



**SOME REASONS FOR POOR APPLICATION OF WOOD PRODUCTS STANDARDS AND STRENGTHENING THE PROCESS OF STANDARDS DEVELOPMENT**

G. K .D. Ametsistsi  
B. Kyereh  
A. Duah-Gyamfi

## TABLE OF CONTENT

<b>1.0 INTRODUCTION.....</b>	<b>1</b>
1.1 <i>Background</i> .....	1
1.2 <i>Objective Of The Study</i> .....	2
<b>2.0 OVERVIEW OF STANDARD DEVELOPMENT AND ACTIVITIES OF STANDARDS DEVELOPMENT ORGANIZATIONS.....</b>	<b>2</b>
2.1 <i>Concept Of Standardisation</i> .....	2
2.2 <i>Importance Of Standards</i> .....	2
2.3 <i>Standards Development Organization And Standards Development</i> .....	3
2.4 <i>Standards Development In Ghana</i> .....	3
2.4.1 <i>The Need/Call For Standards</i> .....	4
2.4.2 <i>Negotiations</i> .....	4
2.4.3 <i>Approval</i> .....	4
2.4.4 <i>Standard Review</i> .....	5
2.5 <i>Some Roles Of The Timber Industry Development Division Of The Forestry Commission</i> .....	5
<b>3.0 METHODOLOGY .....</b>	<b>6</b>
<b>4.0 FACTORS INFLUENCING STANDARDS DEVELOPMENT AND APPLICATION .....</b>	<b>7</b>
4.1 <i>Status Of Wood And Wood Products Standards And Draft Work Programme For Ghana Standards Board</i> .....	7
4.2 <b><i>FACTORS WHICH LIMIT GSB FROM DEVELOPING STANDARDS FOR ALL WOOD PRODUCTS</i></b> .....	<b>11</b>
4.2.1 <i>Inadequate Funding And Lack Of Sponsorship</i> .....	11
4.2.2 <i>Lack Of Working Drafts</i> .....	11
4.2.3 <i>Inadequate Expertise</i> .....	12
4.2.4 <i>Priority Of The Board</i> .....	12
4.3.0 <b><i>FACTORS WHICH LIMIT INDUSTRY AND CONSUMERS FROM APPLYING STANDARDS TO WOOD PRODUCTS - INDUSTRY PERSPECTIVE</i></b> .....	<b>12</b>
4.3.1 <i>Structure Of The Ghana Timber Industry By Product And Activity And Capacity Of Industry To Apply Standards To Products.</i> .....	12
4.3.2 <i>Lack Of Standards</i> .....	14
4.3.3 <i>Ignorance Of Local Market Of Standards</i> .....	15
4.3.4 <i>Non-Specific Market Demands</i> .....	16
4.3.5 <i>Insufficient Training In Standards In Wood Training Institutions</i> .....	16
4.3.6 <i>Inadequate Training For Manufacturers, Public Education And Lack of Consumer Protection Associations</i> .....	17
4.3.7 <i>Capacity Of Equipment And Machinery To Produce “Gradable” Products</i> .....	17
4.3.8 <i>Raw Materials Source and Quality</i> .....	18
4.3.9 <i>Finance</i> .....	20
4.3.10 <i>Demand For Wood And Wood Products</i> .....	21
4.3.11 <i>Calling For Standards And Gazetting</i> .....	23
4.4.0 <b><i>STANDARDS APPLICATION CONSTRAINTS- CONSUMER PERSPECTIVE</i></b> .....	<b>23</b>
4.4.1 <i>Knowledge Of Standards</i> .....	23
4.4.2 <i>Policies Implementation And Lack Of Education And Enforcement Of Standards</i> ....	24
4.4.3 <i>Consumer Protection Associations/ Groups</i> .....	25
<b>5.0 STRENGTHENING PROCESS OF STANDARDS DEVELOPMENT .....</b>	<b>25</b>
5.1 <i>Adequate Funding Of Standards Development Organisations</i> .....	26

<i>5.2 Ensuring Availability Of Draft Standards</i> .....	26
<i>5.3 Holding And Sustaining Public Education On Wood Products Standards</i> .....	26
<i>5.4 Establishment And Empowerment Of Consumer Protection Movement</i> .....	27
<i>5.5 Meeting Contemporary User Needs For Wood And Quality</i> .....	28
<i>5.6.1 Capacity Development In Quality Assurance And Standards In Wood Training Institutions By Experts</i> .....	30
<i>5.6.2 Appraisal Of Timber And Furniture Making Training Institutions</i> .....	31
<i>5.6.3 Enhancing Local Artisans Skills</i> .....	34
<i>5.7 Incentives For The Production Of Value Added Product And Motivation To Apply Standards</i> . 35	
<i>5.8 Adequate Representation Of Consumers In Standards Development Committees</i> .....	35
<i>5.9 Empowering GSB In Addressing Consumer Complaints</i> . .....	36
<b>REFERENCE</b> .....	<b>37</b>

## **LIST OF ACRONYMS**

FAWAG	Furniture & Wood Products Association of Ghana
FC	Forestry Commission
FORIG	Forestry Research Institute of Ghana
FSD	Forestry Services Division
GIPC	Ghana Investments Promotion Centre
GSB	Ghana Standards Board
GTA	Ghana Timber Association
GTMO	Ghana Timber Millers' Organization
ISO	International Standards Organisation
ITTO	International Tropical Timber Organisation
BoG	Bank of Ghana
MLFM	Ministry of Lands, Forestry and Mines
TIDD	Timber Industry Development Division of Forestry Commission
WAG	Wood-products Association of Ghana
WITC	Wood Industries Training Centre

## **1.0 INTRODUCTION**

### **1.1 Background**

The timber industry of Ghana is facing innumerable problems which are leading to the collapse of some timber firms, while those operating are barely breaking even. The timber industry contributes about 6% to the Gross Domestic Product (GDP) and employs a significant portion of the country's labour force with a tenth of the population of Ghana earning their livelihood from the industry. The timber industry has over the years been associated with export sales and characterised with unstable or mixed performance. This performance in the past few years is registering decline in both volume and value. The decline has been attributed to myriads of problems facing the industry such as the continuous use of obsolete equipment, high operational cost, inconsistent policies, intense competition from the Far East Asian countries and development of substitutes apart from decline in resource base. Economic analyst forecasted that, one sustainable way of salvaging the timber industry is by producing value added products capable of matching international competition, however on the contrary, showrooms of many large and famous furniture companies are stocked with imported furniture and little of locally produced furniture.

Waste material in the form of saw dust and timber off-cuts are generated daily within Ghana's timber industry. The waste materials have little use and form heaps at various saw and plymills throughout the country. About 45,000 metric tonnes of waste is generated annually (Ghana Export Promotion Council, [www.ghanaembassy.jp.or](http://www.ghanaembassy.jp.or)). Technology for efficient utilisation of wood waste is not available for many companies rather, the industry incur cost in their disposal.

In order to produce quality tertiary products, the industry needs a technological baseline in form of standards for product development and for future research. This will ensure multiple market participation, reduced production costs, and the efficiency effects of product interchangeability.

## **1.2 Objective Of The Study**

The objective of this study is therefore to investigate the availability of wood product standards, their current status and their application and the major constraints in wood standards development, revision and application in order to suggest possible solutions to support quality assurance of wood products.

## **2.0 OVERVIEW OF STANDARD DEVELOPMENT AND ACTIVITIES OF STANDARDS DEVELOPMENT ORGANIZATIONS.**

### **2.1 Concept Of Standardisation**

Standards are agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines, or definitions of characteristics, to ensure that materials, products, processes and services are fit for their purpose.

### **2.2 Importance Of Standards**

The standards that are created through standards organizations lead to improved product quality, ensured interoperability of competitors' products, and they provide a technological baseline for future research and product development. Formal standard setting through standards organizations has numerous benefits for consumers including increased innovation, multiple market participants, reduced production costs, and the efficiency effects of product interchangeability. Other benefits of standards include:

- suitable products for vulnerable populations
- greater consistency in the delivery of services
- easier access to and greater choice in goods and services
- lower costs and greater competition, hence lower prices for consumers
- safer, healthier, more environmentally sound products
- improved quality and reliability
- better operational compatibility between products
- better product information

Standards distil the latest in expert knowledge and make it available to all. In this way, they propagate new advances and transfer technology, making them an invaluable source of knowledge. The importance of quality control guidelines cannot be overemphasised, for neglecting of standards in production is tantamount to poor products and services delivery leading to inefficiency, and proliferation of sub-standard goods in the market.

### **2.3 Standards Development Organization And Standards Development**

Standards development organization or SDO, is any entity whose primary activities are developing, coordinating, promulgating, revising, amending, reissuing, interpreting, or otherwise maintaining standards that address the interests of a wide base of users outside the standards development organization ([www.iso.org](http://www.iso.org)). Although SDO is government-funded, the institute is independent. For consumer goods, it sets standards that products should reach. SDO also tests products to see that they conform to that standard among others. (Microsoft® Encarta® Reference Library 2003).

In Ghana, the Ghana Standards Board (GSB) has been instituted as the Standard Development Organisation with a view to promote and enhance the growth of industry, reduce the proliferation of sub-standard goods and to protect the health and safety of the consuming public.

### **2.4 Standards Development In Ghana**

Standards may be developed directly by the GSB or through assistance to organisations to develop standards that are harmonised with those of the target markets. National Standards are developed based on applicable international standards through Technical Committees and their Sub-Committees. These committees are made up of representatives of the relevant stakeholders in a particular subject area or industry sector. At present a ten member committee has been formed to execute this function. The committee comprised representatives from GSB, FORIG, Dupaul Wood Treatment, Spalo Wood Treatment, Bys and Ways Ltd, GREDA, Ghana Institute of Architects, University/Research, TEDC.

The stages involved in the development of Standards are as follows:

STAGE 1: Request for the development of Standard in a particular subject area or industry sector.

STAGE 2: Consideration of request and approval

STAGE 3: Request referred to the relevant Technical Committee.

STAGE 4: Preparation of Working Draft

STAGE 5: Consideration of working draft by Technical Sub-Committee (SC) members

STAGE 6: Consideration of working draft document by Technical Committee (TC) Members

STAGE 7: Draft document circulated among interested bodies, other Standards bodies etc. for comments (Public Comments Stage)

STAGE 8: Final Technical Committee (TC) meeting to consider comments from public comments

STAGE 9: Editing and publishing of document

STAGE 10: Gazetting of the Standard through the Legal Unit of GSB and the Attorney General's Department.

#### **2.4.1 The Need/Call For Standards**

The need for a standard is usually expressed by an industry sector, which communicates this need to a national member body. The latter proposes the new work item to the SDO. Once the need for a Standard has been recognized and formally agreed, the first phase involves definition of the technical scope of the future standard. This phase is usually carried out in working groups which comprise technical experts from countries interested in the subject matter.

#### **2.4.2 Negotiations**

Once agreement has been reached on which technical aspects are to be covered in the standard, a second phase is entered during which detailed specifications within the standard are negotiated. This is the consensus-building phase.

#### **2.4.3 Approval**

The final phase comprises the formal approval of the resulting draft Standard (in the case of International standards, the acceptance criteria stipulate approval by two-thirds



of the ISO members that have participated actively in the standards development process, and approval by 75 % of all members that vote), following which the agreed text is published as an ISO International Standard.

#### **2.4.4 Standard Review**

Most standards require periodic revision. Several factors combine to render a standard out of date:

- technological evolution,
- new methods and materials,
- quality and safety requirements

To take account of these factors, ISO has established the general rule that all ISO standards should be reviewed at intervals of not more than five years. On occasion, it is necessary to revise a standard earlier. However in Ghana the situation is different mainly due to logistical constraints. GSB reviews its standards based on technological changes that may call for changes in portions of the document or provisions for a new product/brand.

#### **2.5 Some Roles Of The Timber Industry Development Division Of The Forestry Commission**

The Ghana Forestry Commission Act, 1980 (Act. 405) provided for the establishment of a Commission in line with the 1979 Constitution of Ghana to among others to manage, maintain and protect forests as an economic resource in perpetuity. The existing forestry sector agencies were made Divisions of the Commission. Forestry Commission Act, 1993 (Act 453) which repealed Act 405 of 1980, however re-established the Commission as an advisory body. The existing forestry sector agencies were then granted independence to operate separately.

Forestry Commission Act, 1999 (Act, 571) also repealed Act 453 and re-establish the Forestry Commission as a semi-autonomous corporate body and also brought under the Commission, the forestry sector agencies. There are three divisions under the

Forestry Commission namely Forest Services Division, Wildlife Division and Timber Industry Development Division implementing the functions of protection, development, management and regulation of forest and wildlife resources.

Timber Industry Development Division which evolve from Forestry Products Inspection Bureau was established under Forestry Products Inspection Bureau Law, 1985 (P.N.D.C.L. 117). This Act established an agency to enforce timber grading rules and ensure quality control standards were maintained in the exports of wood and wood products. Today TIDD performs this role.

### **3.0 METHODOLOGY**

The methods used in gathering data and information included use of questionnaires and discussions with officials of institutions such as Ghana Standards Board, Timber Industry Development Division, Forestry Commission and members of Ghana Timber Association (GTA), Ghana Timber Millers Organisation and Small Scale- Carpenters Association as well as civil society. The questionnaire assessed opinions using summated rating adopting Likert Scale.

## **4.0 FACTORS INFLUENCING STANDARDS DEVELOPMENT AND APPLICATION**

### **4.1 Status Of Wood And Wood Products Standards And Draft Work Programme For Ghana Standards Board**

Ghana Standards Board (GSB) developed some standards for the wood industry and through assistance to organizations mainly TIDD to develop standards that are harmonised with those of the target markets (export). These standards are classified as follows; undergoing periodic review, being considered for adoption, undergoing draft/working draft, standards being monitoring or new work item.

Apart from the timber industry which has Ghana Grading Rules (GGR), Ghana Standards and some standards from ISO, the furniture industry has no grading rule to guide it in ensuring quality as indicated in the status of standards. Standards development for the industry has been limited mainly by inadequate funding. Other factors include lack of working documents (drafts to initiate the standards development process) and sponsorship. ISO convention for standards development stipulated that full representation of all stakeholders including, scientists, architects, consumers, and research institutions are involved. Thus standards development and review are very expensive which is often beyond allocated funds. Ghana Standards Boards is aware of these problems and has been making efforts to address them to ensure quality of Ghanaian wood products. Unfortunately their best is not enough to provide adequate standards for the industry.

At present the GSB has selected 54 standards comprising, new standards to be developed, draft documents and standards under review. Ranking in a priority groups of a scale of 1-5, the standards were arranged as indicated table 1. The selected standards were to be completed in six years.

**Table 1 Status Of Wood And Wood Products Standards**

	<b>WORK ITEM</b>	<b>STATE</b>
	<b>Priority I</b>	
1	GS 146-1:1992-Code of practice for wood treatment plants: Quality control and inspections	R
2	GS 146-2: 1992 Code of practice for wood treatment plants: Quality Control and Inspection	R
3	GS 145: 1992 –Specifications for wood poles for overhead power and telecommunication lines	R
4	GS 144: 1992- Specifications for cross-arms, transmission timbers and pole keys for overhead power and telecommunication lines	R
5	SABS 0324:1999-Inspection and supplemental treatment of treated wood utility poles	D
6	SANS 753:1994 – Pine, poles, cross-arms and spacers for power distribution, telephone systems and street lighting	D
7	GS 23:1970 Wood Technology - Glossary of Terms	R
	<b>Priority II</b>	
8	GS 197:2000 - Wood Technology –Wooden Doors	R
9	GS 194:2000 Wood Technology – Wooden Frames for Doors, Windows and Ventilators	R
10	Ghana Grading rules and standards for square edged Sawn wood	N
11	ISO/DIS 2074 – Plywood -- Vocabulary	M
12	ISO/DIS 12465 Plywood -- Specifications	M
13	ISO/DIS 12466-1 Plywood – Bonding quality – Part 1: Test methods	M
14	ISO/DIS 12466-2 Plywood – Bonding quality – Part 2: Requirements	M
15	<i>Ghana Curl Veneer Standards &amp; Grading Rules</i>	<i>N</i>
16	<i>Ghana Rotary Veneer Standards &amp; Grading Rules</i>	<i>N</i>
17	<i>Ghana Grading Rules and Standards and Grading Rules</i>	<i>N</i>
18	<i>Ghana Sliced Veneer Standard and Grading Rules</i>	<i>N</i>
19	<i>Ghana Plywood Standard and Grading Rules</i>	<i>N</i>
20	<i>Ghana rules for log (Adopted from the ATIBT Grading rules for Tropical logs)</i>	<i>N</i>
21	ISO 4470:1981 – Sawn timber – Determination of the average moisture	A

	content of a lot	
22	ISO/DIS 21892 – International framework for classifying wood products durability based on use classes	M
23	ISO 5970:1979 – Furniture – Chairs and tables for educational institutions – Functional sizes.	A
24	ISO 9221-1: 1992 – Furniture –Children’s high chairs – Part 1: Safety requirements	A
25	ISO 9221-2: 1992 – Furniture –Children’s high chairs – Part 2: Test methods	A
26	ISO 1096:1999 – Plywood -- Classification	A
27	ISO 2426-3:2000 – Plywood – Classification by surface appearance – Part 3: Softwood	A
28	SABS 1528-7: 1991 – Children’s Cots for domestic use	D
	<b>Priority III</b>	
29	ISO/DIS 21887 – Durability of wood and wood-based products – definition of use classes.	M
30	ISO/DIS – Round and sawn timber -- Vocabulary	M
31	ISO/DIS 21015 – Office furniture – Office work chairs – Test methods for the determination of stability, strength and durability	M
32	ISO/DIS 21016 – Office furniture – Tables and desks – Test methods for the determination of stability, strength and durability	M
33	DGS 196 – Specification for wooden knock-down and semi-assembled furniture	D
34	ISO 3129:1975 – Wood – Sampling methods and general requirements for physical and mechanical tests	A
35	ISO 3130: 1975 – Wood – Determination of moisture content for physical and mechanical tests	A
36	ISO 3131: 1975 – Wood – Determination of density for physical and mechanical tests	A
37	ISO 4858: 1982 – Wood – Determination of volumetric shrinkage	A
38	ISO 4860: 1982 – Wood – Determination of volumetric swelling	A
39	ISO 9709:2005 – Structural timber – Visual strength grading – Basic principles	A

40	ISO 13912:2005 – Structural timber – Machine grading – Basic principles	A
41	ISO/AWI: 24496 – Office furniture – Office work chairs – Methods for the determination of dimension	A
42	ISO 1098: 1975 – Veneer plywood for general use – General requirements	A
43	ISO 2426-1:2000 – Plywood – Classification by surface appearance – Part 1: General	A
44	ISO 2426-2:2000 – Plywood – Classification by surface appearance – Part 2: Hardwood	A
45	SABS 1528-1:1992 – Furniture – Seating	D
46	SABS 1528-6: 1991– High chairs for domestic use	D
47	SABS 1528-4: 1991– Bunk beds for domestic use	D
48	ISO 7170:2005 – Furniture – Storage units – Determination of strength and durability	D
49	ISO 7171: 1988 – Furniture – Storage units – Determination of stability	D
50	SABS 1528-2: 1996 – Desks, tables and computer stands	D
51	SABS 1528-3: 1991- Storage units	D
52	ISO 7173: 1989 – Furniture – Chairs and stools – Determination of strength and durability	D
53	ISO 7174-1: 1988 – Furniture – Chairs -- Determination of stability – Part 1: Upright chairs and stools	D
	<b>Priority IV</b>	
54	ISO 1954:1999 – Plywood – Tolerances on dimensions	A

## **4.2. FACTORS WHICH LIMIT GSB FROM DEVELOPING STANDARDS FOR ALL WOOD PRODUCTS**

### **4.2.1 Inadequate Funding And Lack Of Sponsorship**

Funding for standard development comes from three basic sources; solely by GSB, solely by industry and partly by industry. Funding for these activities was observed to be inadequate while industry contributions which usually cover insignificant fraction of the budgets were not forthcoming.

Generally standards development is very expensive as it requires amalgamation of ideas from all stakeholders including experts, consumers and civil society. Cost incurred in standards development usually represents foreign travel cost, payment of sitting allowances for committee members who meet numerous times to deliberate on the documents and procurement of logistics.

### **4.2.2. Lack Of Working Drafts**

As indicated earlier, standards are developed after a request for the development of Standard in a particular subject area or industry sector has been made and the request had undergone consideration of the request and approval and then referred to the relevant Technical Committee for the preparation of Working Draft. Development of working drafts is an expensive exercise which requires technical expertise to develop the working draft to be considered by the Technical Sub-Committee (SC) members.

Out of the 54 Standards of various stages in the wood sector, only seven had gone beyond the so called preparation of drafts and technical committee discussions and of these seven, only three could be considered relevant for wood processors and joiners. All other standards in Wood and Wood Products (TC 11) are at rudimentary stages of preparation of drafts and technical committee discussions. This development is attributed to lack of funds and logistics.

### **4.2.3 Inadequate Expertise**

Fully represented Technical Committee is ideal for standards development and review; however there are some areas which lack expertise and such experts could only be imported. Alternatively, staff of GSB or other relevant institutions could be sponsored to be trained outside the country. Ghana Standards Board is also said to be under staff in these areas and lacked expertise in some specific areas. Other constraints include inadequate budget provision for training as well as lack of scholarships for the GSB Staff for further training.

### **4.2.4 Priority Of The Board**

As indicated in priority classification of the 54 wood products, wood products were only 54 out of the 122 standards at various stages of development with various degrees of priorities. Unfortunately, most of the new secondary wood products were put in the two out of five priority scale attracting little attention contrary to the demand of the industry.

## **4.3.0 FACTORS WHICH LIMIT INDUSTRY AND CONSUMERS FROM APPLYING STANDARDS TO WOOD PRODUCTS - INDUSTRY PERSPECTIVE**

### **4.3.1 Structure Of The Ghana Timber Industry By Product And Activity And Capacity Of Industry To Apply Standards To Products.**

The timber industry has over the years gone through structural transformations in response to policy changes, market demands and raw material supply. These structural changes resulted in other changes like range of products and production efficiency levels. The industry structure as at the year 2002 is shown in table 2 below.



**Table 2. Structure of the wood industry (export)**

<b>Product</b>	<b>Number of Exporting Companies<sup>3</sup></b>
Sawn timber <sup>1</sup> and sleepers	170
Profiled and Machined timber	37
Dowels and broomsticks	7
Flooring	9
Furniture Parts	4
Sliced Veneer	19
Rotary Veneer	20
Layons	1
Curled Veneer	6
Plywood	23
Flush Doors	1
Boules <sup>2</sup>	4
Furniture/wood workers	Unavailable

<sup>1</sup> There are 100 companies exporting kiln-dried material.

<sup>2</sup> Boules exports have been suspended for all species with the exception of Niangon and Ofram

<sup>3</sup> Some companies are exporting more than one product.

<sup>4</sup> Source: [www.ghanatimber.org/industry](http://www.ghanatimber.org/industry)

Processed wood production in Ghana is classified into three categories of operation namely:

- (i) Primary (logging)
- (ii) Secondary (boules, corestock, curls veneer, fitches, layons, lumber, pallets, plywood, reconstituted veneer, rectangular poles, rotary veneer, sliced veneer, and sleepers) and
- (iii) Tertiary (furniture parts, mouldings, flooring, toys, block boards, briquets, broomsticks, door lippings, doors, dowels, hockey sticks, profile boards)

### **4.3.2 Lack Of Standards**

As indicated earlier, almost all wood products produced by wood processing companies for export have some form of grading rules, however these grading rules were still in the formulating stage and have not been published and gazetted but were being used in the draft form. At present there are no quality control guidelines, grading rules or standards for a vast majority of new wood products with high potentials for export such as furniture parts, dowels, sleepers and broomsticks for the wood industry as indicated in table 3. Besides it is only for some export production that quality control and standards are strictly applied.

Wood products including furniture produced for the domestic market on the other hand have no grading rule. Thus the local market quality needs have not been addressed in the formulation of the quality control guidelines and grading rules. The study could not locate any company exporting complete furniture. Most furniture companies produce furniture for the domestic market with no grading rules in use. Lack of standards and suitable policies might be responsible for the subjugation of the local wood product to a mediocre quality niche market.

**Table 3. Some exportable products and standards applied**

	<b>PRODUCTS</b>	<b>STANDARD APPLIED</b>
1	Sawnwood	GGR
2	Boules	GGR
3	Rotary Veneer	GGR
4	Sliced Veneer	GGR
5	Curls Veneer	GGR
6	Lay-Ons	GGR
7	Plywood	ISO
8	Particle Board	GGR
9	Mouldings/Profiles	GGR
10	Furniture Parts	None
11	Flooring	GGR
12	Doors	GS
13	Window/door frames	GS
14	Dowels	None
15	Sleepers	None
16	Broomsticks	None

GGR=Unpublished Ghana Grading Rules

ISO= International Standards Organisation

GS= Published Ghana Standards

#### **4.3.3 Ignorance Of Local Market Of Standards**

Apart from exportable wood products which are compelled to be produced according the manufacturer's specifications and other standards, 91% of furniture and other wood workers interviewed had no idea about any standards although standards for doors and window/door frames (GS 197:2000 - Wood Technology –Wooden Doors and GS 194:2000 Wood Technology – Wooden Frames for Doors, Windows and Ventilators) have been published and available at GSB for sale. About 3% of small scale carpenters seemed to be aware of standards for some domestic wood products

such as window and door frames but have never used them. Even those who ever heard of the said grading rules did not know where and how they could be assessed. Furniture design and dimension is strictly 'hereditary' ie the skill is passed from master to the apprentice and by copying from friends and furniture catalogues where dimensions are usually not shown.

It was observed that woodworkers from the polytechnics and other training institutions exhibited superiority in skill in furniture production but do not have access to any grading rule or skill. With the absence of standards especially for furniture and other domestic wood products many woodworkers have resolved to produce so called 'custom made' products.

#### **4.3.4 Non-Specific Market Demands**

Most wood products especially furniture manufactured in Ghana is considered 'custom made' as they are manufactured to the taste of the buyers or produced 'arbitrarily' to the manufacturers own composite specifications/ standards as there are no published standards to guide both buyers and manufacturers. Many furniture manufacturers copy designs from catalogues, friends and other sources without patent and dimensions. It is sad to observe that until a carpenter goes to the site to measure the size of a door frame one is not likely to get a manufactured door that may fit into the frame.

#### **4.3.5 Insufficient Training In Standards In Wood Training Institutions**

It was observed that both the universities and polytechnics lacked experts in wood grading/standardisation and quality control. Timber and furniture grading were being taught as general courses by non-expert lecturers instead of hiring personnel from TIDD, thus students trained in these institutions who might be employed as quality control officers are often too little equipped to handle grading.

#### **4.3.6 Inadequate Training For Manufacturers, Public Education And Lack of Consumer Protection Associations**

Standards are technical documents which can appear complicated and confusing to those introduced to it for the first time. To address this, GSB is supposed to organize general training programs on Standards and Quality to industry as well as tailored training programs designed for specific industries. In order to create quality consciousness, GSB again is supposed to organise public education on standards and quality. It further conducts market surveillance on products certified by GSB to ensure that producers conform to standards and that the mark of conformity is not abused. GSB may trace manufacturing to factory gate by conducting factory quality audit. Furthermore it creates avenue for consumer complaints and disseminates information on relevant trade regulations and economic operators.

The above functions of GSB indirectly disseminate standards to manufacturers and consumers and also enforce the standards, however this important role of GSB has been dormant probably due to lack of funds, disinterest by the other stakeholders or partial ineptitude. All consumers interviewed never had any such education on wood products.

#### **4.3.7 Capacity Of Equipment And Machinery To Produce “Gradable” Products**

The current state of equipment and machinery employed in primary and secondary processing in most of the mills are mostly over-aged and some obsolete. These result in low recovery and high waste generation when they are employed to produce to contract specifications. Some of the equipment in use cannot be used to produce to certain degree of specification. Application of information technology for product design, process engineering, quality control and precision control is absent in almost all firms visited including Polytechnics which train personnel in quality control. The situation was even worse with small scale wood workers. This state of equipment results in inefficiency and inability to meet grade and contract specification apart from dimensions.

It was observed that many sawmills were not interested in investing into modern equipment since the continuous supply of resources cannot be guaranteed and even had to close some production lines. Most carpenters and furniture manufacturers on the other hand were most desirous of modern equipment albeit could not afford to purchase them. They had to carry wood to machine centres for moulding and machining. In addition, they lack wood drying techniques and equipment so cannot use seasoned wood as required.



The machinery employed in primary and secondary processing were very old and inefficient, while many small-scale furniture producers lacked equipment for precision production and finishing as well as the capacity to meet grade. It is evidently clear that, some small and medium-sized enterprises (SMEs) cannot produce ‘gradable’ furniture and other wood products with their current equipment. They could therefore only produce for the local market, and attempt to produce quality product to meet grade will result in unreasonable cost of production and excessive waste of materials and time.

Some companies on the other hand, have state of the art equipment for processing, and they are capable of producing quality products if guided and supported. Thus equipment for downstream wood processing are modern as most firms had invested in them. A case in point is Scanstyle Mim Ltd which produces quality furniture parts for export. This firm has achieved acceptable level of automation and precision processing using state of the art equipment, the only company in this category.

#### **4.3.8 Raw Materials Source and Quality**

Difficulty in getting the right volume of raw material inputs and species has been the main obstacle of local wood manufactures. The Ghanaian wood industry is export-oriented, however, it is characterised by very low recovery rates because, sawn timber recovery factor to meet exacting export orders is only 20-40% of total log input. The

wood industry has traditionally concentrated on exports, to the neglect of the local market.



92% of this lumber had splits and other defects



Illegally harvested teak ready to be sawn



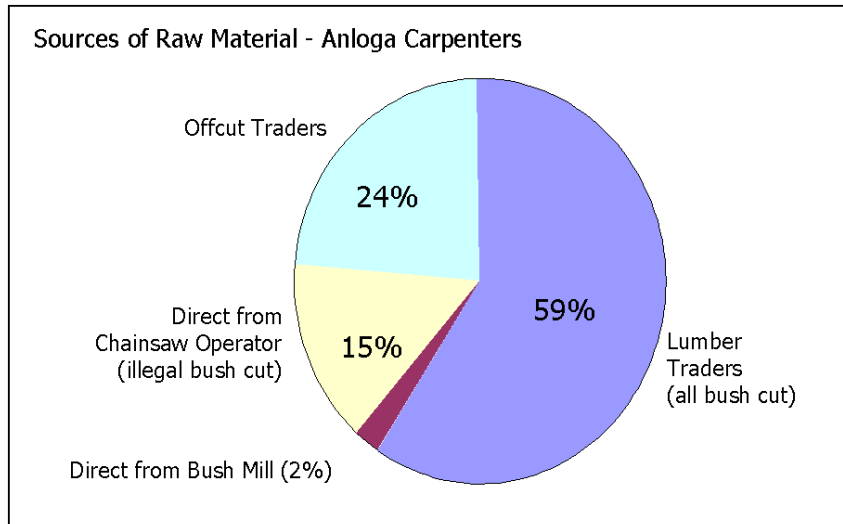
Poor quality plywood, factory reject for sale



Highly defective wood moulded as furniture legs

Thus wood sold in local market is usually export rejects which is inadequate and of poorer quality and therefore cannot be employed to produce certain grade of products of specific quality. Furthermore, the total volume of sawmill lumber available for domestic use is only 152,660 m<sup>3</sup> per year, yet the demand of the domestic end-users is about 384,730 m<sup>3</sup>. This means that the difference of 232,070 m<sup>3</sup> has to be supplied from other sources. Supplies to the local market (estimated at a demand of 0.7 million m<sup>3</sup> per year) are supplemented by illegal logging and chainsaw operations.

In Anloga market in Kumasi, one of the biggest small scale wood processing centres in Ghana which generally represent wood market in Ghana obtain its wood from the sources indicated in figure 1.



**Figure 1 Sources of raw materials for carpenters in Anloga, Kumasi**  
Source- Ward & Gilbert (2001)

Some FAWAG members declare that they could not afford to buy quality dried wood from sawmills at export prices and could only buy the rejected ones from the mills. They affirmed that chain-sawn wood was the only source of quality wood to wood workers. Poor quality of some inputs such as finishing chemicals, hardware and inappropriate hand tools were cited among others for their inability to produce quality products especially furniture.



*Chain Sawn lumber in timber market*

FAWAG also complained of lack of programmes which sought to train members on innovations and application of chemicals and equipment use. Often plywood and other wood products bought from the mills are not labelled for end use determination. Further the quality is often poor and easily infested by insects. The local market has been taken for granted in raw materials quality needs.

#### **4.3.9 Finance**

It is considered that most SMEs are highly indebted and are operating at low profits. Cost of borrowing from financial institutions is less prohibitive and available for short



term activities, yet most enterprises use short-term loans to finance capital expenditure for expansion projects. Industry needed loans to procure state of art equipment to produce to specification and reduce waste. The industry complained of high taxes and continuous rise in utility charges.

Furniture manufactures and other wood workers complained of unavailability of capital to buy wood to stack to dry before use. They often have to use what is available in the wood market to produce furniture for customers who often cannot wait for more than a fortnight. Thus furniture so produced from wood of such high moisture content especially in the raining season warp and twist with undesirable results. Although most of the woodworkers were familiar with correct procedures for quality control, they lack machinery for basic machining, thus can never produce to certain degree of specification. Most small scale furniture manufacturers finance themselves through small scale loans often referred to as ‘Susu’ and also from money collected from customers in advance of production. Due to the weak financial bases of the SMEs, they cannot hire skilled labour, purchase equipment and materials. More injection of equity is therefore needed at their level to encourage production of value added products.

#### **4.3.10 Demand For Wood And Wood Products**

There is general decline in demand for wood in the international market. Wood products from Ghana face stiff competition from other developing countries thereby reducing profitability of trade. On the contrary, there has been a tremendous increase in local demand for wood and wood products especially furniture. This increasing demand for wood material has led to product diversity of wood, which now comes from small and large scale companies with different levels of sophistication and design and characterized by a more diverse array of species use (including LUS) and exotic designs available for use. Wood products identified on the local market could be put in the following major groups:

- i. Building members such as: doors, and window frames, flooring parquets, mouldings including T & G members.
- ii. Veneer and plywood,

- iii. Furniture including cabinets, wardrobes, beds tables and chairs for schools, offices and homes and specialty products like poultry feed trays, crates, pallets, coffins and chop-boxes; and
- iv. Toys and utility products like kitchen stools and broomsticks.

Most of these commonly used wood products are produced by small scale carpenters who exhibit very little specialisation. Their products serve the local market and overland export to neighbouring countries such as Togo, Burkina Faso and Mali. (Ward & Gilbert (2001).



These carpenters have no designers and no showrooms. They often copy designs from the large producers and also from catalogues. All the same, there are a few gifted innovators who produce their own designs. The input wood is often not properly seasoned. Products are therefore not of very good quality. Even though they may appear very beautiful, they usually do not last. Products are often displayed by the roadside; prices are also fairly moderate.

Overland export to neighbourhood countries especially from Kumasi Anloga is characterized by poor quality and mediocrity in manufacturing possibly due to the high demand for wood products in these countries. Large and medium local furniture makers/ tertiary processors also play a very important role in wood product supply especially to government institutions and



elites. These producers are often able to purchase kiln-dried lumber from sawmills or stock timber long enough to allow for adequate air-drying. Furniture products at this level of the market are therefore of better quality and command higher prices. Few of these firms have designers and so they copy designs from catalogues. They have showrooms and would often deliver purchased products. Poor finishing probably due to lack of standards is a major barrier for such producers to enter the export market.

A third group of furniture producers and importers were identified in the urban areas. It is becoming increasingly trendy for major furniture sellers to import cheap furniture from the East thus creating unfair competition for the local producers. These companies are popular through adverts and have showrooms but much of their furniture are imported. Local furniture manufacturers claimed that imported furniture was cheaper than locally produced ones. International manufactures enjoy economies of scale and are well equipped with the state of the art equipment while local manufactures employ mainly manual labour and are poorly resourced. Attempt to mimic imported furniture results in unusually high cost of production.

#### **4.3.11 Calling For Standards And Gazetting**

The need for a standard for a product is usually expressed by an industry sector, which communicates this need to a national member body for consideration and subsequent development of the standard. It however appears that industry is not aware of channel of calling for standard development and this procedure or the right to call for standard is not being utilised. Besides, producing to standards specification tend to be more expensive hence some members of industry would like to exploit the situation to their advantage to enable them produce substandard goods at a cheaper price.

### **4.4.0 STANDARDS APPLICATION CONSTRAINTS- CONSUMER PERSPECTIVE**

#### **4.4.1 Knowledge Of Standards**

All consumers interviewed did not have any idea about grading or standards although they were desirous of such a document that will guide them in selection, determination of quality and utilisation of wood products. Moreover they were willing to pay more for standard product as much as 45%. In construction (mainly roofing), most house

owners would rely on architect's recommendation of odum for roofing their houses while others depended on carpenter's advice on species and dimension without regard to strength and durability as most people interviewed have no idea about documentation on alternative species utilisation.

It is sad to observe that timber grading and grading of other wood products is not taught in any of our tertiary institutions but merely mentioned in courses thus professionals trained in these institutions have little or no ideas about standards. Further, copies of standards are not available to training institutions, thus an average graduate of a wood training institution might be completely ignorant about grading and quality assurance on wood production.

#### **4.4.2 Policies Implementation And Lack Of Education And Enforcement Of Standards**

The wood industry is characterized by policies that are not working efficiently and institutions inability to perform mandates. Consumer protection and public education is one of the major functions of Ghana Standards Boards. This function sought to educate the public on standards and quality to create quality consciousness. Further, it conducts factory quality audit i.e. in between Certification visits to ensure continued compliance of relevant products with applicable standards. However there was no such indication in the wood sector as all members of civil society interviewed were ignorant of these and were not aware of availability of any wood standard and how to obtain copies. Civil society have not had any education from GSB as to what to expect from wood products, thus no public education on standards and quality thus most consumers do not have any baseline for quality determination.

However when civil society was asked to determine their priority areas of standardisation of wood products often utilised, they indicated their priorities as follows:

1. Sawn timber for Roofing
2. Plywood
3. End-use Classification of Sawn timber

4. Profiled and Machined timber
5. Door and Window Frames
6. Doors
7. Flooring
8. Furniture Quality and Strength

According to ISO, standards transfer know-how, avoid wasting resources, safeguard public health and safety, and provide criteria for evaluating imports and for producing exports to compete on markets worldwide. Ghana wood industry and consumers could not benefit from these advantages as education on standards and their availability was lacking.

Standards developed by GSB would indirectly be enforced through GSB certification schemes: product certification, export certification, attestation certification, etc., however due to inadequate staff, financial constraints, lack of requisite test and equipment these functions are not being performed adequately.

#### **4.4.3 Consumer Protection Associations/ Groups**

Although significant efforts were made to locate any such group due to their importance, no such association could be located by office apart from verbal interest expressed by a few individuals especially in workshops and fora.

### **5.0 STRENGTHENING PROCESS OF STANDARDS DEVELOPMENT**

The future of the industry to produce standardised products especially for the local market looks bleak considering the myriads of constraints facing the industry and incapacity of institutions and other stakeholders to play efficient roles in standards development. Over the years there was no deliberate effort to ensure quality control in the local market. However, the status quo could be changed if relevant policies were enforced and institutions strengthened by addressing the aforementioned constraints. Processes of strengthening standards development could involve the following:

### **5.1 Adequate Funding Of Standards Development Organisations**

Inability to develop, review and monitor among other activities of Standards Development Organizations was attributed to inadequate funding. TIDD lacks funds to develop draft wood products standards for the Ghana Standards Boards, the main input for the technical committees. To address these, it is proposed that the government increases funding to these institutions to enable them carry out their activities smoothly. Alternative funding opportunities such as international donors, levies for certification and increase support from the industry could be utilized. It is expected that if adequate funds were available SDO would be able to develop and publish standards as quality control guidelines for industry and consumers.

### **5.2 Ensuring Availability Of Draft Standards**

As indicated earlier, development of working drafts is an expensive exercise which requires technical expertise to develop the working draft to be considered by the Technical Sub-Committee (SC) members. It was observed that SDOs lack expertise in some areas and therefore cannot produce such drafts locally. The onus therefore lies on these institutions to train personnel in these areas, draw on international consultancy services or adopt some international standards and modify them to suit Ghanaian conditions. Other problem of standards drafting could be attributed to lack of funding, inappropriate precedence assigning to wood products or perhaps institutional inefficiency.

### **5.3 Holding And Sustaining Public Education On Wood Products Standards**

The ignorance levels of wood workers on standardisation in Ghana as observed by the study was quite alarming and calls for concerted efforts to establish regular and targeted workshops and other training programmes designed to strengthen the institutional and professional capacity of industry concerned. It was sad to observe that many big furniture companies had never heard of wood standards for some domestic products and do not know the role of GSB in the wood industry as they have had no training or information from the SDO.

GSB could provide advocacy, lobbying, and public outreach training specifically tailored to issues of product quality, diversity, and consumer rights to appropriate stakeholders. As observed by the study, many small scale wood workers had little or

no education hence needed to be helped to improve internal management by offering training in key areas of industrial development: strategic management, human capital, financial resource management, organizational learning, service delivery, and external relations to enable them break into the export market. It could also be suggested that GSB publishes brochures and fliers apart from their websites to enable rapid and easy dissemination of information.

#### **5.4 Establishment And Empowerment Of Consumer-Protection Movement**

Consumer protection depicts the efforts of government, public-interest organizations, individuals, and businesses to establish, protect, and enforce the rights of people who buy products such as food and furniture or services such as health care and insurance. The basic rights of consumers may include (1) the right to safety; (2) the right to be informed; (3) the right to choose; and (4) the right to be heard as in the case of USA. Each of these rights is of major importance in the objectives of the consumer-protection movement. A consumer-protection movement is a powerful mouthpiece when in action could be capable of shifting paradigm. These movements usually comprise volunteers who refuse to accept the undesirable practice as the status quo. They usually engaged in research to be well informed, writing, and lobbying for better policies and their implementation to improve consumer protection.

In many nations the government plays a major role in product testing and consumer education. In the Scandinavian countries and Mexico, for example, the government funds consumer information and education activities. Some nations place great emphasis on informative labeling. The Swedish Institute for Informative Labeling, for instance, works to promote the use of standardized labels that include information about the product's performance in specific “standardized methods of measuring performance” tests. Other countries focus their efforts on making consumer assistance and information more accessible. Most industrialized nations, and many developing countries, have consumer product testing organizations that also publish reports on product tests, services, and other matters of importance to consumers.

Consumers and civil society interviewed complained bitterly about the poor quality of wood products in the Ghanaian market. They affirmed that finishing especially of furniture in the market was poor and often made of inferior materials including cheap

fabrics. Due to high cost of wood which may not even be available, upholstery furniture is becoming increasingly trendy and takes accounts for more than 95% of sitting room furniture. These chairs however were being made from any wood poorly crafted and assembled with any density and thickness of foam including joined pieces.



Poorly stacked wood with high MC and low grade for furniture



Poorly assembled frames made of any species



Sofa under construction



Finished product looking attractive

Although almost all persons interviewed showed interest in being part of such a group with a view of flushing out inferior products and to support the GSB with information, they could not identify any such bodies. It is expected that when consumers are well informed about their rights and with the assistance of the government, consumer protection would be established to augment efforts of GSB.

### 5.5 Meeting Contemporary User Needs For Wood And Quality

Efficient utilization of forest products is a challenge to Standards Development Organisations, producers, other wood workers and consumers. Modern technology such as mechanical grading has made the development of improved grading practices and improved engineered wood products possible and has eliminated otherwise structural failures in construction involving wood. The use of mechanical grading procedures provides precise control of property assignment.

In Ghana solid-sawn lumber continues to provide the bulk of structural products used in construction however the wood so engaged is used without regard to these readily available grading methods. GSB lacks such facilities to regulate and improve quality in the industry leaving the poor and generally uninformed consumer in a limbo.



In addition, engineered wood products, such as laminated veneer lumber (LVL) and parallel strand lumber (PSL) are being considered as substitutes for solid-sawn lumber. Large diameter timbers especially for some species and branches are becoming increasingly difficult to obtain as in the case of teak, it therefore behoves on researchers and wood industry to come out with substitutes such as glued-laminated timbers (glulam), prefabricated wood I-joists, and larger versions of LVL, PSL products and oriented strandboard (OSB), a substitute for structural plywood. This wide variety of innovations in wood products is raising concerns about product quality and structural reliability as facilities for testing them are not readily available.

This system of grading for lumber and wood products that ensures quality of these products is well established, applicable and reliable. However, this system is not available for use in Ghana. Thus quality and strength of wood products is more of a user defined attribute. There is therefore the need for the acquisition of such equipment and training of personnel to be able to use such facilities. GSB could also collaborate with FORIG to use their facilities in developing and promoting standards. Notwithstanding, it is incumbent on GSB to acquire its own modern machinery for testing and certification.

Again Government policies, change in technology and increasing prices of logs have resulted in an increase in the number of sawmills going into value added processing, thus reducing the volume of timber offcuts and export rejects for the local market. Although the government had directed sawmillers to reserve 20% of their sawn timber output for the domestic market to enable local wood workers access to quality inputs the sawmills have not been able to comply with this directive, rather the industry supply falldown and off- cuts of high moisture content and defects in many cases to the local market.

On the ground however, even the little falldown lumber supplied goes to the lumber traders, and majority of it is then sold out to overland export, to neighbouring countries such as Togo and Benin, who are willing to pay a higher price than the carpenters, who continue to buy the bush-cut. The carpenters in Kumasi Anloga indicated that about 38% of the lumber that comes into Anloga market goes straight out again, across the border depriving them of quality inputs and compelled them to



pay higher prices for unseasoned lumber resulting in carpenters using lower grade lumber (*a photo of wood products ready for*

*export to neighbouring countries*). It is important that adequate provision is made for wood supply to the local market as many raw materials available to many companies cannot produce quality products.

### **5.6.1 Capacity Development In Quality Assurance And Standards In Wood Training Institutions By Experts**

There are increasing expectations for quality, both in the consumer and professional markets. It is no longer sufficient to just deliver products which have technical excellence - products also need to be easy to use and to fit in with the work practices and activities of the consumer and professional user.

Traditional approaches to quality put emphasis on meeting the specified requirements which are primarily functional. Attempts have been made to broaden the perception of quality, for example in ISO/IEC 9126 which categorises quality from a user perspective as functionality, reliability, usability, efficiency, maintainability and portability. To achieve this, GSB would need more professionals who are well vested in forest products. Some staff of GSB could be trained through scholarships to acquire these skills in addition to employment of new staff. Inadequate staffing was one of the major constraints of GSB. Apart from these, short courses could be organized for some stakeholders such as GSB staff, industry and consumer advocates.

In addition, the Wood Industry Training Institutions in Ghana needed to be upgraded to provide the needed skilled manpower for the industry. WITC's training programme concentrates on lower grade staff than desired by Industry. This is mainly due to WITC's limited professional staff levels (Birikorang, 2003). It is reported that industry is not keen on paying even the small fees charged by WITC because they have questioned the qualifications and expertise of WITC (WSDP, 1999). The

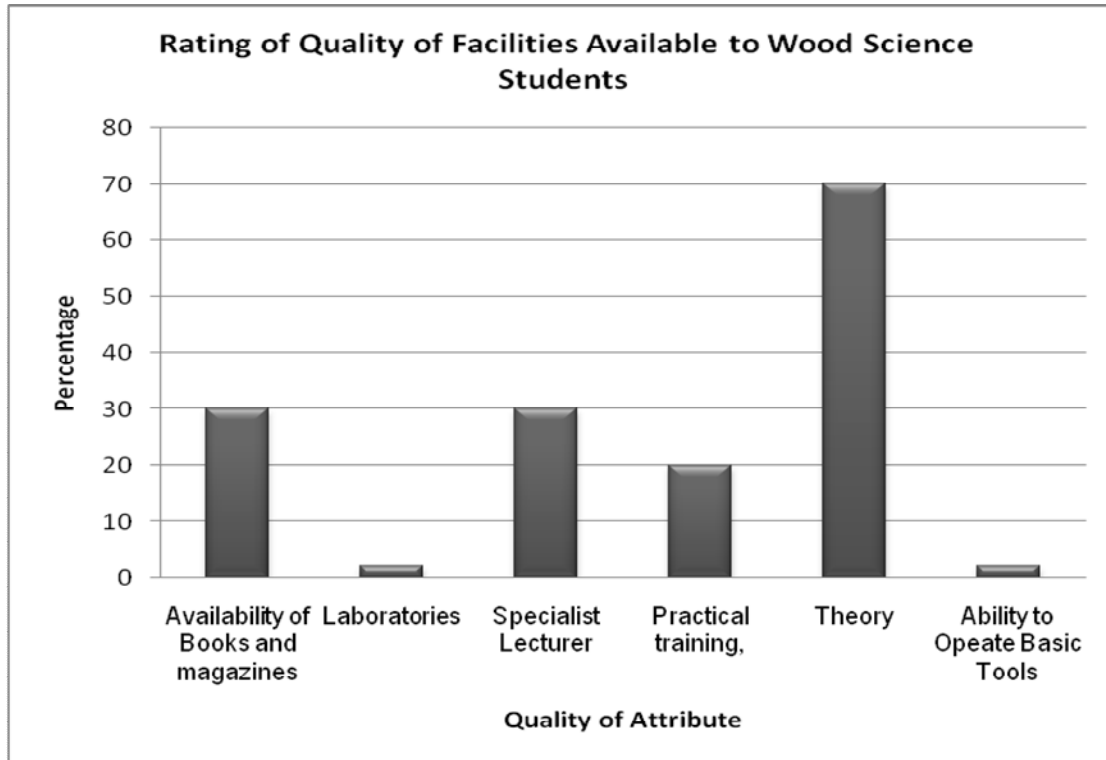
Centre's installed equipments are also not up to date although better than those of many industries. WITC should be a step above Industry, but the reverse is the order.

### **5.6.2 Appraisal Of Timber And Furniture Making Training Institutions**

The Department of Wood Science and Technology of Kwame Nkrumah University of Science and Technology is responsible for training wood scientist/technologists at the tertiary level. Its graduates work mainly in wood processing companies, in wood research institutions and in furniture companies. Although some efforts have been made to make teaching in the university attractive and students now pay academic user facility fees as well as support from the government for training facilities, their performance is below expectations.

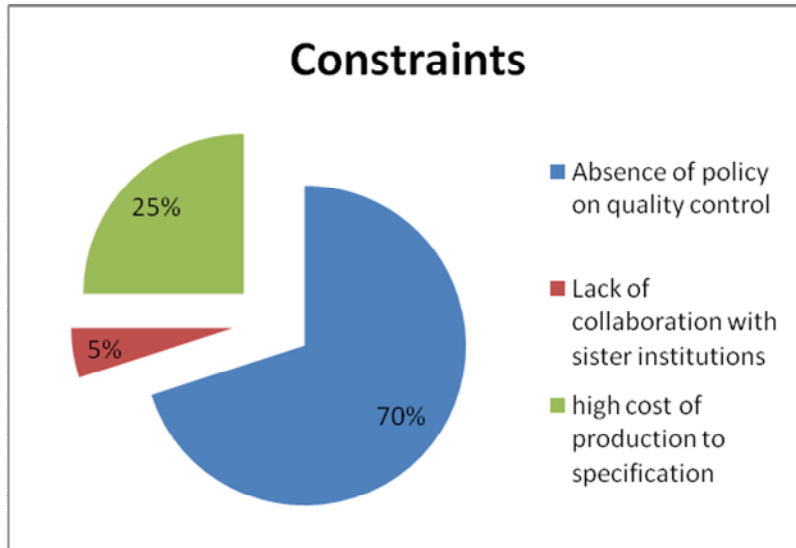
The department lacks basic literature and depends on few text books in the library. Secondly, the laboratories and workshops never operate as they are incomplete hence students at all levels have no access to these facilities and cannot operate basic equipment. Worst, the university lacks capacity to handle certain courses such as machining, quality control and grading. It is sad to observe that there is not a single grading rule in the library. Other factors which hamper quality teaching is the larger than tolerable student-lecturer ratio. Due to the large class sizes, taking students to industry becomes difficult so the students are encouraged to do internship in the industry during vacations. It is sad to observe that a graduate from this institution needs serious further training on the job since s/he depends only on his lecture notes and few text books.

It is imperative that the university trains personnel in these areas or takes experts as part time lectures in areas such as grading from research institution and Timber Industry Development Division of the Forestry Commission and allow students to use the facilities in the workshops to make their products more marketable and useful.



A summated rating of constraints in training students in wood science in the university

In Polytechnics, training facilities employed by tutors in current training at polytechnics are unsuitable for quality training. Further, the specializations the polytechnics administer fall below standards required by the wood industry and experts have even questioned the HND qualification in furniture. Above all, tutors lack motivation and are also out of touch with industry requirements (WSDP, 1999). The present conditions of both Wood Industry Training Centre (WITC) and polytechnics limit their capacity for any wood industry management. To assuage this condition, external fund could be sought to acquire the basic equipment and personnel needed to develop the manpower. Furthermore our wood training institutions should go a step further to employ specialists in the industry as part-time lecturers to teach standardization and grading which is lacking in our institutions.



**Figure 2:** A summarized rating of constraints in training students in furniture processing in Polytechnics

In general, Polytechnics teaching furniture and other wood products associated themselves with the development of standards and aver that availability of grading rule will:

- Harmonize their work with sister institutions
- Lower production cost
- Minimize waste and
- Increase ease of manufacturing

According to the Head of Furniture Department of Accra Polytechnic, availability of standards will help train students in their application thereby promoting them after school and all that the institution might need is some training in new areas. The only hindrances were the state of their equipment which are so obsolete and may produce inaccurate dimensions, lack of wood drying facilities and unavailability of quality raw materials as the market is flooded with curls.

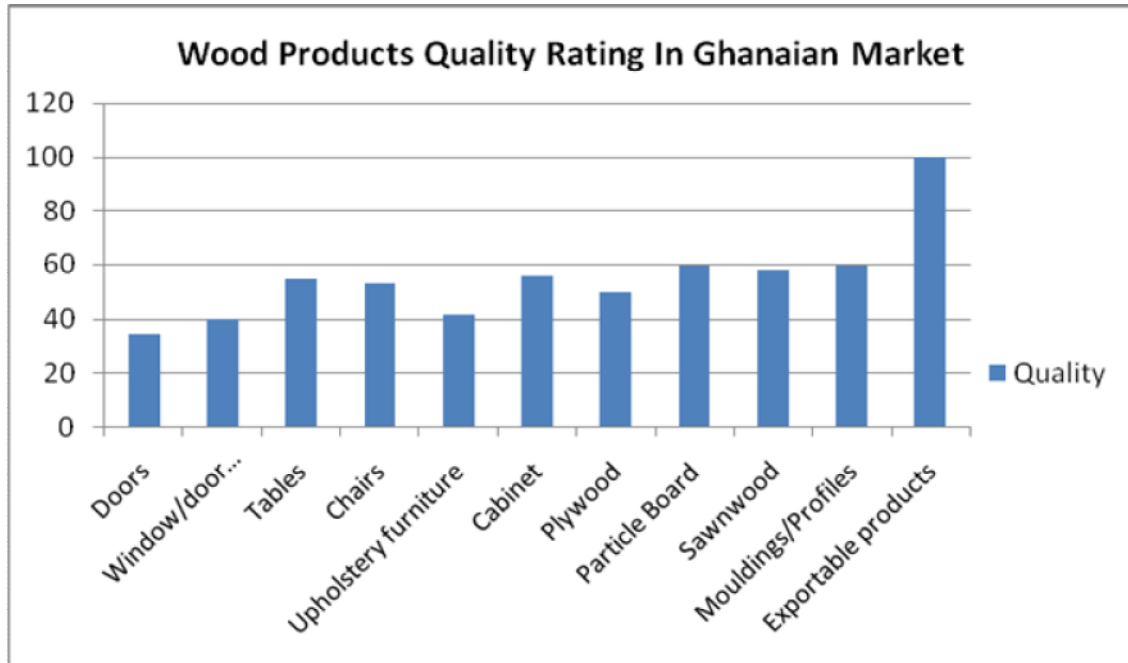


Figure 3: A summated rating of wood products in the Ghanaian market by Polytechnics

### 5.6.3 Enhancing Local Artisans Skills

Carpenters around Kumasi and its environs were aware of the training programmes offered by the Wood Industries Training Centre (WITC), Kumasi but most of them complained that the number of people who benefit from such programs were few since the centre was not taking more than 50 persons at a time. Moreover, the charges for each training session was also not affordable to all woodworkers while many other carpenters were not aware of the services of the centre or saw it as a training programme for a class of carpenters.

However, the management of the Wood Industries Training Centre (WITC) was of opinion that, most small-scale carpenters do not attend training programmes because they do not appreciate its benefits. WITC carries out extensive surveys to identify the training needs of carpenters to ensure relevant training. In addition, the high level of illiteracy made the carpenters shy away from any kind of formal training or technological enhancement. There is therefore the need to educate FAWAG members to take advantage of such trainings and produce quality products while government subsidizes cost of training of carpenters.

## **5.7 Incentives For The Production Of Value Added Product And Motivation To Apply Standards**

To encourage industry to move towards value added production and export through standardisation, a number of incentives schemes should be put in place to entice them. For example, to encourage the processing of wood products to standards, concessionary royalties and tax levels should be reduced. Additionally, for companies that process furniture for export, there should be a waiver on the payment of some export levies. A program to encourage product diversification should be launched with emphasis on promoting investment in gradable products and other downstream products. Furniture manufactures could be motivated through organisation of trade fairs and exhibitions in both overland countries of West Africa, to make direct links with buyers there and locally to enable interaction and comparison of product.

Finally, government could assist in standard application and enforcement by ensuring that all government projects that will employ wood or wood products in their implementation use standard wood products only. Since standards application in wood industry for local products appears to be voluntary, it is incumbent that the government and SDO educate the public including consumers and device alternative means of ‘enforcing’ the standards.

## **5.8 Adequate Representation Of Consumers In Standards Development Committees.**

The consumer representative’s role in standard development is to ensure that the standards being developed address issues of concern to consumers. These may include some of the following: health, safety, performance, ergonomics, quality, reliability, comfort, environmental protection, ease-of-use, compatibility and interoperability.

No particular background is required – though an interest in, and some knowledge of, the subject area is helpful – just a willingness to read and understand the issues, and get their voices heard by participating. ([www.iso.org](http://www.iso.org)). Consumers work in tandem with experts coming from industry, technical and business sector, representatives of government agencies, academia and testing laboratories. It is envisaged that if

adequate consumers were represented on the committees, the true picture of the product could be seen from consumer point of view.

### **5.9 Empowering GSB In Addressing Consumer Complaints.**

GSB should be proactive and vigorously pursue complaints cases of consumer brought to its attention. The officers of the Board could carry out investigation on complaints in respect of products received from the consumers who purchased or observed the products in question. As the only statutory organisation in charge of standardisation and quality control, the essence of the activity should be towards ensuring compliance with the various established standards and quality control practices in the National Standards. This exercise could be carried out to help a consumer seek redress against the manufacturer through the Board. Secondly, the exercise could also assist GSB to identify producers of poor quality products, detect manufacturing defects and thereafter offer practical suggestions that would help manufacturers to correct such defects or even close down their factories when necessary.

Thus, GSB could act as a forum or intermediary judge between the particular consumer with evidence of the purchase and the manufacturer. While ensuring that the privilege is not abused by the complainant and fair judgement be meted out to the manufacturers based on empirical evidence before it and further corroborated by laboratory findings where relevant.



## REFERENCE

**Amankwah, G. (1996)** “Wood supply and demand in Ghana – Sustaining wood industry through the creation of new Resource Base”. Paper presented at a workshop on Forest Plantations Development in Ghana.

Appiah, S.K. 1998. Meeting the demands for wood products in the domestic and international markets. Proceedings of the 20th Ghana Science Association. Biennial Conference, Kumasi.

Bank of Ghana, 2004. Report on the timber industry, Research department sector study series Vol. 2 No. 1

Coleman, H.G. and G. Amankwah, 1998. The current status and future challenges of the development and marketing of timber products-the Ghana example. Proceedings of the 26<sup>th</sup> International Forestry Students’ Symposium. IRNR-UST Kumasi, Ghana.

Denig, J. 1993. Small sawmill handbook. Miller freeman.

Forest Products Inspection Bureau, 1991. Annual report. FPIB. Takoradi.

Forestry Research Institute of Ghana, 1989. User’s guide of some Ghanaian secondary and primary species based on strength and related properties. Information Bulletin No. 9. , FORIG, Kumasi.

Gene Birikorang, 2003 Wood Industries Training Centre and College of Renewable Natural Resources: A Study of Business Options

Levon, M., 1936. Grading rules for export timber. Foundation for forest products research of Finland. Publ.23. 36pp.

Panayotou, T. and P.S. Ashton, 1992. Not by timber alone; economics and ecology for sustaining tropical forests. Island Press. Washington, DC.

Society of American Foresters, 1983. Terminology of forest science technology practice and products. Ed by A.J. Ford-Robertson, Washington D.C. 370pp

Various Export Permit Reports, TIDD

[www.ghanatimber.org](http://www.ghanatimber.org)

[www.fcghana.com](http://www.fcghana.com)

[www.iso.org](http://www.iso.org)