

***SD Publication Series***  
*Office of Sustainable Development*  
*Bureau for Africa*

**Proceedings of the Investment  
Opportunities Workshop for U.S.  
and African Manufacturers and  
Traders in Wood/Wood Products:  
*The Case of Ghana***

***Raleigh, North Carolina***  
***November 2-5, 1999***

**Editors:**



**Emmanuel T. Acquah**  
University of Maryland Eastern Shore

**Charles Whyte**  
USAID/AFR/SD/ANRE



Technical Paper No. **113**  
February 2001



*Agriculture, Natural Resources and Rural Enterprise Division  
Office of Sustainable Development  
Bureau for Africa  
U.S. Agency for International Development*

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Publication services provided by **The Mitchell Group, Inc. (TMG)**  
pursuant to the following USAID contract: AFR/SD Support Services  
Contract Number AOT-C-00-99-00224-00





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# Foreword

The U.S. market for rare and exotic wood and wood products from foreign sources has been growing at a rate of about three percent a year. Developing countries' share of specific market segments, particularly doors, wooden flooring, picture frames and wooden kitchenware, is also growing. Although competition is strong from domestic producers of regular wood products, rare and exotic wood products have few competitors, and therefore the market for them is likely to grow at a faster rate.

Most African wood and wood products are exported to European markets, where demands traditionally have been flexible in terms of style, quality and material specifications. The U.S. market presents significant export opportunities for African products; however, anecdotal evidence suggests that most African suppliers either are unfamiliar with U.S. product specifications, lack contacts, or are not competitive because they lack the technology to meet market requirements.

The Office of Sustainable Development of the U.S. Agency for International Development's Bureau for Africa (USAID/AFR/SD) conducted a market analysis of the U.S. market for African wood and wood products. It found that, while opportunities exist, they are constrained by questions of quality, material specifications and on-time product delivery. An analysis of African capacity to satisfy U.S. market requirements (using Ghana as a study country) revealed a host of issues, including policy, the high cost of exporting, investment and credit, access to market information, technology, infrastructure and trade and investment concerns, that prevent Ghana from fully realizing its investment opportunities in this sector.

The aim of the workshop discussed in this paper, then, was to offer a forum for American and African wood/wood products manufacturers to (1) explore trade and investment opportunities; (2) discuss trade and investment issues that might lead to initiatives through which African entrepreneurs may become trading partners with U.S. manufacturers; and (3) increase

exposure of African wood/wood products manufacturers to U.S. technologies, which would expand use of American processing equipment in Africa.

The workshop was held November 2–5, 1999, in Raleigh, North Carolina. Its goal was to increase trade and investment between the U.S. and African firms in the wood/wood products industry. Its objective was to explore opportunities for and facilitate the development of joint ventures and/or partnerships between African and American firms in this industry.

In addition to formal presentations and discussions of papers, the workshop covered four major thematic areas: (1) trade and investment opportunities in the wood/wood products industry; (2) U.S. wood industry market requirements and regulations; (3) technology and capability development in the industry; and (4) sustainable forestry production and management.

This paper presents a synthesis of the workshop proceedings, as well as an abridged version of the presentations, in order to preserve the fullness of the topics discussed and to share the knowledge gained. This document provides USAID/Ghana with important trade and investment information to expand Ghana's wood and wood products exports. It also provides information to expand USAID/AFR/SD's knowledge of Africa's wood and wood products trade and investment opportunities. Finally, it provides information to USAID partners for exploring additional trade and investment opportunities with the United States.

USAID/AFR/SD/ANRE would like to thank all the participants for their time, effort and valuable contributions, which helped to make the workshop a success.

**Dennis Weller, Chief  
Agriculture, Natural Resources and  
Rural Enterprise Division  
Office of Sustainable Development  
Bureau for Africa  
U.S. Agency for International Development**

# Glossary of Acronyms and Abbreviations

APDF	Africa Project Development Facility
APHIS	U.S. Animal and Plant Health Inspection Service
AWPA	American Wood Preservers Association
dbh	Diameter at breast height (of a tree or plant)
FPIB	Forest Products Inspection Bureau
GTMO	Ghana Timber Millers Organization
IFC	International Finance Corporation
ITTO	International Tropical Timber Organization
IWPA	International Wood Products Association
LUS	Lesser-used species
NHLA	National Hardwood Lumber Association
OPIC	Overseas Private Investment Corporation
PPQ	Plant protection and quarantine
TDA	Trade and Development Agency
TEDB	Timber Export Development Board
TIP	Trade and Investment Program
TIRP	Trade and Investment Reform Program
USAID/AFR/SD/ANRE	U.S. Agency for International Development/Africa Bureau/Office of Sustainable Development/Agriculture, Natural Resources and Rural Enterprise Division
UNDP	United Nations Development Programme



*Plenary Session I*  
**Opening Session**

*Chaired by Charles Whyte, Agribusiness Advisor, USAID/AFR/SD*

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**INTRODUCTION AND REMARKS**

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The chairperson, Dr. Charles Whyte, introduced the speakers and presented a brief historical background on the activities leading to the workshop.

In his remarks, Dr. Whyte stated that the wood/wood products activity was initiated by the Agriculture, Natural Resource and Rural Enterprise Division of the U.S. Agency for International Development's Africa Bureau, Office of Sustainable Development (USAID/AFR/SD/ANRE) in Washington, D.C. The initiative was complementary to USAID/Ghana's Trade and Investment Reform Program (TIRP) and provided much-needed empirical analysis to support TIRP's wood/wood products component. He also stated that the workshop helped to transfer responsibilities from USAID/Washington to USAID/Ghana through AMEX International, the entity responsible for wood/wood products under the current TIRP project in Ghana.

Dr. Whyte stressed that it is the expectation of USAID/Washington that the workshop will help expand business opportunities between Ghanaian entrepreneurs and their U.S. counterparts.

**Welcome by Eddie Woodhouse, Community Liaison for Senator Jesse Helms**

Mr. Eddie Woodhouse brought greetings from Senator Jesse Helms and expressed Senator Helms' apologies for not being able to participate directly in the workshop. Mr. Woodhouse affirmed Senator Helms' interest in and support for trade with Africa and emphasized the senator's view that private-sector growth is the best means for achieving economic development and progress. Mr. Woodhouse also stated that the senator supports trade partnerships

that are of mutual benefit to his state, his nation and to other countries. On behalf of Senator Helms, Mr. Woodhouse enthusiastically welcomed the workshop participants to the state of North Carolina.

**Official Opening of the Workshop by Marye Anne Fox, Chancellor, North Carolina State University (NCSU)**

Dr. Marye Anne Fox remarked that North Carolina State University (NCSU) has outstanding programs in forestry/forestry products, business management and textile and industrial design. She informed the participants that NCSU also has an excellent wood/wood products laboratory, which is involved in cutting-edge research in equipment and product development and which the workshop participants were scheduled to visit. Dr. Fox declared that globalization calls for closer cooperation between nations and expressed pleasure that the state of North Carolina had been selected to host this workshop. She encouraged the participants to engage NCSU staff when they visit the campus and expressed the university's desire to collaborate with Ghana in research and development ventures. Dr. Fox then officially declared the workshop opened.

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**COMMENTS**

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**Seth Addo, Minister Counselor for Trade, Embassy of Ghana, Washington, D.C.**

Mr. Seth Addo relayed greetings from His Excellency Koby Koomson, Ghana's Ambassador to the United States, and expressed the ambassador's regret at not being able to attend the workshop. The forest products subsector is an important component of Ghana's economy, Mr. Addo declared, and

went on to state that, since Ghana's economic reform began in 1983, substantial progress has been made. He noted that Ghana's economy has been growing at a rate of five percent annually and that this, coupled with the stable economy, rule of law and viable stock exchange, makes Ghana an ideal place for investors. Mr. Addo reminded his audience that Ghana is a member of both the World Bank and the IMF and has set up a one-stop investment office, which provides various corporate incentives for export businesses, including three- to ten-year tax holidays, lower tax rates and constitutional guarantees against seizure of assets. Mr. Addo concluded his remarks by encouraging U.S. firms to explore investment opportunities in Ghana.

**Nayou Bilijo, Ghana's Deputy Minister for Lands and Forestry**

Mr. Nayou Bilijo expressed the Ghanaian government's interest in the workshop and emphasized the importance that forestry plays in Ghana's economy. He urged the participants to seriously explore joint ventures and investment opportunities. Because the Ghanaian government is dedicated to sustainable forestry production management, Ghana is collaborating with the International Tropical Timber Organization (ITTO) with the hope of having certified forests by 2000. Consequently, Mr. Bilijo said, the government of Ghana has published a draft "Statement on Certification," aimed at achieving social and environmental performance standards consistent with local and international requirements. He

emphasized the government's support in providing an enabling environment that can foster international trade and investment opportunities, especially in wood/wood products.

**Irvin Coker, Vice President, AMEX International, Washington, D.C.**

Mr. Irvin Coker described AMEX International's commitment to providing technical assistance to Ghana's private sector in expanding trade opportunities between the U.S. and Ghana. He remarked that under USAID's Trade and Investment Reform Program (TIRP) in Ghana, nontraditional exports have increased substantially and that AMEX will continue to collaborate with the private sector to expand wood/wood products exports. Mr. Coker stressed that value must be added to Ghanaian products before they are exported. He further remarked that the African Growth and Opportunity Act in the U.S. Congress is likely to pass and will provide opportunities for more trade ventures between American and Ghanaian private firms. [Note: The African Growth and Opportunity Act was passed by Congress in May 2000.] Mr. Coker then urged workshop participants to seek partnerships, explore technology development and transfer opportunities, and explore investment financing opportunities.

**Self-Introduction of Participants**

Each participant introduced him/herself by stating his/her name, organization and type of business. (See Appendix 1 for registration list.)

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# *Wood/Wood Products Trade Between Ghana and the United States: The Experience of a Ghanaian Firm*

*by Nana Dwomoh Sarpong, President, Sunstex Company, Ltd.,  
Kumasi, Ghana*

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Mr. Nana Dwomoh Sarpong presented a paper based on his company's business experience in the U.S. market during the past 10 years.

He stated that Sunstex Company has been exporting timber products composed of both air- and kiln-dried, high- and low-density African hardwood. Some of the species used are mahogany (*Khaya ivorensis*), odum, wawa, teak, ofram, wawabima, asanfina and sapele; mahogany, asanfina, wawa and odum are dominant among them.

Sunstex entered the U.S. market through the Forest Products Inspection Bureau (FPIB). A request came from the United States for a supplier, and Sunstex was then recommended as being reliable and capable of expertly fulfilling the contracts. Sunstex has remained a supplier to U.S. markets ever since.

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## **PROFILE OF SUNSTEX COMPANY**

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Sunstex is registered in Ghana as a private liability company with its shareholdings owned by its president and another Ghanaian partner. The company, located in Kumasi, was incorporated in April 1986. At the end of its financial year (December 31, 1998), the company's turnover was US \$1.1 million. The company has land concessions that are adequate for logging, with an annual output of 15,000 cubic meters in various species.

The company aims at increasing its turnover to reach US \$1.5 million. "We hope to enter into new markets for moldings and tongue and groove. Additionally, we would like to introduce new processes and products in the form of finger jointing, lamination

and furniture. Our products are currently 35 percent and 65 percent air-dried and kiln-dried, respectively. Our markets geographically are: domestic—15 percent; U.S.—48 percent; and other markets—37 percent."

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## **STRENGTHS**

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### **Contracts**

Contracts with random rather than fixed specifications are better for Sunstex because they enhance recovery and narrow the time required for fulfilling contracts. Sunstex accepts contracts that it can supply by the required delivery time, as delivery time is very important. The U.S. market is reliable, and the buyers are trustworthy and can also, at times, provide trade information. From the supply side, when Sunstex receives larger contracts and cannot supply them, it introduces buyers to other reliable millers who have the log capacity required, so the contracts are shared among suppliers. This arrangement has worked well thus far.

### **Letters of Credit**

Letters of credit are opened promptly once the contract terms are agreed upon. The document requirements are not too demanding, and the technicalities involved are simple. Regarding letters of credit from U.S. buyers, no problem has been encountered so far.

### **Shipment**

There is no lack of shipping lines to the United States. Sunstex has been using Super Maritime (Tomlines),

Delmas (S.D.V.), and Liner Agencies Limited (Ghana). Some lines are regular and ready to accommodate the goods being shipped and are usually available at the port every three weeks. They operate in such a way that if an exporter misses a particular line, another line will be available within a few days, which saves exporters from incurring excessive rent and other levies at the port. This also helps buyers receive goods on time.

Sunstex's buyers have found the freight cost reasonable, due to the competitiveness of the shipping lines. Because Sunstex has been shipping regularly with these shipping lines and is considered reliable, the company has the opportunity to negotiate with shipping lines on behalf of its customers for rebates, depending largely on volumes and continuity.

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## **CONSTRAINTS**

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Due to the difficulties and delays in obtaining visas to the United States, Sunstex has not had time to visit its buyers. European buyers have assisted the company in identifying necessary equipment. At times, they have supplied this equipment to Sunstex on credit terms—an opportunity which Sunstex has yet to receive from U.S. buyers. In addition, the U.S. market will only accept lengths of 2.40 meters

and longer, while almost all the other destinations generally use lengths of 4.10 meters or less.

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## **OPPORTUNITIES**

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After 10 years of experience in the U.S. market, Sunstex has found payments to be reliable, while some of the contracts have been prepaid. This has enabled exporters to raise sufficient funds to finance some activities. Direct dealings promote good business relationships and also reduce cost. Sunstex hopes that supplying the U.S. market will enable it to acquire modern technology, which has a higher yield performance. Another benefit is that U.S. buyers are easily accessible through modern telecommunications media.

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## **THREATS**

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Currently there exist two threats, which must be addressed:

1. European buyers and some U.S. buyers try to enter the market by undercutting prices, even though the market can afford these prices.
2. Some buyers buy certain species for other destinations and then transship them to the United States for higher prices.

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# *Wood/Wood Products Trade Between the United States and Ghana: The Experience of an American Firm*

*by Frank Sheridan, President, Afriasia Wood Company, Mineola, New York, and Greensboro, North Carolina*

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Mr. Frank Sheridan described his extensive experience in trading wood/wood products with Ghana, adding that Ghana is a good place to do business. His presentation may be summarized by the following points:

1. While freight shipping is becoming more difficult, container shipping is becoming more important.
2. Letters of credit are required in Ghana, while not needed elsewhere.
3. Issues of certification and reliability are concerns that need to be addressed.
4. Direct and frequent communication with U.S. partners will ensure mutual confidence and facilitate good business.
5. Ghanaian businessmen should attend trade equipment shows in order to become more familiar with U.S. business professionals and products.
6. The forest needs to be protected from overhunting of “bush meat.”
7. Good forest management is critical if the future wood/wood products supply is to be sustained.
8. The Forest Products Inspection Bureau (FPIB) should continue its good work in Ghana.

## Discussion of Presentations

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Discussion focused on how a Ghanaian firm can penetrate and survive in the highly competitive U.S. market. The following points summarize participants' suggestions:

1. Ghanaian firms must develop specific strategies for accessing the U.S. market, determining at what level they should enter it.
2. Ghanaian firms should use the Internet to access markets and market information.
3. Ghanaian firms should establish marketing partnerships in the United States.
4. To be successful in the U.S. market, Ghanaian firms need to know their customers.
5. Ghanaian firms need to reconsider price floors set by the FPIB for appropriate adjustment.
6. When introducing lesser-known wood products, Ghanaian firms should consider competitive pricing and consumer demand.
7. While U.S. businesses will not pay premium prices for certified wood, they do expect quality and will pay a fair market price.
8. Sustainable forest management must be practiced in order to protect the environment and the health of the industry.

## *Plenary Session II*

*Chaired by Irvin Coker, Vice President, AMEX International, Washington, D.C.*

### *Theme I: Trade and Investment Opportunities in the Wood/Wood Products Industry*

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## *Expanded Trade in Wood Products Between the United States and Ghana: Opportunities and Constraints From the U.S. Perspective*

*by Chris Twarok, U.S. Department of Commerce*

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Mr. Chris Twarok expressed his pleasure in being able to participate in the workshop and discuss the expansion of trade between the United States and Ghana by focusing on opportunities and constraints from the U.S. perspective. In his position at the Department of Commerce, Mr. Twarok works with the Office of the U.S. Trade Representative and the Department of Agriculture to formulate policies that promote business and, in the case of wood products, are environmentally sustainable.

In his discussion, Mr. Twarok observed that constraints are merely opportunities in disguise and that one does not trade in constraints, but in opportunities. He was enthusiastic about the prospects for increasing trade in forest products between the United States and Ghana and indicated that the business climate is favorable for increased opportunities, citing that Ghana was the fourth largest export market for U.S. products in Africa, with over \$223 million exported in 1998.

Due primarily to Ghana's greater transparency and accountability, trade with Ghana has become more significant for the United States. Mr. Twarok cited President Clinton's historic visit to Africa in March 1998, which he said reinvigorated the Ghanaian business community's commitment to becoming the "Gateway to West Africa." This momentum was further accelerated when President Jerry John Rawlings visited the United States in February 1999. The signing of various trade and investment agreements between the two countries, he noted, will only further trade ties and increase the expectations of the business community.

Mr. Twarok stated that, while trade and investment between Ghana and the United States will undoubtedly increase, trade in wood products between the two countries is relatively small. Trade in wood products accounted for only \$15.4 million of Ghana's export trade in 1999 (from January through November) and \$163,000 of the U.S.'s export trade to Ghana for the first three quarters of 1999. Furthermore, U.S. exports of wood products to Ghana have traditionally been small due to the following:

1. The market potential in Ghana for U.S. wood products is perceived as limited.
2. There exist many cultural differences in the utilization of wood products.
3. The cost of local financing is high.

In examining this perceived limited market potential, Mr. Twarok noted that the robust strength of the U.S. economy can also be a weakness. For example, U.S. production of wood products is expected to reach record highs in 1999 (due mainly to the strong demand from the U.S. housing industry), and this kind of success has tended to make the U.S. wood products industry complacent about actively investing time and resources needed to identify and pursue new international markets for their products. However, while it is highly probable that domestic demand in the U.S. housing industry will slow in 2000–2001, levels of housing activity will remain relatively strong by historical standards. Wood products-exporting

executives with vision will realize that their profits depend on the future, and that future includes Ghana. Savvy executives will put Ghana in their business plans because they will realize the tremendous strides made by the country since structural adjustment programs began in the early 1980s. The progressive elimination or reduction of import quotas and surcharges and the harmonization of tariff rates with the economic community of West African states are two strategic elements that will figure into these executives' business plans for the future.

According to Mr. Twarok, there are two broad product areas that are key to a sound business plan for the future: treated wood products and panel products. The use of treated wood products, especially utility poles, will expand as the electricity industry gets back on track and the plan to double generating capacity to 2600 megawatts by 2001 is implemented. Once this infrastructure is established, power will have to be transmitted in a cost-effective way, and the use of treated utility poles could provide a distinct opportunity to U.S. business executives who include this product line in their portfolios.

Mr. Twarok then examined the cultural differences between the U.S. and Ghana in the use of wood products that have contributed to low rates of U.S. exports to Ghana. He said, "The United States is among a handful of countries that rely, to a great degree, on using wood products as their main material of choice in constructing residential and light commercial buildings. In the United States, for example, over 94 percent of single-family housing units use wood products as their main structural element. This familiarity with using wood for building purposes, the long history of safety and affordability and the environmental qualities of wood have lent themselves to the development and maturity of the wood products industry in the United States. A sophisticated system of product certification and testing has evolved in the United States, which has made the use of wood products in residential construction flourish."

Working with the Ghana Standards Board and other technical authorities, continued Mr. Twarok, could expand opportunities to increase the use of wood prod-

ucts in constructing residential buildings. Another way for U.S. executives to expand market opportunities for wood product exports is to work with the standards and certification community to develop a regime that will rely on the performance of the product versus its perspective qualities. "Increased transparency and accountability are two key components in developing standards and certification processes that can bridge cultural differences and ultimately foster increased trade opportunities in wood products," Mr. Twarok declared.

Mr. Twarok then cited evidence that opportunities are slowly emerging for certain wood products to be used for building purposes. U.S. exports of specific panel products like softwood and plywood have been small but steady. As Ghana develops its infrastructure, use of plywood for concrete-forming applications will expand; U.S. companies exporting softwood plywood will be able to capitalize on this because this wood can be reused much more frequently than can other plywood products and will thus be cost-effective for the developer.

The third reason why the rate of U.S. wood products exports to Ghana has been low, Mr. Twarok stated, is the high cost of local financing. High short-term interest rates often discourage companies from expanding production lines, but savvy executives who focus on the long term will develop a business plan that allows expansion of production facilities in Ghana to import some U.S. wood products.

"One thing the executive needs, more than just lower short-term rates," Mr. Twarok declared, "is stability, whether it is exchange rates or inflation rates. Ghana has done an excellent job in providing this stability to exchange rates and inflation rates. The Bank of Ghana pursues a tight monetary policy in its effort to contain inflationary pressures. This policy will be applauded by the executive who plans for the long term, even if there is some short-term pain by paying high rates."

Mr. Twarok concluded, "There has been tremendous movement to develop trade opportunities between the United States and Ghana. Throughout this workshop, we will learn much more. Through our work, Ghana can be not only the 'Gateway to West Africa,' but the 'Gateway to Africa and Beyond.'"

# *Expanded Trade in Wood/Wood Products Between Ghana and the United States: The Perspective of Ghana's Forest Products Inspection Bureau (FPIB)*

*by Nathan Ben Donkor and Attah Alhassan, FPIB, Ghana*

Opening his remarks from an historic perspective, Mr. Nathan Ben Donkor noted that trading in wood and wood products between Ghana and the United States dates back to the colonial days, when shipments of African mahogany logs were regularly transported a century ago. However, trading in processed wood, especially lumber, increased significantly during the 1970s. Recently, the U.S. market has emerged as one of Ghana's leading destinations, accounting for 50 to 60 percent of Ghana's rotary veneer exports during 1996–1998. The U.S. market share of Ghana's wood exports by value grew steadily from 2 percent in 1994 to 10 percent by the close of 1998.

Mr. Donkor stated that, due to current pressure on tropical hardwood producer countries to certify forests for sustainable management, raw material sourcing from prime species has become more difficult. Also, enormous resources currently go into forest management, which has increased the unit cost of the lumber. Therefore, the call for expanded trade in wood and wood products between Ghana and the United States is not only essential, but timely. He noted, however, that such a call should be heeded not only for the sake of increasing volumes, but, more importantly, in order to widen the spectrum of traded species and products.

Mr. Donkor's paper focused on Ghana/U.S. wood trade trends, opportunities and constraints to expanded trade and Ghana's approach to the way forward. The sections which follow highlight his presentation.

## **GHANA–U.S. WOOD TRADE TRENDS**

Prior to 1993, wood/wood products shipped from Ghana to U.S. markets primarily consisted of lumber and sliced veneer. In 1994, about 400m<sup>3</sup> of rotary veneer were added to the usual consignments. These products were limited to species indicated in Table I. By the end of 1998, Ghana had exported a large number of wood products from over 50 species. Table II shows the products and species exported. A comparison of Tables I and II reveals the extent of needed expansion in trade between the two countries.

**Table I: Products**

Species	Lumber	Sliced Veneer	Rotary Veneer
Odum	X	---	---
Mahogany	X	X	---
Asanfona	X	X	---
Makore	X	X	---
Sapele	X	X	---
Mansoni	X	X	---
Teak	X	---	---
Wawa	X	---	X
Ofram	X	---	X
Koto	---	---	X
Ceiba	---	---	X
Otie	---	---	X
Ogea	---	---	X

**Table II: Ghana's Traded Wood Products and Species**

Species	Products													
	LUM	RTV	SLV	MLD	PFB	PLY	FLR	DOW	BST	DOR	FPT	CRL	PLS	CVN
Odum	X	---	X	X	X	---	X	X	---	X	X	---	---	---
Wawa	X	X	X	X	X	X	---	X	X	---	---	---	---	---
Koto	X	X	X	X	X	X	---	X	X	X	X	---	---	---
Asanfina	X	X	X	X	X	---	---	---	---	---	---	---	---	X
Sapele	X	---	X	X	---	---	---	---	---	---	X	---	---	X
Utile	X	---	X	X	---	---	---	---	---	---	X	---	---	---
Ofram	X	X	X	X	---	---	---	---	---	---	---	---	---	---
Emeri	X	---	X	X	---	---	---	---	---	---	X	---	---	---
Akasa	X	---	X	---	X	---	X	---	---	X	---	X	---	---
Mahogany	X	X	X	X	---	---	---	---	---	---	X	X	---	X
Makore	X	X	X	---	---	---	---	---	---	---	---	X	---	X
Mixed Redwood	X	---	---	---	X	X	X	---	---	X	X	---	---	---
Teak	X	---	---	---	---	---	X	---	---	---	---	---	X	---
Afromosia	X	---	---	---	X	---	X	---	---	---	X	---	---	---
Ceiba	X	X	X	X	---	X	---	---	---	---	---	---	---	---
Papao	X	---	X	---	X	---	X	---	---	---	X	---	---	---
Essa	X	---	X	X	---	X	---	---	---	---	---	---	---	---
Otie	X	X	X	---	---	X	---	---	---	---	---	X	---	---
Chenchen	X	X	X	---	---	X	---	---	---	---	---	X	---	---
Danta	X	---	X	---	---	---	---	---	---	---	---	---	---	---
Albizia	X	---	---	X	---	---	X	---	---	---	X	---	---	---
Cedrella	X	X	X	X	---	---	---	---	---	---	---	---	---	---
Fotie	X	---	---	---	---	---	---	---	---	---	---	---	---	---
Kusia	X	---	X	X	---	---	X	---	---	---	---	---	---	---
Dahoma	X	---	---	X	---	---	---	---	---	---	X	---	---	---
Ogea	X	X	X	---	---	---	---	---	---	---	---	---	---	---
Edinam	X	X	---	X	---	---	---	---	---	---	---	---	---	---
Wawabima	X	X	---	X	---	---	---	---	---	---	---	---	---	---
Candollei	X	---	X	---	---	---	---	---	---	---	---	---	---	---
Niango	X	---	X	---	---	---	---	---	---	X	---	X	---	---
Walnut	X	---	X	---	---	---	---	---	---	---	---	---	---	---

**Table II: Ghana's Traded Wood Products and Species, continued**

Species	Products													
	LUM	RTV	SLV	MLD	PFB	PLY	FLR	DOW	BST	DOR	FPT	CRL	PLS	CVN
Guanrea	X	---	---	---	---	---	---	---	---	---	---	X	---	---
Avodire	X	---	X	---	---	---	---	---	---	---	---	X	---	---
Ayan	X	---	---	---	---	---	---	---	---	---	---	---	---	---
Mansonia	X	---	X	---	---	---	---	---	---	---	X	---	---	---
Ekko	X	---	---	X	---	---	---	---	---	---	---	---	---	---
Potrodum	X	---	---	---	---	---	---	---	---	---	---	---	---	---
Denya	X	---	---	X	---	---	---	---	---	---	---	---	---	---
Esia	X	---	---	---	---	---	---	---	---	---	---	---	---	---
Kokote	X	---	---	---	---	---	---	---	---	---	---	---	---	---
Bodwe	X	---	---	---	---	---	---	---	---	---	---	---	---	---
Entedua	X	---	X	---	---	---	---	---	---	---	---	---	---	X
Emeri	---	---	X	---	---	---	---	---	---	---	---	---	---	---
Bombax	---	X	X	---	---	---	---	---	---	---	---	---	---	---
Adasema	---	---	X	---	---	---	---	---	---	---	---	---	---	---
Atabene	---	---	X	---	---	---	---	---	---	---	---	---	---	---
Yaya	---	---	X	---	---	---	---	---	---	---	---	---	---	---
B/Hyedua	X	---	X	---	X	---	X	---	---	---	---	---	---	---
Aprokuma	---	X	---	---	---	---	---	---	---	---	---	---	---	---
Canarium	X	---	---	---	---	X	---	---	---	---	---	---	---	---
Senya	---	---	---	---	---	---	X	---	---	---	---	---	---	---

**Key:**

LUM = Lumber

RTV = Rotary Veneer

SLV = Sliced Veneer

MLD = Moldings

PFB = Profile Boards

PLY = Plywood

FLR = Flooring

DOW = Dowels

BST = Broomsticks

CVN=Curls Veneer

DOR = Door

CRL = Curls

PLS = Poles (Treated)

FPT = Furniture

As certification is enforced, Ghana will have to cut back on the harvesting of prime species. This means that other species must be vigorously promoted.

The years since 1994 saw Ghana-U.S. trade increase: lumber and sliced veneer shipments tripled, while rotary veneer increased sixfold by the end of 1998. The steep rise in rotary veneer sales has been made possible through the use of agents such as Ghana Timber Supplies and Penrod Company, Ltd. The increased number of shipments between 1994 and 1996 corresponded with an increase in the U.S. market's share of Ghanaian exports. Such an abrupt rise provided an opportune time to focus the market for expansion.

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## **OPPORTUNITIES FROM EXPANDED TRADE**

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Apart from enhancing already existing trade relations, expanded Ghana-U.S. trade in wood and wood products opens other opportunities to both countries. Ghanaians can expect market diversification, joint ventureship and better exposure to U.S. products and quality standards. The United States, on the other hand, will enjoy increased business activity in the supply of equipment and machinery and improved technology. Additionally, numerous investment opportunities await.

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## **CONSTRAINTS TO EXPANDED TRADE**

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### **Price Instability**

Factors such as financial crises and political disturbances in the markets adversely affect prices of wood and wood products. The recent Asian financial crisis has reverberated throughout the tropical timber trade. For instance, a fall in prices has led to loss of plywood market share for Ghana. Politically troubled areas, for the time being, sell their prime timber at ridiculously low prices, thereby destabilizing prices for all African timber products.

### **Market Access**

The conservative nature of the wood/wood products market, which limits itself to a narrow group of species, has a negative effect on expanding trade opportunities. Trade restrictions, tariffs and barriers equally stifle hardwood trading.

### **Environmental Concerns**

In the early 1980s, concerns over environmental degradation and global warming resulted in several environmental groups leading a boycott of tropical timber not sourced from sustainably managed forests. This campaign created a certain level of public awareness that has affected the purchasing pattern of timber users. Over the years, this has resulted in the loss of market shares to competing products such as aluminum, plastics and temperate hardwoods, and is limiting market access for tropical timber. The activities of these environmental groups can no longer be ignored. The timber-buying public is increasingly demanding certified timber, although they may not, at the moment, be willing to pay a premium price for it.

### **Technology, Research and Development**

Funding of research and development in producer countries is low and tends to concentrate on forest activity. Technology- or market-related research and development in the forestry industry is also nearly nonexistent in producer countries. The absence of a proactive market research activity in producer countries to support the sale of tropical timber is a major constraint to product and market development. In addition, human resource development for production is lacking.

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## **THE WAY FORWARD—GHANA'S APPROACH**

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Several activities geared toward revamping the wood industry have been carried out in Ghana. These have been accomplished through:

## **Government Policies/Programs**

Since 1983, Ghana has reformed its economy and market. Policies and programs have been instituted to enhance development of the domestic market and further processing. Institutions supporting the forestry sector have also been reformed.

Policies providing several incentives through the Investment Promotion Act, the Free Zone Act and the Divestiture Program are attracting modern installations for kiln drying and further processing. These incentives include reinvestment allowances; exemptions from custom duty, excise duty and sales tax; exemption from export levies on tertiary products of lesser-used species; and incentives for training, research and development.

Ghana reviewed its forestry policy in 1994 and, as a result, introduced its Forest Sector Development Plan to span the period from 1996 to 2014. This plan seeks to encourage downstream processing as a means of optimizing returns on timber resources. Policies and strategies of the plan focus on:

- Revamping existing processing operations to achieve greater efficiency.
- Promoting increased use of lesser-used species (LUSs).
- Reduction in logging and milling wastes.
- Promotion of kiln drying, wood treatment and value-added processing for both local and export markets.
- Promotion of growth in the domestic market for wood products.

## **Domestic Market Improvement**

A viable export market depends on a well-developed domestic market, which provides experience in developing production and sales of processed products. The Ghanaian domestic market has been left undeveloped; instead, emphasis has been placed on the export market.

Plans are well advanced in Ghana to develop the local market and to encourage the market to produce and sell high-quality material. This is witnessed by the establishment of a woodworkers and craftsmanship “village” in two major timber-producing areas (Kumasi and Takoradi), which will enhance facility sharing through pooling modern equipment and, hence, the company integration needed to boost tertiary processing, reduce inefficiencies and promote better utilization of resources.

## **Promotion of Lesser-Used Species (LUSs)**

A woodworking Sector Development Program took effect in January 1999. This program uses integrated interventions that impact the value-added processing sector of the timber and wood products industry by:

- Supporting the restoration of the industry’s resource base by giving firms financial incentives to use LUSs in order to take the pressure off over-used species.
- Improving the technical, marketing and managerial skills of selected firms in the sector, either directly, through technical assistance to individual firms, or indirectly through various forms of support training institutes in the wood sector, to enhance the promotion of the selected LUSs.

The TEDB also carries out promotional activities, through various publications and brochures about targeted species.

## **Forest Certification**

Ghana’s commitment to the global demand of maintaining sustainable managed forests is demonstrated in the attempt to certify wood/wood products. Indicators for sustained yield management have already been identified, and testing preparations are in progress for certifying Ghanaian forests.

### **Market Intelligence Information**

The TEDB provides market intelligence information for the benefit of the Ghana timber industry. It undertakes market and price studies, publishes a market newsletter (*The Ghana Gazette*) and keeps track of policies in markets and various producer countries. The provision of timely and relevant market information has helped stabilize prices for the Ghana timber industry.

### **Promotion of Value-Added Processing**

The active promotion of value-added processing has involved a gradual shift from primary to tertiary products. This has stabilized Ghana's earnings from timber exports over the past five years.

### **Training and Development**

The Ghanaian wood products industry recognizes the low level of skilled manpower available. A Wood Industry Training Center (WITC) has been established to upgrade skills and training to meet the needs of the expanding value-added industry and to be competitive in the world timber market.

### **Infrastructure**

Ghana has two main harbors from which shipments of wood/wood products can be carried out. These harbors have recently been renovated and equipped with new and modern equipment. The road network linking major production centers to the harbors has been upgraded and asphalted; also, most roads lead-

ing to forest areas used for raw material hauling have either been tarred or regradeled.

### **Communication**

The divested, state-owned telecommunications corporation has seen great improvements in communications, supported by the private sector with the provision of express mail services, mobile phones and Internet access. Today, most Ghanaian wood and wood products exporters are equipped with modern communication facilities, including e-mail addresses.

### **Publicity**

With the increasing campaign for a boycott of tropical timber, the TEDB, through its London office, makes regular announcements describing the efforts that Ghana is making toward ensuring trade in wood products from sustainable managed sources.

### **Recommendations**

1. Continuous promotion of LUSs must be encouraged.
2. Markets need to be informed about Ghana's efforts to achieve sustainable forest management in order to address concerns of environmentalists.
3. Effective linkage between the Ghana Timber Millers Organization (GTMO) and similar associations in the United States must be established.

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# *Expanded Trade in Wood/Wood Products Between Ghana and the United States: The Perspective of the Ghana Timber Millers Organization (GTMO)*

*by Ben Kwasi Kufuor, President, GTMO*

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Expressing greetings from the members of the Ghana Timber Millers Organization (GTMO) and the people of Ghana as a whole, Mr. Ben Kwasi Kufuor thanked USAID for setting up the historic workshop, which he said afforded both Ghanaian and U.S. wood/wood products executives the unprecedented opportunity to meet. This meeting, he said, will, without a doubt, enable Ghanaians to explore the already vibrant potential for increased trade between the two countries.

In his brief on the GTMO, Mr. Kufuor stated that the organization is an industry association and was founded in 1982 with the objective of promoting a sustainable timber industry in Ghana. Although the organization has worked hard to achieve its objective, its success has been constrained by several factors, including difficulty in accessing market information, lack of an early warning mechanism for making production decisions and inadequate access to external credit facilities. He said that, despite these factors, the potential for good timber business exists in Ghana, as can be seen in the current range of products in which the industry is engaged. His presentation was highlighted by the topics described below.

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## **THE PRODUCTION TREND**

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Historically, Europe has been the general destination for Ghana's exports in wood and wood products. During the last half of the twentieth century, trade was mostly in unprocessed timber; it was not until the last quarter of the twentieth century that Ghana

began to export semi-processed timber to European countries. Indeed, Ghana has increased its exports of processed wood tremendously over the last two decades to the extent that there are now several semi-finished products on the export market. Kiln-dried lumber, dowels, furniture parts, veneer, particle-board, plywood and other machined products are now being exported from Ghana. Because of the finer species that are available, Ghana is able to put substitute species on the market from time to time, and some of these tend to be preferred over the primary species.

Since 1994, contact with buyers from North America has yielded much interest, and the U.S. companies whom GTMO members deal with continue to find Ghana's semi-finished products useful. Through the network of the International Wood Products Association (IWPA) with which GTMO is affiliated, some of GTMO's companies are now doing good business, albeit in small volumes, with some U.S. companies.

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## **THE IMPORTANCE OF THE TIMBER TRADE**

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The timber industry in Ghana accounts for six percent of the gross domestic product. Foreign earnings in the sector in 1998 totalled US \$180 million. The entire industry employs over 10,000 household heads, while many others are gainfully employed in occupations closely associated with the industry. In addition, the industry contributes immensely towards the development of rural areas of the country.

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## THE CONSTRAINT OF FREIGHT CHARGES AND DELAYS

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The biggest constraint to increased trade between the United States and Ghana in the wood and wood products sector is the absence of affordable freight arrangements. Direct shipment between Ghana and the United States does not exist, as most of the U.S.-bound exports are subject to transshipment from ports in Europe and the Middle East before reaching the United States. Rotterdam, in particular, has become an important transshipment center for U.S.-bound Ghanaian wood and wood product exports. This affects cost as well as moisture content, due to the lengthy transit time. Confidence may also be affected. Most of the time, Ghanaian exporters do not even know who the real importers are, as European-based companies are the immediate buyers. It is, therefore, not surprising that many companies, both in the United States and Ghana, have not taken advantage of trade opportunities between the two countries.

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## THE WAY FORWARD

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The passing of the African Growth and Trade Opportunities Act by the U.S. Congress [passed May 2000] will usher in fresh and attractive opportuni-

ties for Ghanaian timber industrialists to promote strong links with their counterparts in the United States. It is in this respect, said Mr. Kufuor, that this workshop is most welcome. It provides a new wave of opportunities to build strong and viable trade links between the two countries in the area of wood and wood products, and it is by exploring opportunities and taking maximum advantage of them that constraints can be eliminated.

Mr. Kufuor gave assurances to his U.S. counterparts that Ghana can supply quality species difficult to find in other countries. He indicated that there are also many other species that have not yet entered the market, although research results rate them even higher in quality than some traditional species. Mr. Kufuor said that the GTMO believes that, in order to maximize opportunities in Ghana-U.S. wood trade, a joint-venture approach should be adopted. This approach, he said, has several advantages, including enhanced mutual benefits, reliability of supply, reduction of costs and enhanced productivity. Under the laws of Ghana, joint ventures are protected, while the liberalization of the Ghanaian economy provides additional safeguards to foreign investment.

Mr. Kufuor concluded by saying that the workshop presents a fine opportunity for increased trade between the United States and Ghana in the wood sector. "We must all make sure this opportunity does not slip by," he declared.

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# *Feasibility Assessment of Ghanaian Firms to Qualify for International Finance Corporation (IFC) Loans*

*by Alex Bruks, Loan Officer, IFC/APDF, Accra, Ghana*

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Mr. Alex Bruks gave an overview of the Agriculture Project Development Facility (APDF) and the services it provides to its clients. The following summarizes the essential points presented by Mr. Bruks:

- The APDF was created by the International Finance Corporation (IFC)/United Nations Development Program (UNDP)/World Bank in 1986 and is managed by the IFC.
- The APDF's services include feasibility studies, development of business plans and offering financing for African entrepreneurs.
- The APDF provides different forms of financing—loans, equity or both.
- Sources of financing include the IFC, Credit Guarantee, Eximbank and other sources.
- Project size ranges from \$250,000 to \$7 million.
- The APDF uses three-tier fee charging:
  - 0.75 percent initiation fee
  - 1 percent of project amount (up-front payment)
  - 0.5 percent loan fee.
- The APDF finances all ventures, except real estate and pure trading.
- The equity requirement is at least 30 percent.
- Loans are provided in foreign currency.
- Project appraisal takes 4–6 months.
- The APDF has offices in Abidjan, Nairobi, Accra, Harare and Johannesburg.

Other assistance that the APDF can provide includes promotion of joint ventures; preparation of business plans; negotiating agreements; supply of information to U.S. firms; and training and technical assistance.



### *Plenary Session III*

*Chaired by Irvin Coker, Vice President, AMEX International, Washington, D.C.*

#### *Theme II: U.S. Wood Industry Market Requirements and Regulations*

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## *Product Needs, Quality and Specifications of the U.S. Wood Industry*

*by Art Pond, Evergreen Hardwoods Company, and Past President, International  
Wood Products Association, Seattle, Washington*

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### **CHANGING U.S. MARKET**

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Mr. Art Pond observed that the U.S. market for hardwood products is not only huge and profitable but also very competitive. The United States buys its wood products from every corner of the world and, as a result, can be a very fickle market. When one supply area becomes noncompetitive, for whatever reason, customers can be quick to change sources. This happens to Mr. Pond's company almost weekly.

In the last 5–10 years, the U.S. market has changed considerably. For example, when Mr. Pond first started in this business 30 years ago, it was acceptable to ship a little late, to have the grade almost right, to have a few pieces damaged or missing in each unit of product, to send incomplete shipments and to withdraw from the market temporarily if he did not like the price or terms of payment. End users of wood and wood products compensated for supply line problems by carrying huge inventories sufficient to maintain their integrated factories. This situation no longer exists.

Today, the companies who buy Mr. Pond's products in the United States have highly sophisticated and automated factories and maintain little or no inventory, relying on nearby distributors to deliver their raw material just in time. Moreover, if they do not like several pieces in the shipment, they return them to the distributors for credit.

Recently, Mr. Pond had a customer deduct \$300 from his invoice because his packing list accompanying the shipment was incomplete. "He had to spend the time to correct the errors, so he charged me for this time and inconvenience," Mr. Pond stated, observing that these are the realities of American manufacturing today.

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### **PRODUCT AND SPECIFICATIONS**

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From the perspective of Mr. Pond's company, there is significant variation in the levels of understanding of U.S. veneer and plywood needs among African suppliers compared to those in South America or Asia. Since Europe has been Africa's traditional market, this is understandable. Europe does not have adequate timber resources to generate the interior plies for their panel products, so European companies must buy all grades of product from low to high. The United States has vast inexpensive resources of timber available for the core or inner plies of plywood. As a result, U.S. timber companies tend to manufacture the majority of U.S. thick plywood and to import thin plywood.

So what does this mean to Africa and Ghana as potential suppliers of veneer and plywood to the United States? It means that if Ghana wishes to export thick plywood (9mm+) to the United States, our customers would be willing to pay less than the European market prices—but perhaps more than for the

domestically produced product if they can get high quality. Since the United States imports most of its thin plywood from Asia, Africa/Ghana must be prepared to compete with those countries for market share. Presently, European construction requirements are overkill for the United States' everyday commodity plywood needs. Although generally of better quality and more aesthetically pleasing, such plywood is unnecessary in the U.S. market. Africa/Ghana needs to understand this difference to sell its panel products in the United States competitively. Since Ghana manufactures a substantial quantity of core veneer, it is bought from Ghana simply because it is better quality than can be produced in the United States. It is often used to manufacture "thin" plywood or as a crossband immediately adjacent to a thin (0.5mm) face veneer on thick plywood where core transfer is an issue.

Regarding lumber and related products, there is much more of an established trade. Traditionally, U.S. importers have purchased air-dried lumber; however, as kiln capacity increases in Ghana, this will change. On the U.S. side, pressure to reduce inventories and shorten the product cycle will hasten this change to more kiln-drying. So how does as a foreign manufacturer compete and prosper in this market over the long term? Methods to accomplish this follow below.

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## **QUALITY**

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Consistent quality is a requirement in all markets. U.S. manufacturers do not have the time, money or warehouse space to waste on claims, returns or replacements.

In the United States, well-manufactured, well-packaged, high-quality veneer, lumber or plywood can open and keep open the doors for foreign products even under severe price or market pressures. U.S. consumers have the luxury of choice, so it is up to Africa and Ghana as manufacturers, and to the United States as importers or distributors, to deliver the goods as ordered.

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## **SUPPLY**

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Consistent supply is essential. Just as in Ghana, it is very expensive for customers in the United States to set up equipment, manufacture and market a particular product or species. So, as a result, they are reluctant or refuse to invest where they cannot be assured of consistent supply through markets both good and bad. This is particularly important for lesser-known species. In emphasizing the issue of good and bad markets, it is a given that other markets may represent greater short-term return for a variety of reasons, but the price of re-entry may be more expensive than any short-term gains.

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## **SHIPPING**

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Supply, quality and markets are all important, but the final variable for successful marketing to the United States is dependable shipping. One of the most frustrating obstacles to doing business in Africa has been the lack of consistent, predictable shipping to the United States. In the past, our company often had to ship break-bulk and transship in Europe. Today, as volumes grow, there has been tremendous improvement in availability and choice. Better service and lower prices from most African countries, including Ghana, are evident today. "This is one obstacle that companies in Ghana as a group can help us remove. There is one thing that the steamship lines understand and respond to, and that is volume. Combine leverage for better service and greater access to U.S. markets must be provided. The transportation companies will respond," Mr. Pond said.

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## **ADDITIONAL ASSISTANCE**

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As Mr. Pond concluded his presentation, there were requests from the audience that product specifications for the U.S. market be discussed. However, he replied that more specifications have been written for wood products than there was time to discuss

in this short meeting. Mr. Pond recommended that participants get out to see where products are being used in order to understand grading specifications. They can also join one of the U.S. trade associations, such as IWPA or NHLA. Both of these organizations have extensive grading specifications available to anyone who asks for them, foreign or domestic, and both associations are relatively inexpensive to join, especially for foreign companies. IWPA encourages foreign suppliers to join their association.

Exporting to the United States can be an intimidating experience for those not accustomed to the market. Most representatives in the United States have extensive experience in European markets. There are numerous importers able and willing to help with packaging, documentation and so on. Any of the U.S. trade associations mentioned above could be instrumental in putting Ghanaian firms in touch with several reputable trade association members familiar with Ghanaian products, many of whom have experience in Ghana.

# *Trade Regulations and Practices in the U.S. Market: Economic Regulations*

*by Wilbur Jones, Import Specialist, U. S. Department of the Treasury Customs  
Service, Washington, D.C.*

In his presentation, Mr. Jones emphasized that the majority of items exported by Ghanaian wood manufactures to the United States are free of duty (e.g., toys, furniture, sawdust and lumber). He systematically listed the classification numbers, types of wood products and their respective duty rates. He referred

to Chapters 44, 94 and 95 of the U.S. Customs Regulations for wood and wood products for additional details.

Table III summarizes advisory import duty rates for the specified wood articles that Mr. Jones presented to the participants.

**Table III: Advisory Import Duty Rates for the Following Wood Articles**

Classification #	Wooden Item	Duty Rate
4401.30	Sawdust	Free – 1.2%
4403	Wood in the Rough Poles, Logs Timber	Free
4404	Walking Sticks	Free
4408	Veneer Sheets	Free
4409	Siding, Flooring Molding	Free
4409.10	Sanded Dowel Rods	4.9%
4410	Particle Board	Free
4411	Fiberboard	Free
4412	Plywood	Free – 8%
4413	Densified Wood	3.7%
4414	Wooden Frames	3.9%
4415	Packing Cases	Free – 10.7%
4416	Casks, Barrels	Free – 3.2%
4417	Tools, Mop Handles, Broom Handles Paintbrush Handles Builders Joinery Windows Doors Parquet Floor Beams, Arches	Free – 5.1%    3.2% 4.8% Free 3.2%

(continued on following page)

**Table III: Advisory Import Duty Rates for the Following Wood Articles, continued**

<b>Classification #</b>	<b>Wooden Item</b>	<b>Duty Rate</b>
	Roof Trusses	3.2%
4418	Tableware	
	Forks/Spoons	5.3%
	Other	3.2%
	Jewelry Boxes	
	Lined	Free
	Not Lined	4.3%
	Statuettes	3.2%
4421	Wooden Blinds	5.1% – 10.7%
	Caskets	3.3%
9403	Wooden Furniture	Free
9406	Prefab. Bldgs.	2.6%
9501–9503	Toys	Free

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## *Biological Regulations (Phytosanitary and Environmental Considerations)*

*by Deborah Stewart, Regional Program Manager, USDA/APHIS/PPQ,  
Raleigh, North Carolina*

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Ms. Deborah Stewart described the differences between those wood products required to meet biological regulations and those that are not regulated. She explained why logs, lumber and unmanufactured wood products are regulated, while manufactured wood products are not.

Ms. Stewart stated that in 1995, the U.S. Animal and Plant Health Inspection Service (APHIS) issued

new regulations. The three phases of the regulations are:

- Application for import permit
- Inspection (at port of entry)
- Monitoring

Details of the current regulations governing wood and wood products may be found in Appendix 2.

## *Plenary Session IV*

*Chaired by Prof. Michael Wagner, School of Forestry, Northern Arizona University*

### *Theme III: Technology and Capacity Development in the Wood/Wood Products Industry*

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## *Trends in State-of-the-Art Equipment Utilization in Ghana*

*by Wellington Baiden, Managing Director, Portal, Ltd., Takoradi, Ghana*

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Mr. Wellington Baiden expressed his gratitude for the opportunity to present a paper on behalf of Ghana's wood industry. Citing the well-known fact that increasing global environmental awareness has had a significant impact on the wood industry in general, Mr. Baiden stated that added value and sustainability have become the main principles shaping policies in this industry. Technological innovations that minimize timber waste while ensuring the best quality return are now the order of the day. To be competitive in the global market, one must be able to match one's competitors in quality and price. The wood industry in developed countries, such as the United States, is highly mechanized; the same cannot be said of developing countries such as Ghana.

Constraints such as insufficient training and skills; unreliable electricity supply; inefficient, overpriced and outdated machinery; poor production technology; climatic factors; and problems with working conditions all contribute to less value than could otherwise be achieved for Ghanaian wood products. In order to arrest and reverse this situation, Ghana will need to overhaul its machines and technology to enable it to increase export revenues through the promotion of value-added exports.

Expanded exports from Ghana to the United States will involve species not grown in the United States. Consequently, increased trade will not cause any conflicts of interest; indeed, such an expansion in trade will be of mutual benefit to both countries. Ghanaian manufacturers will gain access to U.S. machinery, technology and technical expertise, which will

enhance the quality, range and value of Ghana's wood products and in turn enable it to better satisfy specific consumer tastes and preferences, to the benefit of American consumers. Improved wood-use technology will increase the range and efficiency of the timber being used. Ghana's long-term developmental goals would consequently be greatly enhanced by a vibrant wood/wood products sector.

There is room for improvement in all sectors of the industry, said Mr. Baiden. The primary sector could benefit immensely from improved harvesting practices. In the United States, logging residues are estimated at 10 to 18 percent, as compared to 40 percent in Ghana, which could greatly benefit from improved machinery and techniques to reduce this waste. It would benefit U.S. interests to make available to the Ghanaian industry information on the machines and techniques that add in achieving low residue waste.

Over the years, the Ghanaian wood industry has relied on Europe to supply its technology and machining needs. This has been in the form of reconditioned machines and technology prevalent in Europe as far back as 20 years ago. The focus of trade between Ghana and Europe, until recently, was mostly the export of round logs and lumber. Machinery and technology existed at a level that allowed only minimal processing to be done. This resulted in high volumes of low-value exports with insufficient returns for much-needed investment in technology and investment. As a result, the Ghanaian timber industry has been unable to diversify into areas requiring greater technology. A study by Lochenertz

into recovery rates of various tropical wood-processing countries revealed a very low rate in Ghana, at 40 percent, as compared to Brazil, with 55 percent; Venezuela, 60–70 percent; Indonesia, 50 percent; and Malaysia, 54.5 percent. This low rate of recovery can be directly attributed to the technology and skills of personnel in the industry.

Ghana's wood industry comprises 100-plus sawmills, roughly 200 furniture producers, 20 or more producers of sliced and rotary veneer and 6 manufacturers of flooring, decking doors and windows. There are 10 or more suppliers of plywood and more than 40 producers of molding profiles and machined wood, dowels, and broom and tool handles.

According to a forthcoming USAID report (*The Potential for Ghana's Wood/Wood Products for the U.S. Market*, Acquah et al.), Ghana was among the top ten exporters of veneer plywood and mahogany lumbers to the United States in the first half of 1997. Ghana's share of the U.S. market for veneer and plywood sheet, rough mahogany lumber and mahogany lumber not otherwise specified were 4.9, 3.28 and 20.55 percent, respectively. Also for these products, Ghana ranked sixth, fourth and second, respectively, among the countries of origin for the product.

As a result of recent changes in government policy, many opportunities have arisen in the wood industry which U.S. companies are ideally placed to exploit. Over the past three–four years, the wood industry in Ghana has been in a state of transition from a high-volume, low-value exporter of logs and lumber to a low-volume, high-value exporter of finished products. There are a number of pressing reasons for this shift in policy, including the following listed below.

- Increasing concern about sustainable management of decreasing forest resources has made it necessary to add as much value as possible to timber resources prior to export in order to maximize revenue.
- Tertiary industries generate high levels of employment and demand greater educational and

technical skills than do traditional logging and lumber operations.

- Tertiary production reduces costs by minimizing waste through fuller use of raw materials.

For these and other reasons, the Ghanaian timber industry is moving in the direction of value-added processing. Indeed, most Ghanaian mills are moving into processing further downstream by installing finger jointers and molders for improved recovery.

The market for tertiary product exports to the United States, however, has been nearly nonexistent. This can be traced to the fact that most tertiary production companies are tied to European buyers and are using European machinery and technology that date to the early 1970s to mid-1980s. More modern technology is required to produce items like furniture parts, carved and panel doors, windows, door frames and louver doors. There is also little awareness in Ghana of American technology design or preferences.

Ghana has successfully exported some products to Europe in the past and continues to do so. However, Ghanaian entrepreneurs have had little success in the U.S. market. Most of the tertiary industries in Ghana were initially set up or assisted by European companies, and U.S. companies, unlike their counterparts in Europe, have been unwilling to involve themselves directly in this sector. "The tertiary wood sector needs American companies to get involved in helping upgrade our machinery and technology," said Mr. Baiden. "The benefit to U.S. partners will be improved quality and better prices. We need your research institutions to collaborate with our institutions (i.e., wood training centers, polytechnics and universities) to create awareness of American technology design and preferences." He went on to note that the tertiary wood sector in Ghana needs machines like four-sided planers, multi-rip saws with lasers, kiln dryers, finger jointers, daylight-presses and others. However, Ghanaian tertiary wood firms can only afford to pay for these tools on a credit basis from export dollars.

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# *Trends in State-of-the-Art Equipment Utilization in the United States*

*by Phil Mitchell, Department of Wood and Paper Science,  
North Carolina State University*

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Mr. Phil Mitchell opened his remarks by stating that tooling and machining issues are critical to manufacturing efficiency and optimum use of forest resources. It is commonplace throughout the woodworking industry, he said, for machines and tools to be operated at feeds and speeds much lower than what they were designed to handle. This lost efficiency is due in part to lack of knowledge of proper tooling selection and tooling maintenance procedures.

In addition to inefficiency, poor tooling practices also translate into wasted wood resources. A surprisingly small amount of the total wood harvested is actually converted to finished products. Substantial losses can be found throughout the manufacturing process. Some estimates indicate that as little as 15–20 percent of the total wood volume harvested actually makes its way into wood products (based on saw log input volume), while further estimates suggest that up to 25 percent of the lumber coming into a furniture plant is lost simply through the process of smoothing and dimensioning. This problem is greatly influenced by the tooling and machining practices employed both in sawmills and in rough-end areas of furniture plants. Wood machining and tooling research and education translates into improved technology for increasing productivity and improving wood resource utilization.

The Wood Machining and Tooling Research Program (WMTRP) at North Carolina State University

is a multidisciplinary program that combines the fields of mechanical engineering, industrial engineering, manufacturing engineering, material science and wood science. The program's mission is to (1) supply the woodworking industry with individuals educated in machining and tooling technology and (2) provide applied research results aimed at improving efficiency and wood utilization. WMTRP research focuses on the machine-to-workplace interface, primarily:

- tool design/performance
- tool materials/tool wear
- machine/tool dynamics
- high-speed machining
- process monitoring/control
- surface quality evaluation
- abrasive machining.

Major program support is provided by the U.S. Department of Agriculture. For more information on WMTRP research activities please contact Mr. Richard Lemaster, WMTRP, P.O. Box 8005, North Carolina State University, Raleigh, NC 27695, phone: (919) 515-1548, fax: (919) 515-6302, e-mail: lemaste\_r\_wmtrp@ncsu.edu. See also the WMTRP Web site: [www2.ncsu.edu/wmtrp](http://www2.ncsu.edu/wmtrp).

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# *Access to U.S. Equipment by Ghanaian Manufacturers and Export Opportunities for U.S. Firms*

*by Alex Dorminy and Ed Wilson, Ligna Machinery, Burlington, North Carolina*

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Mr. Alex Dorminy and Mr. Ed Wilson used an audiovisual presentation to display the basic configuration of a typical U.S. sawmill. The presentation covered the operations of (1) debarkers (rosserhead debarkers), (2) primary breakdown technology,

(3) secondary breakdown technology, (4) edgers and (5) trimmers. A general arrangement plan for a sawmill floor layout was also presented.

Details of the equipment shown may be found in Appendix 3.

\* \* \* \* \*

## **Small Group Breakout Sessions**

*Facilitators: Emmanuel T. Acquah, Gustav Adu, Daniel Robison and Bantayehu Gelaw*

At this point, workshop participants were divided into three groups. Each group was charged with discussing and making recommendations on three issues: (1) marketing, (2) technology and equipment and (3) forestry sustainability—issues key to enhancing trade and investment opportunities between U.S. and Ghanaian wood/wood product manufacturers. The following summarizes the recommendations made by the workshop participants.

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### **MARKETING**

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In order to improve the marketing of their products and increase trade with the United States, Ghanaian wood/wood products stakeholders should:

- Study the needs of their U.S. clients through market research and insight gained from multiple sources (e.g., trading partners and trade associations).
- Encourage trade associations in Ghana to establish links with Ghanaian embassies overseas,

especially in the United States, and work with them to promote Ghanaian wood products.

- Target specific markets with known product(s) requirements.
- Explore and encourage the development of partnerships in shipping arrangements.
- Identify additional importers through commodity associations like IWPA, APWA, CLA and the Forest Product Society.
- Establish linkages with U.S. universities (e.g., North Carolina State University) for design and marketing research.
- Follow up on contacts made at this workshop, seek affiliation with identified U.S. wood product associations and participate in their trade shows.
- Collaborate with U.S. universities to develop and advertise product prototypes.
- Develop linkages with U.S. private and public institutions for training and exchange programs.

- Promote less frequently used African timbers by targeting a few (i.e., five) species, at least initially.
- Create a joint Web site for all sectors of the Ghanaian wood industry (primary, secondary and tertiary sectors).
- Place advertisements in U.S. trade journals.
- Seek an alternative payment arrangement that guarantees payments to U.S. partners through FPIB.
- Reorganize wood products associations to make them more proactive.

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## TECHNOLOGY AND EQUIPMENT

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In order to improve access to and use of technology and equipment, Ghanaian wood/wood products stakeholders should:

- Vigorously seek multiple sources of funding (e.g., EximBank, IFC, TDA, OPIC) to acquire better technology and equipment.
- Learn how to develop joint-venture proposals to acquire technology and equipment.
- Explore opportunities with U.S. partners in sourcing long-term external funds for equipment financing.
- Survey technologies being used by successful countries in South America and Southeast Asia.
- Conduct a technology and human capital needs assessment and develop a capacity-building strategy.
- Collaborate with partners to organize a U.S. trade mission to Ghana.
- Collaborate with trading partners to develop skills required to use modern technology and equipment.

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## FORESTRY SUSTAINABILITY

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In order to ensure that sustainable practices are established and maintained in Ghana's forests, Ghanaian wood/wood products stakeholders should:

- Link forestry development with wood production.
- Explore ways in which the public sector can successfully engage the private sector in tree plantation development.
- Explore opportunities for accessing resources from private organizations, NGOs and international organizations to support sustainable forestry development.
- Use technologies that reduce wood residue waste.
- Take seriously international sensitivity to deforestation and become more aware of the current trend of decline in the forest resource base.
- Promote tree planting and plantation forestry.
- Recognize and provide resources to support sustainable forestry research.
- Promote silviculture training in post-secondary institutions.
- Support research institutions' efforts in sustainable forestry production and management.
- Make sure that plantation forestry plans include intermediate crops to improve cash flow and the living conditions of small and medium farmers.

The interventions and recommendations proposed in the pre-processing and sustainable supply issues section in the forthcoming USAID study *The Potential for Ghana's Wood/Wood Products for the U.S. Market* should be examined in conjunction with the above recommendations to develop an action plan that will facilitate sustainable forestry development in Ghana.



## *Plenary Session V*

*Chaired by Zachee Nzoh Ngandemboa, Director, African Forest Action Network (AFAN), Limbe, Cameroon*

### *Theme IV: Financial Opportunities for Joint Ventures and Sustainable Forestry Production and Management in Ghana*

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## *Financial Opportunities for Joint Ventures/ Partnership Initiatives*

*by Yaw Kwakwa, Acting Head, International Finance Corporation, Ghana*

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Mr. Yaw Kwakwa began his presentation by describing the mission of the International Finance Corporation (IFC), which was established in 1956 and is part of the World Bank Group. IFC's mandate is to promote private-sector development through:

- provision of loans and equity for viable projects
- mobilization of capital from other sources
- provision of advisory services to clients.

IFC also provides indirect financing through credit and equity loans, venture capital and leasing. Some unique characteristics of IFC include the following:

- It only participates in private-sector ventures.
- It shares the same risks as other investors.
- It invests in equity.
- It provides market pricing policies.
- It does not accept government guarantees.
- It is profit oriented.

IFC brings several benefits to its clients, Mr. Kwakwa stated. Its presence reassures foreign investors, local partners and governments, while it also serves

as an honest broker and neutral partner. The involvement of IFC in a venture serves as assurance for other investors and lenders.

The three major services that IFC offers are:

- 1) *financial products*: loans, equity, quasi-equity and risk management facilities
- 2) *resource mobilization*: loan participation and security offerings
- 3) *advisory services*: country, industry, financial and technical.

In FY98, 4.7 percent of IFC's total portfolio of \$5.9 billion went into timber, pulp and paper products.

IFC's investment guidelines emphasized that: (1) projects must be in the private sector; (2) projects must be financially, economically and environmentally sound; and (3) IFC shares no more than 25 percent of project costs. Loans of \$1 million to \$100 million are considered standard projects, while loans of \$100,000 to \$1 million are considered small and medium-size projects. IFC loans are provided in currency of the client's choice, with fixed or floating market-rate pricing. Loans are tailored to provide the client with a suitable cash-flow pattern and a long maturity period of 8–12 years.

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# *Sustainable Forestry Production in Ghana: Critical Issues*

*by J.R. Cobbinah, V.K. Agyeman and A.R. Adam,  
Forestry Research Institute of Ghana, Kumasi, Ghana*

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## **INTRODUCTION**

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Formal forestry administration in Ghana began in 1909 with the establishment of the Forestry Department (now the Forest Services Division of the Forestry Commission) to conserve and manage forestlands. However, long before that time, there existed traditionally protected areas such as sacred areas and burial groves, and the forest was left untouched at headwaters and along the courses of rivers and streams. Forest conversion and exploitation also predate the establishment of the Forestry Department.

The forestry sector, supported mainly by the timber trade, has historically been one of the top three foreign exchange earners for Ghana, ranking third after cocoa and minerals. However, it has recently been overtaken by tourism and has dropped to fourth position. Traditionally, the timber trade has accounted for 5–12 percent of the GDP and 11–18 percent of export earnings. The forestry sector directly employs about 75,000 people and provides a livelihood to nearly 15 percent of the country's 19.5 million people. Inhabitants of rural communities, who represent about 60 percent of Ghana's population, depend on goods and services from the forest. The sustainability of forest production in Ghana is thus an important issue.

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## **RESOURCE BASE**

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### **Forest Cover**

Ghana has a gross land area of 23.8 million hectares, which is covered by two broad vegetation

types. Approximately 65 percent of the country, including the entire northern region and some areas of the coastal land, are savanna. The remaining 34 percent (8.2 million hectares), occurring in the center of the country and southwest, falls in the high forest zone. This zone can be divided into four main forest types according to rainfall regime, forest architecture and species composition.

At least 680 woody species that grow to a thickness greater than 5 centimeters in diameter at breast height (dbh) have been identified, classified and named in Ghana. Of these, 240 grow to timber size of above 50 centimeters dbh. The total standing volume of marketable trees is estimated at 188.4 million cubic meters (m<sup>3</sup>), of which 54 percent represents mature trees and 46 percent immature trees.

### **Forest Condition**

Illegal logging and farming activities, mining and bushfires have all contributed to a decline in forest health. Of an estimated 1,634,100 hectares of reserve area, only 762,400 are suitable for timber exploitation. The degraded land area totals over 500,000 hectares, and nearly 80 percent of this has been earmarked for conversion.

The average rate of deforestation over the century is estimated at 0.77 percent, but this has varied during certain periods. From 1980 to 1990, for example, the deforestation rate grew to 1.3 percent. Excessive cutting of timber has been one factor, although often more important contributors to forest clearing are logging roads, which facilitate migration and new settlements. Fires, open grazing, fuelwood collection, mining, urban expansion, slash-and-burn agriculture and unsustainable farming practices are other important local causes of deforestation.

## Forest Plantations

Plantation forestry is a relatively recent phenomenon in Ghana, beginning in earnest in the 1970s. There are now about 50,000 hectares of plantations established by the state, private companies and communities. However, only 15,000 hectares are considered to be productive. At present, these yield about 50,000 m<sup>3</sup> annually, but the yield is expected to increase when clear felling begins. Plantations are planted mainly with teak, cedrella and gmelina.

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## STEPS TOWARDS SUSTAINABLE FOREST MANAGEMENT IN GHANA

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The underlying causes of the accelerated forest decline from the mid-1950s to the mid-1980s have been high population growth rates, rural poverty, weak enforcement of sustainable forestry policies and poor economic performance. Efforts to sustainably manage Ghana's forest have included four main approaches: (1) forest policy reviews, (2) improvement of management practices, (3) investments and financial support and (4) institutional restructuring.

### Forest Policy Reviews

Prior to the 1994 Forest and Wildlife Policy, the guidelines by which forest management operated were based on achieving acceptable levels of forest cover in government-controlled forest reserves. Outside these permanent forest estates no clear-cut management guidelines were available, probably because these areas were earmarked for agriculture under the land use plan.

The 1994 Forest and Wildlife Policy, which was guided by principles based on national convictions and previous policies and legislation, recognizes and confirms the role of social forestry in the general strategic framework for sustainable savannah woodland management. The cornerstones of the 1994 Forest and Wildlife Policy are:

- Management and enhancement of Ghana's permanent forest estate and wildlife resources.

- Promotion of viable and efficient forest-based industries.
- Promotion of public awareness and involvement of rural populations.
- Promotion of research-based and technology-led forestry and wildlife management.
- Development of effective capability at national, regional and district levels for effective forest and wildlife management.

In addition to the Forest Policy, the government has also prepared a Forestry Development Master Plan (1996–2020) for achieving sustainable use and development of forest and wildlife resources, the participation of forest communities in management, modernization of the timber industry and conservation of the environment.

Another recent major policy change is the promulgation of the Timber Resources Management Act 547. Until 1998, timber harvesting was undertaken by timber concession holders who leased the land for a period and logged it under Forestry Department regulations until the lease expired, at which time they had the option to renew it. Through this new Act, the concessions system was replaced by a competitive process that relies on timber utilization contracts. The Act obliges timber contractors to establish plantations at the rate of 10 hectares for every square kilometer of contract area exploited.

### Forest Management Practices

The major components of these practices include:

1. harvesting controls.
2. resource tenure and use rights.
3. collaborative forest management.
4. social equity and efficient distribution of costs and benefits.
5. forest management certification.
6. plantation development.

## **Investments and Financial Support for the Timber Industry**

The government of Ghana initiated an Economic Recovery Program (ERP) in 1983 to revitalize the economy following a severe decline in production and exports in the 1970s. Foreign loans totaling US \$142 million were contracted by the government from international bilateral and multilateral agencies to restructure and rehabilitate the timber industries. As many as 60 companies benefited from various loans. In addition, Ghana has received substantial international support in the past few years for the development of sustainable forest management.

The result of these investments and financial support has been increased output, capacity utilization and conversion efficiencies. Capacity utilization of mills has risen from a low of 20 percent in 1983 to 55 percent in 1999. Average conversion efficiency also rose from 25 percent in 1983 to an average of 38 percent (Tweneboah, 1997). Export of timber and other wood products climbed to US \$126 million in 1992, rising to a peak value of US \$230 million in 1994. These achievements were made possible through the Ghanaian government's macroeconomic policies, as well as through incentives created by the ministry for the enhancement of the timber industry's performance.

### **Institutional Restructuring**

Institutional restructuring of the forestry sector commenced in 1986 under the Forest Resources Management Project (FRMP), funded by the World Bank and the government of Ghana. Capacity building and infrastructural support for all the sector institutions to perform needed services were the primary concerns of the government under the FRMP. Consequently, detailed assessments, based on sector diagnosis, manpower and capacity constraints, were made under the FRMP.

Currently, further institutional restructuring of the forestry sector under the Ministry of Lands and Forestry is being carried out under the Natural Resources Management Project (NRMP), the succes-

sor project to the FRMP. Under the current restructuring program, mechanisms have been established to make the sector's institutions more accountable and cost-effective. Improved technical and financial management systems have also been developed and are now being implemented.

A new Forestry Commission Act of 1999 has been promulgated to restructure the forestry sector under the Ministry of Lands and Forestry. The commission, which previously was primarily responsible for monitoring and evaluation of activities in the forestry sector, has now been given an executive function.

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## **OPTIONS FOR THE FUTURE**

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There are several options for the future in sustainable forestry, which include:

1. Increasing production from forest plantations, particularly those on degraded forest lands.
2. Improving efficiency in forest harvesting and wood processing.
3. Promoting and marketing lesser-used species.
4. Developing the panel products industry. At present, the industry is heavily dependent on large-diameter logs for saw wood, plywood and veneer production.

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## **IMPLICATIONS FOR FUTURE INVESTMENT**

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Future investment in Ghana's timber industry will involve costs in managing natural forests, establishing and managing plantations and developing facilities for producing, processing and marketing forest products. These costs will be influenced by several factors, including wage rates, levels of technology, and adequacy of infrastructure. In the absence of detailed data on these factors, we present only the following indicative needs.

### **Investment Needs for Natural Forest Rehabilitation**

The total area covered by natural forests in Ghana is 8.2 million m<sup>3</sup>. However, about 1.6 million hectares are under reservation. Within reserves, there are about 400,000 hectares of degraded land with crown density of less than 40 percent, which require some form of rehabilitation.

### **Investment Needs for Plantation Development**

The Forestry Development Master Plan proposes a nationwide planting target of 200,000 hectares. This will be met by annual planting of 10,000 hectares over the next 20 years. Plantation establishment costs vary with species, intensity of site preparation, method of planting, and so on.

### **Investment Needs in Sawmilling**

Although the current installed capacity of sawmills exceeds the annual allowable cut, there is still a great need for improved equipment. Much of the existing machinery in these sawmills requires replacement or enhancement. Obsolete sawmill machinery is largely responsible for low processing efficiency.

### **Other Areas for Investment**

Other areas in which investment is required include reconstituted wood-based panel products, wood harvesting capacity, value-added processing, utilization of harvesting and mill residues, and human resource development.

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## **INCENTIVES TO INVESTORS**

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Incentives to promote forest resource use can take various forms: favorable policies, monetary grants, low-interest loans or credit facilities, and good prices for forest products. To achieve desired goals, incentives must be appropriate and properly administered. Favorable investment codes and incentives, particularly to encourage downstream processing like the manufacture of reconstituted panels, molding, joinery and furniture, have been formulated.

Putting forest resources to work involves investing in both capital expenditure and manpower development. Consequently, the government of Ghana has provided access to some financial incentives in the form of lower royalties, tax rebates and market access. However, development of a comprehensive campaign to attract investors is urgently needed. Incentives for forestry sector development should include the following, listed below.

### **Processing**

- Tax rebates for industries located in regional capitals other than Accra and Tema.
- 35 percent export retention for nontraditional wood products and 20 percent export retention for traditional wood products.
- High export incentive rebates on corporate tax (up to 75 percent).
- Depreciation allowance of 10 percent.
- Income tax rebates on workers' accommodations.
- Full deductibility for capital expenditures on research and development.
- A reduction of 8 percent on export tax for non-traditional timber exports.
- Immigrant quotas.
- Transferability of capital.

Currently, the only official charge on wood exports is a 3 percent export levy or service charge. Export levies of other African countries (as of 1996) were: Cote d'Ivoire, 5–15 percent; Cameroon, 7–12 percent; Gabon, 9.5 percent; and Central African Republic, US \$250 per m<sup>3</sup> output.

### **Plantations**

- Access to land and acquisition negotiations carried out on behalf of the investor by the Forest Service.
- A depreciation allowance of 10 percent.

- Income tax rebates on workers' accommodations.
- Full deductibility for capital expenditures on research and development.
- Access to credit and grants.
- Creation of a land bank in degraded forest reserves for developers.
- Creation of the Forestry Plantation Fund approved by parliament.
- Tax exemption for income from plantation thinning and corporate income tax of 8 percent for industrial plantations.
- Income tax relief of 100 percent for five years from start of production in all priority areas.
- A tax rebate of 50 percent on reinvestment in wood drying and treatment.

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# Closing Session

*Chaired by William Akiwumi, USAID/Ghana*

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Mr. William Akiwumi expressed USAID/Ghana's support for the workshop. He indicated that both the initial wood products study by USAID/Washington and the workshop itself complement and directly support the mission's Trade and Investment Reform Project (TIRP). Mr. Akiwumi remarked that USAID/Ghana is committed to the development of the private sector in Ghana, and he encouraged the continued efforts of AMEX International to implement trade development activities in wood/wood products that assist in fostering more linkages between Ghanaian firms and their U.S. counterparts.

Mr. Bilijo, Ghana's Deputy Minister of Lands and Forestry, stated that Ghana will continue its work in sustainable forestry management. He reminded the participants that the government's 1994 policy on forestry encourages agro-forestry, reforestation and forest plantation development. Mr. Bilijo reaffirmed the government's commitment to engaging the private sector and the international community in promoting sustainable forestry production and management in Ghana. He thanked the workshop organizers for their leadership, indicating that the workshop will serve as a necessary first step in helping Ghana (both private and public sectors) develop strategies for effectively competing in the U.S. market.

Professor Michael Wagner, who spoke on behalf of the U.S. participants, expressed appreciation for the opportunity offered to the Americans to interact with their Ghanaian counterparts. He viewed the workshop as a first and necessary step in effectively participating in the wood product subsector of the U.S. economy. Professor Wagner reemphasized one fact which had become clear during the course of various discussions, which is that "Americans do business differently from other traditional trading partners of Ghana." He therefore encouraged the Ghanaians to understand how Americans do business and to use that information in developing their

strategic plans for competing in the U.S. market. He also encouraged Ghana to continue its development of sustainability policies in natural and plantation forestry and its support for forestry research.

Dr. Duffuor, on behalf of the Ghanaian private-sector participants, congratulated USAID for organizing such an important workshop. He thanked the American participants for taking time out of their busy schedules to participate in the workshop and declared that the workshop served as a very important beginning for exploring expanded trade and investment opportunities between the Ghanaian and American manufacturers and traders in wood/wood products. Dr. Duffuor noted the importance of the list of recommendations that resulted from the small group discussion and assured the workshop organizers that the Ghanaians would study those recommendations carefully and use them in their strategies to expand trade with the United States in the wood products subsector.

Mr. Addo, of the Ghanaian embassy to the United States, assured the participants of the embassy's availability and readiness to facilitate business relationships between Ghana and the United States. He stated that the embassy is committed to assisting the private sector in Ghana in the promotion of their products and promised to provide information to Ghanaian firms, via fax, e-mail and regular mail, on any U.S. facilities (e.g., EximBank, OPIC) that may have interest/mandates in promoting investment opportunities. Mr. Addo assured the U.S. participants that Ghana has developed a friendly investment environment and is ready to work with all serious investors.

Mr. Adu, of AMEX International, expressed profound thanks to both the Ghanaian and U.S. firms for participating in the workshop. He stated that the willingness of the Ghanaian firms to split expenses with USAID to cover the cost of attending the

workshop is a testimony to their commitment in exploring trade opportunities in the United States. He categorized the workshop as a first critical step whose outcomes will be used in planning for future courses of action and assured the participants of AMEX's commitment to assist the private sector in management and marketing. Mr. Adu declared that the industry is looking forward to continued engagement with the government to enhance and maintain sustainability in the forestry subsector.

Dr. Whyte, of USAID/Washington, thanked all participants for their active involvement and contribution during the two days of the workshop. He expressed satisfaction that the output of the original wood study, the seminar held in Ghana to discuss research results, and the output of this workshop will jointly serve as useful information resources for developing action plans for expanded trade between

U.S. and Ghanaian manufacturers and traders in wood/products. Dr. Whyte indicated his pleasure in noting that an activity initiated three years ago by USAID/Washington, independent of USAID/Ghana's efforts, is contributing significantly to USAID/Ghana's Strategic Objective (SO) on private-sector growth. He expressed the hope that the Ghanaian parties (the ministry, the private sector, AMEX International) will continue the dialogue initiated at the workshop in exploring effective means for all parties to enhance the sustainable wood products industry in Ghana.

Dr. Whyte was particularly pleased to learn that the Ghanaian participants found the small group discussion outcomes to be useful inputs for future action plans. He assured participants that USAID/Washington will work closely with USAID/Ghana as the Ghana mission sees fit.

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## Site Visits for Ghanaian Participants

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On Friday, November 5, the Ghanaian participants visited the following three facilities:

- Hodges Wood Products Laboratory, Department of Wood and Paper Science, North Carolina State University, Raleigh, North Carolina.
- Tramway Veneer, Incorporated, Sanford, North Carolina.
- This End Up Furniture Company, Sanford, North Carolina.

# Appendices



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## *Appendix 1*

### *Trade and Investment Workshop Participants*

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## *Appendix 2*

# *Logs, Lumber and Other Unmanufactured Wood Articles: U.S. Import Regulations*

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Historically, the United States has exported wood and wood products, except for tropical hardwoods and Canadian softwoods. However, economical changes and new global conditions have decreased the availability of U.S.-grown old-growth timber, which has led to an interest in importing raw wood and products from other countries.

Changes in types of wood imported, as well as the market for larger quantities of wood products, have created a pathway for injurious pests. In 1995, the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) therefore published Regulation 319.40 to monitor and control the import of logs, lumber and unmanufactured wood articles.

There are three phases to Reg. 319.40:

- permit
- inspection (at port of entry)
- monitoring.

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### **PHASE I: PERMITS**

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Importers of logs, lumber and unmanufactured wood articles must apply for a permit by using Plant Protection and Quarantine Form 587. There are two types of permits granted:

- **General:** Authorization (no permit required) for wood from Canadian and Mexican states adjacent to the U.S. border, solid and loose wood packing materials, and bamboo timber.
- **Specific:** Written permit providing specific conditions of entry for logs and lumber from other areas.

Permit applications must include:

- Type of regulated article, including the genus and species of the tree from which article was derived.
- Country and locality (if known) where the tree was harvested and from which the regulated article was derived.
- Quantity of the article to be imported.
- Description of processing, treatment or handling of the regulated article to be performed prior to importation, including location of processing or treatment which was or will be performed and the name(s) of chemicals used in the treatment.
- Description of processing, treatment or handling to be performed following importation, including location and name(s) of chemicals to be used.
- Whether the article will be imported in a sealed container or hold.
- Means of conveyance used to import the article.
- Intended port of arrival in the United States and subsequent ports where articles might be unloaded.
- Destination and general intended use of articles.
- Name and address of applicant and, if not in the United States, name and address of an agent in the United States accepting the service.
- Statement certifying the applicant as importer of record.

The permit unit will review the application to determine if the importation meets criteria under specific

or universal requirements. Tropical hardwood lumber and logs may be imported under specific requirements.

Tropical hardwood logs and lumber must be debarked so that bark covers no more than 2 percent of the surface of all articles, with no single article retaining bark on more than 5 percent of its surface, and are subject to inspection and other requirements as necessary. (See 7CFR 319.40-9.)

If not debarked, logs must meet fumigation requirements using methyl bromide under treatment T-312 of the agency's treatment manual.

Small lots of tropical hardwood, i.e., 15 or fewer logs, may be imported into the United States, with the exception of Hawaii, Puerto Rico and the U.S. Virgin Islands. Shipments are subject to inspection and other requirements as necessary. (See 7CFR 319.40-9.)

Temperate hardwoods, including logs and lumber with or without bark, may be imported if fumigated, according to treatments specified in 7CFR 319.40-7(f) (except places in Asia east of 60 degrees east longitude and north of the Tropic of Cancer). Shipments are subject to inspection and other requirements as necessary. (See 7CFR 319.40-9.)

- Articles associated with tropical pests that can become established in tropical or subtropical climates can be imported if (1) their destination is the continental United States or (2) they are not imported into any tropical or subtropical areas of the United States specified in the permit.
- Crossties can be imported from all areas (except areas in Asia east of 60 degrees east longitude and north of the Tropic of Cancer) if free of bark and accompanied by an importer statement that the crossties will be pressure treated within 30 days of importation. Shipments are subject to inspection and other requirements as necessary. (See 7CFR 319.40-9.)

### **Universal Importation Options for Logs, Lumber and Unmanufactured Wood Articles Other Than Tropical Hardwoods<sup>1</sup>**

- Logs must be debarked to no more than 2 percent of the surface of all articles, with no single article retaining bark on more than 5 percent of its surface. Logs must be heat treated at a facility approved by APHIS or a designee of APHIS and the national government of the country where the facility is located. The temperature of the center of the logs must be raised to at least 71.1 degrees Celsius and maintained at that temperature for at least 75 minutes. If the logs are not immediately shipped, they must be stored, safeguarded and handled in such a manner that excludes potential infestation by plant pests.
- Lumber must be heat treated as described in the paragraph above or heat treated with moisture reduction, i.e., by kiln drying, according to the dry kiln operator's manual, or by dry heat, which raises the temperature to 71.1 degrees Celsius, maintains the temperature for 75 minutes and reduces the moisture content by 20 percent or less as measured by an electrical conductivity motor. In addition, during shipment there will be no other regulated articles (other than solid wood packing material) permitted on the conveyance unless separated by sealed containers or separate holds, unless all the regulated articles have been heat treated or heat treated with moisture reduction as described above. If the lumber has been heat treated, that fact must be stated on the importer's statement document or permanently marked by the letters "HT" or words "Heat Treated" on each piece of lumber. If heat treated with moisture reduction, that fact must be stated on the importer's statement document or permanently marked by the letters "KD" or words "Kiln Dried" on each piece of lumber.
- Raw lumber, including solid wood packing material, may be imported as cargo if 100 percent

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<sup>1</sup> 7 CFR 319.40 Excerpted to specify requirements under universal options for the importation of logs, lumber and unmanufactured wood articles other than tropical hardwood logs and lumber from Ghana.

debarked and if, during shipment, no other regulated articles are permitted on conveyance unless separated by sealed containers or separate holds. Raw lumber on a vessel's deck must be in a sealed container. Raw lumber must be consigned to a facility operating under a compliance agreement with the capability of treatment, i.e., heat treated or heat treated with moisture reduction (as described above) within 30 days from the time the lumber is released at the port of arrival. Heat treatment must be completed before cutting, planing or sawing of the raw lumber.

Wood chips may be imported when accompanied by an importer document stating that the wood chips or wood bark were either derived from live, healthy, tropical species of plantation-grown trees in tropical areas or fumigated with methyl bromide per treatment schedule T-404, heat treated or heat treated with moisture reduction. During shipment, no other regulated articles are permitted in the holds or sealed containers carrying wood chips or bark chips. In addition, the chips must be free from rot at the time of importation, unless accompanied by an importer's statement stating the entire lot was fumigated with methyl bromide, heat treated, or heat treated with moisture reduction. Chips must be consigned to a facility operating under a compliance agreement with the capability of treatment, i.e., heat treated or heat treated with moisture reduction within 30 days of arrival at the facility.

Wood mulch, humus, compost and litter may be imported if accompanied by an importer document stating it was fumigated with methyl bromide per treatment schedule T-404, heat treated or heat treated with moisture reduction.

Cork and bark may be imported if free from rot at importation. They are subject to inspection and other requirements.

## **Compliance Agreements**

Importers applying for permits for material requiring a compliance agreement, i.e., raw lumber and/or wood chips, should submit a copy of the permit application to a PPQ office (port of entry), so that arrangements can be made with the facility operating under the agreement. Permits with compliance agreements are valid for three years, and both permits and compliance agreements must be renewed to ensure that the facility continues to meet requirements for processing.

When the permit process requires a compliance agreement, a PPQ inspector will arrange an inspection of the facility. The inspector will ensure that the facility can meet the requirements of the agreement. Shipments consigned to a facility for further processing are allowed to move from the port of arrival to the facility under safeguard procedures, e.g., a transit permit.

Operators of facilities which process regulated articles may enter into a compliance agreement with APHIS to facilitate importation of these articles. Compliance agreements will specify necessary requirements to (1) exclude plant pests spread from the facility, (2) ensure effective processing methods to destroy plant pests and (3) apply chemicals in accordance with the agency's treatment manual. The agreement must also state that inspectors will be allowed access to the facility for monitoring compliance requirements. Compliance agreements may be obtained from the office of the Administrator or through a PPQ office.

Compliance agreements may be canceled by an inspector orally or in writing when the facility fails to comply with the conditions of the agreement. Reasons for cancellation will be confirmed in writing. Persons whose compliance agreements are canceled may appeal the decision in writing to the Administrator

within 10 days of receiving notification of cancellation. The Administrator will grant or deny the appeal in writing and provide reasons for the action(s).

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## **PHASE II: INSPECTION AT FIRST PORT OF ARRIVAL**

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All regulated articles offered for importation must be inspected at the first port of arrival. The inspector will review the cargo manifest, entry documents and the importer's statement to determine the shipment's origin and if it meets requirements stipulated by the permit.

The inspector will examine the shipment for plant pest infestation. If the shipment is found to be infested by plant pests or has been associated with other articles infested with plant pests, the infested article(s) will be subject to cleaning or other treatment as designated by the inspector. If the inspector

determines that the shipment is infested with plant pests to the extent that, within the inspector's judgment, it cannot be cleaned or treated, the entire lot may be refused entry into the United States.

No regulated article will be moved from the first port of arrival until released electronically or in writing by the inspector. Regulated articles that require further processing at a facility under a compliance agreement must meet processing requirements within 30 days after being moved to the facility.

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## **PHASE III: MONITORING**

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Periodically, inspectors will monitor shipments of regulated articles that are being moved to facilities for further processing. Monitoring procedures ensure direct transit of the shipment to the facility and also ensure that required measures are taken to exclude plant pests.

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*Appendix 3*  
*Basic Configuration of a Typical American Sawmill:*  
*Ligna Equipment Presentation*

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LIGNA PRODUCT LINE

I. DEBARKERS

A. ROSSERHEAD DEBARKERS

B. ROSSERHEAD DEBARKERS

II. PRIMARY BREAKDOWN

A. CARRIAGES

B. SCRAGS

III. SECONDARY BREAKDOWN

A. GANG SAWS

B. GANG SAWS

C. VERTICAL RESAW

IV. EDGER

V. TRIMMER

VI. MILL FLOOR LAYOUT

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## PRODUCTS MANUFACTURED BY LIGNA MACHINERY

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### Gangs

- Thin kerf, bottom and top single-arbor (clam shell available)
- Conventional kerf, bottom and top single-arbor
- Combination gang-edgers
- Capacities: 4", 6", 8" and 10"

### Edgers

- Conventional two-saw bottom or top arbor
- Three-saw with automatic outfeed system
- Chipping edger with side and top heads
- Computerized networks-optimized edger systems

### Debarkers

- Split track carriage design—up to 54" diameter
- Overhead tube design—up to 42" diameter

### Scrag Mills

- Conventional “cradle-chain” single-pass
- True “sharp-chain” single-pass
- End-dogging carriage multiple-pass
- Top-dogging carriage multiple-pass
  - Twin band sharp-chain single-pass
  - Optimized sharp-chain canter
  - Small log processor

### Trim Saws

- Conventional two-saw (one fixed, one movable)
- Automatic air lift

### Sorting Lumber Handling

- Bin sorters for sawmills and planer mills
- Trimmer systems
- Stackers and lifts
  - Tilt hoists
  - Unscramblers
  - Board feeders/lug loaders
  - Transfers, conveyors
  - Grade/tally systems

### Miscellaneous

- Sharp chains
- Drop belts; off-bearing belts
- Belt conveyors
- Belt and chain conveyors
- Rolicases; transfers
- Decks; log troughs
- Tree-length cut-up systems
- Circular-head saw husk frames
- Modularized track frames
- Top saws
- Pre-trim systems—dealer decks; lug loaders; even-end modules
- Pre-positioning infeed tables (for gangs)
- Hydraulic bar style log turner

## **I. Debarkers**

### **A & B - Rosserhead Debarkers**



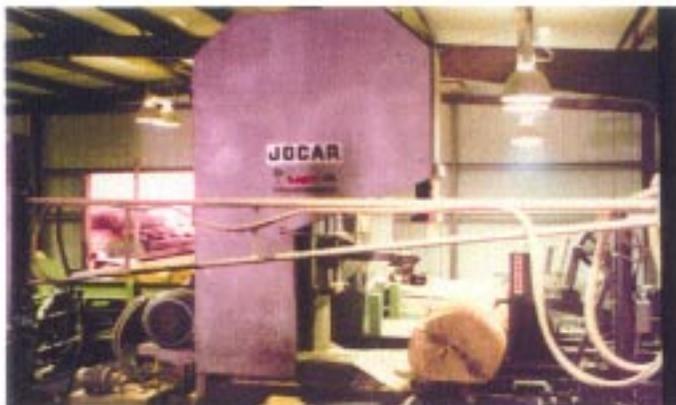
## **II. Primary Breakdown**

### **A. Carriages**



#### **1. Carriage**

#### **2. Carriage with Track and Husk**



#### **3. Carriage with Band Headrig**

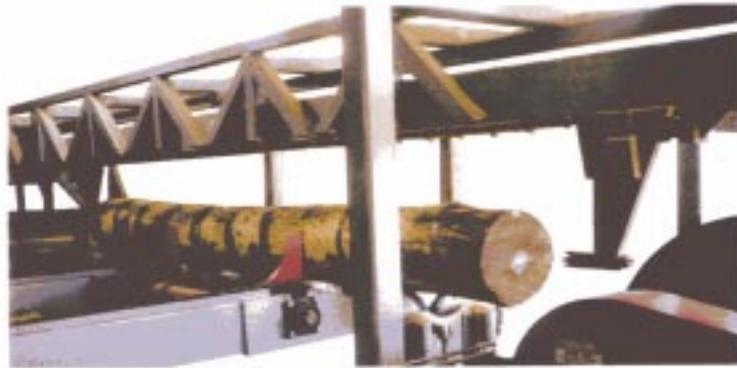
## **II. Primary Breakdown**

### **B. Scrag**



#### **1. Cradle Chain Scrag**

#### **2. End Dogging Scrag**



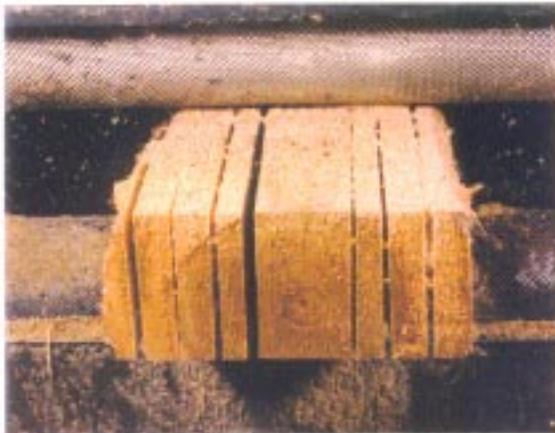
#### **3. Top Dogging Scrag**



### **III. Secondary Breakdown**

#### **A & B. Gang Saws**

##### **A. 10" Top Arbor Thin Kerf Gang**



##### **B. Gang Outfeed**

##### **C. Vertical Band Resaw**



## **IV. Edgers**

**Bottom  
Arbor  
Edger**

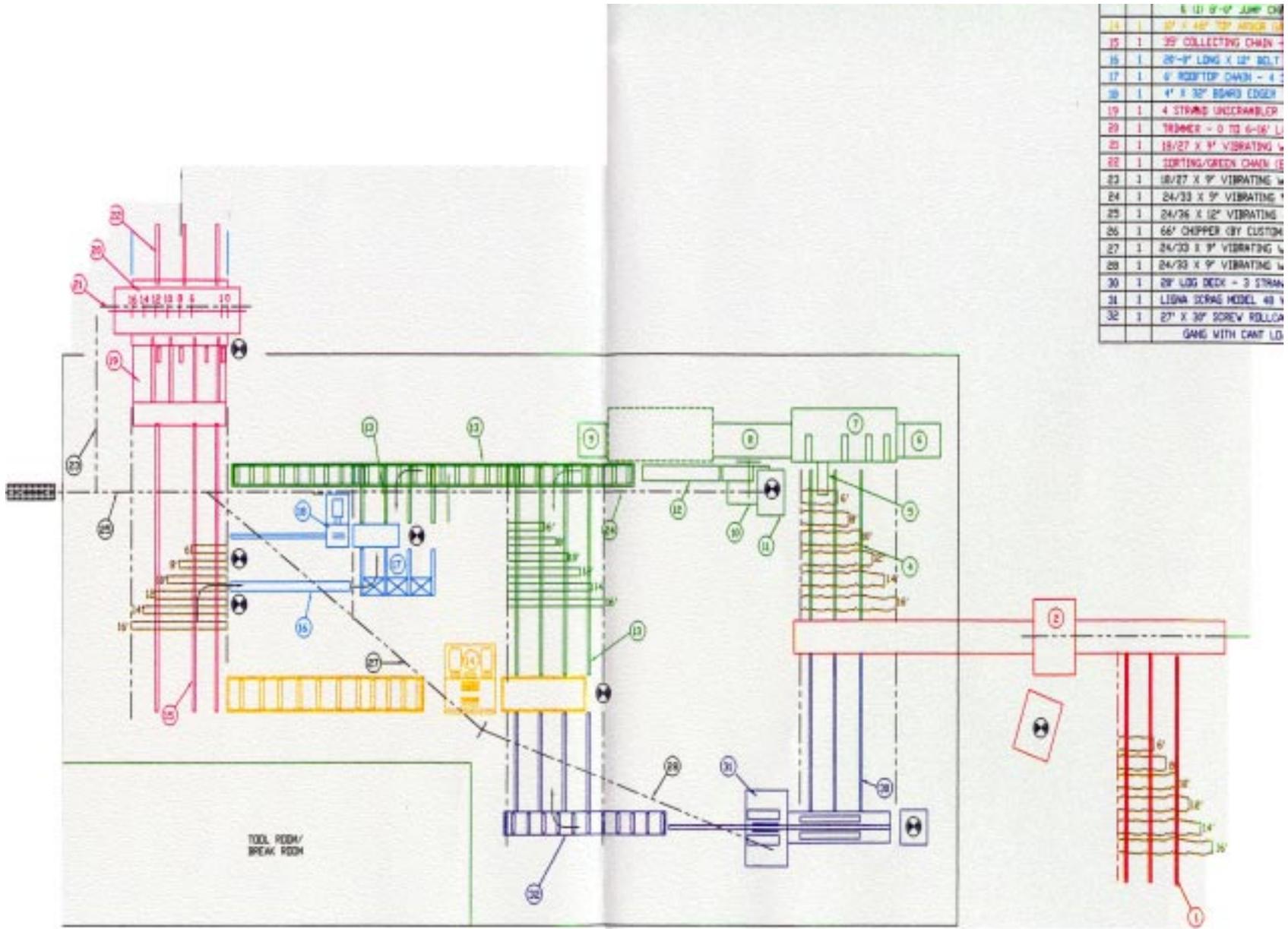


## **V. Trimmers**



**Drop Saw  
Trimmer**







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Office of Sustainable Development  
Agriculture, Natural Resources and Rural  
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