



TOGETHER
for a sustainable future

OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.



TOGETHER
for a sustainable future

DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

16788

Distr.
RESTRICTED

IO/R.56
6 April 1988

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

ENGLISH

PROSPECTS FOR INTEGRATION IN THE WOODWORKING
INDUSTRY OF THE CARIBBEAN COMMUNITY

UC/CAR/86/201

Technical report: The situation in Belize*

Prepared for the CARICOM Secretariat
by the United Nations Industrial Development Organization

Based on the work of Pietro Borretti, woodworking consultant

Backstopping officer: A. V. Bassili
Industrial Management and Rehabilitation Branch

584

* Mention of firm names and commercial products does not imply the endorsement of the United Nations Industrial Development Organization. This document has been reproduced without formal editing.

TABLE OF CONTENTS

	Page
1. Introduction	1
2. Summary	3
3. Forest Resources	5
4. Lumber production	6
5. Lumber prices	8
6. Lumber export trends	9
7. Lumber export destinations and type of lumber exported	10
8. Shipping links	11
9. The sawmilling industry	12
9.1 Loskot Enterprises Sawmill	13
9.2 Belize Timber sawmill	13
9.3 Well sawmill	14
9.4 Whitney sawmill	14
10. Technical assistance requirements of the Whitney sawmill	15
11. The furniture manufacturing sector and its potential for export	16
12. Technical assistance required by the Loskot Enterprises sawmill (furniture manufacturing project)	16
13. Belize Lumber export potential to CARICOM	17

TABLES

1. Belize forest inventory results	6
2. Percentage of log production according to species/species group and regions in 1982	7
3. Production, exports and consumption of lumber in Belize, 1980 and 1985	8
4. Lumber exports as a percentage of lumber production 1983 and 1985	9
5. Belize lumber exports by species	9
6. Belize log exports, 1982-1985	10
7. Main lumber export destinations	10
8. Percentage of rough and dressed lumber exports	11
9. Exports of Belize's mahogany lumber to Jamaica, 1981-1985	17

ANNEXES

I Persons met	18
II Draft project document: Assistance to the Whitney Integrated Woodworking Plant	19
III Draft project document: Assistance to the Loskot Integrated woodworking project	23
IV Draft project document: Assistance to pine Lumber sawmill	26
V Properties of a Belizean timber species suitable as a substitute to Mahogany in furniture making.	29
VI Specific opportunities for exchange of wood products within the Caribbean Community	32

1. Introduction

1.1 Title and number of the project under which this country report has been prepared:

Development of integrated industry programme for the woodworking and furniture industry sector in CARICOM - UC/CAR/86/201

1.2 Cooperating Agency:

Caribbean Community Secretariat, Georgetown, Guyana

1.3 UNIDO consultant:

Pietro Borretti, Consultant in Woodworking Industry Sector.

1.4 CARICOM counterpart:

Ivor Carryl, Industrial Economist, Economics and Industry Division.

1.5 Main institutional contact in Belize:

Forestry Department

1.6 UNIDO Backstopping officer:

Antoine V. Bassili, Senior Industrial development Officer, Industrial Management and Rehabilitation Branch, IO/IIS

1.7 Period of mission in Belize:

19 to 28 April 1987

1.8 Terms of reference:

To assess the status and potential of lumber exports from Belize to the timber-deficit countries of the Caribbean Community.

1.9 Main activities:

- (a) Survey of selected sawmills to determine their capability to export furniture-grade lumber;
- (b) Review of shipping links with timber-deficit countries in the community;
- (c) Review of lumber export trends;
- (d) Reporting to the Belize Forestry Commission on specific lumber requirements of major CARICOM lumber importing countries (Trinidad, Barbados and Jamaica).

1.10 Background:

Among the primary aims of the Caribbean Community Secretariat (CARICOM), established in 1973, are the coordination of economic policies and

development planning, and setting up of a special regime for its less developed members. In line with these aims, the CARICOM has developed an industrial programme for the industrial development of its 13 member states. The emphasis is on the production of goods and services for the regional market with a view to minimizing costly imports.

The development of the timber industries sector - and in particular the promotion of the supply of wood products from within the Region - has been assigned a priority role by the CARICOM secretariat, since the Caribbean Community as a whole is heavily dependent on extra regional sources of supply to meet its lumber demand.

A regional project of assistance to CARICOM - entitled 'Development of Integrated Industry Programme for the Woodworking and Furniture Industry Sector in CARICOM' - was undertaken in this connection in 1987 by the UNIDO consultant Pietro Borretti who visited nine of the twelve CARICOM countries together with his counterpart Ivor Carryl.

As a result of the missions the consultant prepared eleven reports to highlight the situation to the CARICOM Secretariat and to the authorities of the member states the situation of the sector and its potential. He also recommended certain immediate measures for the development of the sector. This report concerns the mission undertaken by the consultant in Belize.

1.11 Related reports prepared under project UC/CAR/86/201:

The eleven reports prepared under the project include the following:

- (a) The project's terminal report (reference No. IO/R.52) entitled 'Prospects for Integration in the Woodworking Industry of the Caribbean Community' dealing with the situation in the region as a whole. The report proposes, inter alia, the implementation of three projects of a regional scope:
 - (i) Study on the establishment of a timber distribution centre in Barbados or Trinidad to facilitate the supply of lumber from within CARICOM;
 - (ii) Holding a regional WOODTECH course/exhibition of woodworking machinery in Barbados in order to promote the transfer of technology for the small-scale furniture and joinery industry in the Caribbean.
 - (iii) Intra-regional tool maintenance training programme for the furniture/joinery industry;

- (b) Nine country reports covering the CARICOM member states^{1/} visited by the consultant and his counterpart in the course of the project; and

^{1/} Antigua, Barbados, Belize, Dominica, Guyana, Jamaica, St. Lucia, St. Vincent, Trinidad and Tobago.

- (c) A technical report on the 'Selection of woodworking equipment for the small-scale furniture/joinery industry in the Caribbean Community (report No. IO/R.53)^{2/}.

2. Summary

Belize is the CARICOM country with the second largest area of commercial forest covering about 1,784,000 hectares (Guyana's tropical rain forests cover some 16.29 million hectares). However, Belize has the largest proportion of woodlands (97 percent as compared with Guyana's 77 percent). Furthermore, Belize has the largest softwood forest in the Caribbean region. Only 26 percent of the country's forests have been inventoried so far.

The primary species of hardwood forests include Mahogany and Cedar. The second minor group of hardwoods consists of Rosewood and Zericote. The main timber among the lesser known species is Santa Maria; the remaining can only be supplied as mixed species because they occur in a scattered pattern in the country. The volume of secondary species is almost twenty times the volume of Mahogany because the primary ones were overcut in the past.

Lumber production has remained constant between 1980 and 1985 with an average sawmill output of 8.7 million BM (29,472 m³). Production of Mahogany attained an apex of 3.8 million (9,000 m³) in 1982 and declined to 2.1 million BM (5,000 m³) in 1985; whereas Pine lumber output increased from 456,000 BM (1,076 m³) in 1980 to 2.5 million BM (5,969 m³) in 1985.

The volume of lumber exports has declined considerably since 1982 in both volume and percentage of total production. Mahogany has remained Belize's major export species: 577,437 BM (1,363 m³) of Mahogany lumber exported in 1985, corresponding to 78.3 percent of the total lumber exports. Mexico, the United States of America and Jamaica are Belize's traditional lumber export destinations.

The promotion of lumber exports to CARICOM destination is hampered, as with the trade flow in general, by the lack of adequate intra-community shipping links. In fact, with the exception of a direct regular shipping service with Jamaica, trade with other CARICOM countries is handled via ports in the United States, by transshipment at Puerto Rico or by charter vessels.

The sawmill industry consists of some 46 mills with an estimated manpower of about 1,500 full-time workers, however, no more than six of them offer a lumber export potential because of the inherent inefficiency of most small-size operations equipped with obsolete machinery. The new or newly-equipped larger mills, such as the Belize Timber Sawmill, the Loskot

^{2/} The report provides among others, guidance on the selection of tool maintenance equipment suitable for various levels of woodworking plants as well as for tool maintenance service centres. Moreover it includes specifications for tool maintenance and sawdoctoring equipment suitable for sawmills equipped with circular saw blades with inserted teeth, gang saw blades, and bandsaw blades up to 5 in. wide. A particularly useful piece of equipment presented in the guidelines is a simple hand-operated device recommended for the proper sharpening of inserted teeth - an operation which is carried out inefficiently by hand filing in most Caribbean sawmills.

sawmill and the Whitney Sawmill, have introduced band headrigs or band resaws and gear their operations to the production of lumber of export standard. The combined output of the main four sawmills is estimated at about 5.5 million BM (13,000 m³) per year.

The prospect of Belize's expanded Mahogany lumber exports to CARICOM points to Jamaica as a priority destination in view of its proximity as well as of availability of direct shipping links and established lumber trade contacts between the two countries. In fact, a major Jamaica furniture manufacturer visited in the course of the project and engaged in an ambitious furniture export drive towards the USA market, expressed a keen interest in the supply of Mahogany lumber from Belize in view of the increasing scarcity of Brazilian Mahogany.

As a direct result of the project direct contacts were established between the Jamaican Industrial Development Corp. (JIDC) and the Belize Forestry Department to negotiate a regular supply of Mahogany lumber to the export-oriented group of Jamaican furniture manufacturers.

On the wider perspective of lumber exports to CARICOM as a whole, a definite interest was identified in the course of the project on the part of manufacturers in various countries in utilizing the Belizean timber species Santa Maria as a substitute to Mahogany in the manufacture of furniture for local markets. On the other hand, the prospect of exporting Caribbean Pine to CARICOM destinations does not appear promising because of the very competitive prices of Pine lumber supplied to the region by Canada and Honduras. Details on possible CARICOM outlets for Guyana and Belize lumber are given in Annex V.

In the area of secondary wood processing, it was found that furniture manufacturing has yet to establish a meaningful industrial basis. However, a potential does exist to develop a furniture export potential based on the manufacture of mahogany furniture incorporating traditional Maya design patterns.

The following recommendations are made towards promoting the development of woodworking in Belize and its export potential to CARICOM:

- (a) To provide short-term assistance to the Whitney sawmill which is in the process of being expanded into an integrated woodworking plant (see draft project document in Annex II);
- (b) To provide short-term assistance to the Lcskot sawmill so as to develop a capability to produce furniture for export incorporating both hand-carved and machine-made components (see draft project document in Annex III);
- (c) To provide short-term assistance to the Pine Lumber Sawmill so as to validate its expansion plans and provide a basis for access to credit facilities (see draft project document in Annex IV);
- (d) To study the feasibility of stocking Belize lumber with a major lumber importer in Barbados for further distribution to the smaller Leeward and Windward Caribbean islands, so as to overcome the absence of regular shipping links between Belize and the East Caribbean area. A draft project document in this respect is attached to the main report as Annex VI. The proposed timber distribution centre would stock lumber from both Belize and Guyana.

- (e) To provide guidance to the emerging furniture manufacturing industry in the introduction of modern and appropriate types of woodworking equipment (see separate report prepared by the consultant in this respect: 'Guidelines on the selection of woodworking equipment for the small-scale furniture/joinery industry in the Caribbean community'.^{3/}

3. Forest Resources

Belize is the CARICOM country with the highest proportion of woodlands (97 percent or 2.2 million hectares) followed by Guyana (77 percent or 16.5 hectares). Commercial forests in Belize cover an area of 1,784,000 hectares with an estimated volume per hectare of 24 m³ and a total volume of 42,2 million m³. Belize has also the largest softwood forest in the Caribbean region.

Only 26.2 percent (or 46,000 hectares) of the commercial forests have been inventoried so far. The inventory was carried out from 1968 to 1978. The inventory results are given in Table 1.

According to a UNDP/FAO study carried out in 1978, based on available inventory data and estimates, about 49 million cubic feet (approximately 1.4 million m³) of tropical hardwood can be cut annually on a sustained yield basis.

The primary species of hardwood forests consist of:

- Mahogany (*Swietenia macrophylla*); and
- Cedar (*Cederela mexicana*)

The second minor group of hardwood includes Rosewood and Zericote. The main lesser-known species currently extracted are:

- Santa Maria (*Calophyllum brasiliense*);
- Jobillo;
- Granadillo;
- Mylady (*Aspidosperma megalocarpon*);
- Yellow Rosewood; (*Dalbergia stevensonii*);
- Nargusta (*Terminalia amazonia*);
- Redwood or Jobo (*Tapiria guianensis*);
- Bitterwood (*Vatairea lundelli*); and
- Sapodilla (*Achras zapota*).

With the exception of Santa Maria, the other secondary species occur in a very scattered pattern in the forests and generally can only be supplied as mixed species.

^{3/} The report provides also details on the selection of tool maintenance equipment for the Whitney sawmill.

Table 1: Belize Forest Inventory Results, 1968-1978

Year Inventory carried out	Location and area inventorised (ha)	Volume and species/ha			
		Primary* m ³ /ha	Secondary m ³ /ha	Total m ³ /ha	Total volume all species 1000 m ³
1968-1971	Chiquibal Forest Reserve 76,800 ha	0.8	19.8	20.6	1,579
1969-1970	Mountain Pine Ridge Forest Reserve 19,000 ha			8.8	167
1970	Southern Coastal Plain Pine Forest 45,000 ha			10.7	487
1978	Southern Maya Mountains 43,000 ha	0.3	55.4	55.7	2,401
1977	Cockcomb Basin 40,000 ha	0.2	51.0	51.2	2,048
1972-1973	Belize Estate and Produce Co. Ltd. 243,000 ha	1.8	16.5	18.3	4,447
	Total area inventorised 467,000 ha			Total	11,129

* Mahogany and Cedar

Source: Regional Forest Sector Study, Caribbean Development Bank, 1984

The areas of the country endowed with the highest percentage of Mahogany species are the Corosal/Orange Walk districts in Northern Belize where Mahogany represents about 75.7 percent of the commercial forests. The areas with the highest percentage of Pine (*Pinus caribea*) are Belize City/Cayo District in Central Belize (24.4 percent) and Stann Creek/Toledo districts in Southern Belize (19.6 percent).

A growing Pine resource area (36,000 hectares) is the Pine Ridge Forest Reserve in the Mountain Pine Ridge district, which according to local estimates is expected to reach in the 1990s an annual increment of over 3 million cubic feet (approximately 56,000 m³).

According to the Forest Department in the Southern region, the volume of secondary species logged is almost twenty times the volume of Mahogany because the primary species were overcut in the past. In the Northern region, the volume of logs of primary species produced is three times the volume of secondary species as a highly selective felling is practiced with resulting high logging costs.

4. Lumber production

Lumber production has remained constant since 1980 with an average sawmill output of 8.7 million BM (20,532 m³) per year. As estimated by the Forest Department, total production in 1985 amounted to 9.2 million BM (approximately 21,712 m³).

Production of Mahogany lumber attained an apex of 3.8 million BM (approximately 9,000 m³) in 1982 and declined to 2.1 million BM (approximately 5,000 m³) in 1985. In contrast, the production of Pine lumber increased from 456,000 BM (approximately 1,000 m³) in 1980 to 2.5 million BM (5,969 m³) in 1985. The production of lumber of secondary, mixed hardwood, species has remained practically constant from 1981 to 1985 with an output of 4.2 million BM (10,000 m³) and 4.5 million BM (10,721 m³) respectively. The percentage of log production in 1982 according to species/species group and region is indicated in Table 2 hereunder, whereas the trends of lumber production and apparent consumption for the period 1980 to 1985 are shown in Table 3.

Table 2: Percentage of log production according to species/species group and regions in 1982

Region/species	Mahogany & Cedar	Secondary Hardwoods	Pines	Rosewood	Zericote	Total
Northern Belize						
Corozal/Organge Walk Districts	75.8 (75.7)*	19.1 (23.3)	2.5 (0.9)	—	88.7 (0.1)	38 (100)
Central Belize						
Belize City/Cayo Districts	22.1 (19.9)	50.0 (55.2)	71.9 (24.4)	87.7 (0.4)	11.3 (0.1)	42.5 (100)
Southern Belize						
Stann Creek/Toledo Districts	2.1 (4.2)	30.9 (76.1)	25.6 (19.6)	12.3 (0.1)	— —	19.5 (100)
	100%	100%	100%	100%	100%	100%

Source: Forestry Department, Belmopan

* Figures between brackets indicate percentage of species/species groups within a region.

Table 3: Production, exports and apparent consumption of lumber in Belize, 1980-1985.
(m³ and '000 BM)

Year	Mahogany	Cedar	Pine	Other Hardwoods	Total Production	Exports	Apparent Local Consumption
1980	(7,572 m ³) 3,208	(78 m ³) 33	(1,076 m ³) 456	(13,341 m ³) 5,619	(21,989 m ³) 9,316	(5,434 m ³) 2,303	(16,666 m ³) 7,013
1981	(7,038 m ³) 2,982	(70.8 m ³) 30	(2,060 m ³) 873	(10,095 m ³) 4,247	(19,193 m ³) 8,132	(3,504 m ³) 1,485	(15,684 m ³) 6,647
1982	(9,038 m ³) 3,829	—	(3,814 m ³) 1,616	(9,843 m ³) 4,170	(22,695 m ³) 9,615	(6,254 m ³) 2,649	(16,436 m ³) 6,966
1983	(4,026 m ³) 1,706	—	(4,447 m ³) 1,897	(8,226 m ³) 3,485	(16,727 m ³) 7,088	(4,152 m ³) 1,760	(12,571 m ³) 5,328
1984	(4,879 m ³) 2,067	—	(5,459 m ³) 2,529	(10,192 m ³) 4,542	(20,530 m ³) 8,678	(2,694 m ³) 1,142	(17,829 m ³) 7,556
1985	(5,000 m ³) 2,118	—	(5,969 m ³) 2,529	(10,721 m ³) 4,542	(21,690 m ³) 9,189	(1,741 m ³) 738	(19,941 m ³) 8,461
1986			(5,282 m ³) 2,238			(1,243 m ³) 527	

Source: Forestry Department, Belmopan.

5. Lumber prices

	Government-Regulated*	
	Ex-mill prices/BM	
	B\$	US\$
(a) Primary hardwoods (Mahogany and Cedar)		
- FAS (8/4 and above)	1.40	0.70
- FAL (under 8/4)	1.35	0.67
- FAS (wormy)	0.90	0.45
- No. 1 Common	0.85	0.42
- No. 2 Common	0.75	0.37
- FAS shorts		
- Rejects and wormy/shorts	0.37	0.18
- Other rejects	0.53	0.26
(b) Secondary hardwoods		
- Structural lengths (dressed)	0.86	0.43
- Structural lengths (rough)	0.77	0.38
(c) Pine		
- Structural lengths (dressed)	0.79	0.39
- Structural lengths (rough)	0.70	0.35
- Short (dressed)	0.53	0.26

* An increase of about 10 percent has been applied in 1987 to the above prices.

6. Lumber export trends

The volume of lumber exported has declined considerably since 1982 in both volume and percentage of total production as shown in the table below:

Table 4:

Lumber exports as a percentage of lumber production, 1983 and 1985

	Lumber produced	Lumber exported	Lumber exported as a percentage of produced lumber
1983	9,615,000 BM (22,695 m ³)	2,649,588 BM (6,254 m ³)	27,5 %
1985	9,189,000 BM (21,690 m ³)	737,747 BM (1,741 m ³)	8 %

An even lower volume of lumber was exported in 1986; it only attained 527,000 BM or 1,243 m³.

Mahogany has been the species most affected by the decline. Its export volume fell from 1.8 million BM (4,305 m³) in 1983 to 0.58 million BM (1,370 m³) in 1985. The main reason given by the Forest Department for the decrease in Mahogany exports was the close-down of the sawmill associated with the Belize Estate & Produce Co. Ltd. which, when in operation, accounted for about 80 percent of Mahogany export. This decline in output capacity is now being corrected by the establishment of a new sawmill and the expansion of a second one.

However, Mahogany has remained Belize's major export species as shown in the following table.

Table 5: Belize lumber exports by species, 1981 and 1985.

	1981		1985	
	BM and (m ³)	Percentage of total exports	BM and (m ³)	Percentage of total exports
Mahogany	1,444,313 (3,409)	97.2	577,437 (1,363)	78.3
Mixed hardwoods	39,285 (92.7)	2.6	93,091 (219.7)	12.6
Cedar	1,515 (3.5)	0.1	67,219 (158)	9.1
Total	1,485,113 (3,505)	100	737,747 (1,741)	100

Source: Custom Office.

Only minor quantities of coniferous species were exported up to 1984, namely, 14,403 EM or 34 m³ in 1982; 20,000 EM or 47 m³ in 1983, 11,246 EM or 26.5 m³ in 1984. No export of coniferous lumber was recorded in 1985.

Exports of logs declined in 1984 and 1985 after having peaked in 1983, as shown in the following table:

Table 6: Belize log exports, 1982-1985

Species Group	1982	1983	1984	1985
Coniferous logs *	29,140 EM (825 m ³)	—	—	1,750 EM (4 m ³)
Non-coniferous logs	2,018 EM (4.8 m ³)	18,587 EM (518 m ³)	9,906 EM (290 m ³)	8,022 EM (227 m ³)

* Main destination: United States of America

Source: Forest Department and custom Statistics

7. Lumber Export by destination 1982 and 1985

Jamaica, the USA and Mexico are the traditional lumber export destinations for Belize as shown in the following table:

Destination	1982	1983	1984	1985
Jamaica	1,121,488 EM (2,647 m ³)	1,174,601 EM (2,774 m ³)	809,265 EM (1,910 m ³)	170,348 EM (402 m ³)
USA	664,429 EM (1,568 m ³)	508,190 EM (1,199 m ³)	267,701 EM (632 m ³)	178,381 EM (451 m ³)
Mexico	317,041 EM (748 m ³)	—	—	358,458 EM (846 m ³)
Total exports to above 3 countries	2,102,958 EM (4,964 m ³)	1,683,791 EM (3,974 m ³)	1,076,966 EM (2,542 m ³)	707,187 EM (1,669 m ³)
Grand total exports	2,649,588 EM (6,254 m ³)	1,760,191 EM (4,155 m ³)	1,141,759 EM (2,695 m ³)	737,747 EM (1,741 m ³)
Share of above 3 countries (%)	79.4	95.6	94.3	95.8

Source: Belize Custom Statistics and Forest Department

Up to 1984, the majority of lumber exported consisted of dressed lumber as shown hereunder:

Table 8: Percentage of rough and dressed lumber exports 1981-1985

	1981	1982	1983	1984	1985
Rough lumber	12%	32%	29%	12%	74%
Dressed lumber	88%	67%	71%	88%	26%

8. Shipping links

Jamaica is the only CARICOM country linked by a direct, regular shipping service to Belize. With the exception of this particular destination, Belize's intra-CARICOM trade is handled via ports in the United States of America, by transshipment at Puerto Rico or by charter vessels. Details of shipping services to CARICOM destinations are given below:

- (a) Belize-Jamaica: Twice a month service by Harrison Line (Agent: Belize Estate and Produce Co. Ltd.)

Freight rates: US\$ 1,340 per 20 ft container (basic rate); US\$ 1,500 per 40 ft container (basic rate); US\$ 127 per 20 ft container (container loading cost) ^{4/}; US\$ 276 per 40 ft container (container loading cost) ^{4/}; US\$ 175 per 20 and 40 ft container (delivery and return of container, Belmopan); US\$ 250 per 20 ft. container (LSD ^{5/} destination, Kingston).

- (b) Weekly services through West Palm Beach by Tropical Shipping vessels to following destinations:

1. Belize-Antigua: Freight rates: US\$ 3,412 (based rate per 40 ft container; US\$ 450 (LSD ^{5/} destination Antigua); container loading charges and container delivery and return costs as in (a) above.
2. Belize-Barbados: Freight rates: US\$ 3,512 (basic rate) per 40 ft. container; US\$ 500 (LSD destination Bridgetown); container loading charge and container delivery and return cost as in (a) above.
3. Belize-St. Lucia: Freight rates: US\$ 3,412 (basic rate) for 40 ft container; US\$ 350 (LSD destination St. Lucia); container loading charge and container delivery and return cost as in (a) above.

^{4/} Source: Forestry Department
^{5/} Landing, Storage and Delivery charge.

4. Belize-Trinidad: Freight rates: US\$ 3,062 (basic rate) for 40 ft. container; US\$ 375 (LSD destination, Port of Spain); other container charges as in (a) above.

(c) Shipping arrangements identified by the Forestry Department, Belmopan, for shipment of lumber to Kingston (Jamaica), Bridgetown (Barbados) and Port of Spain (Trinidad and Tobago) are as follows:

	Freight cost US\$	LSD at destination US\$
(i) Belize-Jamaica		
- 20 ft. container	1,340	250
- 40 ft. container	1,850	n.a.
(ii) Belize-Barbados		
- 20 ft. container	1,600	500
- 40 ft. container	2,400	n.a.
(iii) Belize - Port-of-Spain		
- 20 ft. container	1,575	375
- 40 ft. container	2,375	n.a.

9. The sawmilling industry

There are about 46 sawmills in Belize with an estimated employment of about 1,500 full-time workers. However, not more than six of them offer a lumber-export potential. The rest consist mostly of small sized operations based on obsolete and rudimentary equipment of the single circular-saw with inserted teeth type. In these mills the lack of proper blade maintenance and lack of accuracy in the operation of the log-feeding carriage, makes it impossible to process lumber of uniform thickness and straight edges. Because of inherent inefficiency, they are unable to differentiate the lumber - as stipulated by the Government Control Price Rules - into grades, namely first and seconds (FAS), No. 1 Common, No. 2 Common, etc.

A large mill, the Belize Timber, used to account for about 80 percent of the export quality lumber produced in Belize, but is now no longer in operation. However, in the last four years, new sawmill operations have been established and existing ones expanded, which are equipped to attain appropriate recovery rate, productivity and quality of lumber to meet export market requirements. Moreover, a study is now being prepared, under the Commonwealth Fund for Technical Cooperation (CFTC) by a team of the Overseas Development Administration (ODA) on the establishment of a new modern sawmill in the Mountain Pine Ridge Forest Reserve (36,000 hectares) for the annual production of about 13,000 m³ Pine lumber for export.

Of the sawmills visited in the course of the mission, the following four were found to offer a good export potential for sales to the CARICOM member states:

- (a) Loskot Enterprises Ltd.
Orange Walk Town
Orange Walk District

- (b) Felize Timber Ltd.
Georgeville
Belize City District
- (c) Wall Sawmill
Shipyards Camp 10
Orange Walk District
- (d) Harold Whitney Ltd.
Punta Gorda
Toledo District

The combined output of the four sawmills is estimated to be about 5.5 million BM (13,000 m³) per year.

9.1 Loskot Enterprises sawmill

This mill was modernized two years ago by the introduction of a band headrig. It produced an output of 0.5 million BM (1,179 m³) in 1986 and expects to attain a production level of 1 million BM (2,359 m³) in 1987. The Company obtains its raw material supply from a forest concession of 15,000 acres (6,070 hectares). In contrast with other sawmills, Loskot can maintain a regular supply of logs even in the rainy season in that logs are loaded 60 miles away on rafts and delivered up to the mill site by river. The operation provides an employment of 15 in the sawmill and 25 in the logging activities.

Some 80 percent of the lumber produced by the mill consists of Mahogany and the balance mainly of Santa Maria. The mill was the only one of the sawmilling operations visited to be equipped for the preservation of lumber by dip treatment^{6/}.

In 1985, nearly 100 percent of the mill output was exported, mainly to Mexico and the United States of America. This year, the Company is expected to deliver a consignment of 25,428 BM (60m³) in two 20 ft. containers, to the Angelus Furniture Factory in Barbados. Contacts have also been established with potential buyers in other CARICOM countries (Jamaica and Trinidad).

9.2 Belize Timber sawmill

First established in 1973, the Belize Timber now operates the newest sawmill in the country and is expected to produce an output of about 2 million BM (4,720 m³) in 1987 from logs supplied from its own forest concession.

^{6/} A pressure-impregnation cylinder is in the process of being installed in the mill of the Pine Lumber Co. Ltd. which plans to expand its facilities with the addition of a gang saw.

The log processing is based on the use of both a circular-saw headrig and a bandsaw. The material handling in the mill is entirely automated. Boards are transferred mechanically from the bandsaw to an edger and on to the final process, cross cutting, which is performed by an automatically adjustable double-end trim saw.

The mill concentrates on secondary hardwood species - especially Santa Maria. Mahogany accounts for 8 to 10 percent of the total output. According to the management, the mill produces about 200,000 BM (471 m³) per year of lumber of exportable quality. Two USA buyers had bought Belize Timber's anticipated output of Santa Maria species up to October 1987.

9.3 Wall sawmill

Wall sawmill is one of the two mills operated in the Orange Walk District by the Mennonite farming community. The mills have developed in size and capacity and not only collect logs from their farming areas but also buy logs from other producers. The mill has an annual output of Mahogany lumber of about 1 million BM (2,360 m³) and operates with a manpower of 14.

The Wall sawmill was found to be the most efficient of the small Mahogany-producing units visited in the course of the mission. The plant is equipped with a typical circular saw headrig with a 54 in. diameter blade with inserted teeth. Handling of the log to and through the headrig is mechanized. Timber cut on the headrig is edged and ripped into multiple widths by an edger and is finally trimmed into final lengths by a crosscut saw. The mill is the only one of the small sawmills visited which is equipped with a proper device for the accurate sharpening of inserted teeth.

The mill has recently entered the export market by shipping a load of Mahogany lumber (43,000 BM or 101 m³) to Jamaica.

The operative problem faced by the Wall sawmill is having to rely on an obsolete moulder, some 35 years old, to produce dressed and tongue-and-grooved lumber. This, coupled with the lack of appropriate moulding cutters and of related sharpening equipment, is severely limiting the added-value capability of the mill.

9.4 Whitney sawmill

Established in 1982, the Whitney sawmill is the largest one in Belize processing Caribbean Pine. The mill derives its log supply from a forest concession of 91,000 acres (36,826 hectares) and 15,000 acres (6,070 hectares) of a privately-owned forest area. It produces an output of about 2 million BM (4,720 m³) per year, which at present is totally absorbed by the local market but could also be exported to CARICOM countries if lumber was pressure-treated and offered at an attractive price.

The mill has a manpower of 15 and an equal number of workers is involved in the logging operation. Capital investment in equipment is as follows:

- US\$ 200,000 production machinery;
- US\$ 250,000 logging equipment;
- US\$ 150,000 road-construction equipment.

The company's average annual value of sales is US\$ 500,000.

The Whitney sawmill is probably equipped with the most modern circular saw headrig (60 in. diameter blade) in the country. The machine is fully automated and operated by a single operator from a control station.

The mill is in the process of installing a second-hand moulder so as to be able to supply dressed and tongue-and-grooved lumber for construction end uses. Moreover, Whitney has recently taken over a consignment of brand new German woodworking machinery originally purchased by a woodworking plant now closed down. The machines include the following:

- (a) Moulder, with five heads and 12 in. capacity
- (b) Frame saw, make: Kirchner, Leipzig
- (c) Band resaw, with 5 in. blade and 1.5 m diameter pulley
- (d) Mosaic parquet equipment, set of three machines. make: Weinig
- (e) Narrow bandsaw: (make: Petzing and Hartman, brand: Pehaka, Mod. H7 1983)

The moulder is of heavy-duty type - possibly the best of its kind available in Belize for the production of dressed and moulded lumber. The frame saw is the only one available in the country and should prove to be a considerable asset in the cutting of small-diameter logs. The mosaic parquet making machinery is also the first of its kind to be introduced in Belize, and possibly in CARICOM, and is expected to provide a major contribution towards attaining a higher level of value added in the timber industry.

The equipment was bought at a fraction of the original price. However, the mill now faces three major problems in actually installing and operating the machinery:

- (a) lack of know-how in the operation of machines;
- (b) lack of related tool grinding equipment; and
- (c) lack of an initial supply of cutting tools.

10. Technical assistance requirements by the Whitney sawmill

Technical assistance and credit facilities are required by the mill in order to overcome the above problems. An outline of requirements in this respect is provided in Annex II ^{1/}.

^{1/} Details on the selection of tool sharpening equipment for the Whitney sawmill are given in a separate report prepared by the consultant: "Guidelines on the selection of woodworking equipment for the small scale furniture/joinery industry in the Caribbean Community" (report reference No. IO/R.53).

11. The furniture manufacturing sector and its potential for export

The consultant did not have the opportunity to visit a sufficient number of furniture workshops in Belize to be able to make an accurate prima facie evaluation of the sector. However, from the brief received at the Forestry Department at Belmopan, it was understood that the sector is in its very first stage of development. In fact, the Department is extending the scope of its present woodworking shop - with the assistance of CFTC (Commonwealth Fund for Technical Cooperation) - into a pilot furniture/joinery plant with the aim of spearheading the development of the sector. The assistance programme includes the supply of machinery, the provision of fellowships and the services of a long-term woodworking expert. The programme is carried out in the framework of the Government policy aimed at developing a furniture export potential based on the utilization of Mahogany.

The furniture workshop in the private sector visited in the course of the mission, Caymills Ltd., was found to have been supplied recently with second-hand reconditioned woodworking machinery, among which was a vertical copying machine - with no provision however, for equipment for the maintenance of the related cutters of special design. In fact, but for a rudimentary bench grinder, no equipment had been supplied to handle the tool maintenance needs of the new workshop. As a result, special types of cutters, such as routing bits, would have to be sharpened free-hand, while expensive carbide-tipped circular saw blades would just be discarded as they become dull.

A positive development in the furniture manufacturing sector is the plan by the Loskot sawmill - a major producer of Mahogany lumber in the country - to establish its own furniture factory.

The Loskot enterprise is currently operating a small woodworking shop for the manufacture of individual pieces of furniture and joinery incorporating hand-carved components. The hand-carving work is produced by a team of highly skilled carvers taking inspiration from design patterns derived from the Maya heritage.

It is strongly recommended that these traditional hand-carving skills be utilized in the development of a furniture-export potential.

12. Technical assistance required by the Loskot Enterprises Ltd.

The assistance is meant to provide the initial basis for developing a furniture export potential based on the utilization of both machine-made and hand-carved furniture components. The assistance is to include:

- (a) Selection of modern wood jointing equipment and efficient tool-sharpening machines as a complement to the basic woodworking machinery already being acquired by the Company. Information in this respect is shown in the charts on pages 4 and 5 of the report entitled 'Guidelines on the selection of woodworking equipment for the small-scale furniture/joinery industry in the Caribbean Community' (report reference No. IO/R.53).

- (b) Assistance of a leading furniture designer for the development of two furniture-prototype designs reflecting the Maya heritage. A project data sheet in this respect is given in Annex III: Assistance to Loskot Enterprises, Belize.

13. Belize's Lumber export potential to CARICOM

Through the years Belize has maintained its role of main supplier of Mahogany lumber to Jamaica as shown in the following table. Jamaica has also remained the only CARICOM export outlet for Belize's lumber, except for a shipment of 162 m³ to Barbados in 1983.

Table 9: Exports of Belize's Mahogany Lumber to Jamaica, 1981-1985

	1981	1982	1983	1984	1985
Rough lumber (m ³)	1,500	1,240	—	—	28
Planed and tongue and grooved lumber (m ³)	688	504	2,870	1,645	256
Total Mahogany lumber imported by Jamaica from Belize (m ³)	2,196	1,628	2,870	1,645	284
Share of total Mahogany imported by Jamaica	75%	36%	45%	39%	19%

Source: Jamaica Custom Records

With the increasingly scarce supply of Brazilian Mahogany, Belize could become the major single supplier of Mahogany lumber to Jamaica. In fact, most of Belize's yearly output of export-quality Mahogany - currently estimated at 2 million BM or 4,700 m³ - could be channelled to Jamaica, a market which absorbed 1.7 million BM (4,175 m³) of imported Mahogany lumber in 1984. In particular, Belize's Mahogany might be utilized by the new Kingston Heirlooms furniture factory in Kingston which produces top-quality Mahogany furniture for the USA market and absorbs some 500,000 BM (1,179 m³) of Mahogany per year.

An equally good export potential exists for the supply of the Santa Maria species to the major lumber-importing countries in CARICOM, as a substitute to Mahogany.

On the other hand, the prospects of exporting Caribbean Pine lumber will depend on the following factors:

- (a) capability to compete with the very low cost (about US\$ 0.50/BM CIF Kingston) of Pine supplied by Honduras and the USA;
- (b) availability of pressure-impregnation and kiln-drying facilities.

ANNEX I

LIST OF PERSONS MET

Mr. R. Leslie	Permanent Secretary, Ministry of Foreign Affairs and Economic Development, Belmopan
Ms. Y. S. Hyde	Director, Office of Economic Development, Ministry of Foreign Affairs and Economic Development, P.O.Box 42, Belmopan
Mr. C. Souza	Permanent Secretary, Ministry of Commerce, Industry and Tourism
Mr. H. Flower	Chief Forest Officer, Forestry Department, Ministry of Natural Resources, P. O. Box 148, Belmopan
Mr. O. Rosado	Principal Forest Officer, Forestry Department, Ministry of National Resources
Mr. J. A. Nilsen	Forest Utilization Officer (Expert Commonwealth Fund for Technical Co-operation, UK), Forestry Department
Mr. S. O. K. Brimpong	Forest Products Marketing Adviser, Forestry Department
Mr. J. C. Roberson Jr.	Managing Director, Belize Timber Ltd., Head Office: P. O. Box 97, Belize City
Mr. J. B. Loskot	Chairman of the Board, Loskot Enterprises Ltd. Sawmill, P. O. Box 164, Orange Walk Town
Mr. R. A. Ellis	Production Manager, Loskot Sawmill
Mr. H. Whitney	Managing Director, Harold Whitney Ltd. Sawmill, P. O. Box 36 - Punta Gorda, Mile 75 Southern Hwy
Mr. A. Bedran	Managing Director, Pine Lumber Co. Ltd. Sawmill, P. O. Box 4, San Ignacio
Mr. J. Wall	Managing Director, Wall Sawmill, Camp No. 10, Shipyard
Mr. G. Krahn	Managing Director, Krahn Sawmill, Camp No. 9, Shipyard
Mr. M. Cenus	Plant Manager, Genus Sawmill, P. O. Box 78, Punta Gorda
Mr. T. Wilson	Factory Manager, Cayomills Ltd. Furniture Plant, Cayo District
Mr. S. Edwards	Forest Officer, Machacu Forest Station, Toledo District

ANNEX II

Project Data Sheet

Country: Belize

Title of Project: Assistance to the Whitney Integrated Woodworking Project

Company address and contact: Harold Whitney Ltd.
P. O. Box 36, Punta Gorda, Mile 75 Southern Hwy, Belize, C.A., Phone (07) 2037
(Mr. Harold Whitney, Managing Director)

Cooperating Agency: Forestry Department, Belmopan

Executing Agency: United Nations Industrial Development Organization (UNIDO)

Duration: 18 months

Total external inputs US\$ 72,000

Government input In kind

Development objective:

To promote the development of integrated woodworking industries in Belize.

Immediate objectives:

As a direct result of the project, the Whitney Sawmill will have attained the following objectives:

1. Efficient utilization of the production equipment recently purchased for the purpose of expanding the sawmilling operation, and integrating it into a planing and moulding mill as well as with parquet making;
2. Introduction of proper sawdoctoring methods for the newly purchased equipment; and
3. Introduction of proper kiln drying and wood preservation techniques.

Background and justification:

Established in 1982, the Whitney sawmill is Belize's largest Pine processing plant, while having also access to hardwood logs supply. Its yearly output is about 2 million BM (4,700 m³). Total capital investment amounts to US\$ 600,000 of which US\$ 200,000 consists of production equipment, and the balance of logging and road construction equipment.

The mill has recently taken over a consignment of brand new German woodworking equipment originally purchased by a plant now closed down. The machinery includes: a moulder with 12" capacity, a Kirchner gang saw, a band resaw with 1.5 m. diameter pulley and 5" blade, one set of 3 Weinig mosaic floor equipment, one narrow bandsaw Pehaka Mod. H7-1983. The gang saw and the parquet machines are the only ones of their kind available in the country, thus, the Whitney sawmill has the potential to becoming a pioneer integrated mill in Belize and indeed in CARICOM.

However, the Company lacks the know-how to utilize the newly purchased equipment efficiently, and it is not equipped with the necessary sawdoctoring equipment. Moreover, the mill lacks dry-kiln and wood preservation facilities, designed to extend the serviceable life of building components made of Pine timber. Finally, the mill requires credit facilities to purchase the following equipment:

- (a) Pressure impregnation cylinder;
- (b) Dry-kiln;
- (c) Four trucks for transport of logs from the company's forest concession to the mill (estimated cost: US\$ 120,000);
- (d) One log loader (estimated cost: US\$ 20,000);
- (e) One 300 KW generator (estimated cost: US\$ 75,000).

Outputs

1. Outputs related to objective 1:

- (a) Revised plant layout to include new equipment
- (b) Purchase order specifications for spares, accessories and tools required for the new equipment
- (c) Three technicians trained in the operation of the new equipment
- (d) Two technicians trained in the operation of the moulder and the mosaic parquet equipment; and
- (e) outlines of preventive maintenance for new equipment.

2. Output related to objective 2:

Two trained technicians in the maintenance of tools ^{1/} for the new production equipment.

3. Outputs related to objective 3:

- (a) Purchase order specification provided for dry kiln and timber preservation facilities;
- (b) Two technicians trained in the operation of the above equipment

^{1/} To include the following tools: (1) bandsaw blades up to 5" width, (2) moulding cutters, (3) planing knives, (4) gang saw blades, (5) narrow bandsaws.

Activities

1. Activities related to output 1/

- (a) Survey of the conditions of woodworking equipment taken over from another company and identification of needs for spares, accessories and cutting tools;
- (b) Revision of existing plant layout to include installation of new equipment;
- (c) Assistance in the installation and operation of the new equipment, once the required spares, tools, etc. are delivered.

2. Activities related to output 2/

- (a) Assistance in the installation of the sawdoctoring equipment^{3/} to be purchased to service the new production equipment
- (b) Training of factory personnel in the operation of the maintenance equipment.

3. Activities related to output

- (a) Review of the timber seasoning and timber preservation requirements of the local market;
- (b) Selection of appropriate kiln drying and preservation equipment;
- (c) Assistance in the initial operation of the dry kiln and wood preservation equipment, and training of the plant's personnel in its use.

1/ The expert will undertake an initial mission of two weeks to undertake activities under (a) and (b) and then return to duty station once the spares, accessories and tools are delivered.

2/ The expert will undertake an initial mission of two weeks to carry out activities under (a) and (b) and then return to duty station once the kiln drying and preservation equipment is delivered.

3/ Specifications of the sawdoctoring equipment are given in the following report prepared under the UNIDO project UC/CAR/86/201: "Guidelines for the selection of woodworking equipment for the small scale furniture/joinery industry in the Caribbean Community". (Reference No. IO/R.53).

External inputs

		<u>man/months</u>	<u>US\$</u>
<u>Experts</u>			
11-51	Sawmill production engineer (to produce outputs listed under 1) split mission	4	32,000
11-52	Sawdoctoring expert (to produce output listed under 2)	2	16,000
11-53	Timber seasoning and preservation expert (to produce outputs listed under 3) split mission	2.5	20,000
15-00	Local travel		1,275
51-00	Miscellaneous expenses		<u>2,725</u>
	Grand total external inputs		<u>72,000</u> =====

Inputs by the Whitney Sawmill

- Costs of sawdoctoring equipment
- Cost of spares, accessories and tools
- Cost of dry kiln and wood preservation equipment

Related activities

The selection of sawdoctoring equipment for the maintenance of cutting tools related to the new production equipment (gangsaw blades, moulding cutters, bandsaw blades, planing knives, etc.) has been provided as part of the report entitled 'Guidelines on the selection of woodworking equipment for the small-scale furniture/joinery industry in the Caribbean Community' on page 41 et seq. and in a chart on page 5 (report reference No. IO/R.53).

ANNEX III

Draft product document

Country: Belize

Title: Assistance to Loskot Integrated Woodworking Project.

Company address and contact: Loskot Enterprises, Ltd., P.O.Box 164, Orange Walk Town, Belize, Phone 03-223, (Mr. Joseph B. Loskot, Board Chairman)

Government implementing Agency: Forestry Department, Belmopan

Executing Agency: United Nations Industrial Development Organization (UNIDO)

Duration: 5 months

Estimated starting date:

External inputs: US\$ 40,000

Government inputs: In kind.

PART I - LEGAL CONTENT

To be indicated in final project document.

PART II - THE PROJECT

PART II A - Development Objectives

1. To promote the value-added capability of the forest industry sector and its hard currency earning potential.
2. To promote the utilization of traditional hand-carving skills and design patterns of the Maya heritage.

PART II B - Immediate Objectives

To enable the Loskot Enterprises Ltd. to develop an initial capability to produce furniture for export incorporating both hand-carved and machine-made components, and reflecting decorative patterns of the Maya Heritage.

PART II C - Background and Justification

Belize is the only country in CARICOM endowed with Mahogany timber resources, and Mahogany is its dominant lumber export species. However, Belize's furniture industry is largely underdeveloped and has not been able so far to enter the export markets.

The Loskot Enterprises Sawmill is currently operating a small woodworking shop for the manufacture of individual pieces of furniture and joinery incorporating hand-carved components. The hand-carving work is produced by two skilled wood carvers taking inspiration from design patterns derived from the Maya traditions. However such furniture is largely manufactured on the basis of inefficient artisanal methods, and is of too heavy a design to qualify for export markets.

The Loskot company is now planning to set up a proper furniture plant but lacks the experience to develop furniture designs suitable for the export markets. The project proposes to provide the necessary initial know-how in this respect.

PART II D - Outputs

1. A technical report providing a wide selection of Maya decorative patterns and designs as a basis for developing modern furniture.
2. Two furniture designs, incorporating hand-carved details reflecting the Maya heritage.

PART II E - Activities

1. Activities to reach output 1:

- (a) Review of Maya artifacts at the Department of Archeology in Belize and of available bibliography on Maya handicrafts and architecture;
- (b) Field study of main sites of Maya ruins located in Belize and neighbouring countries; and
- (c) Preparation of reference drawings of selected Maya design patterns.

2. Activities to reach output

- (a) Study of the technical report paper prepared under the project (output 1); and
- (b) Preparation of product and process specifications of two selected furniture items of occasional type such as bookshelves, bar cabinets, side chairs, etc. These should be detailed enough to allow production on standard machines, and include, where appropriate, designs for jigs, etc.

PART II F - External inputs

	<u>man/months</u>	<u>US\$</u>
11-51 Furniture development consultant (to produce output 1)	2.5	17,500
21-00 Subcontract to a leading furniture designer (to produce output 2)		20,000
Government inputs		
(a) Local travel		
(b) Secretarial services		
(c) Counterpart		

ANNEX IV

Draft Project Document

Country: Belize

Title: Assistance to Pine Lumber Sawmill

Company address and Contact Pine Lumber Co. Ltd., P.O.Box 4, San Ignacio,
Cayo District, Belize, (Mr. Amin Bedran,
Managing Director);

Government Implementing Agency: Forestry Department, Belmopan

Executing Agency: United Nations Industrial Development
Organization (UNIDO)

Duration Two months

Estimated starting date:

External inputs US\$ 25,000

Government inputs: In kind.

PART I - LEGAL CONTEXT

To be indicated in final project document

PART II - THE PROJECT

Part II A - Development Objective

To promote the expansion and efficiency of the sawmill industry in Belize.

Part II B - Immediate Objective

To enable the Pine Lumber Sawmill to validate its expansion plans and present a basis for access to credit facilities.

Part II C - Background and Justification

The Pine Lumber Co. is involved in the processing of Pine thinnings at a rate of 2,000 to 3,000 BM (4.7 to 7 m³) per day. Its present operation is based on a circular saw headrig and is also equipped for producing dressed lumber. The company provides employment to a total of 45 workers of which 15 are engaged in the mill operation and the rest in logging work. The sawmill is in the process of installing a pressure impregnation cylinder of 700 BM capacity.

The company is now considering to expand its sawmilling capacity and introduce, among other equipment, a gangsaw, as well as expanding its logging capability.

This project proposes to provide assistance to the Management of the Pine Lumber Company in establishing the economic viability of expanded sawmilling and logging facilities.

Part II D - Outputs

A prefeasibility study to ascertain the new investments' profitability.

Part II E - Activities

1. To provide a broad review of the main factors that might affect the proposed expansion of the sawmill/logging operation, such as:
 - (a) raw material availability and cost;
 - (b) market trends and requirements;
 - (c) manpower resources;
 - (d) infrastructure conditions; and
 - (e) Government industrial development policies.

2. To select the appropriate technology and estimate additional output capacity.

3. To provide a general estimate of capital investment; and
4. To provide, on the basis of the above, a rough estimate on how much return on investment can be expected from the expanded sawmilling/logging operation.

PART II F - Inputs

The services of a consulting engineering firm will be provided to prepare a prefeasibility study.

External inputs

- | | |
|-----------------------------------|-------------|
| (a) Services of a consulting firm | US\$ 24,600 |
| (b) Miscellaneous expenses | US\$ 400 |

Total external inputs	US\$ 25,000
-----------------------	-------------

Government inputs

- | | |
|--------------------------|---------|
| (a) Counterparts | |
| (b) Local travel | |
| (c) Secretarial services | in kind |

PART II G - Related Activities

On the basis of the outcome of the prefeasibility study the CARICOM Secretariat will assist the company in gaining access to credit facilities.

ANNEX V

Properties of a Belizean Timber Species suitable as a substitute
to Mahogany in furniture production

1. Names

Trade: Santa Maria

Botanical: Calophyllum brasiliense camb. var. rekoi Standl.
(Guttiferae)

Local: Santa Maria, Leche Maria, Jacareuba (Brazil).

2. Range

Mexico to Brazil and through the West Indies.

3. Description of Wood:

Sapwood - pale pink, 1-2 inches wide.

Heart - light pinkish to reddish brown

Odour and taste - not distinctive

Grain - generally interlocked

Texture - medium

Growth rings - indistinct, usually limited by a fine line of parenchyma.

Pores - medium, visible, in diagonal to radial chains and in irregular groups, rather numerous.

Vessel lines - distinct, darker than background.

Rays - very fine, invisible to naked eye on cross section; fine but distinct on radial surface, darker than background; faintly visible on tangential

Gum Veins - often associated with calcium carbonate deposits, rather frequent

Parenchyma - in concentric or broken tangential lines, indistinct on cross section; distinct because of darker colour than background on longitudinal surfaces, where an irregular pattern is produced.

4. Physical properties

Weight: 34-45 lb. per cubic foot at 15 per cent moisture content.

Hardness: moderate, about equal to that of English Oak.

Shrinkage - above average. From green state to about 11 per cent moisture content:

tangentially 5/8 inch per foot

radially 3/8 inch per foot

Distortion: There is some tendency towards distortion in seasoning unless the logs are suitably converted, preferably by the semi-quartered method. But given this, and careful seasoning, the wood has been observed to give satisfactory results in good class joinery trials over a period of eight years.

Durability: Resistance to fungal and insect attack moderately high. Heartwood moderately durable in contact with the ground. Constructional

material in exposed situations very durable. Not readily attacked by termite. Not resistant to marine borers.

Resistance to impregnation with preservatives: Sapwood readily amenable to impregnation, but heartwood extremely resistant.

5. Mechanical properties

In resistance to static bending, shock load and splitting, the timber is slightly superior to English Oak.

It has poor bending qualities and cannot be compressed without buckling.

6. Working qualities

Works with moderate ease in most operations with both hand and power tools and is comparable with medium quality English Oak in resistance to cutting.

Saws: Flat-sawn green wood may cast off the saw.

Planing: For the dressing of seasoned stock cutter knives require to be kept in good condition while the rate feed should be relatively low in order to obtain the best results. Unless this care is taken pronounced pick-up may occur in the stripe figure of fully quartered stock, thus causing extra sanding prior to finishing and polishing. If obtainable, a cutting angle of less than 20 degrees materially improves the finished surface.

Drilling: The wood tends to tear at the exit hole and the wood must be carefully supported to minimize damage.

Turns: readily to a reasonably good finish.

Stains and finishes: well but quarter-sawn stock requires much sanding to remove 'picked-up' grain.

Nailing: The wood is rather hard to nail and, in dimension stock, nails once driven are very difficult to pull.

Where the darker coloured gum streaks are present the associated calcium carbonate tends to dull the cutter edges.

7. Laboratory tests:

(a) One small log of Santa Maria was tested at Imperial Institute, London in 1922.

(b) A preliminary test on 5 logs was made at the U.K. Forest Products Research Laboratory in 1932 and a major test on some 1400 cubic feet in 1933.

(c) Four bolts from different parts of the same tree were tested at Yale School of Forestry in 1932.

Trade trials: Material from the major test was tried by woodworking firms.

(a) Veneer and plywood

The interlocked grain persisting throughout the wood caused tearing of rotary cut-stock. Gum streaks were present. Veneers showed a tendency to buckle and in drying the interlocked grain caused splitting both at the ends and middle of the sheets.

Plywood showed open end-split, torn grain and gum streaks while distortion was pronounced.

(b) Plywood

A short log taken from the parcel described in 7(b) above was examined by a firm of decorative veneer manufacturers, who stated that interlocked grain was present and caused tearing of rotary cut veneer, and that gum streaks were present, thus causing a tendency towards splitting and buckling in the veneer when drying.

Nevertheless plywood made up from these veneers and kept under observation for some years has remained flat and shows a fairly decorative appearance.

For future plywood manufacture care should be taken to select at source logs which are the most suitable in size and shape, and as far as possible free of the defects mentioned.

(c) Tris is as general purpose furniture

A favourable report was made on a parcel of about 500 cubic feet by a furniture manufacturer. The wood was used for turnings, light articles of furniture, small tables, chairs, mattress sides, couches. It was noted that the condition was very fair and comparable with other commercial Empire timbers.

Defects and distortion after resawing were not more than 5 percent, which is reasonable. The timber had good 'standing' qualities during manufacture and final assembly.

ANNEX VI

Specific opportunities for exchange of wood products
within the Caribbean Community

1. Antigua

1.1 Antigua's lumber imports potential from Guyana and Belize

Of the nearly 25 million BM (about 59,000 m³) lumber imported by Antigua in 1984, only an insignificant fraction (61,365 BM or 143 m³) was supplied by Guyana, down from 383,962 BM (906 m³) in 1981, while Antigua's total lumber imports had increased by about 393 percent in the same period. An even more drastic downtrend developed in the same period in lumber imports from Belize (down to nil from 413,301 BM or 975 m³) although minor quantities of lumber might have been imported through Puerto Rico from Belize, as is currently the case in 1987.

There is therefore a significant scope for promotion of lumber imports from both Belize and Guyana. In particular, imports from Belize could be made very attractive by the establishment by a lumber agent such as the Costel Commercial Corporation* of a lumber depot in Puerto Rico, thus taking advantage of the weekly frequency of the TMT's Shipping Service between Puerto Rico, Antigua and other Leeward and Windward Islands. Perhaps a similar arrangement could be introduced with regards to lumber imports from Guyana, but with a depot in Barbados and utilizing the same TMT's weekly shipping service.

Keen interest was expressed in the course of the mission on the part of furniture manufacturers in utilizing the following timber species:

- Mahogany and Caribbean Pine from Belize;
- Mahogany substitutes, Hububalli and Pine substitutes from Guyana.
(Crabwood would not be suitable for use in Antigua unless properly dried before shipment, because warping problems have been experienced with sample shipments of this lumber.

Pine and Pine substitutes would be required for use in hidden framework of upholstered living room chairs.

1.2 Specific requests for quotations/samples for Guyana and Belize timber species:

Requirements of Benjamin Woodwork Shop, Bennett Street, Villa Area, St. John's, Antigua, Telephone: 23431:

- (a) Hububalli samples as follows:
5 pieces 2" x 10" x 6'
- (b) Quotation CIF for trial order of 200 BM of Hububalli as per above sizes.

* Costel Commercial Corporation
65 Infanteria Entrade, Carolina
P.O.Box 899, Carolina
Puerto Rico 809
Tel.: 726 7633

- (c) One set of small samples of main Guyana timber species suitable for furniture making.

Requirements of Renford Woodworking, Nevis Street, St. John's Antigua, W.I., Telephone: (809) 46 24537

- (a) Hububalli and Determa lumber; samples as follows:
- 5 pieces each species, size 1" x 6" x 6'
- 5 pieces each species, size 1" x 4" x 6'
- 5 pieces each species, size 1" x 10" x 6'
- (b) CIF quotation for trial order of Determa and Kereti Silverballi lumber as per above sizes for a total shipment of 13,985 BM (33 m³);
- (c) Trial order: CIF quotation for one 20 ft. container (13,985 BM) of Mahogany from Belize as per sizes in (a) above.

Requirements of Etinoff Enterprises Ltd., Cassada Garden, Antigua, Telephone 20793

- (a) Trial order. CIF quotation for one 20 ft. container (13,985 BM or 33 m³) of Santa Maria lumber, sizes: 1" x 6" x 6'
1" x 4" x 6'
1" x 10" x 6'
- (b) Quotation as above for Caribbean Pine lumber.

1.3 Antigua's potential for importing semi-finished furniture from timber producing CARICOM countries

The very high wage rate for skilled woodworkers in Antigua - EC\$ 6.25 or US\$ 2.30 per hour, second only to Trinidad - prevents this sector from catering for the furniture needs of the low-income groups. In fact, the Plastic Foam and Furniture Company is presently importing badly-made, low-cost furniture from Brazil to fill this gap.

Thus, there should be a good potential for Antigua to import low-cost furniture either in parts or in semi-assembled form from selected furniture plants in CARICOM' countries such as Jamaica, Guyana and possibly Dominica who offer the advantage of lower wage rates and local timber resources. The following timber species could be utilized in this respect:

- Determa and Hububalli from Guyana;
- Spanish Elm from Jamaica; and
- Gommier from Dominica.

In view of Antigua's ongoing considerable, tourism-related, building activities, it might also be worth investigating the possibility of importing panel doors and flush doors from the following CARICOM sources:

- (a) E.H. Charles and Co. Ltd.
P. O. Box 213
Roseau, Dominica, W.I.
- (b) Caribbean Woodcraft Manufacturing Co. Ltd.
P.O.Box 38
Kingston 10
Jamaica, W. I.

1.1 Special request for importation of furniture components by buyers in Antigua.

Requirements by Plastic Foam and Furniture Co. (Furniture manufacturer and importer), P. O. Box 1050, Antigua, W. I., Telephone: 462-1452

CIF quotations for the following furniture items:

- (a) 5-piece dining room set (one square table and four chairs);
- (b) 7-piece dining room set (one rectangular table and six chairs);
- (c) 5-piece living room set (one 3-seater settee, two easy chairs and one coffee table) excluding cushions;
- (d) beds of width 4'5" and 3'5" (headboard, footboard and two side rails)

Quotations for the above should include the following alternatives:

- (a) Furniture supplied in the form of machines parts;
- (b) Furniture supplied in the form of parts and sub-assemblies such as individual parts of chairs (back rests, back rails and front rails) to be combined to pre-assembled side frames.

The furniture could be supplied either unfinished or lacquered. Some of the potential suppliers are listed below:

Fairway Furniture Factory Ltd.
Nanse Pen, Weymouth Close
Washington Gardens
Saint Andrew, Jamaica, W.I.
Tel.: 923 5419

Ogheden Industries Ltd.
Cockrane, Roseau
Dominica, W.I.
Tel.: 91285

Precision Woodworking Ltd.
35 Industrial Estate
Ruimveldt, Georgetown
Republic of Guyana
Tel.: 56366
Tlx: 3043 GY

2. Barbados

2.1 Barbados' lumber imports potential from Guyana and Belize

Through the years Barbados has remained the main importer of Guyana lumber in CARICOM and the fifth main destination of total lumber exports from Guyana. The best known species from Guyana are Purpleheart and Greenheart which, however, are exclusively used in building construction, with Purpleheart being particularly utilized in various joinery work such as staircase components, window sills, etc.

Despite Purpleheart's attractive shade and the ease with which it can be finished, none of the furniture manufacturers contacted would use it as furniture timber because of its blunting effect on tools. This problem, however, could be minimized by using carbide-tipped tools.

Contrary to the situation in Trinidad, where local Crabwood is already in use in the furniture industry, Barbados furniture manufacturers are familiar neither with this species nor with the Determa species. Samples of these two timbers had been provided from Guyana to some furniture manufacturers but no follow-up ever materialized on the part of potential suppliers.

As in Trinidad, keen interest was shown on the part of furniture manufacturers as well as of lumber importers in placing orders for the following timber species: Hububalli, Determa, Crabwood, Locust and Kerti-Silverballi.

Hububalli was seen as having a good potential in furniture making on account of its attractive grain, easy finish and its high suitability for turned furniture components. A major lumber importer, Blades and Williams Ltd., saw a considerable potential in using Hububalli for panel-door production. Panel doors are currently manufactured locally and are also imported from the Taiwan Province of China, Brazil and Costa Rica. The introduction of Hububalli in door production would offer the possibility of Guyana supplying dimension-stock components - rather than just sawn or dressed lumber.

A unanimous interest was shown for Determa and Crabwood in view of their potential for substituting Mahogany. One particular furniture plant, Kirton's Furniture Ltd. would consider purchasing actual machined parts and turnings made of either species.

A furniture and door manufacturer, Lashley and White Ltd., would consider utilizing the Kerti-Silverballi and Simarupa species as a substitute to Pine in flush-door manufacturing, provided these species from Guyana can compete in price with Pine supplied from the USA and Honduras. A particular plant, Hampden's Furniture, expressed interest in the Locust species in addition to Determa and Crabwood. According to test results provided by the Guyana Forestry Commission, Locust has mechanical and workability properties suitable for furniture making. However, further tests should be carried out to validate the original findings in view of the fact that some end-users have encountered difficulties in the utilization of this species. As for Crabwood, it is recommended that it be dried prior to shipment to about 15 percent moisture content in order to minimize warping problems encountered by some of the end users.

Imported panels of medium density fibreboard (MDF) faced with Mahogany veneer, are being introduced in furniture manufacture although not to the same extent as in Trinidad and Tobago and with a lower degree of finishing standard. The same result is expected to be brought about by recent introduction of imported melamine-faced particle board in the manufacture of

panel furniture. The introduction of these new wood based panels is bound to affect, in the long term, the demand for solid timber, and in particular, for lumber components of large widths.

Some furniture manufacturers are already familiar with the Gommier species from Dominica and Santa Maria from Belize, and it appears that both species would be well received for wide utilization in the furniture industry. Santa Maria is at present being exported to the USA by one of the largest Belizean sawmills.

2.2 Specific requests for lumber quotations/samples

(a) Requirements of Kirton's Furniture Ltd.

P.O.Box 486, Cluster Block
Harbour Industrial Park, Barbados
Tel.: 426-4594

- (i) CIF quotation for turned and sanded spindles of 12" length in Crabwood, Determa and Santa Maria as per samples. Quantity required: 6000 pieces per year.
- (ii) CIF quotation for Crabwood, Determa and Santa Maria sawn lumber as follows:
 - thickness: 1", 2", 3", 4"
 - width: random 6" to 12"
 - grade: prime and standard
 - Length 8' and up
 - moisture content: 12 to 16 percent
 - quantity required: 7,204 BM (17 m³)
- (iii) CIF quotation for Crabwood, Determa and Santa Maria lumber with the following specifications:
 - cross section: 2" x 2" and 3" x 3"
 - length: 20"
 - Grade: prime
 - moisture content: 12 to 16 percent
 - quantity required: 4,238 BM (10 m³)
- (iv) CIF quotation for Crabwood, Determa and Santa Maria sawn lumber as follows:
 - cross section: 4" x 4"
 - length: 6"
 - grade and moisture content as above
 - quantity required: 2,542 BM (6 m³)

(b) Requirements of Blades and Williams Ltd. (Lumber importers),

P.O.Box 279, Bridgetown, Barbados, Tel.: 80942-62691, Tlx: 2320

- (i) Trial order, CIF quotation for sawn lumber Hububalli, Determa and Santa Maria species for panel door construction. Assorted sizes as follows:
 - 2" x 5 1/4" x 7'3" (door slides)
 - 2" x 8 1/4" x 3' (top and bottom rails)
 - 2" x 3 3/4" x 3' (intermediate horizontal rails)
 - 2" x 3 1/4" x 18" (central vertical lines)

sizes of in-fill panels will be given later

grade: prime

quantity: 60,000 BM (141 m³)

(ii) Lumber samples of Determa, Hububalli, Crabwood and Santa Maria as follows:

size: 2" x 6" x 12'

quantity: 5 pieces of each species

(c) Requirements of Lashley and White Ltd. (Furniture and door manufacturer) Chelsea Gardens, Chelsea Rd., St. Michael, Barbados, W.I., Tel.: 77959

(i) CIF quotation for supply of partly dressed lumber for flush-door construction specifications:

size: 1 1/8" x 1 1/2" x 7' or 14' long

wider faces to be planed to finish thickness of 1 1/2"

narrower faces not to be planed

species: Simarupa and Kereti Silverballi as a substitute to White pine

Moisture content: 12 to 15 percent

quantity required: 11,000 BM (approx. 26 m³) per month

3. Jamaica

3.1 Potential for lumber imports from Guyana and Belize

Unlike the other major lumber importing countries in CARICOM, such as Trinidad and Tobago and Barbados, Jamaica has so far provided only a minor market outlet for Guyana timber products. In fact, no timber exports to Jamaica were recorded in 1986 by the Guyana Forestry Commission other than 183 m³ (77,555 BM) of shingles.

However, the increasing difficulty in obtaining a steady supply of Brazilian Mahogany and the inadequate supply of lumber from local forests seems to provide an incentive for a long-term lumber supply link between the two countries. In particular, both the industry and the JIDC looked favourably into the possibility of importing Mahogany substitutes - such as Determa and Crabwood (Andiroba) from Guyana and Santa Maria from Belize - so as to allow the scarce supplies of Brazilian Mahogany to be reserved for the production of furniture for export to the USA, a market which would resist the introduction of Mahogany substitutes.

As in the other two major regional markets, Trinidad and Barbados, the interest in Guyana species in Jamaica centered on two species seen as substitutes to Mahogany, that is Determa and Crabwood and, in addition, Hububalli. However, the Fairway furniture Company had obtained good results in testing the Guyana species Locust and expressed interest in experimenting with this species of lumber in actual production of furniture and utility wooden items, such as bowls, trays, etc.

Jamaica was also the only country of the eight visited in the course of the mission where two furniture manufacturers, the MW Furniture Ltd. and the

Modern Furnishing Ltd., found the Purpleheart samples shown to them interesting and requested quotations for this particular species.

The potential of further developing lumber imports from Belize is highly enhanced by Jamaica's proximity to that country, the availability of direct shipping links and the familiarity of the market with Santa Maria - a main hardwood species exported by Belize.

3.2 Requests for quotations (lumber and dimension stock)

(a) Requirements of Kreative House

Mr. D. C. Orane
Managing Director
67 Waltham Park Road
Kingston 11, Jamaica
Telex: YP SEA 2211

Quotations CIF for Mahogany, Determa, Crabwood and Santa Maria
- Size: 1" and 2" thick, width 8" and up (8" minimum length)
- MC: 20 to 25 percent
- Trial order quantity: 1000 BM

(b) Requirements of the Caribbean Woodcraft Manufacturing Company

Mr. J. Reynolds
Managing Director
P.O.Box 38
Kingston 10
Jamaica
Telex: CARIWOOD 2207

(i) CIF quotation Kingston for the supply of dimension stock in Mahogany, Determa, Crabwood and Santa Maria, for the manufacture of panel doors

Each panel door consists of a set of dimension stock as follows:

	<u>Quantity per door</u>
1. Stiles: 1 7/8" x 5 3/8" x 85"	2 pieces
2. Top rail: 1 7/8" x 4 5/8" x 33"	1 piece
3. Bottom rail: 1 7/8" x 8 3/8" x 33"	1 piece
4. Horizontal rail: 1 7/8" x 3 5/8" x 33"	2 pieces
5. Horizontal rail (central): 1 7/8" x 3 5/8" x 33"	1 piece
6. Vertical rails: 1 7/8" x 3 1/8" x 18"	4 pieces
7. Panels: 1 1/4" x 12 1/2" x 16"	8 pieces

The quotation should cover the supply of 10,000 sets of components to be delivered in one or two shipments. Moisture to be 8 to 10 percent maximum.

Should the supplier not be in a position to supply kiln dried stock, a quotation could be submitted instead for rough lumber air dried to 20 - 25 percent MC. The corresponding sizes are:

	<u>Quantity per door</u>
1. 2" x 5 1/2" x 85"	2 pieces
2. 2" x 4 3/4" x 35"	1 piece
3. 2" x 8 1/2" x 35"	1 piece
4. 2" x 3 3/4" x 32"	2 pieces
5. 2" x 3 3/4" x 35"	1 piece
6. 2" x 3 1/4" x 20"	4 pieces
7. 1 3/8" x 12 5/8" x 20"	8 pieces

(ii) CIF quotation Kingston for the supply of Caribbean Pine sawn lumber for furniture manufacture. Specifications are:

Sizes: current standard sizes

Grade: firsts and seconds

Moisture content: 20 to 25 percent

Quantity: Annual requirement 300,000 to 500,000 BM

(c) Requirements of Kingston Heirlooms Ltd.

(Furniture Manufacturers)

Mr. T. Smith, President

38 Red Hills Road

Kingston 10, Jamaica, W.I.

CIF quotation for the supply of Mahogany, Determa, Crabwood and Santa Maria sawn lumber of the following specifications:

Size: 4" x 4" x 42" and 6" x 6" x 43"

Grade: clear four sides

Moisture content: 20 percent

Quantity: 30,000 pieces per year delivered in three shipments.

4. Saint Lucia

4.1 Potential for lumber imports from Belize, Dominica and Guyana

Unlike most other CARICOM markets where Mahogany is a dominant hardwood species, Saint Lucia's yearly Mahogany imports are very limited (1985 figures: 44,923 BM or 103 m³), whereas the imports of other non-coniferous species have increased steadily from 378,029 BM (892 m³) in 1983 to 1.3 million BM (3,291 m³) in 1985. Therefore, there should be a good potential for importing hardwood species other than Mahogany, such as Determa from Guyana, Santa Maria from Belize and Commier from Dominica.

As for developing the potential of importing Pitch and Yellow Pine substitutes such as Caribbean Pine from Belize and Simarupa from Guyana, a lot will depend on the capability on the part of the two CARICOM suppliers to match the current CIF price of imported Pitch and Yellow Pine (US\$ 0.50 to US\$ 0.65).

Lumber importers to contact are:

- (a) Saint Lucia Furniture Manufacturers' Association
P. O. Box 744, 59 Brazil Street
Castries, Saint Lucia, W.I.
Tel.: 22221, Cable: SLFMA
- (b) A. F. Valmont & Co. Ltd.
Importers of lumber, panels, doors and plywood)
P.O.Box 172, Castries, Saint Lucia, W.I.

5. Saint Vincent

5.1 Potential for lumber imports from Guyana, Belize and Dominica

Contrary to the prevalent trend in other CARICOM countries, only 36 percent of St. Vincent's total lumber imports consist of coniferous species, whereas mixed hardwood takes 45 percent of the total. Moreover, one particular hardwood species from Guyana - Crabwood - has already found acceptance in the building industry. Thus, there seems to be a favourable climate for the introduction of Mahogany substitutes such as Determa from Guyana and Santa Maria from Belize. A very keen interest was expressed in Hububalli, both on the part of manufacturers and lumber importers. One particular furniture manufacturer, O. T. Mayers, was impressed with samples of Gommier and planned to visit Dominica to negotiate supplies of this species.

5.2 Specific requirements for lumber quotations and samples

- (a) Requirements of Builders' Mart Ltd. (lumber importers)

P. O. Box 362, St. Vincent, W.I., Tel. 71248

Samples of Hububalli and Determa

- 5 pieces each species, size 1" x 6" x 6'
- 5 pieces each species, size 1" x 10" x 6'

CIF quotation

- (b) Requirements of Sutherland Furniture

P. O. Box 1059, St. Vincent, Tel. 61198

Samples of Hububalli, K-Silverballi and Santa Maria

- 6 pieces size 1" x 2" x 8'
- 3 pieces size 3" x 3" x 7'
- 3 pieces size 2" x 7" x 7'

- (c) Requirements of Corea's Trading Ltd. (lumber importers)

P.O.Box 122, Kingstown, Tel. 61201

Quotation CIF for Determa and Hububalli

- Thicknesses: 1", 1 1/2", 2", 3"
- lengths: 8' to 16'
- widths: 6", 8", 10", 12"
- grade: prime
- moisture content 15 to 20 percent
- quantity: one 20 ft. container (33 m³)

Quotation CIF for Santa Maria species (same specifications as above).

6. Trinidad

6.1 Lumber import potential from CARICOM sources

The increased price and the scarcity of supply of Brazilian Mahogany provides a major opportunity for increased lumber imports from CARICOM sources such as Guyana, Dominica and Belize.

A keen interest was identified during the mission on the part of both furniture manufacturers and lumber importers in the introduction in the market of the following species from Guyana:

- (a) Hububalli
- (b) Determa
- (c) Crabwood (to be dried to 20 percent moisture content prior to shipment)
- (d) Kereti Silverballi
- (e) Simarupa

Hububalli seems to have the largest potential as a furniture timber and is seen as an attractive alternative to local Teakwood on account of its pronounced decorative grain and apparent ease of finish.

Determa and Crabwood are seen as possible alternatives to Brazilian Mahogany. Kereti Silverballi and Simarupa were considered by a major lumber importer, Dansteel Ltd., as possible alternatives to White Pine.

Practically all furniture manufacturers rejected the possibility of a wide use of Purpleheart as a furniture timber due to its hardness and resulting machinery difficulties, such as abnormal wear of cutting tools. However, limited quantities of Purpleheart spindles have been imported for use in staircase handrails. The possibility should be advertised to furniture manufacturers of producing knock-down bookshelves incorporating Purpleheart spindles - which are easy to machine - and self panels made of species of contrasting colour, such as local Pine.

6.2 Specific requests for lumber quotations and samples

- (a) Requirements of Specialist Furniture Ltd. (furniture manufacturer)
Lot 26A, O'Meara Industrial Estate,
Arima, Trinidad, Tel.: 642-3183
Cable: SPECFUR

CIF quotations are required as follows:

Determa, Crabwood, Hububalli, Simarupa and Kereti Silverballi species:

Thickness range: 7/8", 1", 1 1/2", 2", 3", 4" (square)

Width range: 8", 10", 12"

Lengths: random starting from 6'

Moisture content: 12 to 15 percent

Grade: No. 1 common and better

Quantity: 150,000 BM (354 m³)

- (b) Requirements of Dansteel Ltd. (lumber importers)
2 and 1/2 Miles South Trunk Road
La Romain, via San Fernando, Trinidad
Tel.: 652 - 8562, Telex 32337 DANSTEL WG

CIF quotation is required as follows:

Species: Simarupa and Kereti Silverballi (as possible substitutes to White Pine)

Should quote both rough and dressed lumber

Thickness range: 7/8", 1", 1 1/2", 2", 3", and 4" (square)

Squares: 3" x 3" and 4" x 4"

Random widths

Random lengths 6' and up

Moisture content 12 to 15 percent

Grade: No. 1 common

- (c) Requirements of Bwagwansingh's Ltd. (lumber importers)
1 Development Circular Road, Beetham Highway,
Sea Lots, Port of Spain, Trinidad, W.I
Tel. 62 36731

CIF quotation is required as follows:

Species: Determa and Crabwood

- (d) Requirements of Trans Antilles Agencies (lumber importers)
P.O.Box 1176, Trinidad
Tel.: 642 4404

CIF quotation is required as follows:

Species: Determa in rough lumber form

Thickness: 1", 1 1/2", 2", 3"

Squares: 3" x 3" and 4" x 4"

Width: 8" and up

Length: 6' and up

Quantity: 50,000 BM (117 m³)

6.3 Furniture and furniture parts import potential

Despite the trade imbalance between Guyana and Trinidad and Tobago, Trinidad's current Government policy prevents the imports of finished wooden furniture from whatever source through non-tariff barriers. In fact, furniture is listed among the products in the import 'Negative List'. Moreover, during discussions at the Industrial Development Corporation (IDC) it emerged that the Government would equally discourage the imports of furniture parts for assembly in Trinidad, as this would deprive the local furniture industry value-added opportunities in a situation of drastic decline in the capacity utilization of the sector.

The Government would give favourable consideration to importing furniture stock - that is, furniture parts dried, planed and trimmed to rough sizes - for further processing in Trinidad, as this would avoid incurring waste normally associated with processing of rough lumber. However, of all the furniture manufacturers contacted, only one - the Specialist Furniture Ltd. - expressed interest in importing dimension stock, on the longer term.