Diagnostic Report on Factors Affecting Markets and Measures Impacting on Tropical Timber Use

Report prepared a part of ITTO Project:

Strengthening market information systems to enhance trade and market intelligence in the forest sector of Guyana: **TMT-PD 006/11**

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ABBREVIATIONS

BCL	Barama Company Limited
CARICOM	Caribbean Community and Common Markets
DTL	Demerara Timbers Ltd
EU	European Union
FDI	Foreign Direct Investments
FLEGT	Forest Law Enforcement, Governance and Trade Investments
FPDMC	Forest Products Development & Marketing Council
FSC	Forest Stewardship Council
GFC	Guyana Forestry Commission
IPED	Institute of Private Enterprise Development
ITTO	International Tropical Timber Organisation
LCDS	Low Carbon Development Strategy
LUS	Lesser Utilised Timber Species
TEUS	Twenty-foot equivalent units
TRADA	Timber Research and Development Association
TLAS	Timber Legality Assurance System
TSAs	Timber Sales Agreements
SFPs	State Forest Permissions
VPAs	Voluntary Partnership Agreements
WCLs	Wood Cutting Leases
WWF	World Wildlife Fund

1.0 INTRODUCTION

Guyana's abundant supply of high quality raw forest, including many lesser known species, provides this sector with the means to become a significant economic driver of the national economy. However, the comparative advantage for timber producers is constrained by various factors such as high shipping and transportation cost, international regulations, expensive infrastructure, high harvesting and production cost, out-dated technology and equipment, lack of business reinvestments and lack of skill labour.

A key factor determining Guyana's potential is in the exports of value-added wood products and the increased production of lesser utilised species. However, the actual availability and cost of timber production, followed by the cost of transformation and transportation and the technological ability to produce these specifications need to be examined. Hence, improvements at the extraction end are crucial to the long term viability of the value added forest products sector and the timber sector as a whole.

This Report seeks to highlight the factors that affect the timber market and the measures impacting on the tropical timber uses in Guyana. In the core report, it seeks to present the constraints faced by producers on the local market that have contributed to both the state of the local and international for the past 5 years.

Additionally, the various factors that influence the timber market will be evaluated and analysed. Subsequently, recommendations on how to enhance production on the local and International market will be highlighted.

2.0 The factors affecting the timber market and the measure impacting on Tropical timber uses.

There are several factors affecting the local timber market and the measure impacting on tropical timber uses in Guyana. The most prominent ones being:-

1. Transport and Shipping cost.
2. Diversification in species (Lesser Utilised Species).
3. The cost of production.
4. Information on marketing trends.
5. The new emphasis on Value added and timber certifications on the International markets.
6. International Laws and Policies.

3.0 Transport and Shipping Cost

3.1 Transport Cost

There are several different modes of transporting timber and timber products on the local markets in Guyana; the two main modes being the waterways and roads. However, the underdevelopment of the road infrastructure in the rural areas has cause timber exporters to rely mainly on the cheapest mode (water transport); since the provision of transport facilities is usually very expensive and increases the cost of operation and the competitiveness of local operators. In a few cases, some operators have the benefits of roads built by mining concessions and Amerindian villages.

There are several factors that affect the transportation cost, most commonly; it depends on the distance from the market along with favourable terrain conditions. Additionally, according to the wood species that is being transported some transporters may be flexible with producers. For instance, because of the light weight nature of form boards, it is likeable to attract a lower cost to transport to Georgetown via trucking. For example, the average cost to transport 1000 cubic metres lumber from Ituni to Georgetown is approximately G$90,000 per shipment (US$450). Whilst, the average cost of transporting 20 cubic metres of Logs from Kwakwani to Georgetown is approximately G$200,000 (US$1,000). These costs therefore vary depending on accessibility and proximity.

Generally, the costs are relatively high for small scale producers, especially when profits are not guarantee for their 'produce to sell' products. A 2012 Report on investment reveals that the average Infrastructure Investment cost for the ten (10) largest producing TSAs and WCLs was approximately $2,810,048 USD.

3.2 Shipping Cost

Guyana's timber industry depends heavily on the availability of shipping lines to transport their products. The cost of trading internationally is considerably higher than trading domestically. One of the factors that affect shipping is time. The time taken to transport goods across oceans can cost timber exporters tremendous amount of monies. There can be time spent at borders in which tariffs must be paid and the custom inspections can be very cumbersome. There are seven (7) terminals which are all privately owned and all are customs bonded facilities. Guyana has a number of shipping lines that facilitate trade between Guyana and the rest of the world. There are twenty one (21) shipping lines available to exporters. However, there are a few limitations to the effectiveness and efficiency for export specifically with regards to the forest industry and export of timber and timber products which may directly or indirectly hinder the smooth flow of trade across borders. One of the m**ain** issues affecting the smooth transition from packing and handling specifically for forest products is the *documentation procedure.*

Another constraint that can increase the time and cost for exporters is the availability of the type of packing preferred by the exporters of timber and timber products. Since forest produce is bulky by nature and is therefore required to be packed in a specific manner; there are three main means or methods in which it can be shipped:

- Containers – 20ft and 40ft
- Flat rack
- Breakbulk

The most preferred method used for the packing of timber products is flat racks. These are more expensive than containerized shipping because they are easier to pack and handle and are more desirable since timber is a bulky product to export. Alternative packing methods such as containerized shipping is made available at a cheaper cost per container. Exporters of timber and timber products can therefore weigh the opportunity cost between the use of flat racks and containerized shipping.

Container capacity:

20ft - 7500 to 10,000 BM Lumber

- 500 to 520 bundles Shingles

40ft - 14,000 to 15,000 BM Lumber

- 18 to 23m^3 Logs

Table 1:- Showing the current for shipping of Logs and Lumber to the USA, Canada, the United Kingdom and the Caribbean.

Country	Type of Shipment	Description		Price in USD	Destination
The United States of America	Container	Logs	40 ft	$ 3,000	Brooklyn New York
		Lumber	20 ft	$ 2,500	
	Flat rack	Logs	40 ft	$ 6,240	
		Lumber	20 ft	$ 4,390	
	Breakbulk	-	-	-	-
Canada	Container	Logs	40 ft	$ 5,860	Halifax
		Lumber	20 ft	$ 4,260	
	Flat rack	-	-	-	-
	Breakbulk	-	-	-	-
The United Kingdom	Container	Logs	40 ft	$ 3,311	Tilbury
		Lumber	20 ft	$ 2,286	
	Flat rack	-	-	-	-
	Breakbulk	-	-	-	-
Netherlands	Container	Logs	40 ft	$ 3,311	Rotterdam
		Lumber	20 ft	$ 2,286	
	Flat rack	-	-	-	-
	Breakbulk	-	-	-	-
Trinidad and Tobago	Container	Logs	40 ft	$ 1,170	-
		Lumber	20 ft	$ 1,274	-
	Flat rack	Logs	40 ft	$ 1,289	-
		Lumber	20 ft	$ 1,789	-
	Breakbulk	-	-	-	
Suriname	Container	Logs	40 ft	$ 729	-
		Lumber	20 ft	$ 930	-
	Flat rack	-	-	-	-
	Beakbulk	-	-	-	-

Source: - John Fernandes Ltd, C &V Shipping and Guyana Freight Service Inc, 2013 shipping cost for Container, Flat rack and Breakbulk. In cases where nil are shown, this means that these companies do not provide service for such shipments.

The table above depicts the current cost for shipping logs and lumber to the USA, the Caribbean, South America and North America. From the table, it is shown that the general cost to ship 40ft of logs with the use of flat rack to Brooklyn, New York is approximately $6,240 USD or $1,248,000 GYD whilst a 20 ft lumber can be shipped for approximately $4,260 USD or $852,000 GYD. Shipments using the containers are slightly below that of the flat rack, i.e. approximately $3,000 USD for 40 ft containers and $ 2,500 USD for 20 ft containers. For the shipment of containers to Halifax, Canada; it cost exporters approximately $5,860 USD or $1,172,000 GYD for 40 ft and $ 4,260 or $852,000 GYD for 20 ft containers.

Shipment to Trinidad and Tobago cost $1,170 USD for a 40 ft container of Logs and $1,274 USD for a container of Logs. Whilst, the cost for shipping using flat rack are $1,289 USD for Logs and $1,789 USD for lumber. The cost to shipping containers to Suriname is $729 USD for Logs and $930 for lumber.

For countries in Europe such as the Netherland and the United Kingdom the approximate costs to ship 40 ft of logs is $3,311 USD whilst to ship 20 ft cost $2,286 USD respectively.

Another aspect to shipping of timber produce from Guyana that directly affects the cost of export or shipping is the fact that Guyana has no deep water harbour. This reduces the ability of any vessel to be filled at 100% capacity. In any instances vessels move off from Guyana at 75% capacity. A vessel can only carry approximately 10,000 tons or 1000 containers due to the draft in the channel. This forces the cost per container to increase. Additional charges may also be added when the length of the lumber exceed the required length specified under US regulations.

Table 2: - Showing the total number of shipment made for the period 2008-2012.

Number of shipment made per year (2008- 2012)			**volume(m3) exported**
2012 (Jan-Nov)	Logs	40ft	78,189
	Lumber	20ft	21,807
2011	Logs	40ft	97,539
	lumber	20ft	29,513
2010	Logs	40ft	110,683
	Lumber	20ft	36,219
2009	Logs	40ft	62,039
	Lumber	20ft	41,941
2008	Logs	40ft	92,404
	lumber	20ft	47,603

The table above illustrates the total number of shipment exported for the period 2008- Jan – Nov 2012. There has been a reduction in the volume exported for 2012 (Jan-Nov) when compared with that of 2010 and 2011.

Table 3:- Showing the Shipping Companies in Guyana and their twenty-foot equivalent units (TEUS).

Shipping company	**TEUS capacity**
Guyana National Industrial Company Inc.	12000
Guyana National Shipping Corporation	160
John Fernandes Ltd	2800 for 40 ft and 2,400 for 20 ft
DIDCO Trading Company Ltd.	Na
Muneshwers Ltd	950
Demerara Shipping Ltd	Na

Shipping facilities handling timber and timber products have a capacity of 650 to 12000 TUES. It is recognized that shipping companies can meet the demands for containers for shipping of forest produce. Flat Racks which are preferred by timber exporters due to ease of packing but is more expensive and is not as readily available. This is due to the demand from other sectors for the export for their products.

From the data presented on transportation and shipping cost, it can be concluded that the cost for transport and shipping is indeed a factor that is affecting the timber producers in Guyana.

4.0 Diversification in Species

4.1 The emerging demand for Lesser utilised species on the International markets

Traditionally, the forestry industry was based on the supply of marketable timbers, such as Greenheart and Purpleheart and few other well-known species. Though Greenheart, because of its relatively high concentration in some areas, and special characteristics, has good commercial potentials, it is posited that an industry should not be dependent on one wood species alone. This is exactly what has happened over the years; however, as a result of less accessible, larger integrated forestry operations will not survive using historic timber harvesting practices they have been new emphasis on lesser utilised species.

Moreover, modern practices that involve better planning and larger economies of scale must be gradually introduced so that the volumes extracted per acre will better balance the regeneration needs of each forest type while reducing logging costs. Frequently, this will involve a market-driven process which harvests more lesser utilised species and higher volumes from each entry, does more careful felling and

extraction, and uses much longer rest periods (estimated at 25 to 40 years), before harvesting again in a given compartment.

Since traditional commercial species are giving rise to the possibility of exhausting the current supply of these commercial species for both the domestic and export market; the emphasis is now being placed on marketing Guyana's lesser utilised species (LUS).

In recognition of the value and the importance of diversifying Guyana's timber sector of the Lesser Utilised Species, the ITTO[1] have collaborated and funded a project on the lesser Utilised Species in Guyana and the GFC have since published a booklet with the description and uses of these LUS. At present, 15 tested species (Group one) have been researched by Timber Research and Development Association (TRADA) and Tropenbos International Foundation[2] and the findings were that these species were no less important or usable than the major harvested species.

In fact, there are several advantages as it relates to affordability and availability. The main advantage was that the widening of species utilization will ultimately lead to the reduction of forest 'creaming'. As such, the TRADA encourages greater acceptance and utilisation of these LUS species of timber, both domestically and internationally, since, the lack of knowledge and information has been one of the main deterrents of the successful use of these species.

As can be seen from the table below; to date, many of Guyana's lesser used species are penetrating the international markets and it was posited that they are used for structural, outdoor as well as indoor applications.

[1] http://www.itto.int/resource14/
[2] Lesser Utilised Timber Species of Guyana published by Guyana Forestry Commission.

Table 4: - Showing the Production and Export of Lesser Utilised Species for 2012 and 2011.

Common Name	Production 2011 in m3	Export 2011 in m3	Production 2012 in m3 (Jan-Nov)	Export 2012 in m3 (Jan-Nov)
Black Kakaralli	-	-	99	36
Burada	451	4,641	4,081	2,922
Dalli	237	-	1,570	4
Darina	609	3,594	3,212	2,565
Fukadi	107	479	1,492	309
Futui	218	-	1,168	-
Iteballi	67	422	2,558	48
Itikiboroballi	1	5,295	430	205
Kurokai	167	-	278	-
Limonaballi	998	1,518	2,308	492
Morabukea	-	23	13	4
Muniridan	111	1,447	5,651	653
Suya	126	76	-	-
Tonka Bean	130	568	396	4

Note: - Where export is greater than Production; this represents left over stock from the previous year. (Old Stocks)
Source: - Year to date data for 2011(Jan-Dec) and 2012 (Jan-Nov) taken from the GUYANA FORESTRY COMMISSION Production & Export database (2011-2012).

The table above illustrates the Production and Exports of the lesser used species in Guyana for 2011 and 2012. From the table, it is notable that demand for lesser utilised species has gained momentum on the International markets. In 2011, the exports of Itikiborooralli and Burada recorded the highest amount of exports, at 5,295 $m^3$and 4,641m^3. However, in 2012, the total amount of Burada and Darina exported were 2,922m^3 and 2,565m^3. In 2011, the use of lesser utilised species were shown to be highly demanded with a total export level of 18,063m^3 while 2012 have witness thus far a 7,242 m^3.

Therefore, over the past seven (7) years, large concession holders (TSAs and WCLs) and State Forest Concession (SFPs) holders as well as home owners/builders have been fully edified on the uses of lesser used species and have thus far gravitated towards using them.

5.0 The Cost of Production

5.1 Credit/Finance/Capital Sources

Lack of access to capital is a common issue experienced by the business community in Guyana and the forestry industry is no exception[3]. The issue for the Forestry sector is one of the costs of capital, rather than access. It has been argued that there is excess liquidity in the local banking sector, and this is substantiated by numerous studies and reports. The situation, therefore, seems to be one whereby firms have access to money/capital, but the real interest rates are high for industries that often require capital on a medium to long term basis and as such borrowing is seemingly uneconomical.

At present there are a few formal micro-finance institutions developed to meet the financial needs for small scale financing in Guyana. Some of which are: -

a. The Institute of Private Enterprise Development (IPED)
b. Scotia Enterprise
c. Commonwealth Youth Credit Imitative
d. Go-Invest

However, none of these agencies are specific to the forestry sector. Hence, the undeveloped nature of local equity markets coupled with the local banks regarding SFPs and WCLs as short-term, non-tradable and non-exclusive leases makes it difficult for local firms to use their cutting rights to attract joint venture capital. In addition, loans for working capital and export financing are difficult to obtain from local banks, and this affects the negotiating ability of exporters. Real interest rates are high for an industry that often requires capital on a medium to long term basis.

Some other limitations lie in the fact that there are no export credit guarantee schemes in place in Guyana coupled with the fact that there is limited scope, if any at all, for transnational companies investing in SFPs in venture capital arrangements. Three reasons for the lack of foreign venture capital arrangements are: - firstly, sustainability of SFPs is not guaranteed – that is, the right to operate goes through an annual process of application, selection. Secondly, GFC views SFPs as a means of livelihood to their holders (i.e.,

[3]Analysis of the Forestry Industry in Guyana, Produced for Forest Products Association of Guyana by Vijay Rambrich and Associates, September 2002, p30

an alternative to the cash crop system etc). Thirdly, the capital base of most SFPs is very small (some only own just one chainsaw and contract out the operation)[4].

There is some scope for the transfer of FDI to TSAs and WCLs manufactures (furniture and joinery especially). Investment in this category requires more capital than in the SFPs.

5.2 Level of Processing Efficiency

The low level of efficiency in the utilisation of equipment, facilities, personnel and timber harvesting is common in the industry. It is posited that royalties and logging costs that remains low while timber was accessible, have allowed many firms to thrive with very low levels of efficiency and relatively low production.

Today, with increasing logging costs, depreciated equipment and untrained personnel, the formal traditional producers are being displaced from the local lumber market by a proliferation of informal, roving, chainsaw millers[5]. These informal (SFPs) producers have even lower timber recoveries, no fixed capital costs, pay little or no forest fees and taxes, and often poach their timber from formal operations. As a result, the competitive position of the traditional forest products industry, both in the local and export markets has steadily eroded over the years.

In essence, inefficient processing pervades the industry and a number of factors have been attributed to this including: -

- **Poor selection of equipment and mill designs**. (Guyana's sawmills tend to be using old, fully depreciated equipment)
- **Inadequacies of log and lumber handling machinery relative to sawing capacity.**
  The low conversion efficiency of the sawmilling industry that is only about 45% of the volume of a log currently ends up as usable lumber, due to poor and poorly maintained equipment.

[4] Small and Medium forest enterprise Guyana, A discussion paper (2003), Raquel Thomas, Duncan Macqueen et al, p 32.

[5] *Chainsaw milling* is legal in Guyana. Guyanese law requires that a logger or small logging association (SLA) requires a State Forest Permissions (SFP) permit that designates the number of logs an individual or SLA can fell and process as well as a sawpit licenses. In order to obtain your sawmill license the model and serial number of all chainsaws used in SFPs must be registered with the GFC.

- **Lack of trained staff and Poor management techniques.**

  The inability to attract skilled labour and management is adversely affects the development of the industry since it has a direct effect on productivity. Untrained workers tend to frequently misuse equipment and often fail to carry out maintenance activities, resulting in unnecessary and extensive downtimes and costly repairs.

The above factors have a direct relationship to the cost of production and adversely affect recovery rates. It is estimated that over 40 communities are involved in chainsaw milling, engaging up to as many as 80% of the residents. Furthermore, 80% of the domestic market met by chainsaw milling production[6]. Presently, a few small-scale loggers have been able to the establish Associations and as such they are now able to access portable mills which provided a basis to improve their production.

Recently, Guyana has instituted a Code of Practice for Processing Operations, focussing on Sawmills and Lumberyards. This has been implemented in a phased manner and is already showing some results in improving performance at the processing level.

5.3 The Total Investment for Large scale (TSA) Production in 2012

Table 5: - The table below illustrates the actual term investments for 2012

Total Investment	Short term in USD $(actual 2012)
Total harvesting equipment Investment	$2,977,902
Total Infrastructure Investment	$2,810,048
Total Value added Investment	$934,425
Total Employment Investment	$1,323,103
Total Other investment	$9,025,103
Total Investments	$17,070,486

*Total Other Investment includes fuel and lubricants, maintenances and repairs, staff housing, workshops, etc.

The table above was extracted from a 2012 studies done by GFC on Investments in the Forestry sector. Investment Information was collected for ten (10) large scale productions.

[6] Chainsaw Milling in Guyana - A synopsis of the issues, Tropenbos International by Rohini Kerrett and Marieke Witt, 2009.

The key aspects of the 10 large scale concessions for 2012 was examined with respect to harvesting equipment both harvesting and value – added, road infrastructure, value added equipment, employment, and other investments indirectly related to the operation. Form the data presented, it can be concluded that the total actual Investment cost for 2012 was considerably high.

In terms of the small concessions the investment may not be that significant but it may be enough to offset production in some instances.

6.0 Information on marketing trends.

6.1 Insufficient marketing research

The lack of market research on the timber market in Guyana has hampered the success of producers on the local and international markets; in the sense that, in most instances producers have been producing based on what they predict the market needs but in actuality the market is not responding positively to these wood products. Thus, causing a reduction in quantity demand and hence, a reduction in Production.

In a recent interview with an actor within the forest export market, it was revealed that the low productivity of SFPS maybe as a result of enterprise operating on the basis of "produce to sell' rather than accessing the markets' needs. Further, they have been frequent complaint of a shortage of quantity supply for wood species demanded locally. In addition, he alluded to the fact that they have been frequent complaints locally about the ***quality*** and ***reliability*** of timber products especially as it relates to providing properly finished kiln dried products. Consumers are faced with two (2) problems: - i.e., dressed lumber of poor finish quality and a shortage of supply of the wood species that they demand. For instance, there is a spiralling demand for *PRIME* grading Crabwood locally but however producers have been producing quality of the *SELECT* grade.

Therefore, local operators should keep abreast of the changing nature of market dynamics. In the Competitive markets that exist today, the marketing process is customer rather than production driven. In this instance, firms cannot hope to use dated equipment to supply markets that were in existence decades ago. In essence, to enhance production and meet the needs of the market there is a dire need for firms to go to their local market place, assess what is demanded and align their production and operational strategies to follow suit.

Though the Forest Products Development & Marketing Council (FPDMC) serves as a hub in providing information in a timely manner about market trends and prices, changing demands, regulation and policies and market opportunities on a national level, the onus is on the local producers to study their local market and produce accordingly in order to increase their production and exports.

Table 6: - Table showing the total State Forest Productions for 2010-2012.

	Total SFPs	Total Production in m3
SFPs Jan 2010 to Dec 2011	496	323,787
SFPs 2012 (Jan-Nov)	477	101,022

Source: - Year to date data for 2010-2011 (Jan-Dec) taken from the GUYANA FORESTRY COMMISSION Production database (2010-2012).

From the table above, it can be seen that the combined production level for 2010/2011 SFPs was 323,787m^3. This represents an average of 161,894m^3 per year which is 60% over than that of 2012 (Jan-Nov) or a 60% reduction in production.

The inability of producers to meet the requirements of the local and international market has played a critical role in determining the production capabilities. Thus, small concession holders producing products that haven't met the required grade and species demanded locally are faced with a reduction in demand and ultimately a reduction in market share.

7.0 The new emphasis on Value added timber products and FSC Certification on the International markets.

Guyana is traditionally known for its export of timber in raw or semi-processed forms, however, the government and segments of the forest product industry have placed an emphasis on promoting value-added forest product production for export to the Caribbean, U.S. and Europe. This is so because there are a number of comparative advantages similar to those found in other light manufacturing industries; some of which are that of affordable and trainable labour, as well as attractive investment incentives.

It has been recognised that a number of lucrative opportunities exist for investors interested in working with Guyana's wood industry. These include furniture (e.g. hardwood and wicker), plywood and veneers, moulding and doors, parquet, floor tiles, and other related products. Within these product sectors, additional value can be achieved on investments that meet the requirements of certain environmental and social certifications from organizations such as the *Forest Stewardship Council (FSC)*. There are also a number of opportunities to expand the development and marketing of lesser-known species where utilization is well below capacity, or where species are yet to be utilized commercially. Even in cases where the availability and accessibility of species does not warrant large-scale exploitation, lucrative opportunities exist for investments towards the manufacture and marketing of value added and high-value niche products. .

According to ITTO (2006), two concessionaires were engaged in the process of obtaining forest-management and chain-of-custody certification under the FSC, while two more had shown an interest in pursuing certification. These companies are: -

- Demerara Timbers Ltd (DTL) has a chain-of-custody certificate in compliance with a UK government standard.
- Barama had FSC certification but it was suspended in 2006.
- Variety Woods & Greenheart Limited has sought FSC certification but it is unclear how far it has progressed.
- Toolsie Persaud Ltd underwent a pre-assessment audit with The Forest Trust.
- Iwokrama's joint venture partner (Tigerwood Guyana Inc) had held FSC chain-of-custody certificate.

Guyana is currently negotiating a Voluntary Partnership Agreement under the EU Forest Law Enforcement Governance and Trade Programme. This is expected to give international verification of legality compliance in the forest sector.

7.1 Investments in Value-added products

The table below, shows the status of added value production in Guyana.

Table 7: - Showing the Export of Value added products for Jan- Nov 2011 and 2012.

PRODUCTS	Jan - Nov 2012		Jan - Nov 2011		% Change *Over*	
	Volume	Value	Volume	Value	Jan - Nov 2012	
	m^3	US$	m^3	US$	% Vol	% Val
Sawnwood	21,807.13	17,693,734.56	25,821.44	19,017,634.33	(15.55)	(6.96)
Dressed	7,601.46	8,858,463.45	*8,750.61*	*9,300,061.95*	*(13.13)*	*(4.75)*
Undressed	14,205.67	8,835,271.11	*17,071.58*	*9,717,572.38*	*(16.79)*	*(9.08)*
Splitwood	1,910.28	1,730,895.03	1,728.41	1,466,922.06	10.52	18.00
Paling Staves	-	-	-	-	-	-
Shingles	1,910.28	1,730,895.03	*1,728.41*	*1,466,922.06*	*10.52*	*18.00*
Plywood	4,214.15	2,126,238.64	1,589.70	874,395.79	*165.09*	*143.17*
Veneer	-	-	-	-		
Furniture (pcs)	154	20,196.40	3,025.00	250,606.00	(95.07)	(92.05)
Building Components (psc)	1,575.00	124,082.12	6,830.00	227,239.84		(73.03)
Mouldings (m)	19,663.25	38,874.92	32,491.68	63,662.15	-	(79.76)
Pre-Fabricated Houses (psc)	1	12,883.63	-	-		
Fuelwood (m3)	8,861.79	205,156.97	6,820.50	167,567.17	29.35	20.76
Other (psc)	10,369.00	19,512.97	10,432.00	14,219.51	(48.32)	(11.21)
Non-Timber Forest Product (psc)	2,346.00	38,117.05	1,599.00	3,984.16	269.68	6,495.79
Total Value-added products	**70,901.60**	**22,009,692**	**90,338**	**22,086,231**		**2**
Total Export		**37,414,860**		**36,832,248**		

Source: - Data for the export of value added products 2011-2012 (Jan-Nov) taken from the GUYANA FORESTRY COMMISSION Export Database.

From the table above, it can be seen that for January to November 2012 they have been an increase in the value of exports from US $36,832,248 to US$ 37,414,860 when compared with the same period of 2011. This represents a 2% increase and is attributed mainly to the increase in the quantity supply of value-added timber and timber products to traditional and non-traditional markets.

8.0 International Trade Laws and Polices

8.1 *International regulations*

There are a number of international regulations and requirements that Guyana must adhere, with regards to the shipping of exports. Since most vessels leaving Guyana will at some point go through transhipment or go directly to the USA, Guyana must subscribe to US regulations. One being that a ship's manifest must be presented to US port authorities at least 24 hours prior to the ship or vessel docking. US customs are used to regulate shipping manifests and shipping lines are fined if documentation is not in order. This cost is ultimately borne by large (TSA) and small scale (SFPs) exporters.

In addition, policies such as the US Lacey Act, contributes to additional pressure on the documentation procedure required. The US Lacey act requires that each timber product being exported must provide in detail a list of all species being exported or used to manufacture a particular timber product. Such requirement ensures that timber and timber products are legally harvested or obtained from a sustainably managed forest.

Furthermore, the social cost of complying with international standards must be considered by forest enterprises. For instance, Methyl bromide as a fumigant is recognised as an important tool for control of some pests and diseases, particularly quarantine pests of plants and plant-derived materials. However, the quarantine use of methyl bromide is critical for preventing spread of plant pests since Methyl bromide is a potent ozone-depleting gas that could have huge economic and environmental consequences. As a result of these properties, methyl bromide is of particular concern in two Multilateral Agreements – the Montreal Protocol on Substances that Deplete the Ozone Layer and the International Plant Protection Convention.

This is important to the exporter since some of Guyana's largest export markets (such as India) require all timber imports to be treated with Methyl bromide. However, with Guyana signing to the Montreal Protocol and our focus on the Low Carbon Development Strategy (LCDS) in Guyana, it posses some challenges.

Another International agreement that Guyana has recently signed onto is the Voluntary Partnership

Agreement under the EU FLEGT Action plan (2003). FLEGT stands for Forest Law Enforcement, Governance and Trade while the EU FLEGT Action Plan sets out a range of measures that aim to combat the problem of illegal logging, including government procurement policies, financial due diligence and a regulation to control the sale of illegal timber. The FLEGT Programme aims to control illegal logging by improving governance in the forestry sector in producer countries and strengthening the role of civil society actors and tenure rights of local communities. Voluntary partnership agreements (VPAs) are legally binding trade agreements between the EU and timber producing countries and form the central plank of the EU's fast growing FLEGT Programme.

A VPA basically includes three key steps:

a) Defining legality, or deciding which laws impact on forest use and trade and will be enforced for the implementation of the agreement, laid down in a legal definition.
b) Developing a Timber Legality Assurance System (TLAS) that includes timber tracking, government legality controls, licensing plus systems to verify the legality of the timber.
c) Independent audits of the whole system, to ensure credibility of the export licenses.

Once a VPA has been signed and the LAS is in place, the EU will ban all non-licensed imports from that country thereby requiring that the country ensures that all exports and domestic production are legally sourced.

In mid 2012, Guyana and the European Union (EU) signed a Voluntary Partnership Agreement (VPA) on Forest Enforcement, Governance and Trade (FLEGT). This agreement provides confidence to the EU buyers that Guyana's timber products were legally sourced. The VPA will be applied to all timber exports on a list of forest products defined during negotiations with the European Union. Moreover, the system can optionally be developed to cover forest products to all other exporting markets.

It is important that exporters be cognisance of these International Regulations since they provide a form of Standardisation.

9.0 CONCLUSIONS

The reasons for production being at the level which has been noted in Guyana are attributed to the various factors that affect the Timber market. These factors have all impacted on the output and exports of timber products. The high cost for transport and shipping among others has proven to be not enough to offset demands. Hence, small scale producers are faced with the problem of not producing enough to cover their production cost. As such, these high production costs of large and small enterprises for sawn lumber couple with the lack of consistent supply will in turn threatened the viability and sustainability of forest enterprises that concentrate on lesser utilised species and value added products. Moreover, profits have been earned on the basis of volume rather that value addition to the product; sales have been concentrated on the basis of the greenest, i.e., dressed lumber of poor finish quality rather than properly finished kiln dried products.

One of the main reasons for this is lack of market research among small scale producers. In most instances these enterprises have operated on a "*produce to sell*" system with no contractual arrangements, commitments or networking to ensure the best prices and more reliable supplies to the local lumber market is available. The failure of these enterprises to properly examine the recovery rates of their timber products has also stifled their ability to maximize profit and to produce high quality niche market products.

Another factor that have been constraining enterprise in their attempt to produce and supply high quality niche market products on the international market is their inability to meet the requirements of certain environmental and social certifications from organisation such as the Forest Stewardship (FSC) which allows their products to be standardise and recognise worldwide.

International regulations and policies is also a contributory factor influencing the timber market since policies such as the US Lacey Act requires documentation procedure that requires a detail list of all species being exported or used to manufacture a particular product. In addition, Guyana has recently signed a Voluntary Partnership Agreement under the EU FLEGT action plan; this agreement provides confidence to the EU buyers that Guyana's timber products are legally sourced.

10.0 RECOMMENDATIONS

This study has revealed that they are several factors that have affected Guyana's timber market. It is evident that production for small and large concessions holders has witnessed a reduction in recent years. However, when looking at the total number of concessions held by small concessionaires (SFPs) it has generally increased over the years.

Studies have revealed that Guyana's forest fees is internationally among the lowest even after allowance is made for the relatively lower quality and productivity in commercial timber species. As such, it is recommended that the GFC increase the forest acreage fees in phases; i.e. initially doubling and later tripling them.

Internationally, charges have been levied upon the standing timber rather than the harvested timber; this approach can be adopted by Guyana, since it provides a basis of encouraging concessionaires to harvest more timber; in an attempt to avoid the royalties or stumpage fee that would otherwise be levied on their standing timber. An advantage of a system based on estimates of standing timber in concession areas is that they discourage attempts to acquire over-sized concessions. That is, if loggers are aware that fees will be paid on the concessions' total harvestable timber (whose volume also accords with plans for sustainable management of each area), then bids for concessions will conform to realistic harvesting capabilities.

In addition, penalties should be charged to concessionaires that delay the process of declaration of logs in an attempt to evade royalties. Concessionaires should also be fined for attaching unidentifiable names to species that are commercially used.

Higher fees can also encourage smaller producers to organise into producers' associations. For 2012, though production has been bleak, the associations have recorded the highest levels of Production. These associations through the pooling of resources are able to receive and pay for technical assistance, skilled labourers, market information and better equipment and machinery. For instance, the provision of more portable mills as oppose to chainsaw are used by these associations. In addition, after consolidation they could later apply for larger and longer leases with secure tenure.

There is a need for an improvement in the sector's marketing capabilities so that a wider range of species may be utilised. Concessioners should not only rely on FPDMC alone to provide information on market trends but rather should investigate for themselves; the needs of the market. Information on the market is crucial since it provides data that can be used to project profits.

Producers should also focus on having their products properly graded and kiln dried. Since, both the local and International markets are demanding dressed lumber of the highest grade and quality. The emphasis on value added products should also be a focal interest since it is very lucrative. Once these measures are properly put in place, Guyana would witness increases in Production and Exports.

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APPENDICES

Appendix I: - Total Production for Jan-Nov 2012 – Comparisons for Jan-Nov 2011.

Appendix II: - Export volumes and values by Products for the period Jan-Nov 2012.

Appendix III: - Major Timber Species and Uses

Appendix 1: - Total Production for November 2012 plus Month and Year-to-Date Comparison, 2011 & 2012.

Table 1: Total Production for November 2012 plus Month and Year-to-Date Comparisons, 2011 & 2012

PRODUCTS	Unit	Nov-12 Total	Nov-11 Total	[1] % Change over Nov '11	Jan - Nov 2012 Volume	Jan - Nov 2011 Volume	% Change over Jan - Nov 2012
TIMBER PRODUCTS							
Logs	m^3						
Special Category							
Greenheart		5,073	3,827.37	32.53	30,234.01	29,082.49	3.96
Purpleheart		2,338	2,000.27	16.88	18,137.44	15,545.79	16.67
Others		313	420.43	(25.64)	2,930.72	4,311.91	(32.03)
Total Special Category Logs		**7,722.96**	**6,248.07**	**23.61**	**51,302.17**	**48,940.67**	**4.83**
Class 1		10,597	9,326.13	13.63	68,493.69	74,952.00	(8.62)
Class 2		4,308	3,982.87	8.15	32,995.41	37,654.69	(12.37)
Class 3		4,151	3,119.99	33.04	31,708.19	36,241.71	(12.51)
Total Other Class Logs		**19,055.61**	**16,428.99**	**15.99**	**133,197.29**	**148,848.39**	**(10.51)**
Total Logs		**26,778.57**	**22,677.06**	**18.09**	**184,499.46**	**197,789.06**	**(6.72)**
Roundwood	m^3				-		
Greenheart Piles		936	580.98	61.15	9,551.03	7,284.55	31.11
Kakaralli Piles		113	64.01	76.50	1,491.58	633.83	135.33
Mora Piles			-	-	-	-	-
Wallaba Poles		198	249.53	(20.71)	1,723.95	2,393.16	(27.96)
Wallaba Post		96	183.35	(47.81)	1,853.49	1,886.48	(1.75)
Spars		7	3.84	79.60	125.67	91.22	37.76
Total Roundwood		**1,349.65**	**1,081.71**	**24.77**	**14,745.72**	**12,289.24**	**19.99**
Primary (Chainsaw) Lumber	m^3				-		
Special Category					-		
Greenheart		653	554.21	17.89	5,183.31	5,647.62	(8.22)
Purpleheart		140	322.62	(56.68)	2,286.09	3,201.40	(28.59)
Others		388	231.90	67.24	2,580.82	2,431.00	6.16
Total Special Cat. Lumber		**1,180.94**	**1,108.90**	**6.50**	**10,050.22**	**11,280.19**	**(10.90)**
Class 1		4,649	4,263.47	9.04	34,899.07	36,858.20	(5.32)
Class 2		1,007	1,106.69	(8.98)	9,817.54	10,854.70	(9.55)
Class 3		1,302	1,422.55	(8.49)	10,708.25	10,622.51	0.81
Total Other Class Lumber		**6,958.17**	6,792.71	**2.44**	**55,424.86**	**58,335.41**	**(4.99)**
Total Primary Lumber		**8,139.11**	**7,901.61**	**3.01**	**65,475.08**	**69,615.60**	**(5.95)**
Splitwood	m^3				-		
Paling Staves		14	5.55	159.34	95.36	144.86	(34.17)
Vat Staves			-	-	-	-	-
Shingles			16.98		33.30	51.96	
Total Splitwood		**14.39**	**22.53**	**(36.11)**	**128.69**	**196.82**	**(34.61)**
Fuelwood Charcoal	m^3	1,377	1,307.39	5.30	11,556.81	10,829.80	6.71
Firewood	m^3	2,042	1,686.60	21.08	22,287.64	20,092.04	10.93
Total Fuelwood		**3,418.87**	**2,993.99**	**14.19**	**33,844.45**	**30,921.84**	**9.45**
Veneer	m^3	**1,424.00**	**1,481.00**		**10,843.00**	14423.1	**(24.82)**
Plywood	m^3	**884.00**	**1,889.00**		**9,685.00**	**11,728.48**	**(17.42)**
NON - TIMBER FOREST PRODUCTS					-		
Wattles	pieces	33,287	31,442.00	5.87	379,727.00	313,950.00	20.95
Manicole Palm	pieces	370,327	156,908.00	136.02	1,795,117.00	2,184,390.00	(17.82)

Table 2: **Export Volumes and Values** *by* **Product for the period Jan - Nov 2012** (Compared to Jan - Nov 2011)

	Nov 2012		Nov 2011		% Change *Over*		Jan - Nov 2012		Jan - Nov 2011		% Change *Over*	
PRODUCT	**Volume**	**Value**	**Volume**	**Value**	**Nov 2012**		**Volume**	**Value**	**Volume**	**Value**	**Jan - Nov 2012**	
	m^3	US$	m^3	US$	% Vol	% Val	m^3	US$	m^3	US$	% Vol	% Val
Logs	**6,730.13**	**1,202,393.92**	**7,760.64**	**1,113,280.59**	**(13.28)**	**8.00**	**78,189.24**	**13,154,071.15**	**94,540.49**	**13,460,003.69**	**(17.30)**	**(2.27)**
Sawnwood	**2,446.13**	**1,951,032.92**	**2,433.06**	**1,947,302.10**	**0.54**	**0.19**	**21,807.13**	**17,693,734.56**	**25,821.44**	**19,017,634.33**	**(15.55)**	**(6.96)**
Dressed	*874.44*	*938,030.12*	*857.51*	*937,111.03*	*1.98*	*0.10*	**7,601.46**	**8,858,463.45**	*8,750.61*	*9,300,061.95*	*(13.13)*	*(4.75)*
Undressed	*1,571.69*	*1,013,002.80*	*1,575.55*	*1,010,191.07*	*(0.25)*	*0.28*	**14,205.67**	**8,835,271.11**	*17,071.58*	*9,717,572.38*	*(16.79)*	*(9.08)*
Roundwood	**1,162.33**	**584,679.21**	**429.62**	**190,475.49**	**170.55**	**206.96**	**5,800.54**	**2,251,096.37**	**3,008.99**	**1,286,013.89**	**92.77**	**75.04**
Greenheart Piles	1,063.90	520,079.21	294.31	125,870	261.49	313.19	**4,712.79**	**1,785,543.91**	*2,216.56*	*956,779.61*	*112.62*	*86.62*
Kakaralli Piles			-	-	-	-	-	-	*44.62*	*17,952.00*	-	-
Other Piles			-	-	-	-	-	-	-	-		
Poles	90.45	61,000.00	89.31	52,040	-	-	**467.69**	**61,000.00**	*378.72*	*192,019.79*	*23.49*	*(68.23)*
Posts	7.98	3,600.00	46.00	12,565	(82.65)	(71.35)	**374.70**	**78,962.55**	*369.08*	*119,262.49*	*1.52*	*(33.79)*
Spars			-	-	-	-	-	-	-	-	-	-
Splitwood	**282.19**	**273,170.00**	**240.68**	**212,299.09**	**17.25**	**28.67**	**1,910.28**	**1,730,895.03**	**1,728.41**	**1,466,922.06**	**10.52**	**18.00**
Paling Staves			-	-	-	-	-	-	-	-	-	-
Shingles	282.19	273,170.00	240.68	212,299	17.25	28.67	**1,910.28**	**1,730,895.03**	*1,728.41*	*1,466,922.06*	*10.52*	*18.00*
Plywood	**379.54**	**190,695.13**	**117.64**	**62,978**			**4,214.15**	**2,126,238.64**	**1,589.70**	**874,395.79**		
Veneer			-	-	-	-	-	-	-	-		
TOTAL TIMBER & PLYWOOD	**11,000.32**	**4,201,971.18**	**10,981.64**	**3,526,335.03**	**0.17**	**19.16**	**111,921.35**	**36,956,035.75**	**126,665.97**	**36,104,969.76**	**(99.88)**	**(99.94)**
Furniture (pcs)	**16.00**	**800.00**	**185.00**	**17,980.00**	**-**	**-**	**154.00**	**20,196.40**	**3,025.00**	**250,606.00**	**(95.07)**	**(92.05)**
Indoor Furniture	12.00	600.00	185	17,980	-	-	**149.00**	**19,921.40**	*317.00*	*28,546.00*	*(98.42)*	*(99.04)*
Outdoor/Garden Furniture	4.00	200.00	-	-	-	-	**5.00**	**275.00**	*2,708.00*	*222,060.00*	*(41.84)*	*(44.12)*
Building Componentry (pcs)	**98.00**	**12,162.48**	**152**	**380**	**(35.53)**	**3,100.65**	**1,575.00**	**124,082.12**	**6,830.00**	**227,239.84**		**(73.03)**
Doors	87.00	11,762.48	-	-	-	-	**608.00**	**61,275.24**	*1,795.00*	*166,865.35*	*(89.42)*	*(97.09)*
Door Components	7.00	210.00	-	-	-	-	**190.00**	**4,850.00**	*161.00*	*3,108.35*	*(3.73)*	*587.02*
Windows			-	-	-	-	**155.00**	**21,355.00**	*308.00*	*23,515.30*	*80.52*	*11.13*
Other Builder's Joinery (pcs)			-	-			**556.00**	**26,132.00**	*5,270.00*	*28,778.00*	-	-
(m^3)			-	-	-	-	-	-	-	-	-	-
Rails (pcs)			-	-	-	-	-	-	*4.00*	*146.20*	-	-
(m^3)			-	-	-	-	-	-	-	-		
Spindles (pcs)	4.00	190.00	152	380	(97.37)	**(50.00)**	**602.00**	**10,469.88**	*1,623.00*	*4,826.76*	*1,111.54*	*705.40*
Mouldings (m)	**875.39**	**2,340.89**	**-**	**-**			**19,663.25**	**38,874.92**	**32,491.68**	**63,662.15**	**-**	**(79.76)**
Pre-Fabricated Houses (pcs)			-	-	-	-	**1.00**	**12,883.63**	-	-		
OTHER *(than Plywood)* ***VALUE ADDED***	**989.39**	**15,303.37**		**18,360.00**			**6,630.75**	**196,037.07**	**-**	**541,507.62**		**(62.11)**
Fuelwood (m^3)	**1,305.23**	**29,792.18**	**1,199.27**	**27,334.52**	**8.84**	**8.99**	**8,861.79**	**205,156.97**	**6,820.50**	**167,567.17**	**29.35**	**20.76**
Charcoal	1,305.23	29,792.18	1,194	26,985	9.35	10.40	**8,822.17**	**202,356.97**	*6,814.84*	*167,217.17*	*(99.42)*	*(98.33)*
Firewood			5.66	350.00	-	-	**39.62**	**2,800.00**	*5.66*	*350.00*		
Other (pcs)	**330.00**	**558.75**	**145**	**410.50**	**127.59**	**36.11**	**10,369.00**	**19,512.97**	**10,432.00**	**14,219.51**	**(48.32)**	**(11.21)**
Wooden Ornaments & Utensils	50.00	200.00	66	192	(24.24)	4.17	**5,391.00**	**12,626.15**	*2,845.00*	*6,068.00*	*71.46*	*13.49*
Craft	280.00	358.75	79	219	254.43	64.19	**4,878.00**	**6,886.82**	*7,587.00*	*8,151.51*	*(69.08)*	*367.61*
Non - Timber Forest Products (pcs)	**160.00**	**7,550.00**	**83**	**55**	**92.77**	**13,627.27**	**2,346.00**	**38,117.05**	**1,599.00**	**3,984.16**	**269.68**	**6,495.79**
OTHER PRODUCTS		**37,900.93**		**27,800.02**		**36.33**	**5,911.13**	**262,786.99**	**-**	**185,770.84**		**20,040.33**
TOTAL EXPORT VALUE		**4,255,175.48**		**3,572,495.05**			**0**	**37,414,859.81**	**0.00**	**36,832,248.30**		**1.58**

Appendix III: Major Timber Species and Uses

	Species (Local Names)	Species (Scientific Names)	Major Uses
	Greenheart	*Chlorocardium rodiei*	Boat building, marine work, piling, general heavy construction, flooring, heavy furniture, turnery and finishing rods.
	Purpleheart	*Peltogyne venosa*	Building construction, flooring, bridging, boat building – keels, transoms, canoes, coach building, furniture, turnery, inlay, tool handles, sticks, bows, and veneer.
	Brown Silverballi	*Licaria cannella*	Boat building, canoes, furniture, interior work, and general carpentry.
	Red Cedar	*Cedrela odorata*	Furniture, cabinet work, panelling, boats, coffins and cigar boxes.
	Letterwood	*Brosimum guianense*	Inlay, turnery, sticks, tool handles and bows for archery.
	Bulletwood	*Manilkara bidentata*	General heavy construction, house framing, sleepers, mill rollers, wheel spokes, fencing, axe and tool handles, turnery.
	Crabwood	*Carapa guianensis*	General construction, interior work, carpentry, furniture, and turnery, plywood and veneer.
	Yellow Silverballi	*Aniba hypoglauca*	Boat planking, canoes, furniture, cabinet work, and interior construction.
	Itikiboraballi	*Swartzia xanthopetala*	Inlay turnery, cabinet work, walking sticks, bag-pipes and tool handles.
	Locust	*Hymenaea courbaril*	Ship-building, general construction, carriage buildings, tool handles, furniture and croquet mallets.
	Tatabu	*Diplotropis purpurea*	Boat-building, house framing, and flooring, furniture and turnery, interior work, carriage-building, tool handles, and sleepers.
	Determa	*Ocotea rubra*	Boat and carriage building, masts, furniture, carving, interior work, and general carpentry.
	Wamara	*Eperua grandiflora*	Furniture, cabinet work, parquet flooring, turnery, inlay, tool handles, walking sticks, and bows for archery.
	Kabukalli	*Goupia glabra*	Heavy construction, house framing, flooring, decking, punt bottoms, canoes, railway sleepers, paving blocks, furniture and decorative plywood.
	Shibadan	*Aspidosperma album*	Fuel and Plywood.
	Tauroniro	*Humiria balsamifera*	Heavy construction, piling, bridges, house framing, flooring, wheelwright work, furniture, sleepers, counters, work bench tops.
	Manniballi	*Moronobea coccinea*	Heavy construction house sills, machinery frames, flooring, furniture and sheet piling.

Washiba	*Tabebuia sp.*	Bridges, house framing, sleepers, tool handles, rollers' walking sticks, and fishing rods.
Hakia	*Tabebuia serratifolia*	Bridges, house framing, sleepers, tool handles, rollers' walking sticks, and fishing rods.
Dalli	*Virola spp.*	Match boxes, coffins, inside boarding, carpentry, packing cases, plywood, slack cooperage chip board and concrete shuttering.
Suya	*Pouteria speciosa*	Interior boarding, carpentry, and plywood.
Ulu	*Trattinickia demerarae*	Inside boarding, cupboard linings, canoes and plywood.
Simarupa	*Quassia simarouba*	Interior construction, furniture, shelves, drawer linings, shoe heels, plywood, paper pulp, toys.
Aromata	*Clathrotropis branchypetala*	Furniture, house framing, boat building, flooring and sleepers.
Mora	*Mora excelsa*	Building construction especially flooring, framing and siding, boat building especially ribs, stems, knees, transoms, and decking, sleepers, furniture, turnery, wagon building; wheelwright-work, naves and felloes, croquet mallets.
Morabukea	*Mora gonggrijpii*	Heavy construction, sleepers, flooring and siding, heavy furniture, boat timbers, truck bodies.
Hububalli	*Loxopterygium sagotii*	Panelling, furniture and cabinet work.
Baromalli	*Catostemma commune*	Dry cooperage, interior work, paper pulp, and plywood.
Dukalli	*Parahancornia fasciculata*	Carpentry, interior work, furniture, door and window stock, concrete shuttering, match boxes and plywood.
Kereti Silverballi	*Lauraceae spp*	Shuttering, temporary buildings, box making, and plywood.
Kurahara	*Calophyllum lucidum*	Boat planking, canoes, punt mast and furniture.
Wabaima	*Licaria cannella*	Heavy construction, flooring, furniture, boat building (planking), bridge decking, musical instruments.
Karohoro	*Schefflera decaphylla*	Match splints, drums, canoes, interior construction and plywood.
Baradan	*Ocotea tomentella*	Canoes, concrete shuttering and plywood.
Ubudi	*Anarcadium giganteum*	Interior work and plywood.
Kirikua	*Iryanthera macrophylla*	Oars, interior construction, utility plywood, slack cooperage and concrete shuttering.
Kurokai	*Protium decandrum*	Masts, spars, house framing and plywood.
Maporokan	*Inga alba*	Interior work, fuel and cheap plywood.
Monkey Pot	*Lecythis zabucajo*	General construction, furniture, turnery and wheel spokes.
Manni	*Symphonia globulifera*	Utility wood, paper, pulp, plywood, cooperage, railway sleepers, sheet piling, packing cases, general carpentry, flooring, furniture and fuel.
Pakuri	*Platonia insignis*	Piling, boat building, furniture, turnery, house framing, flooring, panelling, tight cooperage and general carpentry.

	Yaruru (Yarula)	*Aspidosperma excelsum*	Paddles, axe and tool handles, walking sticks, fishing rods and fuel.
	Muneridian	*Siparuna spp.*	
	Wallaba	*Eperua falcata* *Eperua grandiflora*	Pillar trees, roundwood framing, fence posts, transmission poles, sleepers, paling and vat staves, shingles, charcoal, particle board and firewood.
	Burada	*Parinari campestris*	Heavy construction, flooring.
	Duka	*Tapirira marchandi*	Interior construction, furniture, and plywood.
	Dukuria	*Sacoglottis cydonioides*	Heavy construction.
	Fukadi	*Terminalia amazonia*	House framing, framing, constructional work, railway sleepers and plywood.
	Inyak	*Antonia ovata*	Interior work, furniture and boxes.
	Limonaballi	*Chrysophyllum pomiferum*	Heavy construction and fuel.
	Suradan	*Hyeronima alchorneoides*	Boat-framing, railway sleepers, heavy construction, truck building, wheel spokes, furniture, plywood and gun stocks.
	White Cedar	*Tabebuia insignis*	Paddles, shovel handles, and interior work, packing cases and cheap furniture.
	Futui	*Jacaranda copaia*	Coffins, matches, concrete shuttering and interior construction.
	Halchiballi	*Pera schomburgkiana*	Fuel and utility plywood.
	Haiariballi	*Alexa imperatricis*	Interior construction, packing cases and plywood.
	Huruasa	*Abarema jupunba*	Fuel and plywood.
	Iteballi	*Vochysia schomburgkii*	Carpentry and furniture.
	Kakaralli	*Eschweilera alata*	Piling, house framing, mine lagging, posts and sleepers.
	Kauta	*Licania laxiflora*	Light gauge railway sleepers, roof shingles, mine timbering, fuel and charcoal.