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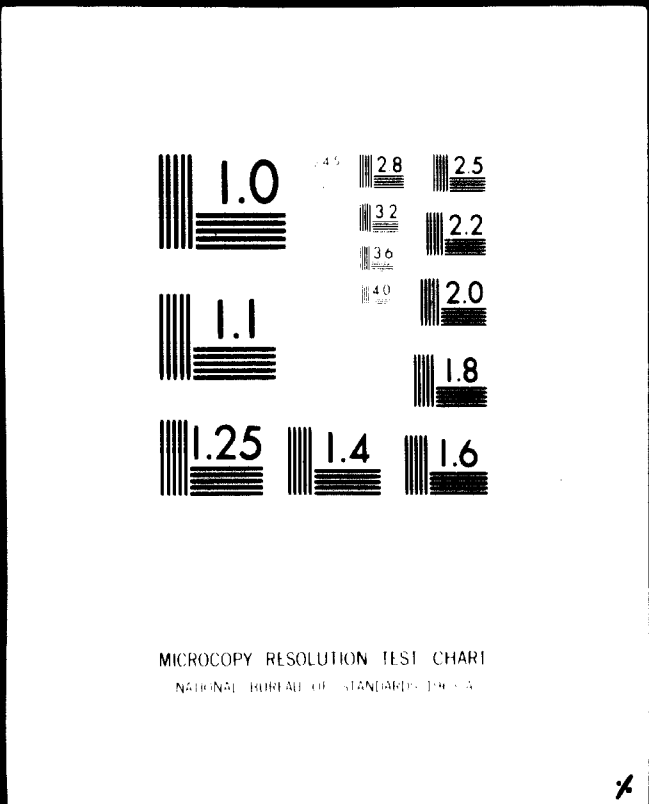
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Technical Course on Criteria for the
Selection of Woodworking Machines

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**WOODWORKING AND JOINERY INDUSTRIES OF BANGLADESH
AND TIMBER INDUSTRIES: FUTURE PROSPECTS FOR DEVELOPMENT 1/**

by

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1) Present situation of the Wood Working Industries

There are two distinct divisions of Wood Processing firms in Bangladesh - Government initiated projects equipped with most modern machinery imported from the outside and run under the direct supervision and control of Bangladesh Forest Industries Development Corporation (BFIDC) which annually meets a fraction of the total national demand, and part by the private sector which mostly works with hand tools manufactured locally. BFIDC has already undertaken studies to rationalize and streamline the primitive wood working industries by ensuring better utilization of the forest resources. The Wood Processing Industries play a very important role in producing elementary structures, furniture and wood based panels. In this assessment we are primarily concerned with the furniture and joinery industries of Bangladesh which is based on direct conversion of lumber and has only recently shown a tendency of diverting towards wood based panel materials, as well as steel furniture, for institutional use due to the high cost of timber.

The Forestry and Wood Working operations of Bangladesh contribute 15 per cent to the Gross National Product of Bangladesh and employ 15 per cent of the labour. Almost all the firms in the Wood Working Sector are small in size with the larger ones being mainly under the control of BFIDC. Export is negligible, although a substantial potential market exists for the products made of hardwood.

2) Timbers *Geological Timber ?*

While Bangladesh has 4418 square miles of reserve forests (8.16 per cent of the land area) it is estimated that about 20 per cent of the land may be covered with forests.

Potential yield is 40 million Cft. from productive forests, 45 million Cft. from mangrove forests, 15 million Cft. from village groves and, non-productive forests and land development another 83 million Cft. making a total of 183 million Cft. of timber which may be had from our own forests. The requirement of timber for Bangladesh will roughly be about 130 million Cft. for heavy construction, rail car repair, housing construction, boat building, railway sleepers, telegraph and power poles, also plywood manufacturing.

Similarly figures from bamboo are 0.8 million tons from productive forests, 1.28 million tons from non-productive forests and 3 million tons from village groves, giving a total in excess 5 million tons.

The following indigenous timbers are available for furniture and joinery industries of Bangladesh:

- 1) Garjan (Dipterocarpus Spp.)
- 2) Champa (Michelia Champaca)
- 3) Chapalish (Artocarpus Chapalisha)
- 4) Gamar (Gmelina Arborea)
- 5) Jarul (Lagerstroemia Flosreginea)
- 6) Chikrashi (Chukrasia Tabularis)
- 7) Toon (Codrela Tuna)
- 8) Tali (Palaquium Polyntha)
- 9) Koroi (Albezzia Spp)
- 10) Talsur (Hopea Odorata)

4 new species/

In the category of soft wood the following are available:

- 1) Banshpata (Podscarpus Mnericfolia)
- 2) Aam (Mangiferras Ylvatica)
- 3) Civit (Swintania Floribanda)
- 4) Chundul (Tetramelis Mudiflora)
- 5) Kadam (Anthosephalus Calamba)

Some Burma Teak and Sal timber are imported from Burma and India but this is not much.

A crude type of air drying is practiced for wood. BFIDC has a capacity of kiln drying of one million Cft. of timber per year, but an insignificant part of the capacity is actually used due to various reasons, one of which is the marketing problem.

Problems

Difficulty in transportation of logs from hilly forests to markets results in high cost, as well as deterioration of the logs. Proper saw

milline machinery is not available, modern techniques are not followed, qualified man-power is lacking, large scale wood working industries are very few and those which do exist are not properly run, besides which there is the high cost of raw materials and machinery to be considered.

3) Primary Wood Processing Industries (sawing wood and wood based panels).

Most of the industrial wood is used as sawn products, 1" to 3" planks, and railway sleepers. There are about 1000 Saw Milling Units, most of which have a single band saw of local origin for converting small logs or squares into planks, the big logs being first converted manually.

On the basis of 10 to 15 labour per unit, 10 to 15 thousand persons are employed. BFIDC has a well equipped modern saw mill with five veneering and plywood plants and two veneer slicing and hot pressing units attached to the wood particle plant and "partex" brand jute sticks chipboard plant. Approximately 1200 persons are employed in the veneering and plywood plants and about 250 in the particle board plant. There are two hard-board plants employing about 400 persons and these plants produce 1/4" rigid hard-board totalling about 2000 tons annually.

The products of veneering and plywood plants are mainly plywood for tea chests and manufacture of battens, as well as some commercial plywood and flush-doors. The BFIDC wood particle board plant has not yet gone into production. Partex board of different thicknesses are veneered and laminated with plastic sheets as and when the demand calls for it.

The lumber processing saw mill complex situated at Kaptai, Chittagong Hill Tracts, consists of a modern, efficient high capacity band saw mill with resizing, planing, treating and joinery facilities. Because of the absence of standards to meet market demand for sized, seasoned, treated and machined stock, the lumber processing complex is unable to operate efficiently.

The wood-based panel operation consists of a peeling lathe (M/s. Angelo Cremona + Figlio, Monza, Italy), a clipper machine, one dryer (M/s. Schilde, West Germany), glue spreader machine, hot press (M/s. Becker + Van Hullen, West Germany) with trimming saw, drum sanding machine for sizing and finishing the products. In addition to this, there is a band saw mill for production of planks and other sizing and finishing machines like planing, moulding and

multiple cut rip-saw machine for the production of battens required for tea chests. For drying the planks there is a modern timber seasoning kiln (M/s. G.F.Wells Ltd., Timber Drying Engineers, Sheffield, UK).

There are five tea chest manufacturing units in Bangladesh which at present produce about 700,000 tea-chests annually.

4) Secondary Wood Processing Industries (furniture, joinery, etc.)

Numerous cottage industry type furniture manufacturing units are located throughout the country employing semi-skilled man-power catering to the consumer market for domestic and institutional furniture, construction industries and boat building yards.

Wood seasoning and cabinet manufacturing units of BFIDC located strategically throughout Bangladesh receive their requirement of timber both from the BFIDC Timber Extraction project as raw material as well as sized lumber from BFIDC-Lumber Processing Complex. These units are equipped with their own small saw milling and resizing equipment, with automatic planer, thickness planer, glue jointer, ripping saw, tenoner, moulder, mortaser, wood working lathe, dovetail machine, belt sander and copying machine, employing about 1000 persons and producing 5 million Cft. of timber.

Technical hands required for the wood seasoning and cabinet manufacturing plants are being developed at the Bangladesh-Swedish Institute of Technology which offers special courses for the requirements of the wood working industry. The institute offers special courses in designing modern furniture to suit both style and taste.

The wood working and joinery industries in Bangladesh did not grow along scientific lines with the result that timber waste is very high. The product eventually must be developed along proper industry lines so as to conserve on waste wood through improved utilization.

The wood working and cabinet manufacturing industry which is now based on solid timber has to be modified. Technical skill as well as re-orientation will have to be simultaneously developed through the introduction of

on the job training to develop the required new skills and expertise. International assistance in this regard would be highly welcomed.

Problems

Lack of qualified man-power at all levels in the mechanized part of the industry leading to lack of efficiency in design, fabrication and manufacture of furniture which results in high cost, loss of material, etc.

The basic problem facing the timber extraction project is the communication between its far-flung operation centres both in the matter of relay of instructions and transportation of the produced goods. In the matter of transportation of produced goods which is based mostly on rafting, further mechanization to the extent of improved rafting methods, use of floatation tanks, towing of rafts, should be investigated.

5) Labour

Manual operation from tree felling to furniture making and finishing have well trained traditional craftsmen. However, mechanized units have serious deficiency in man power. Training schools are there but limited in number and even then there is unemployment and under-employment of trained people because of the peculiar institutional and organizational set-up of the industries. Higher technical education is extremely limited or non-available, though a few highly qualified foreign trained people are available, (Master Degree and Ph.D. Degree). Most of the industrial wood working and joinery units are now faced with the problem of replacement of antiquated units as well as modernization of equipment. The internal demand of reconstruction and development works justifies the diversion of acutely scarce internal resources, as well as external assistance to their sector of the economy which is intimately linked with various other sectors of the national economy. Besides this is the pressure of population growth in the demand for construction of new residential, industrial, commercial and institutional buildings, added to the demand for replacement of old, unsatisfactory living accommodation for a large number of families and the further demand for housing and furniture for families who have no accommodation of their own, but are

forced to share with others in over-crowded housing. These matters are already engaging the attention of our Government, as well as international bodies.

6) Local manufacture and/or import of wood working machines.

Though there is a large number of Pakistani made sawing machines throughout the country, the more modern imported timber processing equipment is owned only by the BFIDC.

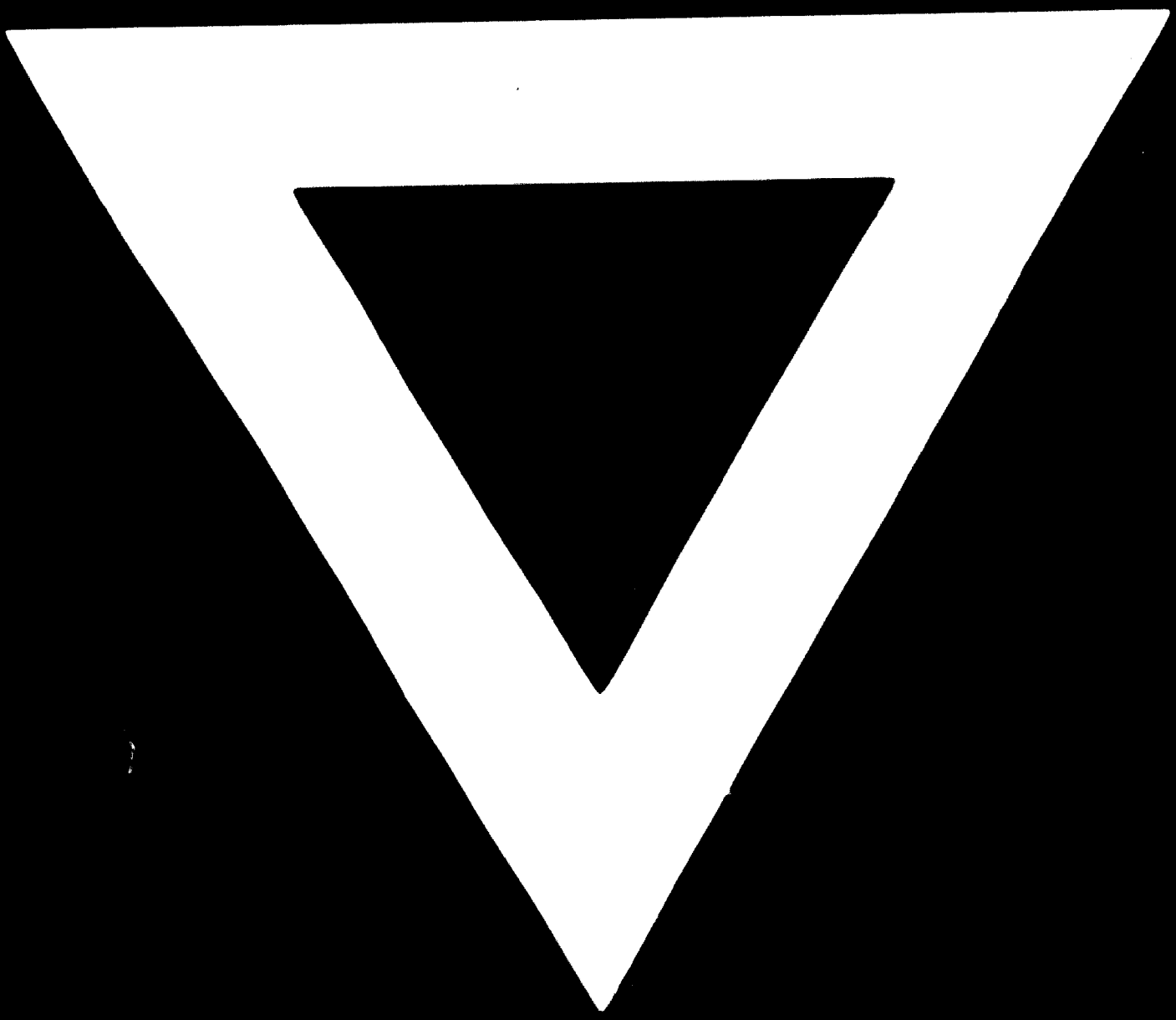
Tools operated manually are sometimes made within the country of inferior quality whereas the important machines of good quality are bought from West Germany, Italy, USA, UK., Japan, Poland and Sweden.

In conclusion it would be highly appreciated if UNIDO could render concrete assistance to the development of the wood working and joinery industries of Bangladesh by making it possible for officials of the BFIDC actually engaged in production, marketing and design activity to become acquainted with modern wood working and joinery industries overseas.



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