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ENGLISH

ASSISTANCE TO THE FURNITURE INDUSTRY

BARBADOS

Technical report: Short appraisal of the potential for
export of wooden furniture from Barbados *

Prepared for the Government of Barbados
by the United Nations Industrial Development Organization

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INTRODUCTION

A UNIDO staff member, Antoine V. Bassili, Senior Industrial Development Officer in Agro-based Industries, stopped over in Barbados for three days (from 28 to 30 April 1986) to provide a quick assessment of the country's furniture industry and to recommend measures for its rapid development with a view to enable it to enter export markets.

Brief review of current situation

Like in most developing countries, specially in those with limited local markets because of their small populations, the furniture industry of Barbados has remained at the "mechanized craft" level.

The industry managed to enter, to some extent, the Caribbean market, notably Trinidad and Tobago. The reduction of world oil prices has affected the Trinidad market, including exports from Barbados. To enable it to overcome this shortfall and facilitate the entry of furniture produced in Barbados in the United States, the industry has, with the collaboration of the Barbados Development Bank, created the Barbados Furniture Trading Company Ltd. (BFTC).

This company, grouping some 34 manufacturers, has obtained relatively large orders from an US company (Pulanski Co.) for reproduction pieces, from Mahogany, to be sold "in the white". Some of these manufacturers have participated in the production of the first order, while six are currently producing to deliver the second order. Considerable delays have occurred in delivering this second order.

At the time of the visit very little work was being done on the order for Pulanski, in spite of the fact that the delivery dates foreseen had been passed.

The Chairman and General Manager of the Barbados Furniture Trading Company stated that, since the industry seems to be unable to deliver the goods ordered by Pulanski, they were seriously considering expanding the role of BFTC into manufacturing. They plan not only to kiln-dry the lumber, but also to produce blanks in a "rough mill". They are also considering a plan to establish and operate a "finish mill" to produce components and even assemble them.

FINDINGS

The findings enumerated below are based on visits to four furniture factories and discussions with their officials as well as with officials of the Barbados Furniture Trading Co. Ltd. and the Barbados Development Bank. The list of persons met and their affiliation is given in Annex 1.

Managerial Attitudes

Discussions with management gave the impression that, except for Legacy Furniture Ltd., they were not fully committed to enter the export market. This could be attributed to the fact that they consider the prices obtained from Pulanski to be too low, even if productivity were increased to an internationally acceptable level. Furthermore, because of their current small capacity, they did not wish to embark fully in the export business to the detriment of their traditional local clients lest they lose them to their competitors.

Furthermore, they were wary of the proposed plans of the Barbados Furniture Trading Co. to enter not only the kiln-drying of lumber but also the production of "blanks" and eventually also the full production of components, thus becoming not the marketing aid originally intended but a fully fledged competitor benefitting from financing facilities at concessional rates given by the Government.

Again, except for Legacy, they did not give the impression that they realized the changes that they had to make in their operations to pass from "mechanized craft" to full serial production.

Physical Facilities

The physical facilities of three of the plants visited, while being adequate, were laid out for craft operations, with the machine serving the craftsmen and not the operator serving the machine. Those of the fourth (Legacy Furniture Ltd.) were being modified and expanded for serial production. While the layout was good, the company would probably face problems in assembling the goods produced as not enough space seems to be available.

With respect to equipment available, in three of the four plants, it consisted of general purpose machines, with some shortcomings in their selection. Two of the plants lacked installations for dust extraction. The equipment of Legacy is well balanced and well suited for serial production of reproduction furniture. It is far more sophisticated than any found in the other factories and expected to be found in plants of this size in developing countries. (For example, they have a numerically controlled router and a computer to prepare the tapes and plan production, control inventories, etc.)

Factories visited (with exception of Legacy) lacked the simple pneumatic aids for hand-sanding, driving in screws, assembly clamps, and the simple pneumatic "low cost automation" built into the older single purpose woodworking machines to upgrade them and increase productivity.

None of the plants visited had a kiln. However, they all had climate-controlled storage rooms for kiln-dried lumber, blanks, machined components and assembled pieces prior to shipment.

Internal transport facilities in all factories - except Legacy, which was not yet operating but they were manufacturing wheeled pallets - were haphazard. All plants had some pallets, but their use was haphazard.

Human resources

All factories visited seem to have qualified skilled workers. Like in almost all developing countries they lacked qualified middle management. The training provided is for cabinet makers and joiners. No training seems to be given in machine woodworking. There seems to be no on-the-job training in specialized fields. Products produced for the export market had been designed by a professional designer, but those produced for the local market seemed to be copies of traditional designs. (No typical or innovative products were seen during the short stay in Barbados). Certain of the more intricate hand-carved components in the Pulanski order were delivered finished by the client to be incorporated in the assembled product.

Technology used

Products are manufactured using basic woodworking machines but with considerable hand-finishing. Batches are small. Little or no use is made of jigs. Productivity could be increased by using low cost automation. Plant layout is not suited for industrial production. No pneumatic hand tools are used for sanding. Except for Legacy, none of the plants had higher production machines such as double end tenoners, multi-head boring machines, and copying lathes.

Raw material supply

Basically all the requirements in lumber and wood based panels are imported (mainly from Brazil).

Product range

The goods produced for the local market are commensurate with the per capita income in Barbados, while those produced for the US market are designed for the upper range price bracket.

Distribution channels

Local markets are serviced either through direct sales, or through sales to retailers and department stores. Export sales are made through the Barbados Furniture Trading Company Ltd.

CONCLUSIONS AND RECOMMENDATIONS

Managerial attitudes

It is difficult for the owners/managers of the firms to recognize their weakest points and to determine an order of priorities for future investments and improvements in their firms.

This could be overcome by the following two activities:

1. A qualitative survey of the 34 furniture factories and workshops shareholders of Barbados Furniture Trading Company Ltd. This survey could be based on answers given by managers to the questionnaire reproduced in Annex 2.1. These replies could be compiled by a local technician, but a one-month to six-week assignment by a consultant familiar with conditions in a wide range of developing countries would be needed once the data has been compiled from the questionnaires, for the consultant to assess these plants qualitatively. He could thus draw to the attention of each firm those aspects which, to his eyes, are below par as far as an export-oriented factory is concerned. (The owners do not have the broad exposure to be able to do this on their own). It would enable each owner/manager to assess his strengths and weaknesses and draw up a long range development plan, identifying his priorities for future investments.

2. Managers can be made aware of how to overcome their shortcomings, and their foremen and other technical staff can be taught important aspects of industrial production through a three-week seminar on aspects of serial production of furniture. A team of say four or five specialists would cover the various weaknesses identified in the survey carried out under 1. (above). Over and above the lectures, they would be available to provide technical assistance to the various plants on an ad_hoc basis during their stay in Barbados.

Physical Facilities

Advice should be sought in plant layout. Due consideration should be given to ensuring that sufficient space is allocated for work in process.

Internal transport in the plants should be developed throughout the factories. Management should realize that adequate internal transport is a must. No value is added in the production process through moving components from the floor near a machine to the floor near the next machine. This necessitates smooth and level floors and the marking off of aisles which should be kept clear at all times.

Dust extraction systems should be installed in all plants. Care should be taken to separate sander dust from other types of waste (sawdust, planer chips, etc.), since sander dust is prone to explosion because of its fineness.

1/ This questionnaire was developed by a UNIDO consultant in furniture production, Desmond P. Cody, and used in a Caribbean country.

Compressed air installation should be generalized to permit an increased use of pneumatic devices to be incorporated in the existing machines (low cost automation) to increase productivity. Pneumatic assembly clamps should be generalized to speed up assembly and make it more precise. (It must be realized that the repetitive nature of serial production justifies such investments).

Human Resources

Training in machine woodworking should be provided side by side with that in carpentry and joinery currently given to school leavers.

In order to permit the Barbados furniture industry to increase the value of its exports, consideration should be given to producing more carved work. This would call for the training of carvers by existing vocational training institutes. Similarly, the skills needed to produce marquetry work (intarsio) should be introduced in Barbados. This would permit Barbados to export high value products and benefit from its relatively lower wages.

Short intensive training should be arranged by the Barbados Furniture Trading Company for the middle management of member firms. They would be more specialized and go to greater depths than the three-week seminar referred to above and would start where the seminar left off. They could cover such fields as design of jigs, estimating production times and waste factors, production planning (machine loading) and control, etc.

The training of designers - or the identification of persons with a potential to design furniture - could be carried out through a competition open to all citizens of CARICOM countries to design a range of furniture. These designs should be evaluated by an international jury who could also, on that occasion, discuss with each of the participants the shortcomings of his project thus help correct the mistakes made. This will permit the furniture producers in Barbados to find out whether they have locally available design capability which would reduce their dependence on foreign designers or having to produce to their clients' designs. It could also identify local talent that could best benefit from studies abroad.

Technology used

More emphasis should be placed on obtaining interchangeable parts, i.e. parts that have been machined accurately, using jigs, when appropriate, that do not need any hand-finishing prior to assembly. This can be obtained by using precise machines, ensuring precise set-ups and using accurate and appropriate jigs whenever possible. UNIDO publications on these two topics exist^{2/} and should be used whenever possible.

Similarly, the productivity of the existing basic woodworking machines could be improved by adding to them certain pneumatic devices to eliminate operator fatigue, improve precision and safety, etc. Some 50 such applications have been described in detail and corresponding technical designs given in a UNIDO publication.^{3/}

^{2/} Chapter 2 of document ID/247 (Technical Criteria for the Selection of Woodworking Machines) deals with checking of machine precision while document ID/265 (Manual on the Production of Jigs) deals with jig production.

^{3/} Manual on Low Cost Automation for the Furniture and Joinery Industry Document ID/154.Rev 1).

The assembly process should be studied in depth and investments made in developing and producing the necessary assembly clamps and work stations. These should be "specialist", i.e. the sub-assemblies are each assembled at one station which should be of appropriate height and size. Pneumatic or electric tools used in assembly should be hung on a spring with a counterweight and moving on a monorail so as to reduce operator fatigue. Adequate spaces should be available to store all the necessary hardware, and the assembled items should be moved on pallets with, if necessary, padded surfaces to reduce risks of scratching.

If the plants were to produce for export (i.e. have large batches in production) on a more than passing basis, plant layout in most plants will have to be improved.

Production planning and control, and quality control should also be introduced and developed to suit local conditions.

Raw material supply

The idea to centralize purchases and provide kiln-drying services at the Barbados Furniture Trading Company's facility at Spring Garden is a sound one.

It is recommended to study carefully the optimal capacity of the proposed kilns bearing in mind that as a result of having to dry several species and/or several thicknesses, different kiln-drying schedules for each are necessary. This calls for a battery of small-sized kilns rather than a few larger ones. This permits relatively small volumes to be made available to the manufacturers at relatively smaller intervals, hence reduces the risk of moisture uptake.

The type of kiln should also be investigated in depth. Because of the relatively high cost of electric power in Barbados it is recommended that an in-depth study between the conventional (steam-heated) kilns and the dehumidifier-type kilns be done. In case that the Barbados Furniture Trading Company decides to invest in a rough mill, the availability of sawdust, off-cuts and edgings should be taken into account when selecting the kilns. It would be advantageous to call upon a specialist consultant for a one-month split-mission assignment in Barbados (two weeks to determine the specifications of the kilns and two weeks to evaluate the bids)^{1/} to advise in this highly specialized field.

The proposal for the Barbados Furniture Trading Company to produce and deliver to the industry rough milled blanks from their Spring Garden facility is a sound one worth pursuing. It will ensure better costing by the Trading Company for all export orders, since it - and not the manufacturer - will bear the cost of wastes. It would also ensure that waste factors are reduced because in cutting the blanks to length a wider range of sizes would be available to the Trading Company than to individual companies. This will allow them to reduce wastes because of the greater number of permutations and combinations available.

As in the case of the kilns, it is recommended to call upon the services of a specialist consultant to draw up the technical specifications and subsequently for the evaluation of bids. These tasks could be carried out in a one-month, split-mission assignment.^{1/}

^{1/} These durations include travel times.

Long term assistance - of one year - would most likely be needed by the Barbados Furniture Trading Company to start up and operate its kiln-drying and rough mill facilities at Spring Garden. The consultant should have had experience in operating a similar facility in a developing country.

Product Range

The decision to produce for the higher priced bracket and, in order not to have to invest in surface finishing equipment, ship the products "in the white", is a sound one. (The only possible disadvantage is that unfinished wooden products are more likely to re-absorb moisture when stored in a tropical climate. This is estimated to reach up to one per cent per week).

Attempts should be made to export products with the maximum possible value added. This would signify that emphasis should be placed on producing products with as much hand-carving (and, if appropriate, marquetry) as possible. Specializing in reproduction furniture would also be a safer bet than in the modern "fad" type of furniture where styles change often, resulting possibly in additional investments for equipment.

Marketing channels

Although the contracts with Pulanski represent a useful entry in the United States market, the furniture producers in Barbados should not "put all their eggs in one basket", and should, sooner or later, establish other contacts.

ANNEX 1

List of persons met

<u>Name</u>	<u>Function</u>	<u>Company</u>
Mr. Roach	Manager	C. Angelus & Co. Ltd. (Barbados)
Mr. Beaton Marsh	Volunteer Executive	International Executive Service Corps
Mr. John Hampden	Managing Director	John Hampden's Furniture Ltd.
Ms. Ralph D. Edghill	Director	Legacy Furniture Ltd.
Ms. Kirton		Kirton Furniture Ltd.
Mr. Bruce G. Hill	Chairman	Barbados Furniture Trading Co. Ltd.
Mr. Trevor O. B. Lovell	General Manager	Barbados Furniture Trading Co. Ltd.
Mr. Richard E. Leslie	General Manager	Barbados Development Bank
Mr. Rolf Stefanson	Res. Representative	United Nations Development Programme
Mr. Peter F. Ryan	Senior Industrial Deve- lopment Field Adviser	United Nations Industrial Development Organization

Annex 2

Furniture and woodworking plants survey

1. Questionnaire

1. Company Profile

1. 1. Name of company:					
1. 2. Office address: Tel: Telex: Cable:		Factory address:			
1. 3. Contact executive (s):					
1. 4. Year established:		1. 5. Year of commencement of exports:			
1. 6. Type of business Manufacturer Manufacturer Retailer Manufacturer Exporter Other (specify)					
1. 7. Legal status: Sole proprietor Private Ltd Co. Co-operative Govt. owned Co. Partnership Others (specify) Public Ltd Co.		1. 8. Capital: Authorized: Paid up			
		1. 9. Ownership: Local: % Foreign: %			
1. 10. Total no. of employees: Office: Production: Total:		1. 11. Gross sales:			
		Year	Domestic	Overseas	Total

2. Product Profile

2.1. Product description

- | | |
|-----------------------------|------------------------------|
| Solid wood furniture | Prefabricated housing |
| Panel furniture | Doors and windows |
| Upholstered furniture | Parquet/strip flooring |
| Bedding | Joinery parts |
| Cane furniture | Moulding |
| Furniture parts | Turned parts |
| Outdoor furniture | Boat building |
| Domestic woodware | Pallets |
| Wooden toys | Boxes crates |
| Others (specify) | Vehicle bodies |

2.2. Product specification

- | | |
|-----------------------|------------------------------|
| Own design | Architect |
| Ex catalogue | Standard specification |
| Customer design | Copy |
| Designer | Other (specify) |

2.3. Quantities produced

- | | |
|--------------------|----------------------------------|
| Single items | Batch production (specify) |
| Other (specify) | Continuous production |

2.4. Usual delivery period:

2.5. Other relevant information:

3. Raw Materials Profile

3.1. Timber species used

Species	Annual input b.ft.	Average purchase price, air dried b.ft.	Average purchase price, kiln dried b.ft.
Craewood			
Hububalli			
Simaruba			
Deterna			
Red Cedar			
Silverballi			
Locust			
Dakamacalli			
Dukali			
Durbanpine			
Kirikaua			
Iteballi			
Kabukalli			
Kuzanara			
Kuzokai			
Mamara			
Purpleheart			
Shibadan			
Brown Silverballi			
Tauroniro			
Tatabu			
Greenheart			

3.3 End use of various species.						
Species	Furniture	Joinery	Pre-fab Houses	Moulding	Flooring	Other (specify)
Cracwood						
Hububalli						
Simarupa						
Ceterma						
Red Cedar						
Silverballi						
Locust						
Dakamaballi						
Dukali						
Durbanpine						
Kirikaua						
Iteballi						
Kapukalli						
Kuzanara						
Kurokai						
Wamara						
Purpleheart						
Shibadan						
Brown						
Silverballi						
Tauroniro						
Tatabu						
Greenheart						

3.5. Is supply of raw materials satisfactory? If not, please indicate the major problems. (Rank five problems in order of importance).

Local materials

Irregular availability

Fluctuating price

High cost

Unsuitable dimensions

Quality not conform to specifications

Quality of local materials do not compare favourably with imported materials

Government regulations and procedures cumbersome

Imported materials

Restriction on imports

High import tariff and taxes

Fluctuating prices

Long delivery time

High prices

Import procedure and regulations cumbersome

Other (specify)

Any other relevant information or comments.

4. Manufacturing Profile

4.1. Site and Building

Site area: _____ Length: _____ Width: _____

Timber storage, covered: _____ Uncovered: _____

<u>Production</u>	<u>Length</u>	<u>Width</u>
Machining	_____	_____
Assembly	_____	_____
Finishing	_____	_____
Upholstery	_____	_____
Dispatch	_____	_____
Product development	_____	_____
Machine maintenance	_____	_____
Other materials storage	_____	_____
Storage for work in progress.	_____	_____
Height to eaves	_____	_____

Single storey:

Multiple storey:

Floors: Concrete:

Wood:

Other (specify)

Space: Open:

Subdivided:

Lighting: Natural

Artificial

Other (specify)

Power: Three phase

Single phase

Room for expansion:

Have you expansion plans (specify):

4.2. Machinery and Equipment:							
Process	Model/Type	H.P	Age Yrs	Condition			Purchase Price
				Good	Fair	Poor	
1. Cross-cutting							
2. Band sawing							
3. Ribbing							
4. Planing and Thicknessing.							
5. Planing and Moulding.							
6. Moulding.							
7. Turning							
8. Mortising							
9. Tenoning							
10. Dovetailing							
11. Boring							
12. Drilling							
13. Sanding							
14. Other (specify)							

4.3. Ancillary production equipment. (1)						
Equipment	Model/Type	Age Yes	Condition			Purchase Price
			Good	Fair	Poor	
1. Dust exhaust system.						
2. Compressor						
3. Compressed air system.						
4. Spray Booths						
5. Spray Guns						
6. Pneumatic tools (specify)						
7. Power tools (specify)						
8. Internal transport (specify)						
9. Spares and accessories.						
10. Tool maintenance (specify)						
11. Other (specify)						

4.4. Ancillary production equipment. (2)

Type of cutting tools generally used

High speed steel

Tungsten carbide tipped

Other (specify)

If equipped with pressure impregnation plant state:

Number of units: _____

Capacity : _____

Type of treatment : _____

If equipped with kiln drying facility state:

Number of units: _____

Capacity : _____

Type/Model : _____

Supply of fuels and lubricants. Good Fair Poor

Source of power: G.E.C Diesel generator

 Other (specify) Gasoline generator

Cost of power. _____

Any other relevant information.

4.5. Is supply of production machinery and ancillary equipment satisfactory?

If not, please indicate the major problems (Rank problems in order of importance:

Shortage of foreign exchange: High prices:

Restriction on imports: Long delivery time:

Import procedure and Regulations cumbersome:

High import tariff and taxes:

Others (specify):

4.6. If production capacity is under utilized, what are the major reasons? (Rank reasons in order of importance)

Insufficient domestic demand: Insufficient overseas demand:

Shortage of raw materials: Shortage of spares and accessories:

Lack of working capital Lack of adequate power

Non availability of skilled labour: Non availability of unskilled labour:

Other (specify)

5. Personnel Profile

5.1. Management and Supervision

Functions	General education	Relevant technical/managerial training
1. Owner/manager:		
2. General manager:		
3. Production manager:		
4. Marketing sales manager: ...		
5. Financial and admin. manager:		
6. Production supervisor		
7. Machine setting-up and maintenance:		
8. Other (specify):		

State which, if any, of above functions are exercised by the same person.

No(s) _____

What in your opinion, are the major constraints in employing suitable management personnel.

Shortage of trained managers:

Emigration

High salaries sought:

Other industry competition:

Unattractiveness of wood industry

Other (specify)

Lack of job security:

5.2. Supervisors/Charge hands/Foremen for:

Timber yard:.....	Drying kiln (s):.....
Pressure impregnation plant:	Break-down mill:
General machining:	Assembly/Joinery:
Finishing (lacquering):	Sanding:
Upholstery:	Other (specify):

5.3. Have you or any of your management/supervisory personnel attended training courses conducted by:

Organisation	If yes, specify
Guyana Management Institute	
Government Technical Institute	
Guyana Manufacturers Association	
Extramural Department of University of Guyana.	
United Nations Industrial Development Organisation (UNIDO).	
International Trade Centre UNCTAD/GATT.	
Other (specify)	

5.4. Management systems and procedures	
Activity	If yes, specify
1. Production planning:	
2. Series production:	
3. Product costing:	
4. Quality control:	
5. Piece work:	
6. Incentive bonus schemes:	
7. Work study:	
8. Marketing:	

5.5. Labour

State the number of employwes, male and female engaged in each of the following:

Department/Section	Male	Female	Total
1. Timber yard			
2. Pressure impregnation			
3. Kiln drying			
4. Break down mill			
5. General machining			
6. Sanding			
7. Furniture assembly			
8. Joinery			
9. House element assembly			
10. Surface finishing			
11. Cutting and sewing			
12. Concretery			
13. Others (specify)			

5.6 Usual standard of education attained by employees:

General education: _____

Technical education: _____

5.7. How do you train your workers?

On the job training:

Technical Institute:

5.8. Hourly/daily wage rate: Male: \$ _____ Female \$ _____

Hourly/daily overtime rate: Male \$ _____ Female \$ _____

5.9. Normal working week: Hours:

Average weekly overtime: Hours:

5.10 Contract workers.

Number employed: Male:..... Female:.....

Average weekly earnings: Male:..... Female:.....

Method of payment (specify)

5.11 Any other relevant information.

6. Marketing Profile

<p>6.1. Quantity available for export</p> <p>Per order: \$</p> <p>Per year: \$</p>	<p>6.2. Delivery period</p>
	<p>6.3. Quotations F.O.B CIF C.F</p>
	<p>6.4. Terms of payment:</p>
	<p>6.5. Port(s) of shipment:</p>

6.6. Previous exports

Year	No. of Units.	Value	Main markets.

6.7. Availability of sales aids.

Samples: Catalogues: Other (specify)

Photos: Price list:

6.8. Packaging and quality control

List important packaging materials

Are there any problems related to their availability?

yes: no:

If 'yes', please specify

Do problems exist regarding quality control?

yes: no:

If 'yes', please specify.

6.9. What in your opinion are the major constraints which affect your exports?
(Rank constraints in order of importance)

- Lack of market information:
- Lack of market demand:
- Lack of trade contact:
- Low prices:
- Inadequate shipping services:
- High shipping costs:
- Other specify:
- Discrimination tariffs:
- High import tariff:
- Non tariff barriers:
- Payment problems:
- Quality requirements too demanding:
- Restrictive import regulations:

6.10 Please specify areas of assistance needed to achieve increased exports. (Rank in order of importance)

- Market information:
- Export incentives:
- Market survey:
- Export finance:
- Raw materials:
- Packaging:
- Improvements in production techniques:
- Improvements in quality:
- Trade contact:
- Selling mission:
- Reduction in taxes/duties:
- Export management training:
- Product adaptation:
- Product design:
- Others (specify):

6.11. Are you interested in joint venture agreements? yes:..... no:.....

If 'yes', please indicate your interest:

Management: Finance: Marketing:..... Technology:.....

6.12. Are you planning to diversify your export markets yes:..... no:.....

If 'yes', which countries

- | | |
|----|----|
| 1) | 4) |
| 2) | 5) |
| 3) | 6) |

6.13. Are you in need of financing yes: no:

If 'yes', please check (List in order of importance)

- | | |
|--------------------------------|--|
| Raw materials financing:..... | Export credit financing:..... |
| Machinery financing: | Additional working capital financing:..... |
| Joint venture financing: | Expansion financing:..... |
| Other (specify):..... | |

6.14. Would you like to make suggestions concerning export development of your products?

7. Financial Profile

7.1. Costs.	\$	%
Timber		
Plywood		
Plastic laminates		
Ironmongery		
Fittings		
Adhesives		
Finishes		
Upholstery covers		
Upholstery frames		
Fillings and foams		
Springs and webbing		
Bought in parts		
Bought in finished goods		
Other materials (specify)		
Outwork (payment for work done on materials supplied by you)		
Production wages*		

*All wages concerned with production whether direct or indirect.

7.2. Manufacturing overhead	\$	%
<p>Holiday pay</p> <p>Light and power</p> <p>Rent and Rates</p> <p>Building depreciation</p> <p>Building, maintenance and repairs.</p> <p>Plant and machinery, maintenance & repair</p> <p>Consumable stores</p> <p>Design development</p> <p>Rectification and Inspection</p> <p>Any other manufacturing expense</p> <p>a.</p> <p>b.</p> <p>c.</p> <p>d.</p> <p style="text-align: right;">Total</p>		<p style="text-align: right;">100</p>
7.3. Distribution overhead	\$	%
<p>Wages and salaries</p> <p>Packing and storing expenses</p> <p>Truck drivers wages</p> <p>Vehicle depreciation</p> <p>Vehicle operating expense</p> <p>Other distribution costs</p> <p>a.</p> <p>b.</p> <p>Outside contractors changes</p> <p style="text-align: right;">Total</p>		<p style="text-align: right;">100</p>

7.4 Selling overhead	\$	%
Sales representation and office Travelling and entertainment Advertising and exhibition cost Trade discounts allowed Bad debts Other selling expenses a. b.		
Total		100
7.5 Administration overhead	\$	%
Salaries (other than above) Telephone, Telegrams, Postage Printing & stationery Office equipment depreciation Audit, accounting fees Bank charges Trade subscriptions Other administration expenses		
Total		100
7.6. Insurance overhead	\$	%
Manufacturing Distribution Selling General		
Total		100

7.7 Summary	\$	%
Total production (sales)		100
Prime costs		
Direct materials		
Outwork		
Direct wages		
Total prime costs.		
Gross margin		
Overheads		
Manufacturing		
Distribution		
Selling		
Administration		
Insurance		
Total overhead		
Net profit for comparison with total assets.		

8. Pricing

Please indicate your average ex-factory prices for the following:

Dining-room chair \$.....	Dining-room table \$.....
Show-wood armchair \$.....	Sideboard \$.....
Wardrobe (solid wood) \$.....	Wardrobe (plywood) \$.....
Chest of drawers \$.....	Dressing table \$.....
Executive desk \$.....	Other (specify) \$.....

Name:..... Signature:.....

Designation:..... Date:.....

ANNEX 3

Proposed Programme of Technical Assistance

A. For immediate implementation

1. Qualitative survey of the furniture factories and workshops members of the Barbados Furniture Trading Company Ltd.
Inputs: Consultant in furniture production
Duration: One month to six weeks
Cost: \$US 8,000 to 12,000
2. Seminar on serial production of furniture for export.
Inputs: Team of 3-4 consultants
Duration: Three weeks
Cost: \$US 40,000
3. Advice to the Barbados Furniture Trading Company Ltd.:
 - a) On the selection of timber drying kilns;
Inputs: Consultant in kiln-drying
Duration: One month, split mission
Cost: \$US 10,000
 - b) On the selection of equipment for the rough mill:
Inputs: Consultant in furniture production
Duration: One month, split mission
Cost: \$US 10,000

B. For future implementation

1. Provision of expertise in selected fields to train technicians and middle management through short intensive courses and ad hoc advice to the factories.
Inputs: 4 to 6 consultants
Duration: Three weeks each
Cost: (at \$US 7,000 each) \$US 28,000 to \$US 42,000
2. Provision of a production manager to start-up and operate the Spring Garden kiln-drying and rough mill facility of the Barbados Furniture Trading Company Ltd.
Inputs: Furniture production expert
Duration: 12 months
Cost: \$US 96,000
3. Provision of an internationally known furniture designer to participate in the jury of a Barbadian furniture design competition (and provide ad hoc advice to local designers).
Inputs: Furniture designer
Duration: Two weeks
Cost: \$US 6,000