghana International Furniture and Woodworking Industry Exhibition "Gifex 93" held in Accra during October, provided a key message - "Processed wood - the answer to our forest sustenance". This headline provides an insight into the public relations approach of the sector. It is interesting and significant that at the exhibition free space was given to "Friends of the Earth", an international N.G.O. active in environmental conservation.

Furniture for local use appears to be made largely by local craftsmen in the smaller urban workshops.

3.11 Other materials

The majority of materials used within the wood, woodworking and wood furniture sectors are imported. Adhesives, paints and lacquers are from EC countries whilst fasteners, screws and hardware are mainly imported from Taiwan. The one local paint/lacquer manufacturer apparently does not produce the quality required for exports.

Plastic foam products (polyurethane) used for fillings in furniture cushions, are foamed and converted locally - 2 plants are located in Kumasi and 4 in Accra. Furnishing fabrics and packing materials are imported.

As the industry expands into further-processed wood products, there will be many development opportunities arising for linking with other sectors. Chemical products (adhesives and lacquers), metalworking (tools, machine spares and hardware) and textiles (woven fabrics) could be developed to support the wood industries with locally produced materials.

3.12 Equipment and Machinery

Most of the machinery and equipment used is imported from Europe. Older equipment is from the UK and Germany with plywood and veneer plant mainly from Italy. Machine spares are sometimes difficult to obtain and repairs are mostly carried out locally. Some tooling is available locally but much is still imported, particularly where further machining is carried out and furniture parts are manufactured.

There are government incentives available for machinery and equipment if wood processing is carried out for export. These include:

- exemption from customs duties;

- Capital allowances of 40% in year 1 and 20% in subsequent years;
- Investment allowance of 7.5%;
- An exporter's retention account of 20% for sawnwood lumber and 35% for value-added products. Funds are held in London for purchase of equipment, spares, etc.

Within the furniture sector small, hand-held, electrically powered tools are used extensively, inter alia, showing the small-scale nature of production. In view of this, and the current high cost of each company importing them, the Ghana Furniture Producers Association (GFPA) are considering buying a range of these in bulk and selling them to their members at cost prices.

It will be important to recognise that where larger, more complex equipment and tooling is employed for woodworking and wood furniture manufacture, the demand for technical skills within the factories will increase.

4. EXPORT TRADE IN TIMBER AND WOOD PRODUCTS

The annual value of the industry's export trade is about US$ 126 million (1992).

Table 1 shows a summary of timber and wood products exported during the early part of 1993, together with the volume and value FOB of export trade. This gives a good indication of the wood materials and products supplied to export markets.

A large amount of data is published by the FPIB and the TEDB on the export performance of individual companies within the subsectors as all exports are monitored by the Bureau.

Table 1 shows that about 43% of the volume is logs and a small volume of "curls" for further processing. Sawnwood, 47% of volume, represents the main export product group with "boules" included. In value terms sawnwood returns over twice the amount per m^3 compared with that from logs. Veneers are about 5% of the volume but in value terms, sliced veneers including "layons" are well ahead at 10% of the value of 11 exports and a high value per m^3. The total of all other products are 5% of the volume but over 9% of the value including plywood with a very low volume and value.

The average value returned per m^3 for further processed products and furniture parts is high and over 8 times the return on a log!

Some care should be taken with the m^3 values shown as the yield in m^3 from the log decreases with further processing. The yield in Ghana overall has yet to be documented. A reduction in yield will reduce the return in m^3 for the product. However, as much of the wood "lost" in further processing is or can be recycled for other purposes within the country, and this work provides employment, the benefit of adding value by further processing is clear. Diversification to smaller wood products would enable the overall yield to increase.

The EC countries have historically been Ghana's main export markets with EC countries still accounting for 85% of the exports in 1992. Table 2 shows the actual market destinations for various products imported from Ghana.

Countries have different and changing preferences for their industrial wood. This is a feature of international trade and exporters need to be aware of any changes that are taking place in their markets. Also, they must be able to determine what further processing of the wood is of benefit, and of value, to a customer. Additional processing will not necessarily increase the value/m^3 in proportion with the yield. This is nicely demonstrated in Table 1, where the value/m^3 of plywood is virtually identical with sawn wood and rotary cut veneers (which anyway are used in plywood).

TABLE 1: Summary of Leading Timber Exports by Product Volume and Value January to May 1993

	Product	m^3	Volume m^3 000s	%	Value DM Million	%	Average Value DM/m^3
1	Logs including Curls		93.7	42.9	19.42	2. .9	207
	for further processing	0.4					
2	Sawnwood including		87.9	40.2	41.43	46.8	471
	Air Dried	77.2					
	Boules (sawn through)	3.5					
3	Sawn wood (Kiln dried)		14.8	6.8	8.24	9.3	557
4	Veneers (sliced)		6.7	3.1	8.86	10.0	1,322
	including layons	0.2					
5	Poles including		6.5	3.0	2.01	2.3	309
	Broomsticks	0.02					
6	Veneers (Rotary Cut)		4.3	2.0	2.32	2.6	540
7	Processed Products including:		2.4	1.1	2.95	3.3	1,229
	Flooring	1.2					
	Mouldings	0.9					
	Profile boards	0.2					
8	Furniture parts		1.6	0.7	3.03	3.4	1,891
9	Plywood		0.6	0.3	0.34	0.4	567
	TOTAL		218.5	100.0	88.60	100.0	405

TABLE 2: IMPORT COUNTRY DESTINATIONS OF TIMBER AND WOOD PRODUCTS FROM GHANA, JANUARY - MAY 1993

Product	Country	% Total Exports by Product	Trade by product value %
Logs	Germany	57	62
	Italy	11	11
	Japan	10	9
Sawnwood lumber -Air dried and kiln dried	Germany	22	20
	Ireland	14	17
	UK	12	12
	Netherlands	12	12
	Saudi Arabia	9	10
Boules	Germany	77	70
Veneers: - sliced	Italy	33	37
	Germany	25	26
	UK	22	17
- Rotary cut	Germany	44	45
	France	38	37
- "Layons"	UK	34	33
	Australia	27	27
	Belgium	21	18
	Germany	18	22
Processed - Flooring	Italy	68	63
	Spain	29	33
- L/Moulding	Germany	46	40
	UK	25	29
	Netherlands	22	21
- Profile boards	Germany	61	69
	Netherlands	35	27
Furniture Parts	UK	89	88
Plywood	Guinea	67	65
	Germany	19	25
Broomsticks	UK	48	54
	Germany	38	32
	Italy	14	13

5. STRUCTURE AND STATUS OF WOODWORKING SECTOR

The "Ghana Hardwoods Trade and Industry Directory", published by the TEDB in 1991, provides comprehensive background information on the industry. Updated information is available with the TEDB. In September 1993 the industry structure was as below:

Activity	Number of firms(approx)
Logging	200
Sawmilling	103
Ply milling	9
Veneer milling	15
Chipboard Manufacture	1
Furniture Manufacture (registered)	200
of which medium/large	40
Flooring	6
Doors	6
Mouldings	7
Toys	2

Most firms are small private companies but as mentioned before, there are eight large state owned companies involved in logging, sawmilling and some further processing. At least three, and possibly later all eight, of the state owned companies are for sale as the country proceeds with the planned privatisation programme. Little interest has so far been shown in these companies, although they have large log concessions and processing capacity. An FAO sponsored privatisation seminar is being considered.

Various studies on different aspects of the industry have also been undertaken. An industry study (audit) has been carried out recently by a Canadian team. This should provide background data for the ability of the industry to increase their wood processing activities.

Logging is mainly carried out in the Western Region of the country and the railway system is being extended further into that region to service the industry. Improvements to the track and replacement diesel engines should improve the infrastructure. Problems with transport capacity is considered by the loggers to be limiting the flow of logs.

One highly ambitious development plan for part of the industry is a project for the development of a wood centre - "The Wood Village Concept" in Kumasi. This plan intends to concentrate various activities of the wood industry on a single site of 50 acres. Then large and many smaller companies were to be established or relocated there in order that skills in short supply, such as training, tooling and spares, could be better serviced. The site has been secured but development has not progressed very far. As a single project, the plan may have been too ambitious (an amount of up to $500 million for total costs was mentioned) but elements of it may provide a way forward for the industry.

The industry is represented by a number of trade and industry bodies: the Ghana Timber Association (GTA) represents the loggers, the Ghana Timber Millers Organisation (GTMO) represents sawmilling and secondary processing and the Ghana Furniture Producers Association (GFPA) covers the tertiary sector.

An umbrella organization, The Association of Ghana Timber Industries (AGTI), was established less than two years ago to represent the members' common interests to Government. However, at the moment, the AGTI appears to be "falling apart" over differences of interest. This breakdown will not help the process of government policy making as the privatisation of industry moves ahead and new regulations are introduced. To ensure a healthy industry, good trading relationships and links will be necessary.

6. HUMAN RESOURCES

Very little information was available on the level of skills available within the industry. Within a TEDB report, it is said that production enterprises lacked the required skills and personnel at managerial and shop floor level. Whilst there has been substantial research and training in forestry and silviculture, there appears to be a greater need now in training and other activities related to further processing of wood.

Wood inspection and grading staff are all trained and monitored by the FPIB, whilst the TEDB are involved with expanding the former "sawdoctors" school into a "Wood Industries Technical Centre" in Kumasi. This is due for completion in 1994. The centre is planned to broaden the range of skill training offered to persons within the industry to include cutting tool maintenance.

Operator training and technical advice is also being provided as part of the TEDB supported consultancy programme to improve kiln drying in the wood industry.

The first phase of an EC funded project, to train and develop management staff and systems within the furniture manufacturing sector is nearing completion. In addition, it is understood that there is a separate German funded development programme for training in furniture manufacture.

Local development initiatives are considered to be important, particularly in regions of the country where there are limited opportunities for employment. As a contribution to the government "Rural Action Programme", a small factory has been set up in Tamale in the Northern Region. This was established with German development funding in conjunction with the Ministry of Science and Technology to make small hand tools and implements. The business has recently been privatised.

Most of the smaller private manufacturing companies suffer from a lack of management skills once they expand beyond a certain stage. An owner is usually able to manage a business up to this stage but once volume production or export contracts are started to be considered, management problems arise. It was frequently said about the management of small businesses ". . . people try to do it all themselves". This fact has been recognised in Ghana and an organization (EMPRETEC) has been set up to overcome some of these particular difficulties.

EMPRETEC was established by UNDP, ODA and Barclays Bank Ghana, Assistance is provided to owners or senior staff of established companies, "start up" situations are not normally considered. the work mainly involves:

- Entrepreneur training
- Management development programmes
- Extension Programmes - specific needs
- Loan monitoring

- Establishing appropriate export specifications
- Developing joint venture, licensing and subcontracting agreements

It also includes a procurement scheme with the U.K. Crown Agents, also to ensure granted credits are used for the agreed equipment.

In most situations a staff member, many of whom are British expatriates, is assigned to a particular person or company. This approach has been used for many small company development situations and should be considered for use within the wood industries sector.

It seems however that the overall needs of the wood processing sector are not being considered by any of these parties. Large gaps in volume and subject coverage exist. For further development a more systematic approach to develop the human resources, so essential for export development, is required.

7. PROBLEMS AND CONSTRAINTS

There is positive recognition of the necessity to undertake sustained management of the forest resource. However, the existing rates of replanting are unlikely to be sufficient to ensure reafforestation at the required level. The existing royalty collection on logging is too low to provide the funds necessary for sustained and sustainable forest management. Other methods of funding forest management on an on-going basis will need to be found. Much higher rates of replanting are required urgently to ensure long term supplies of key species and safeguarding remaining forests of the considerable reserved areas. Large areas need to be replanted urgently as currently they are not fully forest covered and therefore not productive. Although the forestry department is strong at the central level, there are serious institutional weaknesses at the district levels.

Early observations indicate the industry does not operate smoothly. there are a number of conflicts of interest within the wood supply chain, mainly for log supplies. In part, these are caused by government policies on prices and duties. Government policies affecting the subsector are inconsistent. To gain the confidence of the subsector, and to ensure a balanced development, consistent longer term arrangements are necessary together with appropriate taxes and incentives.

The AGTI, an organization recently established to represent the views of the wood industries to the Government, appears to be breaking down into its components of logger, sawmilling and furniture maker associations. Some form of reconciliation between the membership should be found for the industry to benefit. This would be greatly facilitated by a better management of the subsector as a whole, defusing current conflicts.

The different components of the industry must co-operate in their trading relationships. This will be very important for further processed wood products and furniture where it is essential to have reliable and consistent supplies.

There is considerable pressure on forests from the local needs for fuel-wood. This will have to be taken into account.

The industry as a whole appears to be processing the wood resource inefficiently for various reasons, including:

- logging below the minimum allowed diameter;
- high losses in sawmills
- domestic use of higher value species for low specification purposes;
- non-existent treatment facilities for softer woods to allow substitution in domestic market;
- low use of lesser known species (low international demand and low prices for non-standard species)
- use of good quality wood for low value applications (e.g. low specification plywood);
- high waste of wood as there is little processing of smaller parts of wood produced in logging and sawmilling;
- under-use of rattan and cane for export manufacturing.

The Government, through various agencies and state owned firms, still controls many aspects of production, trading and all exports. The involvement in production is creating considerable friction and uncertainty in the industry and possibly conflicts of interest, while not providing maximum economic benefit. As the private sector increasingly manages the industry, careful consideration should be given to the government concentrating on overall management of the subsector, and creating the right environment for investment and promote balanced development opportunities. It should then withdraw from production itself.

Technical and management skills in the subsector are weak. This affects not only the technical quality of products, but also efficiency of production, choice of equipment and other factors. Also design skills for export markets, including specifically for knock down furniture are virtually non-existent. A combination of operator training in vocational training establishments, higher level training for designers and technical managers, and in-plant support for technical and managerial skills would be required. Even if this is done, partnerships with foreign firms are probably the only short term solution for this problem. this would also provide long-term market access.

For development of final products, much more use of kiln dried wood is required. While additional kiln drying capacity is being introduced this is unlikely to be sufficient. In addition, distribution arrangements will need to be developed covering the whole country. Also wood treatment plants need to be established in order to stimulate use of lower value species for local building and other product markets.

Hardly any production of required ancillary materials and tools exists in Ghana. For a successful furniture and wood products industry, local production of items such as glues, paints and varnishes, some hardware, upholstery fabrics and woodworking tools and equipment would be very important and provide a considerable stimulus.

Whilst export marketing on behalf of the timber and wood industry is undertaken by the TEDB, other wood products such as assembled furniture and doors are promoted through the Export Promotion Council (EPC), who market "non traditional products". A review of this situation may be in order to eliminate duplication and reduce costs.

Export markets for further processed wood products and furniture are difficult to penetrate, and competition is very strong. Various forms of partnerships with foreign companies including joint ventures, marketing arrangements, subcontracting etc. should be given consideration to overcome these problems and facilitate long term market access. This would simultaneously address the problem of design skills and knowledge of market demands, facilitate quality improvement efforts and reduce marketing costs, as well as provide capital.

8. PROSPECTS

Timber and wood production is well established and recognised as in important part of the economy. In contrast, woodworking and furniture industries are fragmented but present a natural path along which to expand and improve the "value" returned for a given volume of wood.

The tropical forest resource is still substantial. Ghana is serious about managing the reserved rain forest areas for long term wood production. Also, plantations for wood production have been introduced. As forest management and wood supply becomes more stable, wood user industries will become more secure. In addition there are considerable amounts of rattan and cane that could be used for furniture production as well as other raw materials, like rubberwood, that may be available.

Privatisation of the state owned companies within the wood industry is likely to proceed as investment conditions improve and government controls on the industry are modified.

The railway system, harbour facilities and key roads are being improved. These developments will help the wood industry.

There is a willingness by government to find ways to encourage inward investment, particularly for further processed wood products. Sawmill owners, as well as the furniture makers, expressed considerable interest in various forms of partnerships with foreign owners, up to and including shared equity. They were certainly aware of their own limitations and the many potential advantages that foreign partners could bring.

As further wood manufacturing processes increase, there will be a growth in demand for other supplies, such as varnishes, paints, glues, hardware, etc. Opportunities will start to become available for import substitution, with investments in other industries for locally manufactured supplies becoming attractive.

The UNIDO concept for an industry-wide integrated programme within the wood sector was well received by the different government ministries, the private sector as well as the local representatives of donors. Specifically the private sector representatives considered that further studies and a balanced programme could help in defusing conflicts of interest and facilitate development of objective policies. Representatives seemed willing to lend support to the concept, or become directly involved. The conditions appear to be very favourable within the woodworking, wood product and wood furniture subsectors.

The Government is currently seeking World Bank funding for projects within the wood industries sector. Their current proposals include: "A study of the market ... a survey of what capacity is available in further processing ... an analysis of other work carried out ... furniture manufacture would be a main focus".

In late 1994, Ghana is planning to hold a UNIDO-sponsored Investment Forum where a range of activities would be promoted to potential investors. The Ministry of Trade and Industry felt that this Forum would be a key opportunity to promote the subsector for investments, as well as specific projects. The Forum was also thought to be an appropriate time to secure donors for, or confirm interest in, technical assistance elements within the programme. This however would require the early completion of the analytical work and the development of the draft integrated programme.

9. CONCLUSIONS

The situation in Ghana in the wood and woodworking subsectors is definitely suitable for an integrated programme of policy support, technical cooperation and investment promotion activities in support of the Ghana Government and industry. It could even be said that an integrated approach is required if the industry and the forest in Ghana is to have a long term future.

All parties in Ghana enthusiastically supported the concept and assured their cooperation in subsequent analytical work as well as in the implementation of the programme. The authorities have in place already a relatively well organized monitoring and control system for the industry, which could be strengthened and used in the programme. All parties also appear ready to proceed with promotion of foreign direct involvement in the development of the sector. An official government request to proceed with a full analytical phase is expected shortly.

It is expected that optimum use of the forest resources and plantations will lead not only to much higher export value for the country, but also to a much more independent industry not relying as strongly as it does now, on volatile world markets for logs and other commodity products. A diversified woodworking sector which maximizes use of wood is also likely to generate considerable employment in small, medium and larger scale industry with a large variety of products. This in turn would create considerable opportunities for ancillary industries that, relying on the wood processing subsector, could develop products like paints and varnishes, glues, hardware and other finishing materials, tools and equipment, etc.

It would also seem that Ghana is relatively attractive for direct foreign investment. It recently signed a World Bank Investment Guarantee Agreement (MIGA) which should give more security to foreign equity investors.

A three to five month in-depth analytical phase is required to obtain a complete understanding of the overall system, material flows and opportunities, before a draft programme of activities can be developed. A major task will be to review the considerable amount of studies and information available, and assess ongoing activities in the subsector to ensure that no duplication of efforts will take place. Throughout this phase, intensive involvement of government and private sector is required. Draft proposals should be discussed at a workshop involving all parties, including interested donors, before a complete set of proposals is prepared. If possible, this should be completed before August/September 1994 when the investment forum is likely to be held. A project proposal for the analytical phase will be prepared shortly for promotion to potential donors.

ANNEX I

LIST OF PERSONS CONTACTED

Ministry of Finance and Economic Planning

Mr. Charles Abakah, Director
IERD/MFEP

Ministry of Trade and Industry

Mr. Jonatnon R, Owiredu, Deputy Minister
Ms. Hannah Woanyah, Chief Director

Ministry of Lands and Forests

Mr. Kese, Deputy Director, Forestry Department, Accra
Mr. Boachey-Dapah, Planning Officer, Forestry Dept. Kumasi

Timber Export Development Board

Mr. Alhassan Attah, Deputy Director,
Monitoring and Statistics Department, Takoradi
Ms. Janet Daniels, Public Relations Officer, London Office

Forest Products Inspection Bureau

Mr. Francis L.A. Akrong, Chief Executive

Ghana Forest Inventory and Management Project, Kumasi

Mr. Tim Nolan, Project Leader, (UK, ODA)
Mr. Chris Turnbull, Senior Forester, Ghana Forest Plantations Project, Kumasi (UK, ODA)

British High Commission

Mr. Stuart S. Strong, First Secretary (commercial)
Mr. Andrew Wilson, Second Secretary (Aid) (ODA funded Officer)

USAID Mission to Ghana

Mr. Geoffrey Lee, Head, Private Sector Development
Mr. Daniel C. Gyimah, Private Sector Adviser

EMPRETEC GHANA, Entrepreneurship Development

Mr. Alan Kyerematen, National Director

DEUTSCHE GESELLSCHAFT FUR TECHNISCHE ZUSAMMENARBEIT (GTZ)

Ms. Margit Gutteridge, Head of GTZ Liaison Office

Embassy of Japan

Mr. Kenji Tanaka, Second Secretary

Ghana Furniture Producers Association (GFPA)

Mr. Frank Enos, Executive Officer
Mr. Torgbor Mensah, Managing Director, Woody Ltd., Accra

Ghana Timber Millers Organization (GTMO)

Mr. Fosuaba A.Mensah Banahene, Executive Secretary

Ghana Timber Association (GTA)

Mr. Kwame Brogya Mensah, Managing Director, Victory Timber and Mining Co. Ltd.
Mr. Teming-Amoako, Managing Director, Temako Supply Ltd.
plus several Committee Members of the GTA

FINTRAC International Ltd.
Contractor (EC funded furniture industry project)

Mr. Christopher Potts, Woodworking Industry Consultant
Mr. Brian Mercer, Consultant
Mr. Pivetta, Project leader (no contact made)

UNDP

Mr. S.S.O. Akpata, Resident Representative

UNIDO

Mr. David Tommy, UNIDO Country Director

FAO

Dr. Matthew Okai, Deputy Regional Representative for Africa

ANNEX II

PROPOSED PRICES AND LEVIES ON FREQUENTLY EXPORTED SPECIES - LOGS

SPECIES	PRICES(US$/M³)	LEVY
Kyenkyen	120	30%
Canarium	120	30%
Ogea	120	30%
Ceiba	120	30%
Otie	120	30%
Wanton	120	30%
Bombax	125	30%
Afzelia	250	30%
Guarea	210	30%
Dahoma	125	25%
Kaku	125	25%
Denya	125	25%
Kussia	125	25%
Teak	195	25%
Potrodom	195	25%
Albizzia	128	15%
Esia	100	15%
Yaya	100	15%
Ananta	100	15%
Tetekon	100	15%
Esa	120	15%
Sterculia	100	15%
Aprokuma	100	15%
Wawabima	100	15%
All others	100	15%

ANNEX III

GHANA TIMBER INDUSTRY -

STATE OWNED ENTERPRISES

- African Timber and Plywood (GH) Ltd
- Bibiani Industrial Complex Ltd.
- Ehwia Wood Products Ltd.
- Gliksten (W/A) Ltd.
- Kumasi Furniture and Joinery Co. Ltd.
- Mim Timber Co.
- Western Veneer and Lumber Co. Ltd.
- Wood Supply (GH) Ltd.