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FURNITURE AND JOINERY INDUSTRIES IN TANZANIA^{1/}

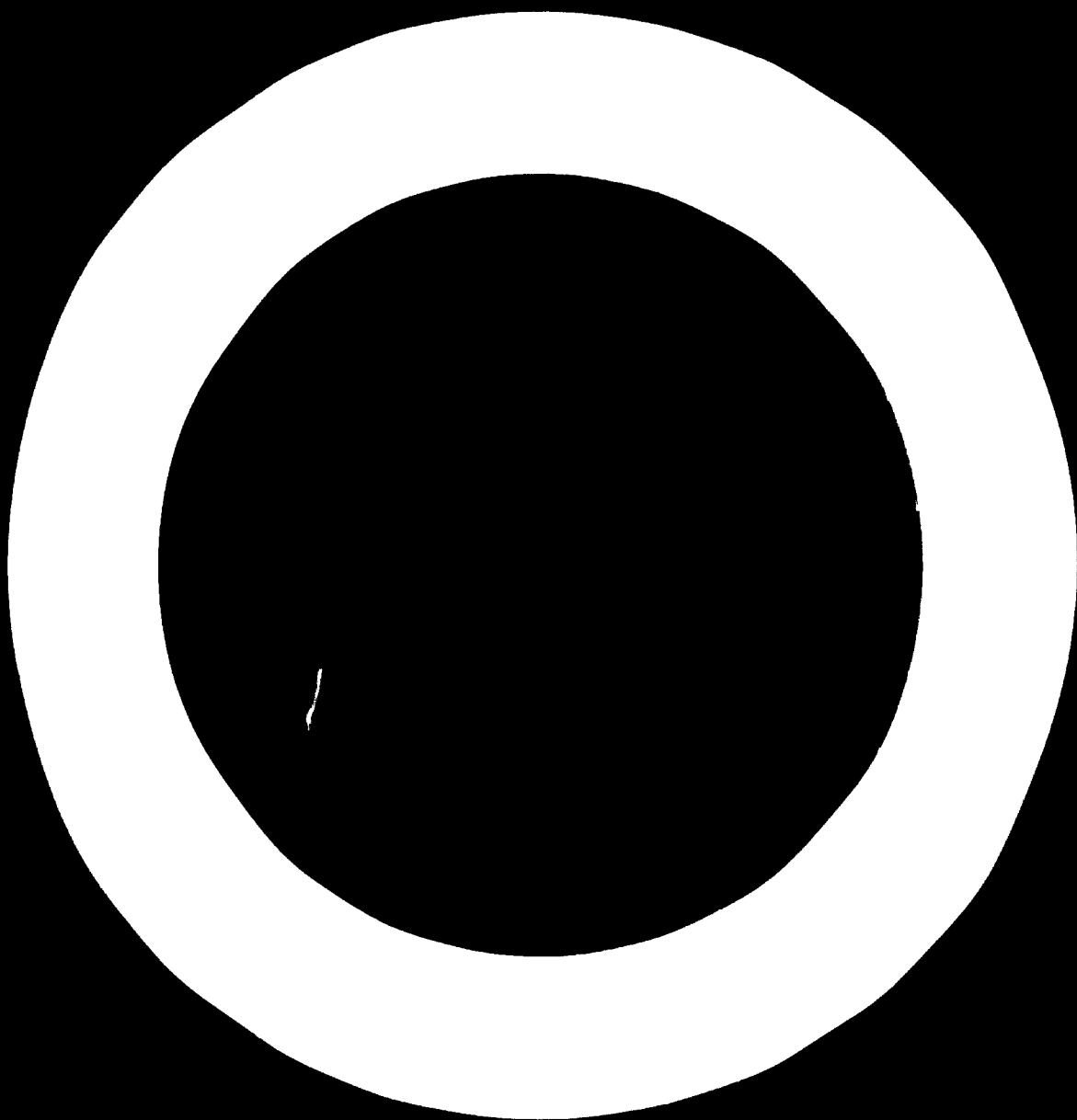
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INTRODUCTION

As far as Tanzania is concerned, most of our furniture and joinry is made by privately owned workshops which are mostly operated by hand tools.

In 1972 the United Nations Development Programme, with the co-operation of the Government started producing furniture and prefabricated houses at Moshi Forest Utilization Section. This was established in order to promote the use of soft woods, lesser known timber species and wood based panels, and development of training programmes in these fields. In order to make use of our country's resources we do not only need efficient industries but more than that we need people with skill, knowledge and devotion.

RAW MATERIALS

The raw material (logs) used in making furniture is mostly Camphor (*Ocotea Usambarensis*), Loliondo (*Otea Welwitschii*), Muninga (*pterocarpus angolensis*) and Mvule (*chlorophora excelsa*). These are supplied by private fellers who sell at an average price of Shs 4/50 per cu.ft. Most of these logs come from West Kilimanjaro although some come from the Pare and Usambar mountains. Logs from West Kilimanjaro are brought by lorries and those from Usambara by rail.

Cypress and pines which are brought from Rongai, about 40 miles from Moshi, are used for housing, fencing and transmission poles.

Sawn timber is supplied either from the sawmill within the utilization section or from Rongai Sawmill which is also under the Forest Utilization Section.

PROCESS

All materials, after cross-cutting, are transported on wooden pallets to various machines. The machines mostly used in the furniture factory are as follows:

- | | |
|----------------------|--------------------|
| 1. Cross-cutting saw | 8. Narrow band saw |
| 2. Rip saw | 9. Lathe |
| 3. Surface planer | 10. Press |
| 4. Thicknesser | 11. Spray |
| 5. Tenoner | 12. Tailoring |
| 6. Mortiser | 13. Sanders |
| 7. Spindle moulder | |

Waste products are contained in plywood boxes and transported on pallets to the boiler as fuel to run the seasoning kilns.

FURNITURE PRODUCTION

The factory produces a wide range of furniture for offices, schools and domestic use and the value of the turnover is about Shs. 100,000 per month.

The profitability based on a target turnover of Shs. 100,000/- per month for a double shift is as follows:-

Wages	Shs. 25,000
Fixed costs	" 8,500
Materials	" 22,000
Timber	" 18,000
Lumber yard	2,500
Office, etc.	" 3,000
Miscellaneous	" 2,500
Production cost	Shs. 81,500
Production value	Shs. 100,000
Production cost	<u>81,500</u>
	Shs. 18,500

FUTURE PRODUCTION

It is recommended that production should be expanded to Shs. 200,000/- per month by budget year 1957/76.

RECOMMENDATIONS

1. Although we are at present able to get hardwoods suitable for furniture manufacturing, the use of veneered chipboard as a main constructional material should be encouraged so that we do not exhaust these valuable hardwoods. This will also bring down considerably the labour costs in the manufacturing process. It will also reduce the transportation costs.
2. To use veneered chipboard, new machines will be needed. It is also recommended to invest in these additional machines.

3. Recommended machines

- (a) Stefan Edge bending machines
- (b) Cold press
- (c) Multiplated hot press
- (d) Parallel veneer crosscut
- (e) Jointing and taping machine
- (f) Moulding machine (4 cutter)
- (g) a double ended tenoner

In addition to these machines, a 15" Radial Arm Cross-cutting machine should be provided as at present cross-cutting is done on a demensioning bench.

- 4. Finished items should be taken to the store as soon as they are finished as the assembling space is very small.
- 5. It is advisable to remove offcuts and saw dust as soon as they occur because the working area should be clear. At present you will find that the working area is so full of waste that sometimes the factory is forced to stop to make way for the cleaners.

It is, therefore, recommended to connect a waste extraction system to some of these machines.

- 6. It is also recommended that a number of imported items should be purchased in bulk. These items are sometimes in short supply which causes a slacking of ^{work.} The following are some of the items which are necessary to be always available:

Upholstery, cloth, webbing, P.V.C., tacks, staples, locks, handles, drawer-pulls, hinges and mirrors.

Bulk purchase will also permit negotiations for lower prices per unit.

MARKETING

An important step in the expansion of TWICO's activities in the forest industry is the plan to erect two processing mills; one in Dar-es-Salaam and one in Tanga with the main object to offer overseas buyers more sophisticated products than has been done so far. However, it is also the intention to cover the local consumption of particularly planed timber for furniture making.

The conception "sophisticated products" cover the production of planed timber such as flooring, panelling and ceiling. Furthermore, the two units are also to supply mouldings, furniture components, impregnated timber and allied products. In order to canvas the interest among the European hardwood consumers a study has been carried out in the following countries: United Kingdom, France, the Federal Republic of Germany, Holland, Denmark and Sweden.

Scandinavia and the Northern part of Western Europe have made admirable efforts to standardize the use of planed timber and mouldings, while U.K. and France are still wrestling with a large number of different profiles and dimensions. This makes the end product considerably more expensive as larger series cannot be produced except in special cases. There is also a possibility to interest the more important chain of furniture shops in Scandinavia in the importation of furniture components and such items as strips for the manufacture of bed-bottoms. The following species are used for joinery and furniture manufacturing in Tanzania:- Mninga, camphor, mvulo, podo, cedar, panga-panga, cypress, mtundu, mtambara and mfimbo.

Most likely other species can also be used, provided sufficient quantities can be supplied. Much will depend on the availability of different species and this will be a decisive factor in the marketing activities.

As Tanzania has practically no experience of exporting processed timber, most of our furnitures are consumed locally (while a small percentage of 10% is exported to our neighbouring countries of Kenya and Uganda.

ORDER FLOW CHART

ORDER RECEIPT

Marketing Department

CHECK

Price, specification, availability

ACKNOWLEDGE

Issue sale note/contract

WRITE OUT INTERNAL ORDER

Original forms order book (in number order)

Copy 1 to lumberyard

Copy 2 to relevant production department

ALLOCATE

Stock to be used, stores purchase, etc.

DELIVERY NOTE

(and sales tax form)

Original to customer for retention

Copy 1 to customer for signature and return
to file for proof of delivery

Copy 2 - Direct to Invoice Department

Accounts Dept.

INVOICE

(Check price, etc. with order book)

Original to customer.

Copy 1. To Accounts Ledger for ontry and then
file in number order.

Copy 2. For sales analysis then file in alphabetical
order.

STATEMENT

(To customer)

Payment received.

PERSONNEL

The operation of joinery machines needs skilled staff, not only with regard to maintenance but also the operation of the machines.

The quality requirements in Europe are normally high, and as the raw material that is to be used in the mill fetches comparatively high prices, the ultimate quality and finish is extremely important. One must bear in mind that a planned product usually has no other end-use other than for what it has been ordered, and is consequently worthless unless the quality stipulations have been completely adhered to. Some hand-picked, and in advance tested, Tanzanians, the number to be agreed upon, should therefore be sent to Europe for on-the-job training before the mill starts operation. The training should take place both with the suppliers of the machinery and in one joinery mill so that they gain a complete knowledge of the functioning of the machines as well as of the products the machines can produce. I would also suggest that the men who have been sent to Europe for training also should assist with the erection of the machinery and act as instructors for training joinery operators for the other mills that are to be constructed in various areas of Tanzania.

Below is the text of the minimum wage rates now applicable in Tanzania, with effect from 1st May, 1975, classified into two groups:-

PART A - URBAN

<u>Rate</u>	<u>Persons over 18 years</u>	<u>Persons of or over 15 years but under 18 years</u>
Daily	Shs. 14.60	Shs. 11.60
Weekly	" 95.00	" 75.50
Fortnightly	" 190.00	" 151.00
Monthly	" 380.00	" 302.00

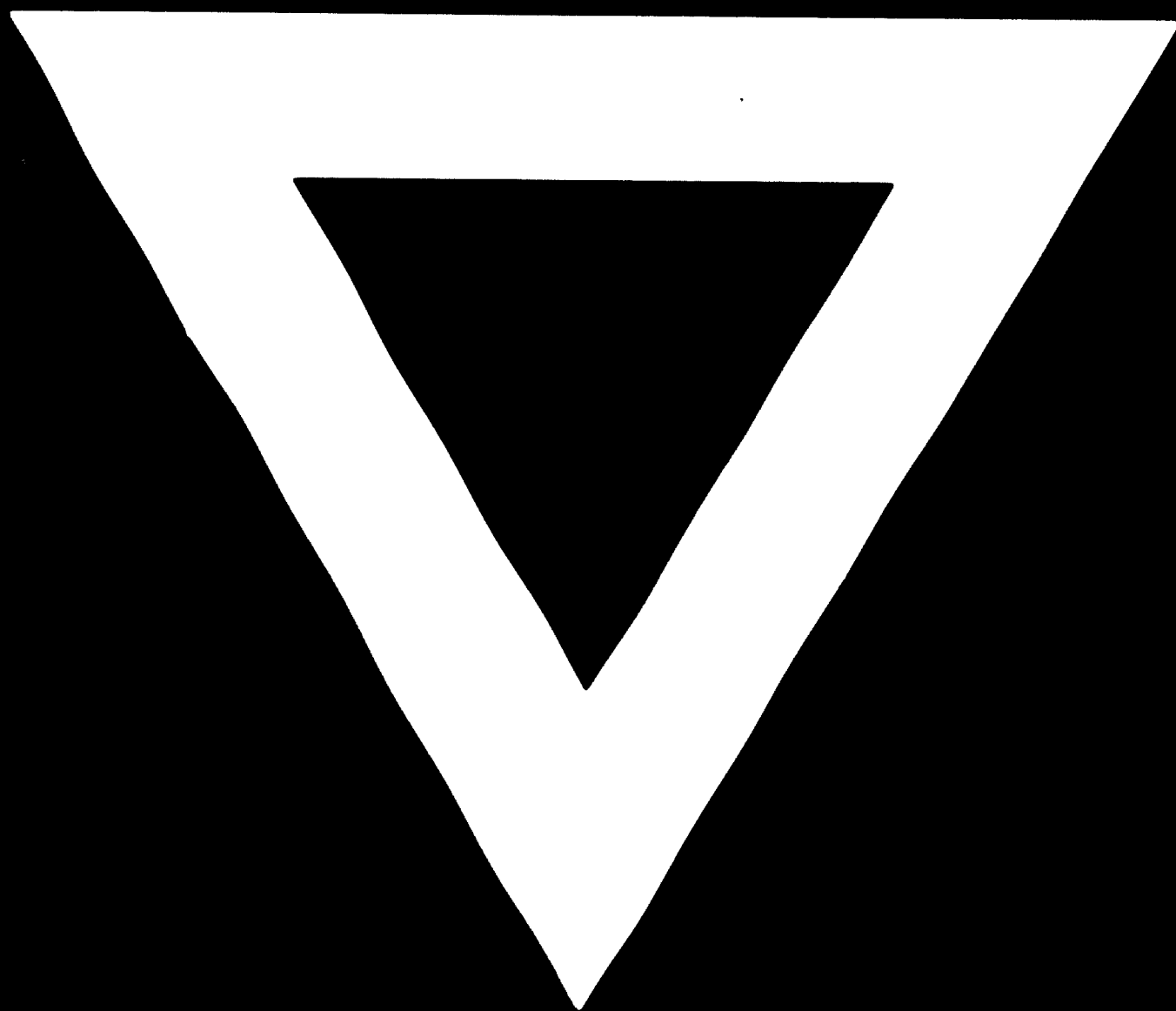
PART B - RURAL

<u>Rate</u>	<u>Persons over 18 years</u>	<u>Persons of or over 15 years but under 18 years</u>
Daily	Shs 8.85	Shs. 7.60
Weekly	" 57.50	" 49.65
Fortnightly	" 115.00	" 99.35
Monthly	" 230.00	" 198.70

TRAINING

As far as training is concerned, it is done mostly on job-training based on practical experience and theory. It is of a sandwich type. The duration depends on the type of the course one takes but varies from a range of six months to two years. In most cases the training has been conducted in the mills as we have no institute for the wood-based industries. With a grant from CIDA we have been able to construct a Forest Industry Training Centre at Moshi which is expected to be completed by the end of July 1975 and the first course for the operators is expected to start in September 1975 so we hope the problem of having unskilled workers in our furniture workshops will be solved.





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