VOLUNTARY PARTNERSHIP AGREEMENT

TIMBER INDUSTRY RESTRUCTURING GROUP

FINAL REPORT

MEMBERS

A. A. Oteng-Amoako  
*Chief Wood Technologist & Scientist, FORIG, Chairman*

Francis K. Odoom  
*M. D., Arbor Nova Forestry Consultant*

Gene Birikorang  
*Private Forestry Consultant*

Kweku Pra Ghartey  
*Commissioner FC and Timber Industry Expert*

O. K. Boateng Poku  
*President GTA*

Ghassan Bitar  
*Timber Industrialist*

Roger Cardoso  
*TIDD*

John H. S. Kwofie  
*SMFEs*

Francis Yaw Opoku  
*FC - Secretary*
# EXECUTIVE SUMMARY

Current State of the Industry  
The Challenges  
Interventions to Restructure the Industry  
Recommendations  

# 1.0 INTRODUCTION

1.1 Background  
1.2 Approach, Methodology and Objective  

# 2.0 THE CURRENT STATE AND CHALLENGES IN GHANA’S TIMBER INDUSTRY

2.1 Inadequate and Unsustainable Raw Material Supply  
2.2 Obsolete Processing Technology  
2.3 Distorted Market  
2.4 Policies and Legislation  
2.5 Inadequate Infrastructure and Logistics  
2.6 Weak Trade Associations  
2.7 Inadequate Research Funding  
2.8 Illegal Chainsaw Harvesting  

# 3.0 STRATEGIC INTERVENTIONS FOR RESTRUCTURING THE INDUSTRY

3.1 Supply of Sustainable Raw Materials  
3.2 Legal Wood Material Supply to the Domestic Market  
3.3 Technology & Capacity building for Downstream Processing  
3.4 Marketing in Legal Timber and Wood Products
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5 Enforcement of Policies, Legislations and Fiscal Reforms</td>
<td>32</td>
</tr>
<tr>
<td>3.6 Capacity Building and Infrastructure Development</td>
<td>32</td>
</tr>
<tr>
<td>3.7 Empowerment of Trade Associations</td>
<td>33</td>
</tr>
<tr>
<td>3.8 Promotion of Demand-Driven Research and Development</td>
<td>34</td>
</tr>
<tr>
<td>3.9 Alternative Livelihood</td>
<td>34</td>
</tr>
<tr>
<td><strong>4.0 THE EFFECT OF RESTRUCTURING IN REDUCING ILLEGAL</strong></td>
<td></td>
</tr>
<tr>
<td><strong>CHAINSAW HARVESTING AND TRADE</strong></td>
<td>35</td>
</tr>
<tr>
<td><strong>5.0 CONCLUSIONS AND RECOMMENDATIONS</strong></td>
<td>37</td>
</tr>
<tr>
<td><strong>6.0 BIBLIOGRAPHY</strong></td>
<td>41</td>
</tr>
<tr>
<td><strong>7.0 APPENDICES</strong></td>
<td></td>
</tr>
<tr>
<td>Appendix 1: Questionnaire on the State of Ghana’s Wood industry</td>
<td>44</td>
</tr>
<tr>
<td>Appendix 2: Budget for Selected Development Interventions</td>
<td>45</td>
</tr>
</tbody>
</table>
## ACRONYMS

<table>
<thead>
<tr>
<th>AAC</th>
<th>Annual Allowable Cut</th>
</tr>
</thead>
<tbody>
<tr>
<td>CoC</td>
<td>Chain of Custody</td>
</tr>
<tr>
<td>CSIR</td>
<td>Council for Scientific and Industrial Research</td>
</tr>
<tr>
<td>CSR</td>
<td>Cooperate Social Responsibility</td>
</tr>
<tr>
<td>DBH</td>
<td>Diameter at Breast Height</td>
</tr>
<tr>
<td>ECOWAS</td>
<td>Economic Commission of West African States</td>
</tr>
<tr>
<td>EDIF</td>
<td>Export Development Investment Fund</td>
</tr>
<tr>
<td>EMPRETTEC</td>
<td>Empresas Technologicas</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>FC</td>
<td>Forestry Commission</td>
</tr>
<tr>
<td>FDMP</td>
<td>Forest Development Master Plan</td>
</tr>
<tr>
<td>FLEGT</td>
<td>Forest Law Enforcement Governance and Trade</td>
</tr>
<tr>
<td>FMP</td>
<td>Forest Management Planning</td>
</tr>
<tr>
<td>FORIG</td>
<td>Forestry Research Institute of Ghana</td>
</tr>
<tr>
<td>FSD</td>
<td>Forest Services Division</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GFTN</td>
<td>Global Forest Trade Network</td>
</tr>
<tr>
<td>GIA</td>
<td>Ghana Institute of Architects</td>
</tr>
<tr>
<td>GIF</td>
<td>Ghana Institute of Foresters</td>
</tr>
<tr>
<td>GIFEX</td>
<td>Ghana International Furniture and Woodworking Industry Exhibition</td>
</tr>
<tr>
<td>GIPC</td>
<td>Ghana Investment Promotion Centre</td>
</tr>
<tr>
<td>GOG</td>
<td>Government of Ghana</td>
</tr>
<tr>
<td>GPHA</td>
<td>Ghana Ports and Harbours Authority</td>
</tr>
<tr>
<td>GRCC</td>
<td>Ghana Grading Rules Consultative Council</td>
</tr>
<tr>
<td>GREDA</td>
<td>Ghana Real Estate Developers Association</td>
</tr>
<tr>
<td>GTA</td>
<td>Ghana Timber Association</td>
</tr>
<tr>
<td>GTMO</td>
<td>Ghana Timber Millers’ Organisation</td>
</tr>
<tr>
<td>ISO</td>
<td>International Standards Organisation</td>
</tr>
<tr>
<td>ITTO</td>
<td>International Tropical Timber Organisation</td>
</tr>
<tr>
<td>IUCN</td>
<td>International Union for Conservation of Nature</td>
</tr>
<tr>
<td>KWC</td>
<td>Kumasi Wood Cluster</td>
</tr>
<tr>
<td>LI</td>
<td>Legislative Instrument</td>
</tr>
<tr>
<td>LKS</td>
<td>Lesser-Known Species</td>
</tr>
<tr>
<td>LUS</td>
<td>Lesser-Used Species</td>
</tr>
<tr>
<td>MES</td>
<td>Ministry of Environment and Science</td>
</tr>
<tr>
<td>MFEP</td>
<td>Ministry of Finance and Economic Planning</td>
</tr>
<tr>
<td>MLFM</td>
<td>Ministry of Lands, Forestry and Mines</td>
</tr>
<tr>
<td>NBSSI</td>
<td>National Board for Small Scale Industries</td>
</tr>
<tr>
<td>NDPC</td>
<td>National Development Planning Commission</td>
</tr>
<tr>
<td>NREG</td>
<td>Natural Resource and Environment Governance</td>
</tr>
<tr>
<td>NTFP</td>
<td>Non Timber Forest Products</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------</td>
</tr>
<tr>
<td>OFR</td>
<td>Outside Forest Reserves</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
</tr>
<tr>
<td>RMSC</td>
<td>Resource Management Support Centre</td>
</tr>
<tr>
<td>SME</td>
<td>Small and Medium Enterprises</td>
</tr>
<tr>
<td>SMFE</td>
<td>Small and Medium Forest Enterprises</td>
</tr>
<tr>
<td>SRA</td>
<td>Social Responsibility Agreement</td>
</tr>
<tr>
<td>TIDD</td>
<td>Timber Industry Development Division</td>
</tr>
<tr>
<td>TIRWG</td>
<td>Timber Industry Restructuring Working Group</td>
</tr>
<tr>
<td>TOR</td>
<td>Terms of Reference</td>
</tr>
<tr>
<td>TRF</td>
<td>Timber Rights Fee</td>
</tr>
<tr>
<td>TUC</td>
<td>Timber Utilisation Contract</td>
</tr>
<tr>
<td>TUS</td>
<td>Technological Unknown Species</td>
</tr>
<tr>
<td>TVA</td>
<td>Timber Validation Agency</td>
</tr>
<tr>
<td>TVE</td>
<td>Timber Validation Entity</td>
</tr>
<tr>
<td>VAT</td>
<td>Value Added Tax</td>
</tr>
<tr>
<td>VPA</td>
<td>Voluntary Partnership Agreement</td>
</tr>
<tr>
<td>WITC</td>
<td>Wood Industries Training Centre</td>
</tr>
<tr>
<td>WTS</td>
<td>Wood Tracking System</td>
</tr>
</tbody>
</table>
TIMBER INDUSTRY RESTRUCTURING GROUP

EXECUTIVE SUMMARY

Illegal chainsaw logging and trade in illegal timber have taken an unprecedented level since the onset of Forest Development Master Plan of 1995 which, among others, sought to curb this illegal practice. It is currently estimated that about 50% or 1.5 m$^3$ of annual harvested timber of 3 million m$^3$ is from illegal source compared to the prescribed annual allowable cut of two million m$^3$. The high volume of illegal timber extracted from the forests poses a major challenge to sustainability of Ghana’s forest resources and a major concern to our major trade partners of the European Union.

Consequently in 2006, Ghana started a negotiation process of a Voluntary Partnership Agreement (VPA) with EU which involves a licensing scheme to ensure that only legal timber and wood products are traded and exported into the EU countries. The key negotiating elements agreed under the VPA were: (a) definition of legal timber, (b) a system of verification of legality, including a proposed licensing scheme, (c) a Chain of Custody (CoC) called wood tracking system (WTS), (d) an independent monitoring of the legality assurance system and (e) mitigation of possible impacts of the VPA on the timber industry which will have to be restructured in order to address the impact.

The Timber Industry Restructuring Working Group (TIRWG) was one of the five Committees tasked by the VPA Secretariat to look at the five negotiating elements and come out with recommendations on the industry related issues to allow GOG negotiate with EU.

Terms of Reference (TOR)

The Terms of Reference (TOR) for the TIRWG was to make recommendations for restructuring the timber industry towards minimizing illegal chainsaw log harvesting and trade in illegal timber in line with international best practices. Additionally the group was to determine the impacts arising from the restructuring and measures to address them. Finally the group was to advise the government on the negotiation on industry restructuring.

In addressing the TOR, the group reviewed the development objective in relation to the five specific objectives of FDMP and arrived at the following three major specific objectives to guide the group’s work.
i. Sustaining raw material supply to the wood industry to meet the domestic and international demand;

ii. Re-quipping the wood processing industry with efficient machinery for downstream processing primary breakdown of small diameter logs, utilization of wood residues and introduction of innovative wood raw materials; and

iii. Improving marketing efficiency of timber and wood products and harmonizing distorted prices of lumber between domestic and export markets.

Additionally, the following relevant specific objectives were also formulated.

i. Identifying, formulating, implementing and enforcing policies and fiscal reforms that enhance positive development in the wood industry to minimize operations of illegal chainsaw loggers and trade in illegal timber;

ii. Building capacity of the Forestry Commission and its associated institutions for improved delivery of their missions;

iii. Equipping and funding research institutions to undertake demand-driven research and development;

iv. Empowering relevant primary stakeholders, especially the SMEs, to be more efficient and accountable and create wealth for their respective members; and

v. Identifying alternate livelihood for affected groups of people including illegal chainsaw operators likely to be victims of the restructured industry.

The Current State of the Industry

A review of the current state of the timber industry was undertaken through literature search and administration of a short interactive interview based on questionnaire in Appendix 1. Ten mills each were selected in Kumasi and Takoradi. The following characteristics describe the current state of the wood industry:

About 3 million m$^3$ of annual raw material, currently used by the formal and informal sectors of the industry, is not only inadequate but also unsustainable. About 1.5 million m$^3$ of illegal round wood equivalent of sawn timber is supplied to the domestic market at a price of 20 to 40% cheaper than the export price. Most processing mills are ill-equipped with old inefficient
machines capable of primary processing of large diameter logs. Facilities for slicing and rotary veneer, and ply milling are limited. The domestic informal processing sector lacks capital and technical capacity. They have limited access to short term finance and have little knowledge about enterprise management and planning. Most mills are not equipped for down stream processing and wood products in the informal sector are invariably of poor quality. Marketing system is mostly export oriented and the domestic market is generally neglected. There is a high unsatisfied demand for lumber on the domestic market for building construction and furniture manufacture.

The Forestry Commission and its institutions are inadequately equipped. Poor capacity and Limited infrastructure, low capacity and other logistics have hindered FC from implementing directives and enforcing existing policies effectively. A large number of the firms and their trade associations governing them are weak and are unable to seek the welfare of their members. Many firms are unable to meet technical and marketing challenges, and associated business practices. The research institutions, though endowed with well-qualified professionals, are poorly funded to undertake any meaningful demand-driven research to address interventions in the industry. Illegal chainsaw loggers, have over the years, had a field day and trade in illegal chainsaw timber in the domestic market is openly displayed due to un-enforced, weakly enforced or inefficient policies, poor fiscal reforms, lack of political commitment and ineffective monitoring.

The Challenges

Ghana’s timber industry faces major challenges that will have to be addressed in a VPA restructured wood industry. First, there is a need to ensure that timber supply to the industry is sustainable, legal and meets domestic and export demand. The old inefficient processing mills must give way to precision and energy efficient machines for downstream processing. The market should be restructured for efficiency that will address the distorted price of timber in the domestic and export markets, and reduce trade in illegal timber. Some policies will have to be reviewed and enforced while new ones will have to be formulated and implemented. There will be a need for comprehensive fiscal reforms in the restructured industry that will reduce activities of illegal chainsaw timber operators. The capacity and infrastructure of FC and its institutions will be improved to enhance effectiveness and to increase output while adequate funding for research and development will be the order of the day. An effective and empowered trade association, in a restructured industry, will be needed to champion the interests of the SMEs and assist in sustainable supply of legal timber to the industry. Alternative livelihood for workers in the
industry, including illegal chainsaw timber operators, likely to be displaced from a restructured industry, is a must and should be given the maximum importance that it deserves.

**Interventions for Restructuring the Industry**

Development interventions needed to restructure the timber industry of Ghana will include but not limited to sustainable wood supply; re-equipping existing mills for downstream processing and normalization of distorted and under-developed market. These interventions will address the vision of a restructured industry seeking to: facilitate an effective balance between the timber resource base and industry processing capacity; improved and modernized milling efficiency and increased value added processing; increased processing capacity for plantation timber and innovative wood material from non-timber forest products including bamboo wood and wood residues.

**Sustainable Supply of Raw Materials:** The Voluntary Partnership Agreement (VPA), as an instrument to tackle illegal timber and export of wood products, will result in strict adherence to the current AAC of two million cubic meters which will be inadequate for the industry. Therefore a sustained source of wood raw material should be found through improved natural regeneration; ensuring efficient processing and utilization of wood residue; increasing use of Lesser-Used Species (LUS), Lesser-Known Species (LKS) and Technological Unknown Species (TUS) to justify possible future increase in AAC allocation; increasing use of non-traditional wood species like rubber wood, coconut wood and bamboo wood; increasing plantation development of fast growing timber trees; importation of logs and increased use of plastic, steel, wood-plastic and wood-steel furniture combinations. Teak log export has to be curtailed to provide more raw materials for downstream processing. Total yield removal will have to be enforced making it mandatory for all LUS in a given yield to be removed by concessionaires for supply to the domestic market.

**Retooling:** The restructured timber industry, under the VPA, is expected to provide financial and technical assistance to local entrepreneurs to enable them to contribute to greater export of value-added wood products through downstream processing, production of quality wood products and promote greater intra-sector and inter-sector linkages. The distressed SME mills will be re-equipped with energy efficient machines for improved efficiency in production of quality and standardized wood products. The capacity of SMEs in innovative processing technology and business skills will be improved. Effective support services and global strategic alliance with international players will be sought and a market-oriented technological research and
development (R&D) will be promoted. The informal enterprises of carpenters and craftsmen will be assisted with simple power tools to increase their efficiency. In addition to energy efficient processing machines, an alternative source of cheaper energy generation from wood residue or solar energy should be sought to support industrial cluster of the micro carpenters and small enterprises at the Nkenkasie Wood Village.

**Marketing and Trade:** Trade in secondary and more importantly tertiary products will have to be enhanced in a restructured wood industry under the VPA. The government as the largest single consumer for illegal chain sawn lumber will be restricted by ensuring that Public Procurement Board prohibits use of illegal chainsaw timber for all projects funded by the government. The FC will enforce all existing laws which will also restrict domestic use of illegal chain sawn lumber. There will be vigorous promotion of LUS and LKS, and even TUS, for domestic and export market. FC will lead in a marketing strategy for promotion of minor species whereby FC through TIDD will assist the trade associations to secure huge export orders and collate production from the SMEs for export. The use of minor species (LUS and LKS) as substitutes for the well-known premium and other major commercial species will be vigorously pursued. Trade information on new products, processing technologies, exhibitions, seminars and workshops will be promoted and trade associations empowered to be more effective.

**Other interventions:** Co-financing of joint research programmes between industries will be promoted and FORIG’s research programme should be demand-driven. The restructured wood industry will result in possible redundancy of chainsaw operators and other workers from the processing industry which has gone downstream. These displaced persons will be given alternative livelihood training and will be assisted to start their own business as plantation farmers, tour guides, forest guards etc while, some of them will be trained to acquire skills in downstream processing to work in the restructured industry.

**Recommendations**

No meaningful result can come out of any developmental agenda unless policies and legislations governing such developmental interventions are properly and effectively implemented. It is therefore recommended that a special task force of relevant stakeholders to implement all policies and the under mentioned interventions needed to ensure effective restructuring of the timber industry. The recommended interventions in asterisks should be formulated for funding by the EU.
A. Sustainability of Legal Raw Material

• * Sustainability of future legal raw material supply through an expansive plantations development programme by the private and public sector taking into account market requirements and environmental considerations in the selection of species. **EU support 20 million Euros; GOG 1 million GHC.**

• * Wood quality assessment, product development and promotion of LUS, LKS and TUS

• * Development of non-timber forest products such as bamboo, rubber and coconut wood as a means of complementing and sustaining future raw material supply to the domestic and international markets including inventory of bamboo and NTFP. **EU support 3 million Euros; GOG1 million GHC**

• Public Procurement Policy to prohibit use of illegal chainsaw timber on the domestic market for all government contracts. This will be done in consideration with other policy interventions under the domestic market recommendations.

• * Measures and incentives to involve fringe forest communities in the management and protection of the forest and timber resource. **EU support 2 million Euros; GOG 0.5 million GHC**

B. Import of Raw Material

• Arrangement with trade missions to promote buyer-seller networking in African timber producing countries to encourage growth in imports of logs, sawn timber and veneer for value added processing in Ghana. Some companies are already bringing in sawn timber and sliced veneers and should be encouraged.

C. Downstream Processing

• * Re-equip selected SMEs for downstream processing and production of quality wood products using LUS and innovative wood materials including bamboo, rubber and coconut wood. Assistance will be in the form of soft loans. **EU support 290 million Euros.**

• * Acquisition of common facility machines and technical services to Kumasi Wood Village cluster of micro and small wood entrepreneurs and industries. **EU support 2.5 million Euros; GOG 0.7 million GHC**
D. Market and Trade

- Improved marketing intelligence, particularly for the domestic market for competitive price and normalizing selling price between domestic and export market.
- * Accessibility to international markets for tertiary products with particular emphasis on innovative product quality, standardization and promotion through international fairs. EU support 3.5 million Euros; GOG 0.95 million GHC

E. Capacity Building

- * Capacity building of FC and associated institutions (TIDD, FSD, and WITC) to strengthen their regulatory role to be more accountable while improving transparency in award and auctioning of the timber resource and ensuring that policies and fiscal reforms are fully and strictly complied with. This will include inter-sectoral links to law enforcement agencies and the judiciary. EU support 6.5 million Euros; GOG 1.85 million GHC

E. Trade Associations

- * Empowering trade associations to be more efficient and accountable including promoting their participation in the protection of the forest resources and acquisition of raw materials. EU support 3 million Euros; GOG 0.35 million GHC

F. Research and Development

- * Adequate funding for research institutions to undertake demand driven research, promote and disseminate research findings on LUS, LKS, and innovative raw material to the industry and other stakeholders. EU support 2.5 million Euros; GOG 0.95 million GHC

G. Alternative Livelihood

- * Training in sustainable alternative livelihood for displaced chainsaw operators and other workers in the industry as a result of wood industry reforms under the VPA. EU support 6.0 million Euros; GOG 1.0 million GHC

H. Professional Associations

- * Developing capacity in civil society and the private sector in particular Ghana Institute of Foresters, to undertake independent monitoring of forest industry. EU support 1 million Euros; GOG 0.15 million GHC

Details and costs of these interventions in the order of priority are provided in Appendix 2.
1.0 INTRODUCTION

1.1 Background

In 2006, Ghana formalized a VPA negotiation process with the EU. The principal aim of Ghana’s future VPA with the EU will seek to engender support for its governance reforms and strengthen enforcement activities in the country. It will also seek to establish a licensing scheme to ensure that only legal timber products are exported into the EU, and to position Ghana to respond to changing international market requirements for timber. The domestic market has long been dependent on illegal timber and the VPA intervention will impact negatively on the supply of wood to the domestic market. There will be the need to restructure the timber industry to ensure sustainable and legal supply of timber to both the domestic and export markets.

Key negotiating elements being considered under the VPA are

(a) Definition of legal timber,

(b) A system of verification of legality, including a proposed licensing scheme,

(c) A Chain of Custody (wood tracking system),

(d) An independent monitoring of the legality assurance system, and

(e) Mitigation of possible impacts of the VPA, including options for legal timber supply on the domestic market and restructuring of the timber industry.

The group’s Terms of Reference will focus on recommendations for restructuring of timber industry towards minimizing illegal trade in timber product and promoting legal trade in line with international best practices.

1.2 Approach, Methodology and Objectives

The Timber Industry Re-structuring Working Group (TIRWG) reviewed the TOR in relation to the following objectives of FDMP of 1996 to arrive at its objectives:
i. Management and enhancement of Ghana’s permanent estate of forest and wildlife resources;

ii. Promotion of viable and efficient forest based industries, particularly in secondary and tertiary processing;

iii. Promotion of public awareness and involvement of rural people in forestry and wildlife conservation;

iv. Promotion of research-based and technology led forestry and wildlife management, utilization and development; and

v. Development of effective capacity and capability at national, regional, and district levels of sustainable forest and wildlife management.

The following inferences in relation to the working group’s terms of reference were derived as the specific objectives for restructuring Ghana’s timber industry.

### 1.2.1 Specific Objectives

(i) Sustaining raw material supply including minor timber species of LUS, LKS TUS, wood residues, branch wood, buttress wood and bamboo wood to meet the domestic and export markets;

(ii) Re-equipping the wood processing industry with innovative and energy-efficient machines for downstream processing;

(iii) Improving marketing efficiency of timber and wood products and harmonizing distorted price between domestic and export markets;

(iv) Identify, formulate, implement and enforce policies and fiscal reforms that enhance positive development in the wood industry and minimize operations of illegal chainsaw loggers and trade in illegal timber.

Additionally the following objectives were also formulated:

(v) Equipping and funding research institutions to undertake demand-driven research and development;

(vi) Building capacity of the Forestry Commission and associated institutions for improved delivery of their missions;
(vii) Empowering relevant primary stakeholders especially the SMEs to become more efficient and create wealth for their respective members; and

(viii) Identifying alternate livelihood for affected groups and workers including illegal chainsaw operators likely to be victims of industry restructuring.

To adequately address the eight specific objectives, a review of the current state of the timber industry to identify the challenges was found necessary.

2.0 THE CURRENT STATE AND CHALLENGES IN GHANA’S TIMBER INDUSTRY

A review of numerous references in the Bibliography and verbal communication were held with relevant institutions to ascertain the current state of the industry. In addition, a brief interactive questionnaire in Appendix 1 was administered to the management of 10 selected SMEs and large mills each in Kumasi and Takoradi.

The state of the timber industry presents intractable problems and major challenges that need to be strategically addressed to curb illegal chainsaw logging and trade in illegal timber. The following description characterizes the current state and challenges in the industry.

2.1 Inadequate and unsustainable raw materials supply

**Technical data on current timber stock:** In spite of resource inventories of 1995 and 1997, illegal chainsaw harvesting, forest fires, shifting cultivation and other activities have rendered past data on forest inventories obsolete. These activities have created insufficient flow of data to underpin forest management programmes and formulation of essential fiscal policies in the industry. *A consistent and up-to-date information on the status of forest cover and available timber stock, bamboo and rattan resources in the forest reserves and off-reserves are needed.*

**Poor natural regeneration:** Lack of effective silvicultural treatment of existing stock has not promoted natural regeneration. The assumption at the onset of FDMP in 1996 that the forest estate would steadily improve when forest fires and encroachments are curtailed have not materialised due to poor regeneration. *An effective silvicultural treatment of seedlings and saplings and over-logged areas will boost natural regeneration.*

**Illegal chainsaw timber accounts for about 75 per cent the Annual Allowable Cut:** Between 2000 and 2004, illegal chainsaw logging accounted for about 50% of the 3 million m³ of the
annual harvested timber. This is about 75 per cent of current AAC of 2.0 million m$^3$. **Effective policies should be enacted and enforced to curtail the illegal menace and protect timber and other forest resources.**

**Processed timber is predominantly from the well-known species:** About 75% of total legal timber harvested and processed for export from 2000 to 2004 was from the 13 premium (scarlet) and 15 commercial (red) species with only 25% from LUS and LKS. This represented 11.5% of the growing stock of premium and commercial species compared to only 1.65% of the growing stock of LUS and LKS. **Wood quality assessment, product development and promotion of minor timber species as substitutes of the traditional timber species are needed and most urgent.**

**Teak log export:** Teak logs continue to be exported in spite of inadequate supply of raw material in the wood processing industry. In 2007, more than 75,000m$^3$ of teak logs were exported in spite of wood deficit in the domestic market. A **legislative instrument or amendment to the existing policy to curtail export of teak logs.**

**Innovative raw materials are unavailable:** The industry is used to processing of traditional timber species and use of wood residue and innovative raw materials like buttress wood, branch wood, coconut wood, bamboo wood and rubber wood are virtually non-existent. **Research and development are needed to promote buttress wood, branch wood, bamboo and rubber wood as alternative raw materials for the timber industry.**

**Simulative or substitute wood and wood-plastic products have only recently been introduced:** Simulative wood products including furniture from non-renewable material such as plastic, steel or glass furniture, T & G, panelings, mouldings, claddings have been introduced at an insignificant level. These substitutes are in competition with wood. While simulative products can reduce domestic demand for wood, they may stifle development of SMEs in the wood processing sector and it can pose a problem in environmental degradation.

### 2.2 Obsolete Processing Technology

**Most processing mills are ill-equipped.** Some of the mills in the processing industry are characterized by old inefficient machines capable of primary processing of only large diameter logs. The industry production is limited to mainly sawmilling and to a few veneer slicing and plywood factories. However the output of plywood production is large and has exhibited a steady upward trend since 1998. **Most mills are not well equipped for downstream processing and it**
calls for a need to install machines which are capable of downstream processing of small diameter trees.

Machinery for rotary and slicing veneer production are designed for processing of only large diameter logs: The annual production of sliced, rotary, curls and jointed veneers have averaged about 280,000 m$^3$. Recovery is generally low resulting in high wastage. Furthermore, the quality of most of plywood product is suited for the domestic and sub regional markets, especially Nigeria. Some mills will have to be retooled for machines capable of milling small diameter logs while plywood production suitable for international market is needed.

There is little integration of the formal processing sector with the domestic market: The developed formal wood processing industry is export oriented and wood processing for the domestic market is largely informal. It is wholly dependent on supply of illegal chainsaw lumber which is relatively cheaper but of poorer quality than the export lumber. Enactment of existing policies to ensure legal timber supply to the domestic market must be pursued.

The spectrum of technology applied in primary and secondary processing is narrow: The industry has undergone very little innovation over the years and is generally accustomed to requiring more timber (high input) to realize higher output. Retooling for value addition and increased output from the same volume of input should be pursued.

High redundancy and high cost of productions: The industry is faced with escalating cost of production due to high fuel, raw material, energy and labour costs. Out of 190 sawmills that existed only about 93 are reportedly active and even then some are operating less than half their installed capacity. The existing 23 veneer mills and 15 ply mills are equally in short supply of raw materials while limited tertiary processing companies of furniture parts, mouldings and profile boards have not seen any growth for the last five years. These problems have resulted in high redundancy in some companies and others have completely closed down. A sustainable legal source of adequate raw material and energy are needed to propel the industry and most urgent.

The timber export is characterized by over-concentration: 10 leading companies out of about 200 accounts for about 70% of export trade in value and in volume. SMEs companies should be financially assisted to go down stream using innovative raw materials and minor species as the sources of their raw material.
2.3 Distorted Market

**Unsatisfied demand of lumber in the domestic market:** The wood industry has been mainly export-oriented from the very beginning with the domestic market virtually neglected and depended on illegal chainsaw timber. *There is a high, unsatisfied demand for lumber on the domestic market for building construction and furniture manufacture. Supply of adequate legal volume and quality lumber to the domestic market remains a major challenge.*

**Designated companies unwilling to supply wood to the domestic market:** In 2005, only about 42,000 m³ of lumber instead of required 500,000 m³ from 79 designated companies and others supplied legal lumber to the domestic market in fulfillment of Regulation 36 of Timber Resources Management Regulations, 1998 (LI 1649). This was mainly due to price differential between domestic and export market which makes it more profitable for the companies to export and not to sell on the domestic market. The low level of legal lumber supply by mills to the domestic market has created a vacuum in the domestic market resulting in high patronage of low priced illegal chainsaw timber supplied by the numerous chainsaw operators. *Normalizing the price differential between domestic and export market mostly depends on curbing illegal lumber supply to the domestic market which remains a major challenge in the industry.*

**Export market for LUS and LKS are non-existent:** In spite of vigorous promotion of LUS, the export market is mostly dependent on the traditional premium (scarlet) and commercial (red) species with very negligible export of the minor species (LUS and LKS). *Intensive research, vigorous promotion, marketing, enforcement of policies and changes to fiscal policies are the needed challenges to resolve the current situation.*

**Disparity between domestic and market price:** The price of timber species for export is about 20 – 40% more expensive than the price in the domestic market which is mainly dependent on illegal chainsaw timber. The export timber however is of higher quality. *The price disparity between export and domestic market should be normalised through promotion and use of legal timber in the domestic market.*

**Export of Teak log in the midst of scarcity:** Teak log export has continued intermittently over the last 20 years at the time when raw material supply for the local processing industry has resulted in ultimate closure of many wood processing companies. In 2007, about 85,000 m³ of teak logs were exported to Far East countries especially in India and China. *Enactment of a new policy to curtail export of teak logs will be in the interest of a restructured industry.*
Dominance over Export of high quality furniture: About 80% of furniture export is undertaken by a single company using legal timber. This poses a strong need for more SMEs to be financially assisted to go downstream processing of quality furniture using innovative wood materials, LUS and LKS.

2.4 Policies and Legislations

There are currently numerous policies, legislations and fiscal reforms in the timber industry which are all geared towards ensuring sanity in the industry. However, most of these policies and legislations have either not been enforced or have been weakly enforced which have all culminated in inefficiency in the timber industry. Limited stakeholder consultations in evolution of these policies have also contributed to this problem. Broad stakeholder consultations are needed in enforcement and enactment of policies.

2.5 Inadequate Infrastructure and Logistics at the FC

The Forestry Commission and its institutions are inadequately equipped with limited capacity, infrastructure and other logistics that have hindered the Commission from implementing directives and enforcing existing policies effectively. Middle-level technical manpower has been the main obstacles to increase and improve value-added processing and export of quality wood products. WITC is not accomplishing its mission as a technical “Centre of Excellence” in the West African sub-region, because of lack of adequate experts and equipment, TIDD has not adequately been positioned to address its vision for the industry. TIDD and FSD is constrained by lack of logistics, personnel and inadequate financial resources to prosecute its activities.

2.6 Weak Trade Associations

A large number of firms and the trade associations governing them are weak and are unable to seek the welfare of their members in many respects. Many firms are unable to meet the technical and marketing challenges and associated business practices. A unified and empowered trade association could assist in addressing the needs of the members of the wood industry.

2.7 Inadequate Funding of Research

The research institutions, though endowed with well-qualified professionals, are ill-equipped and poorly funded to undertake any meaningful demand-driven research and development to address developmental interventions in the industry. A good working relationship between the industry
and research institutions should be promoted with adequate funding for research institutions to undertake demand-driven research to address technical problems in the industry.

2.8 Illegal Chainsaw Harvesting

Independent study by TROPENBOS Ghana estimates that about 68,000 workers are involved in illegal chainsaw timber harvesting. Illegal chainsaw loggers have over the years had a field day and trade in illegal timber in the domestic market is well patronized due to inefficient policies, poor fiscal reforms and ineffective monitoring by the Forestry Commission and its institutions. Illegal chainsaw timber and trade currently accounts for 50% of about 3 million m$^3$ of timber harvested annually. Government contractors also patronize chain sawn lumber in the execution of their projects. Enforcement of existing policies, enactment and promulgation of new ones, implementation of comprehensive fiscal reforms and political commitments are needed to curtail the menace.

Strategic development interventions are needed to overcome these challenges and to promote efficiency and positive development in the wood industry sector. A change in policy focus is necessary for the industry to play its envisioned role.

3.0 STRATEGIC INTERVENTIONS FOR RESTRUCTURING THE TIMBER INDUSTRY

The FDMP (1996-2020) was expected to contribute to export of value added wood products, income and employment generating opportunities as well as promote greater intra-sector and inter-sector linkages. Unfortunately, this laudable aim of the FDMP has not been met and the principle of high volume raw material for low value output still holds. It is essential that the challenges to the goals of the FDMP which have been identified are removed and opportunities created for development of the industry, product development and marketing of higher value-added wood products. The development interventions that address the challenges in the industry including sustaining legal wood supply, re-equipping the mills for downstream processing and normalizing distorted and the under-developed market.

3.1 Supply of Sustainable Raw Materials

The Voluntary Partnership Agreement (VPA), as an instrument to tackle illegal timber and export of wood products, will result in strict adherence to the current AAC of two million cubic meters.
This will be woefully inadequate for the industry and a sustained source of legal wood raw material should be found through following:

i) Sustainable management of existing standing stock;

ii) Ensuring efficient processing and utilization of wood residue;

iii) Increased use of LUS, LKS and TUS to justify increase in AAC allocation;

iv) Improved utilization of non-traditional wood species like rubber wood, branch wood; coconut wood and bamboo wood;

v) Sustaining production of fast growing timber trees through plantation development;

vi) Importation of logs, lumber or veneers to augment supply from Ghana’s forest and

vii) Use of plastic and wood-plastic combinations and other wood substitutes.

3.1.1 Sustainable Inventory and Management of Existing Stock

Knowing what is left of our valuable timber resource can help maintain sustainable use of the resource. There is a need to undertake inventory to know the volume of timber trees and non-forest products like bamboo and rattan that currently exist in our forest reserves. Application of prudent silvicultural treatments of saplings and immature trees can increase the quality and quantity of saplings and enhance their natural regeneration and growth to maturity. Likewise, the quantity and quality of regenerated forest can increase through appropriate enrichment planting. The assumption at the time of the FDMP (1996) that if the AAC was maintained at 1 million m³ coupled with control of fire/encroachment, the forest estate would steadily improve has not materialised. It was assumed at that time that the growth of trees below the felling limit would increase the number of larger trees in 20 years and that the protection of convalescent areas will promote natural regeneration to form the basis of future yields.

3.1.2 Efficiency in Wood Processing

Timber recovery can increase as much as 50% through installation of modern wood processing machinery and application of good processing technology by a qualified machinist. The correct design lay out and balanced engineering of installed machines in the factory can improve efficiency and productivity in downstream processing.
3.1.3 Whole Tree Utilization

The concept of using everything that is wood from a tree is an innovation which should be practised in our current situation of wood scarcity. The large buttresses and branches in most species with a felling diameter of 70cm or more may account for 10 to 40% of tree volume. Furthermore, their working properties are of reasonable quality to be processed into finished products like chippings, broomstick, dowels, carvings, floorings and laminated or finger jointed products using the right equipment and technology. Wood residues from a logging site or the floor of a timber processing factory usually accounts for 10 to 30% of a harvested log. This volume of residue is usually left to rot in the forest, processed into charcoal, burnt to produce energy or discarded as waste. *Installation of modern processing machines and available technology could avail factory managers the possibility of processing these so called “wood waste” into high valued finished products like briquette, flooring, joinery, framing, laminated and finger-jointed products. Research, development and promotion of whole tree utilization by FORIG in collaboration with TIDD and the private sector should be pursued.*

3.1.4 Increased use of LUS, LKS and TUS

Most of the premium (scarlet) and commercial (red) species or either endangered or vulnerable and calls for control of their harvesting to avoid possible extinction. *There is the need to process, promote and utilize LUS and LKS which are in relative abundance as substitutes of the traditional species and to sustain market demand.* Unfortunately, many companies shun harvesting and processing of LUS and LKS because of apparent non-existence of export market for the species. This notion should be corrected and imposition of mandatory harvesting and processing be vigorously promoted for the local and overland market. *Technical data on the LUS and LKS should be disseminated to stakeholders based on their end-use substitutes to the traditional species.* Important target groups in this respect will include the following: Ghana Real Estate Developers Association (GREDA), the Ghana Institution of Architects (GIA) as well as the furniture manufacturers that depend heavily on the traditional species.

In addition to the abundant LUS and LKS, there are over 500 tree species of timber size in the forests of Ghana which have never been used commercially because their technical properties are virtually unknown. *Applied research on the technological unknown species (TUS) should be undertaken with the aim of increasing the number of utilizable timber species from the current level of about 80 species. Verifiable evidence of adequate qualities and development of acceptable products from these minor species could be the basis for future increase of AAC.*
These wood species for tomorrow’s industry should first be promoted for use in the local and the sub-regional markets. *In this respect, LUS LKS and eventually some of the TUS should be included in future calculation of timber yield and a fiscal policy of harvesting and promoting them should be enacted.*

### 3.1.5 Utilization of Non–traditional Wood species

Commercial utilization of rubber wood for timber in Malaysia, coconut wood in Philippines and Thailand, and bamboo culms in China and India, are verifiable indicators of the importance of these non-traditional timber species for industrial use as timber. Ghana abounds in these innovative wood resources in reasonable quantities which could be harnessed and used as supplements to traditional timber trees. Over matured rubber trees in the Western and Eastern regions and the wilted-diseased coconut trees in the coastal regions, have been processed successfully into furniture at FORIG. Bamboo culms grown in Ghana have been processed in China into ply-bamboo and quality floorings in spite of the poor quality of the crooked nature culms with thicker hard nodes. Quality bamboo handicraft products, tooth pick, bamboo furniture, scaffold and industrial ply-bamboo are already making a niche in the local market. The natural stock of bamboo stands in Ghana’s forest should be managed and harvested and then processed into industrial uses. The fast growth of bamboo, with a gestation period of 6 to 8 years, justifies its uses for plantation development and as a future raw material for the wood processing industry. *EU funding to assists promotion and utilization of rubber and bamboo wood as supplements to timber should be pursued.* Additionally development and utilization of york (*Brossenetia spp.*) tree, an invasive species, and palm tree as innovative wood material should also be promoted.

### 3.1.6 Plantation Development

The importance of growing timber trees in the midst of scarcity cannot be over emphasized. There are indications that the previous level of about 200,000 hectares of exotic plantation trees of teak, Cedrella, and Gmelina, established by the government, private companies and individuals, has been heavily harvested to a current level of less than 100, 000 hectares. Plantation establishment rate of 10,000 ha/annum chosen at the time of FDMP has not been met though below the current rate of displacement. Special incentives should be made available to promote indigenous plantation of species like wawa, emire, ofram, mahogany and odum. *FORIG should be funded to lead the way for a plantation replacement target of at least 70,000 ha per annum using superior seedlings.* Development of agro-forestry plantation of mixed tree species
with farm crops is preferred to a monoculture plantation which can be expensive and disastrous in
time of fire and invasion by disease causing insects and pathogens. Displaced illegal chainsaw
operators and redundant sawmill workers from the restructured wood industry should be given
the option to be trained in plantation development as an alternative livelihood. There is adequate
international evidence to show that governments can encourage plantation development by
removing obstacles and creating enabling conditions for farmers and private entrepreneurs.
Private sector roles including communities in plantation development should be favoured to an
expansion of FC’s plantation programme.

3.1.7 Importation of Timber

The Customs & Excise Duties (Amendment) Act 503 of 2002 provides a waiver of 45% import
duty and VAT to allow import of timber to minimize the domestic wood supply deficit and
reduce pressure on the natural forests. It is on record that some companies have taken advantage
of this offer and already timber import from the Cameroon, Congo DR and Gabon has entered the
local scene. This should continue as an option in a restructured wood industry. Trade associations
like GTA & GTMO should liaise with FC to import logs for use in the domestic market. The
origin of imported logs should be ascertained to ensure that they are from legal and sustainable
source in accordance to VPA agreement.

3.1.8 Simulative Wood, Wood-plastic and Wood-steel Products

Simulative wood products currently in the market include plastic or metal furniture, T&G,
panelings, mouldings, claddings and substituted wood plastic products or a combination of wood-
plastic or wood-metal. While these products ordinarily may not be recommended because of
problems with their degradation, the current situation of acute deficiency in wood supply gives no
option until such time that the wood supply situation changes for better. Opportunities should be
created for disposal and recycling of synthetic furniture materials due to their low environmental
credentials.

Although illegal timber will have to be curtailed under the VPA agreement, efforts should be
made to meet the current industrial demand of at least 3 million cubic metres through appropriate
legal means. Installation of appropriate wood processing machines with appropriate research
should assist in efficient processing and utilization of wood residue, buttress wood, branch wood,
rubber wood and bamboo culms into quality industrial products. Promotion and increased
utilization of LUS, and more importantly the LKS and TUS, should make it possible for future increase in AAC allocation. Export of plantation logs including teak should be curtailed while development of plantation forest and efficient processing and utilization of small diameter trees should be vigorously promoted. The option to import logs and use of plastic or steel substitute wood products to supplement current timber supply to the processing industry is laudable and should be encouraged.

3.2 Legal Wood Material Supply to the Domestic Market

The domestic lumber market is heavily dependent on chain saw timber. In 1995, the consumption trend showed that furniture and the construction industries made up of 97% of the total demand for the country out of which furniture industry alone accounted for about 74% of the total. It is notable that lumber demand by the small-scale carpenters alone is about 50% of the total wood demand for the domestic market. The introduction of innovative wood materials and promotion of non-traditional wood species will assist in wood supply to the small scale carpenters.

3.2.1 Chainsaw timber distorts trade in legal timber

Illegal chainsaw timber felling and sawing threaten the already scarce raw material in the timber industry. Furthermore, the general low prices of chain sawn lumber in the domestic market distort legitimate trade in legal timber and are a disincentive for the industry to supply legal timber to the local market. The local dealers in chain saw lumber, on the other hand, complain about the lack of supply from the saw millers. Any clamp down on chain-sawing activities without the commensurate measure to address the vacuum created in the industry would adversely affect the local lumber market and subsequently the furniture and construction industries. A combination of appropriate and effective policies, fiscal policies and utilization of innovative raw materials should assist in addressing the current impasse.

3.2.2 LUS and LKS Processing:

Lumber supplies from the mills to the local market are in the form of rejects and residues are of inferior qualities (e.g. slabs, edgings and off-cuts) while about 50% of the AAC in the form of LUS and LKS are left standing as a result of marketing problems. One of the immediate options in addressing this impasse is for the industry to process all the LKS and LUS which are included in calculation of the AAC for use in at least the domestic market. LUS and LKS harvesting in a yield should be mandatory for all concessionaires and the stumpage fee should be reduced to
make them more attractive to harvest. Millers could for example arrange with concessionaires to purchase the LUS and LKS and process them for the local industry. It requires a paradigm shift on the part of millers to exhibit a sense of national commitment, reliability, timeliness and credibility to supply.

3.2.3 Enforcement of Act 547 and LI 1649

The Timber Resource Management Act (Act 547) of 1997 prohibits chainsaw felling while Resource Management Regulation (LI 1649) of 1998 requires sawmills to supply 20% of their timber output to the domestic market. Enforcement of Act 547 and LI 1649 will ensure a gradual restriction of chainsaw timber on the domestic market and will require political commitment. The enforcement of the two policies and reduction of illegal chainsaw timber in the domestic market will make it more profitable for saw millers to supply LKS and LUS lumber to the domestic market, and at competitive price.

3.2.4 Equipping the SMEs for Quality Products:

The domestic tertiary market is largely under-developed. Yet it offers a potential for pro-poor economic growth. This market is largely controlled by an informal sector that relies virtually on supply of illegal timber. The re-structuring programme must give due emphasis to development of SMEs in the wood industries and the related support engineering firms. Their capacities and the capabilities to produce innovative quality products and services at competitive costs from especially LUS and LKS, should be strengthened and integrate them into the international supply chain. Advisory and outreach services must be provided to equip SMEs with new and improved management style, business practices, production methods, marketing and distribution in order to raise their productivity, efficiency and profit levels.

3.3 Technology and Capacity Building for Downstream Processing

The restructured timber industry is expected to contribute to greater export of value added wood products, income and employment generation and promote greater intra-sector and inter-sectoral linkages. A principal thrust in the restructuring programme will be the development of a competitive, innovative and technologically strong SME sector. To achieve this objective, it is essential that the barriers to the goal of the FDMP is identified and removed and opportunities created for development, production and marketing of higher value-added products. Assuming
adequacy of wood raw material, the following strategies will have to be met for an effective downstream processing industry in a restructured wood industry.

i) Re-equip selected mills of SMEs with efficient machines for downstream processing;

ii) Provide training and manpower development through technical cooperation;

iii) Build the capacity of SMEs in innovative processing technology and business skills;

iv) Seek effective support services and global strategic alliance with international players; and

v) Promote market-oriented R&D and technology development

These five strategies are further discussed below:

3.3.1 Re-equipment for Downstream Processing

The existing wood-processing industries must be re-engineered to improve efficiency, to balance industrial capacity with legal and sustainable supply of raw materials and to demonstrate that the mills can make positive contribution to the national economy. Obsolete inefficient machines currently being used by SMEs will have to be replaced with cost-effective, energy efficient machines capable of producing high quality innovative products for a competitive domestic and international markets.

With the rising cost of energy and its adverse effect on cost of production, energy-efficient technologies will have to be used. The specifications for imported machines and equipment will be planned to conform with national established list which should be compiled with prior to importation. The installation of these machines at the factory floor will be properly planned to ensure free flow of manufacturing processes with minimal movement of raw materials, goods and factory workers. The installed machines must be capable of processing small diameter logs, wood residues and other innovative wood materials including bamboo and coconut wood.

A wood industry specialist and industrial engineer should be attached to TIDD to provide needed technical services to the industry. Soft loans should be made available to the SMEs to purchase new machines and equipment needed to improve tertiary processing. Companies accessing the fund should meet eligibility criteria set out by the FC including their willingness to use minor and innovative wood materials as their raw wood material. Processing mills that are currently far from the source of raw material should be encouraged to relocate to the source. The EDIF,
NREG, ECOWAS, World Bank, Venture Capital and EU funds will be sought to complement the efforts of commercial banks to provide more integrated assistance packages to SMEs.

### 3.3.2 Quality and Standardization of Wood Products

The capacities and capabilities of SMEs to produce innovative quality products and services at competitive costs will be strengthened so as to integrate them into the international supply chain. **Advisory and outreach services will be provided to equip the SMEs with new processing technology, improved management and business practices, quality assurance and promotion marketing in order to raise their productivity and efficiency.** In the light of the foregoing, the status of the Nkinkasie Wood Processing Village will have to be assessed and the necessary support and technical assistance provided for efficient operation and possible replication in other wood producing areas of the country.

Lack of standards encourages waste and does not facilitate production efficiency which in turn adversely affects production costs. **The quality of wood products will be promoted through the use of standards and certification of all products.** The standards compiled by the Ghana Grading Rules Consultative Council (GRCC) under the auspices of the TIDD for logs, lumber, veneer, plywood and mouldings will be adopted for use by the industry. Likewise, GREDA, the GIA and FORIG will work towards standardisation of building components (e.g. roof trusses). This should facilitate mass-production of building components by the industry. International cooperation will be needed to develop and implement product standards and building codes so as to gain international recognition of Ghanaian wood products.

### 3.3.3 Building Capacity of SMEs in Processing Technology

Training and development of middle level technical manpower is the key to increase efficiency, productivity and quality of value-added products. **EU-FLEGT facility should be sought to restructure the WITC and equip it with appropriate array of training machineries and manpower resources to be able to undertake its roles as excellent provider of technical training in sawmilling, veneer and plywood production and tertiary wood processing to the industry.** The restructured WITC, transformed into a Centre of Excellence, will then undertake effective formal and customized training on factory premises.
3.3.4 Effective Support Services and Global Alliance

There is need for support to upgrade the capacity of the relevant sections of the local engineering industry to supply parts, components and modules for the timber industry. In addition to targeting promising areas in the local market, greater partnerships would be formed with foreign affiliates in targeted growth areas. This will enable Ghana’s wood industry to become a crucial part of the international economic chain and produce goods and services that create new demand and market opportunities.

3.4 Marketing of Legal Timber & Wood Products

Traditionally, the timber industry is export market oriented. From a basic logging background, the industry has evolved into both secondary and tertiary processing although secondary processing dominates considerably. The three market segments of domestic, overland and overseas are described with recommended interventions to make them more productive.

3.4.1 The Domestic Market

There is a considerable demand for wood in the domestic market and the huge deficit created is supplied by relatively cheaper illegal chain-saw lumber. However, the cheaper price of domestic illegal lumber does not motivate producers of legal lumber to sell on the domestic market. **A major challenge for intervention in the VPA restructured industry, is how illegal chainsaw timber can be curtailed in the domestic market and yet meet the demand of timber at an affordable price.**

3.4.2 Overland Export

This is the market for less timber endowed countries of the ECOWAS. The characteristics of the market are quite similar to that of the domestic market but this market offers higher prices and better returns. In 2007, the ECOWAS market imported about €32 million of wood products which accounted for about 17% of the total wood export earnings. The bulk of this earning was derived from plywood at a time that the local plywood market has slumped. The industry regards this market as quite lucrative and this niche under a VPA restructured industry have to be protected. **Provision should be made to train and familiarize officials of CEPS, port authorities and freight forwarders in grading rules and export documentations for efficiency and transparency.**
3.4.3 Overseas Export Market

This huge market includes of Europe, non European Union countries, North America and the Far East including S.E. Asia, China etc. The European and North American Markets are very sophisticated and discerning, and together accounted for about 58% and 56% of the volume and value respectively of timber products trade in 2007. The market is extremely environmentally conscious and insists on product certification in conformity with sustainability and legality criteria but offers better prices which are higher than the rest of the markets. A restructured wood industry under the VPA will have to hold on to the overseas export market by ensuring quality standard for export of tertiary wood products. The Far East markets prefer to buy in large volumes of even the minor commercial species. As stated elsewhere in this report, trade associations liaising with FC could execute bulk orders from Far East by distributing the orders among SMEs and arranging their after production. The export of huge volumes of unprocessed teaks has resulted in significant strain on an industry that is already struggling with dwindling resources and a recommendation to curtail export of teak logs has already been made in this report. The possibility of a joint venture with the major market players from the Far East and India should be pursued.

3.4.4 Export of Tertiary products

Most of the tertiary products including furniture are geared for European and North American market. In 2006, tertiary product exports contributed about 8% of volume and 10% of value and in 2007 it contributed 6% by volume and earned 9% of value of the total wood products. It is expected that export of tertiary products in the restructured industry will increase in volume using lesser volume of timber to achieve the same value. The possibilities of producing tertiary products from the LUS, LKS and innovative wood products for export to the Middle East should be the ultimate goal of a restructured industry. This intervention will assist in conserving our vulnerable and endangered species and contribute to reduction in illegal timber trade.

3.4.5 Limitation to Species Utilization and Export

Export of timber revolves around some twenty species and in 2007 seven of such species namely Teak, Wawa, Mahogany, Asanfina, Ceiba, Ofram, and Chenchen contributed about 80% of volume and 70% of value of total timber export. The implication for the future is that these species will soon become endangered and emphasizes the urgent need to promote extensive use of LUS, LKS and TUS as has already been stated.
3.4.6 Use of Illegal Timber to Government Funded Projects

The FC should enforce all existing laws which restrict the use of illegal chain sawn lumber in the domestic market. Elsewhere in this report, *it has been stated that the government, as the largest single consumer for chain sawn lumber, must restrict the use of illegal chain sawn timber in the domestic market by ensuring that Public Procurement Board prohibits use of chainsaw timber for all projects funded by the government*. There must be proof for use of legal timber for all projects funded by the Government.

3.4.7 Market Promotion of LUS, LKS and TUS

In 2006, the LUS contributed only 15% by volume of all kiln dried lumber sold while the LUS component of veneer export was about 26%. The overwhelming dependency on few traditional species particularly the premium (scarlet) and commercial (red) species, poses considerable limitation on future wood supply to the industry as these species are gradually becoming scarce and vulnerable. The need to vigorously promote the use of LUS and LKS in wood processing industry which has already been stated is emphasized. *The Forestry Commission in collaboration with relevant research institutions should identify and select some of the numerous technological unknown species (TUS) for wood quality assessment, product development and promotion to increase the number of utilizable species and support the future of a restructured industry.*

3.4.8 Substitute Trade and Use of Minor Species for Well-known Species

*It will be necessary to classify all timber (traditional and minor) species on the basis of their similarity in technological properties, colour, density, durability and end uses to facilitate substitution of the minor less popular species for the traditional well-known species*. All species with almost identical properties and uses can then be traded as a substitute for the traditional species using their trade names. The new trade names of the substitutes can be differentiated from the original traditional trade names by using an appropriate prefix like “new” or “substitute” etc to differentiate them from the original trade names of the traditional premium or commercial species. This will help to promote trade of the minor species in the domestic and export market. Collaboration with relevant stakeholders in the building industry will also be helpful.

3.4.9 Trade Information, Dissemination and Promotion

More trade information on new products, processing technologies, exhibitions, seminars and workshops should be made available to the industry by TIDD or relevant trade associations. The
revival of GIFEX as a promotional tool and forum for wood industry is a laudable concept. The **TIDD** must adopt Information and Communication Technology (ICT) in their marketing intelligence as a means of receiving and disseminating information to the industry. The industry must be persuaded and encouraged to establish joint ventures and partnerships with organizations and companies that already have considerable linkages and experience in design and marketing of such products.

### 3.4.10 Training of CEPS, GPHA and Freight Forwarders in wood export

Export of timber and wood products by air, sea or road involves various custodies that include officials from CEPS, GPHA and freight forwarders. Provision should be made for periodic training for these officials to familiarize themselves in such areas as grading rules, export documentation, chain of custodies and certification which will be part of future export requirements under the VPA.

### 3.5 Policies, Legislation and Fiscal Reforms

The need to use fiscal incentives or tax packages to sustain the effects of business transactions and social benefits has been suggested. The stumpage fee for all premium and commercial species (about 18 scarlets and reds), classified as vulnerable by IUCN and face high risk of extinction in the medium term future, should be reviewed upwards. An increase in stumpage fee by about 25% species is recommended. The increase in stumpage fees is to make harvesting of these vulnerable species unattractive in relation to the LUS and LKS and at the same time conserve their possible future extinction. Part of the proceeds from stumpage fee can be used for payment of community guards. Furthermore, a new policy that will prohibit export of the vulnerable species and restrict their use for downstream processing is urgently required. Conversely, the stumpage fee for use of minor species (LUS, LKS and TUS) should be pursued by decreasing the stumpage fee by 10 to 15% to make it more attractive to harvest them and process for the domestic market. It should be mandatory for all TUC and concession holders to harvest all LUS and LKS in a yield by imposing a policy of total yield removal.

### 3.6 Capacity Building and Infrastructural Development

The industry restructuring must support pro-poor economic growth and contribute to national wealth. The industry must be efficient, producing a product mix and selling products on willingness to pay basis. The industry must take advantage “at the margin” of the wide spectrum of product specifications offered by global and international markets. The **FC through TIDD must be resourced adequately to reposition itself to support the developmental vision. It must**
move away from fundamental marketing and grading functions to a future role in regulation, promotion, training for industrial development and operational research. These will require human resource development, improvement in infrastructure and other logistics.

WITC, as a unit of TIDD, must be a step ahead of an efficient re-structured industry in human resource development, technical knowledge and markets to accomplish its mission as a technical “Centre of Excellence” in the West African sub-region. A change in policy focus is necessary to play its envisioned role which cannot happen unless there is a comprehensive repositioning in ownership, organizational reforms and financial evaluation. A tripartite initiative consisting of EMPRETEC, WITC and NBSSI could assist in procurement of financial assistance in addition to EU support to restructure the SMEs including upgrading of current skills and technical expertise. The effective achievement of the strategic directions requires strong inter-sectoral cooperation of MFEP, MLFM, MES, GIPC, CSIR, NDPC with the Ministry of Finance and Economic Planning as Coordinator. Efforts will also be pursued to encourage the local firms in engineering to support the wood industry to take advantage of the global trend of outsourcing for machinery components and modules worldwide. Such alliances would facilitate the upgrade of their technology and production capabilities as well as participate in the extensive outsourcing activities.

The capacity of the FSD will be improved to among others hire forest guards from the fringe communities to man forest reserves and protect them against illegal logging. The capacity of FSD will be enhanced to monitor illegal logging to manage silvicultural interventions to enhance regeneration of logged-over forests and give support services for private plantation development.

3.7 Empowerment of Trade Association

The principal thrust of the restructuring programme will be development of a competitive, innovative and technologically strong SME sector. The latter will work within global and regional structures in order to develop economic integration and strategic partnerships with international businesses as well as sustain growth and competitiveness in the industrial sector. Presently the fragmented associations are not responsible to the needs of their members which include objective trade references and their interpretation, research and development, industrial engineering, advisory inputs on technical management, trade arbitration, trade union negotiations, and many more. All stakeholders in the wood industry to should form an effective trade associations that will collaborate with FC and other stakeholders to address the deficiencies and among others seek loans and other logistics to support their members. The empowered association can lobby politicians and policy makers, and promote sustainable harvesting and
3.8 Promotion of Demand-driven Research

*There should be allocation of funds and grants from proposed fiscal reforms for industrial research and development, and commercialization of research and technology for development of technology for the minor species and innovative raw materials.* Research into improved understanding and field application of ecological principles will be promoted to improve silvicultural practices in the natural forests and improvement in yield calculations to facilitate sustainable forest management practices. Biotechnology will be used for production of improved genetic planting material to support the national plantation efforts for high quality plantation wood in the future. Research into development of agro-forestry plantation of indigenous commercial timber species are needed as well as research and management of bamboo clump for production of straighter culms with longer internodes, small nodes with thicker fiber wall. Technological properties and eventual promotion of TUS should be investigated with the aim of increasing and diversifying timber species which can be used commercially. Research on processing and utilization of innovative wood materials like bamboo, coconut and rubber wood should be intensified to increase volume of utilizable wood raw material. Increasing the durability and arresting sap stain in LUS, LKS and TUS and wood products are challenges that have to be addressed as part of demand-driven research initiatives.

3.9 Alternative Livelihood for Displaced workers

It is expected that a fair number of about 68,000 people currently involved in illegal chainsaw timber will be made redundant after the wood industry has been restructured under the VPA. Most of these people will include chainsaw operators who would have either laid down their tools or had been forced to quit the illegal trade; and other workers who will be made redundant as a result of wood industry going downstream. These people will have to be retrained to acquire new skills for alternative and sustainable livelihood. *They will be given necessary skills and loans to go into plantation development while some from the fringe forest communities will be employed as forest guards or tour guides.* Other alternative training will be in batik dyeing, grass-cutter
and mushroom farming, and in carpentry, masonry and block making. EU-FLEGT makes allowance for assistance in the form of grants to promote these ventures.

4.0 The Effect of Restructuring in Reducing Illegal Chainsaw Harvesting and Trade

The TOR seeks to relate how a restructured timber industry will assist in reducing illegal chainsaw timber logging and trade in illegal timber. The Committee found it necessary in this chapter, to list some of the recommendations that have formed the content of the Committee’s report.

1. Policies and legislations should be fully and strictly enforced.

No meaningful development can be achieved in the timber industry unless policies and legislations are strictly enforced and are devoid of political interferences. The FC should take advantage of There is provision for EU-VPA assistance to partner countries to implement policies and legislations that promote legality in timber trade.

2. Fringe communities should be employed to protect the forest.

EU-FLEGT Action Plan encourages private sector to build capacity in forest management. Fringe communities in collaboration with FC will be empowered to appoint youths in the fringe communities as forest guards to curb illegal chainsaw activities and sanction offenders. Remuneration for the guards should come from increased stumpage fees recommended to be imposed on premium and commercial species and EU assistance as in EU-FLEGT briefing Note 1:3.1.

3. Promotion and increased use of LUS and LKS.

Increased use of the minor species will increase volume of domestic timber supply, reduce pressure on wood supply and lower domestic demand to make illegal chainsaw timber less attractive to buy. FC should make it mandatory for concessions and TUCs holders to harvest all LUS and LKS included in a yield.

4. Increase in stumpage fees for vulnerable species.

The stumpage fee for all premium and commercial (about 18 scarlets and reds) species should be reviewed upwards. The list should include all species classified as vulnerable by IUCN and face
high risk of extinction in the medium term future. A legislative review to increase stumpage by about 25% is recommended. The increased in stumpage fees is to make harvesting of these species unattractive in relation to the LUS and LKS and at the same time conserve their possible extinction. Part of the proceeds from increased stumpage fees will be used to support payment of guards from the fringe communities.


The Timber Resources Management Act 547 of 1997 and Regulation LI 1649 which proscribe the use of chain sawn timber should be strictly enforced. Furthermore, Procurement Act 663 should be amended to proscribe the use of illegal chain sawn timber for government projects.

6. Retooling will increase efficiency and reduce demand for raw timber material

The restructured timber industry going downstream will require less volume of raw material to produce high value of wood products and will contribute to conservation of raw material. Development of the formal and informal MSMEs to support the domestic tertiary processing will be driven partly by improved technical proficiency resulting from a retooled industry. The EU-FLEGT has support for private sector’s initiative in going downstream as in 3.4 of Briefing Note 1. One of the conditions for SMEs to qualify for assistance to go downstream will be an undertaking to use only legal timber preferably the LUS and LKS and avoid use of illegal timber in all their activities.

8. Plastic/metal substitutes and plastic/wood or metal-wood combinations to be promoted.

The high demand of legal timber and the inability to supply the market with legal source of raw material, calls for other non-wood substitutes. Plastic-wood and wood-metal combinations should be encouraged until such time that pressure from the industry suggests otherwise. Environmental considerations have to be taken to the disposal of these non-degradable materials.

10. Capacity building of FC

Some special areas in FC establishments at WITC, FSD, RMSC and TIDD, will be strengthened and provided with the needed infrastructure, equipment and other logistics to perform their roles of protecting and sustaining the forest. Research, development and training will be essential interventions for efficient use of raw materials and downstream processing to create high value from less volume of wood. These areas have to be identified and support sought from FLEGT
11. Alternate livelihood for victims of a restructured wood industry

All potential victims of a restructured wood industry will need an alternative livelihood. Training in plantation development, snail, honey, mushroom and vegetable farming, carpentry, masonry and block making will be some of the skills to be acquired. All potential trainees will be registered for the free training and will be assisted to start a new business in the acquired skill.

FC is encouraged to take advantage of all the available incentives from EU to implement most of the recommendation.

5.0 CONCLUSIONS & RECOMMENDATIONS

There are great opportunities available to the proposed timber industry restructuring that when effectively implemented will contribute to reducing illegal chainsaw logging and promote trade in legal timber. The following specific recommendations for restructuring the wood processing industry are tabled for funding from EU and other funding agencies. The proposed budget that is needed to accomplish the interventions are shown below and in Appendix 2.

A. Sustainability of legal raw material

- *Inventory assessment of forest resources of Ghana including forest cover, timber trees, bamboo culms and rattans EU support of 5 mill Euros; GOG 1 mill GHC for 3 years*

- *Sustainability of legal raw material supply through an expensive plantations development programme taking into account market requirements and environmental considerations in the selection of species. Enabling environment and legislature will have to put in place to ensure access to land and capital to help address the raw material requirement gap in industry. EU support of 20 mill Euros; GOG 1 mill GHC for 5 years*

- *Development of non-timber forest products such as bamboo, rattan, rubber and coconut wood as a means of complementing and sustaining future raw material to the domestic and international markets including inventory of bamboo and NTFP. EU support of 3 mill Euros; GOG 0.5 mill GHC for 3 years*

- *Capacity building of FC and its institutions (TIDD, FSD, and WITC) to strengthen their regulatory role and be more accountable while improving transparency in award and auctioning of the timber resource and ensuring that policies and fiscal reforms are fully and
strictly entrenched and complied with. **EU support 6.5 mill Euros; GOG 1.85 mill GHC for 5 years**

- Public Procurement Policy to prohibit use of illegal chainsaw timber on the domestic market for all government contracts. This will be done in consideration with other policy interventions under the domestic market recommendations. **Funded by GOG for 3 years**

- *Measures and incentives to involve fringe forest communities for participation in the management and protection of the forest. This will require policy and legislative review in support of the communities and to cater for small to medium size forest enterprises as proposed in the domestic market interventions. **EU support of 2 mill Euros; GOG 0.5 mill GHC for 5 years**

**B. Import of Raw Material**

- GoG through FC is to arrange with trade missions to promote buyer-seller networking in African timber producing countries to encourage the growth in imports of logs, sawn timber and veneer. This will however have to be done in tandem with industry retooling to ensure that Ghanaian timber firms can produce value added products competitively for the domestic, regional and international markets.

**C. Downstream Processing**

- Assistance should be sought to re-equip selected SMEs for downstream processing and production of quality wood products using LUS, LKS and innovation wood materials including bamboo, rubber and coconut wood. The source of assistance can come from Wood Sector Development Programme (WSDP – ACP GH 054) that provided support to the wood sector in utilization of lesser used species, kiln drying and value added wood products.

- *Provision of common facilities at Nkenkasie Wood Village cluster of wood industries **EU support for 2.5 mill Euros; GOG 0.7 mill GHC.**

**D. Market and Trade**

- Improved marketing intelligence for competitive price and access to international markets **EU support for 3.5 mill Euros GOG 0.95 mill for 3 years**
E. Trade Associations

- Empowering trade associations to be more efficient and accountable including promoting their participation in the protection of the forest resources. Provide technical assistance to trade associations in developing their purchasing policies and working towards self-regulation. **EU support for 3.0 mill Euros; GOG 0.35 mill GHC for 3 years**

F. Research and Development

- Adequate funding for research institutions to undertake demand driven research and promote research-industry linkages.

G. Alternative Livelihood

- *Training in sustainable alternate livelihood for displaced chainsaw operators and other workers in the industry as a result of reforms under the VPA. **EU support for 6.0 mill Euros; GOG 1.0 mill GHC for 3 years**

H. Professional Associations

- *Developing capacity in civil society and the private sector, in particular Ghana Institute of Foresters, to undertake independent forest industry monitoring. Collaboration with international partners should also be encouraged in support to the LAS and other industry requirements for forest management and monitoring. **EU support for 1 mill Euros; GOG 0.15 mill GHC for 3 years**

The Committee is conscious of the fact that no meaningful development can come out of any intervention unless policies and legislations governing such developmental interventions are properly and effectively implemented. *The group therefore recommends a special task force of all stakeholders to over see to the implementation of all policies, legislations and fiscal reforms in the industry.* These interventions properly and effectively implemented will allow for creation of incentives and enabling environment for promoting tertiary processing and provide opportunities for industrialization and employment creation within the sector. While some policies and the interventions recommended in this report may not always be in tune with those suggested for funding in the EU-FLEGT briefing notes, a crossed fertilization from the two sides might forge he way forward.
The Committee further recommends that all displaced persons of the restructured industry should be registered for the purpose of training in alternative livelihood and possible provision of EU-FLEGT assistance to start new business. This will go a long way to mitigate adverse social impacts of down sizing in a VPA restructured industry. Inability to implement this recommendation could lead to resort to illegal logging that could endanger the sustainability of Ghana’s precious forest resource and the timber industry.
7.0 BIBLIOGRAPHY


FLEGT BREIFING NOTES: Briefing Note Number 01 – What is FLEGT?

FLEGT BREIFING NOTES: Briefing Note Number 02 – What is Legal Timber?

FLEGT BREIFING NOTES: Briefing Note Number 04 – Control of the Supply chain: Wood tracing systems and chain of custody.

FLEGT BREIFING NOTES: Briefing Note Number 06 – Voluntary Partnership Agreements.

FLEGT BREIFING NOTES: Briefing Note number 08 – What are the WTO Implications


Forestry Department (1995a) Volume table by species and diameter class produced by FIMP Forestry Department, Planning Branch, Kumasi, Ghana. (unpublished)

Forestry Department (1995b) Timber yields from the forest reserves of Ghana. Planning Branch, Forestry Department, Accra, Ghana.

Forestry Department (1992) *Handbook of harvesting rules for sustainable management of tropical high forest in Ghana*. Forestry Department, Ghana


Timber Industry Development Division (TIDD/FC): *Report on Export of wood Products; December 2006*

Timber Industry Development Division (TIDD/FC): *Minimum Guiding Selling Prices (F.O.B) – Lumber and Other Wood Products for the Period October – December 2007*


VLTP background Paper #1 – Review of the current taxation system relevant to the forest sector in Ghana.

VLTP Background Paper #3 – Institutional Framework for Implementation of VLTP
APPENDICES

Appendix 1: Questionnaire on the State of Ghana’s Wood Processing Industry.

A. RAW MATERIAL SUSTAINABILITY

1. What is the source of your raw material?
2. What type of wood material do you use including class of timber species?
3. Have you ever used the following raw material for your factory? Bamboo, rubber wood, coconut wood, branch wood.
4. Will you like to use any of them, if technology and equipment are available to you and why?
5. What are your company’s views on competitive bidding process?
6. What are your company’s views on the VPA process?
7. What is your view on teak log export? Will you favour its restriction for use in domestic market?

B. PROCESSING

1. What machines do you use and how old are they?
2. Where did you buy it from?
3. What species of timber are processed by your company and where do you get them?
4. What is your sawing recovery?
5. What tertiary products are produced?
6. What kind of training needs do you have?
7. What is your company’s view on VPA?

C. MARKETING

1. What kinds of products are marketed by your company?
2. What is the destination of your products?
3. How do you market your products?
4. List any problems you have encountered while marketing your products.
5. What do you think should be the best way to market your products for competitive price?
6. What is your company’s view on VPA?
7. What is your view on price disparity between domestic and export timber market? How can the disparity be reduced?
## Appendix 2: Budget for Selected Development Interventions for EU and other Agencies Support

### GHANA VPA NEGOTIATIONS: DEVELOPMENT OF TIMBER INDUSTRY INTERVENTIONS FOR EU FINDING (in order of priority)

<table>
<thead>
<tr>
<th>Project</th>
<th>Project Description</th>
<th>Project’s Purpose</th>
<th>Duration</th>
<th>Cost, € million</th>
<th>Expected Benefits</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Research and Promotion of LUS, LKS, TUS</td>
<td>Research and development programme of FORIG to support promotion and increased utilization of LUS/LKS/TUS. The purpose of the project is to foster reduction in pressure on traditional timber resources and thereby reduce tendency towards illegal logging.</td>
<td>This project will seek to create greater market opportunities for timber utilization of LUS, LKS and TUS.</td>
<td>3 years</td>
<td>2.5 (0.95)</td>
<td>• Protection of forest integrity and improved long term forest productivity. • Protection of endangered timber species. • Improved long term legal raw material supply. • Improved revenue generation.</td>
<td>Selection of species. Research into basic technological properties Product development End-use classification of species Promotion and marketing</td>
</tr>
<tr>
<td>2. Bamboo and rubber wood development</td>
<td>Development of bamboo and rubber wood as alternative raw materials for the timber industry</td>
<td>The purpose of this project is to increase legal raw material availability for the timber industry using rubber wood and bamboo wood.</td>
<td>3 years</td>
<td>2.0 (0.65)</td>
<td>• Increased raw material supply to the wood processing industry. • Enhanced industrial use of bamboo wood and rubber wood. • Enhanced sustainable utilisation of forest resources.</td>
<td>Research on technological properties. Preservation of raw material. Processing technologies. Product development. Promotion and marketing</td>
</tr>
<tr>
<td>3. Plantation Development</td>
<td>Development of private and public commercial plantations at a rate of 50,000 ha per annum</td>
<td>The purpose of the project is to develop expansive plantation as a future source of sustainable raw material for wood processing industry.</td>
<td>5 years</td>
<td>20</td>
<td>• Increased plantation cover • Rehabilitation of degraded forest • Improvement in environmental quality • Increased in future raw material source of wood raw material supply to the wood industry</td>
<td>Land acquisition and demarcation. Identification and selection of developers. Preparation and acquisition of planting materials Planting of plant materials. Maintenance and management of planted forests.</td>
</tr>
<tr>
<td>4. Improved wood processing machineries</td>
<td>Re-capitalization of Ghana’s forest industry restructuring programme</td>
<td>This project seeks to provide investment funds for industry re-tooling and transformation necessary to achieve downstream processing. It will target both the export and domestic markets. The purpose of the project is to create value addition without recourse to forest over-exploitation.</td>
<td>5 years</td>
<td>290.0</td>
<td>• Creation of economic value addition and contribution to pro-poor growth.</td>
<td>Criteria setting for identification of beneficiaries List compilation of machinery types Procurement and installation Training</td>
</tr>
<tr>
<td>5. Private sector</td>
<td>Technical</td>
<td>This project seeks to encourage downstream</td>
<td>3 years</td>
<td>5.0</td>
<td>• Improved returns on industry</td>
<td>Identification of training needs</td>
</tr>
</tbody>
</table>
| Development | Assistance to support downstream processing | Purpose of this project will be to reduce industry risks during transformation and sustain stakeholders commitment to promote the use of “legal wood” | Investments and “timber legality”:
- Improved technical knowhow to 5 SMEs.
- Acquisition of machinery by SMEs.
- Improvement in value addition. | and selection of facilitators.
- Workshop and training in downstream processing. |
|---|---|---|---|---|
| 6. Nkinkasie Wood Village Wood industry cluster development | The project seeks to improve facilities at Nkenkasie Wood Village by providing common facility services including machinery and technical services. | 3 years 2.5 (0.7) | Availability of common service facilities.
- Skill development of artisans
- Improved product quality synergy of production units.
- Increased market opportunities. | Appraisal and evaluation of common facilities.
- Identification of interventions.
- Acquisition and installation of machineries.
- Provision of management and technical staff.
- Workshop on design training and development. |
| 7. Alternative livelihood Provision of alternative livelihood for 30,000 displaced workers of a restructured wood industry and chain saw operators. | The project seeks to make displaced persons less dependent on the forest as their main source of livelihood. The project purpose is to create sustainable employment for displaced wood workers and chain saw operators. | 5 years 6.0 (1.0) | Sustainable legal livelihood for displaced workers.
- Timber resource conservation.
- Reduction in illegal chain saw logging and chain saw activities.
- Normalisation of domestic and export markets | Identification and registration of displaced people.
- Identification of types of livelihood.
- Provision of tools, equipment and resources.
- Monitoring and evaluation. |
| 8. Involvement of forest fringe communities Employment of 150 persons from fringe communities as forest guards | The project seeks to employ people from forest fringe communities as forest guards to protect forest resources for improved sustainable forest management. The project purpose is to encourage community participation in forest management. | 5 years 2.0 (0.5) | Rural poverty reduction.
- Improved protection of forest and timber resources.
- Empowerment of communities in forest management.
- Enhanced livelihoods in communities. | Identification of forest reserves to be protected.
- Identification of fringe communities.
- Recruitment of fringe communities.
- Awareness creation.
- Train and equip fringe communities. |
| 9. Forestry planning | Forest and NTFP Inventory Project (FIP) | There has been a non-judicious application of forest and NTFP resources for over a decade. This project will take stock of resources to back future forest planning for multiple forest benefits. **The purpose of the project is to know the extent of forest resources and existing stock of timber trees, bamboo and other NTFP.** | 3 years | 5.0 (1.0) | • Extent of NTFPs and existing stock of timber resources.  
• Rate of forest depletion  
• Effective planning for raw material supply  
• Acquisition of vehicles and equipment.  
• Satellite imaging.  
• Mapping and boundary demarcation.  
• Data evaluation |
| --- | --- | --- | --- | --- | --- |
| 10. Marketing and Trade | Market access of LUS / LKS to EU markets and prohibition of illegal timber for GOG projects | To develop marketing strategies for promotion and marketing of LUS, LKS to EU and other countries. **The purpose is to bring more revenue from LUS and LKS and reduce pressure on traditional timber species.** | 3 years | 2.5 (0.95) | • Expansion of species mix  
• Reduced pressure on traditional premium species.  
• Enhanced sustainable forest management  
• Improved level of skills and marketing.  
• Stifles market for illegal timber  
• Good governance on the domestic market  
• Liaise with FORIG to identify species to be developed and promoted.  
• Develop products in collaboration with private manufacturers.  
• Identify and build capacity of procurement agencies of GOG and public contractors on responsible procurement.  
• Monitor and evaluate compliance |
| 11. Capacity building at WITC | Upgrading WITC’s training capabilities and general infrastructure | This project will seek to improve WITC’s operations research and training capabilities, employ modern technological methods in training and improve its institutional efficiency. **Purpose of the project is to keep WITC one step ahead of industry in training and equipment – an approach that will impact upon the drive towards improved efficiency in wood processing.** | 2 years | 2.5 (0.45) | • Improved efficiency in industrial technical training and livelihood opportunities for workers in formal and informal wood industry sub-sectors.  
• Improvement in skills of workers.  
• Improved quality technical assistance to industry.  
• Identification of equipment and technical needs  
• Purchase of equipment & installation  
• Identification of training needs  
• Workshop and training  
• Monitoring and evaluation |
| 12. Capacity building at WITC | WITC Human Resource Development | This project seeks to improve the levels of professional and semi-professional staff of WITC necessary to deliver management level services to the wood industry. It will provide overseas technical assistance in technology transfer, and training in management. **Purpose of the project is to keep WITC one step ahead of industry in methods and organization – an approach to impacting upon the drive towards improved efficiency in wood utilization.** | 3 years | 1.0 (0.2) | • Improvement in quality control in the wood processing industry.  
• Technology transfer  
• Needs analysis  
• Employment of technical assistants  
• In service training. For staff  
• Training of stakeholders |
### 13. Institutional capacity building

| Institutional reform and capacity building for FC-HQ, TIDD and FSD, RMSC to undertake regulatory roles in the industry. | This project is intended to improve policy analysis, planning and governance control capabilities of MLFM, improve FC adherence to its Service charter and reposition FSD and TIDD to undertake regulatory roles in the industry. **The purpose of the project is to improve forest governance.** | 3 years | 3 | • Improved institutional efficiency, reduced transaction costs of forest stakeholders and improved confidence of landowners. • Improved monitoring and industry development | • Procurement of equipment and other logistics. • Employment of timber industry development specialist. • Re-employment of forest guards. • Training workshop with collaborative partners including Customs, CEPS. |

#### 14. Technical Assistance for RMSC on Forest Regulation & Management

| RMSC will be required to manage the transfer of knowledge from the FIP. It will need the posting of forest engineering specialists and equipment to help attain a newly required level of capacity building to meet emerging challenges. **The purpose of the project is to improve forest management.** | 2 years | 1.0 | • Correct estimation of forest depletion. • Effective planning for future raw material supply. | • Workshops & training • Monitoring and evaluation |

#### 15. Trade Associations

| Trade Association capacity building | This project seeks to position industry associations to assume future challenging roles in industry, trade and development through their organizational restructuring, staffing and provision of infrastructure. **The purpose of the project is to create accountable associations complementing government’s efforts at ensuring legality in forest transactions.** | 3 years | 3.0 | • Reduced economic cost to the state of forest transactions, • Established confidence among members • Improved credibility of the wood industry in overseas markets. | • Identify trading needs of the associations • Formation of secretariats • Acquisition of infrastructural needs • Training in management and administration. • Provision of vehicles, office equipment and services. |

#### 16. Ghana Institute of Foresters’ (GIF) capacity building

| Ghana Institute of Foresters’ (GIF) capacity building | The project seeks to improve the capacity building of the GIF to assume new roles emerging from FC’s institutional reforms. **The purpose of the project is to enable the GIF to support the VPA process through monitoring and enforcement of private sector compliance with forest standards.** | 3 years | 1.0 | • Improved efficiency and transparency in private sector forest conduct. • Reduced industry transaction costs • Capacity building of GIF | • Identification of personnel • Identify role of GIF • Workshop and training |

---

**Note:**

The size of investment is estimated on the basis of the following key assumptions:

- **A.** Target medium term export turnover €600 mln p.a.
- **B.** Target medium term domestic turnover €250 mln p.a. (from 500,000m³ @ €500)
- **C.** Assets-Turnover Ratio: 0.3 (Largely SMEs)
- **C.** Figures in brackets denote GOG counterpart funding