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DEVELOPMENT OF SECONDARY WOOD PROCESSING INDUSTRIES

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THE REPUBLIC OF GUYANA

Technical report: A brief appraisal of the  
Guyana Forestry Department Workshop\*

Prepared for the Government of the Republic of Guyana  
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acting as executing agency for the United Nations Development Programme

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### Introduction

This appraisal is the result of a number of visits made to the Guyana Forestry Department Workshop during the wood finishing seminar held in September/October 1987. It records the impressions formed and makes recommendations for the future development of the Workshop. It is not a definitive study due to the shortness of time available, but it does indicate a very considerable potential in this Workshop for exportable product given the right inputs.

### Buildings and Layouts

The buildings are generally suitable for the manufacture of wooden components and furniture. Some maintenance is necessary but nothing very major requires to be done.

Layout of the machines would need some changes to make handling simpler and allow work in progress to follow its logical sequence. The changes desirable are stated in Annex 1. Lighting and ventilation are good.

### Machinery and Equipment

The 75 m<sup>3</sup> of steam kilning capacity should be rehabilitated as early as possible to allow these kilns to be fully exploited if not for own use then as a commercial service to the Georgetown timber industry.

The solar kilns are excellent and should be extended. Machinery is generally adequate though some money would be required to buy tooling and essential spares particularly for the moulders in the yard. A list of desirable machines and essential repairs is given in Annex II in order of priority.

### Personnel

The staff appears to be well skilled and the Acting Manager, Mr. Bentham, has all the necessary attributes to manage the production. Indeed, he demonstrated a considerable degree of enthusiasm and competence and provided excellent organization for the finishing workshop.

### Raw Materials

Guyana has a wealth of timber suited to American and European requirements for wooden components. The Forestry Department's Workshop does not presently have access to a continuing supply. This would have to be remedied as a first condition of developing the Workshop.

### Markets

There is a ready market for hardwood components both for outdoor leisure furniture and joinery and for domestic furniture and home comforts. Companies in developed countries are increasingly sourcing machined components and are ready to purchase continuous supplies at prices double, treble and sometimes four and five times the basic raw material cost per cubic meter in square edged boards.

The principle requirements of the market place are reliability of supply, quality of wood and workmanship and price. Often price is very significant and appears poor at first but once reliability with deliveries is achieved, then the price can be increased.

For buyers in Europe the biggest single problem is getting reliable suppliers.

It is essential that a product policy is developed for the enterprise to ensure that what is sold is the right product and at the right price for the present capability of the factory. There is no point in selling products which are over-sophisticated for the enterprise.

### Product and Product Development

The workshop does not now have a product. A list of products and prices achievable is given in Annex III and is indicative of the added value achievable for simple processing. Product development would be phased through simple components to customer requirements developing over a period of years to more sophisticated product, and ultimately, to own product design and marketing.

### Sales

The present kiln-drying capacity of 75 m<sup>3</sup> of timber per cycle should on average be repeatable every three weeks giving a net yield of approximately 40 m<sup>3</sup> of finished components at a minimum FOB value of DM 1200/m<sup>3</sup> and as much as DM 1500/m<sup>3</sup> for very basic components FOB.<sup>1/</sup>

This throughput would indicate a turnover of DM 760,000 upward per annum. (Approaching US\$ 0.5 million at today's rate of exchange.)

### Recommendations

A decision should be taken as to whether or not the Forestry Department Workshop is to be upgraded to being a realistic producer. If that decision is no then there is little to be done. If on the other hand it is yes, then the following needs to be done as soon as possible to avoid deterioration of the existing resources.

1. Do detailed study of entire operation to verify production capability and cost accurately the necessary rehabilitation and establish cost working capital requirements for commencement.
2. Collate available market information for wooden components both in the United States and Europe and target in on a given sector. This information is available off the shelf.

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<sup>1/</sup> US\$ 1,- = DM 1.82 in October 1987.

3. Make necessary changes at workshop level to achieve market acceptance of basic product.
4. Supply timber to the workshop for processing.
5. Allow retention of a percentage of the value of exported product to continue the rehabilitation of the workshop thus allowing continued increase in value of product.

The necessary changes at workshop level to commence exporting would be, initially:

1. Rehabilitate at least one moulder.
2. Rehabilitate steam kiln or add more solar kilns whichever is cheaper.
3. Improve sanding equipment - possibly purchase wide belt sander.
4. Improve handling by addition of trolleys or bogies which could be locally constructed.
5. Ensure adequate tooling for above equipment.
6. Ensure tool maintenance equipment is either in the house or available in Georgetown.

This initial phase would get the project up and running and much of the remaining investment could be achieved from cash flow or be financed on a straight commercial basis.

#### Conclusion

Given the will by the appropriate authorities this workshop could be easily and inexpensively geared up to export wooden components. The infrastructure is there.

Within a month to one year of a decision being taken to do a detailed plan, this factory could be exporting components competitively.

On the other hand, if necessary rehabilitation is not carried out the workshop will decline to the level of other government workshops in Georgetown.

ANNEX I

Layout

Layout depends to some extent on proposed product and on entry point of raw materials. For the Forestry Department Workshop it is not essential to do any major changes as yet.

The following principles will assist re layout:

1. Machines should be layed out to follow sequence of work.
2. There must be sufficient space to allow longest lengths to be handled between machines.
3. There must be sufficient space for work to feed into the machine and for laying off after work is completed.
4. There must be clearly defined aisles to allow work to be moved from machine to machine.

Therefore, the sequence should be as follows for the Forestry Workshop:

1. Wilson x-cut saw.
2. Small table saw for ripping.
3. Surface planer.
4. 36" thicknesser. (Note: the two other thicknessers could also be put there.)
5. Spindle (cutters need to be purchased).
6. Router (cutters are required).
7. Chisel Mortiser.
8. Drill press.
9. Both lathes.
10. Overhead belt sander.

The bay in which the machines are put should ideally be the centre 50 ft wide bay with work for assembly for local market going right into the furthest from the gate and work for export going left for inspection and packaging.

The moulders should stay as they are.



ANNEX II

Desirable machines and essential repairs

1.           Rehabilitation of main boilers to provide steam for kiln drying.
2.           Tooling must be purchased for large moulders. This should be in duplicate and sharpening must be embraced in any retooling schedule.
3.           A wide belt sander preferably heavy duty for solids is desirable though not immediately essential.
4.           Tooling will be required for the router and the spindle in particular.
5.           Tenoning equipment for the spindle or a purpose built tenoner.
6.           A fork lift truck.
7.           Pallets or trolleys for moving work in progress from one workstation to the next.

ANNEX III

Products Possible at Forestry Workshop and approximate world market prices for same F.O.B.

Timber Air Dried to 14-16% moisture content.

	Price / M <sup>3</sup>
Garden & Patio Planters, Decking Garden Furniture Components (not for KD Fittings) Cut size unplanned components	1000 DM to 1200 DM
Kiln Dried Timber K.D. Ready to Assemble Garden Furniture	1200 - 1500 DM
Furniture Components P.A.O. with Simple Joints	1500 - 1800 DM
Furniture Components Sub-Assembled Sanded and Ready for Final Assembly	1800 - 2200 DM
Furniture Components Fitted with Fittings, Finished Packaged for Ready to Assemble Market (R.T.A.)	2200 - 3000 DM