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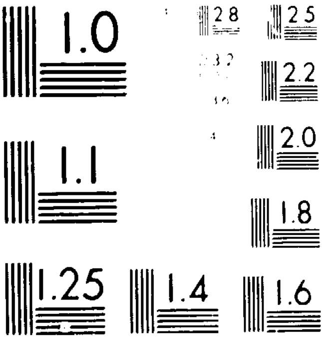
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Zambia's wood based industries [1/]

by

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Zambia has two types of forest resources: indigenous forests and exotic plantations. These indigenous forests are fairly well stocked with valuable hardwoods for both constructional and joinery purposes. The regeneration rate of these hardwoods is very slow and hence Zambia has been forced to import both softwood and hardwood sawn timber and wood products for its home industries. In addition, wood based panels, paper and paper boards containing a substantial amount of softwood and hardwood had to be imported.

After 1967, economic reforms were put into force demanding the localization of industries. This clearly was aimed at very substantial savings in foreign exchange, and could only become feasible by the growing of as much fast-grown softwoods and hardwoods as possible and encouraging the development of local wood using industries. To this end, the Zambian Government, with assistance from the World Bank and other international technical institutions have established exotic industrial plantations on the Zambian Copperbelt. The major species being grown are:

(a) Softwoods: Pinus kesiya and Pinus oocapa;

(b) Hardwoods: Eucalyptus grandis and Eucalyptus cloeziana.

The major portion of this paper is concerned with these four exotic species, and indigenous timbers in general.

Forest Estate:

The Copperbelt was selected for the establishment of industrial plantations because of (a) the existence of good soils, (b) the mining industries which are among the greatest timber users, (c) high industrialization due to the mining and related industries, (d) concentrated urban population and (e) adequate communications and infrastructure.

The Forest Department started species trials in or about 1930 at Dola Hill. The aim was to determine which exotic species - both softwoods and hardwoods would grow in Zambia. On the evidence of these extensive trials Pinus kesiya and Pinus oocapa and Eucalyptus grandis and Eucalyptus cloeziana were selected as the main species and commercial planting of these commenced in 1960-1961.

Currently, the four species are planted at the rate of 60 percent pine and 40 percent eucalyptus. Table 1 shows the current and projected forest estate for commercial plantations only. It is estimated that the total gazetted forest area (i.e. indigenous and exotic forests) is about 6,6 million ha.

Table 1, commercial industrial plantations estate:

	Area in hectares (ha) net	
	Eucalyptus grandis/ cloeziana	Pinus kesiya/oocapa
1977	6,288	24,167
1985	20,800	31,200
2000	34,600	51,900
2001 and later	3,000 per year	4,000 per year

Source 1: Industrial Plantations Division Management Filès Ndola.

2: World Wood, May 1977, Vol. 18, No. 6, page 67.

Existing and potential end uses:

Identification of end uses is made difficult by the relative absence of major wood using industries.

The long existing uses for timber has been for the mining and railway industries. Both have to a large extent relied on indigenous timber with some importation (for example of Oregon pine) for the mines.

The potential uses for the exotic species can be dealt with under four main categories:

(a) Roundwood: posts, poles, billets for chipping, pulping, and matchmaking.

(b) Sawnwood: boards, scantling, box components, block-board cores, general construction, joinery and furniture.

(c) Improved wood or wood based panel products for example fibre and wafer boards.

(d) Minor products: bark, foliage, fruit, resins and charcoal.

For the purpose of this paper only end uses (b) and (c) above will be discussed.

Sawnwood requirements for Zambia:

Projected requirements of sawn timber in Zambia for the period 1975 to 2000 are tabulated in Table 2; all the needs will not be met from Zambia's indigenous and exotic forests. A proportion will still have to be imported.

Table 2: projected requirements of sawn timber in Zambia for the period 1975-2000.

	Required volume in m^3			Expected annual growth Rate (percentage)		
Year	1975	1985	2000	1975-80	1980-85	1975-2000
Total sawn wood	89,400 1/	189,000	312,000	6,5	4,0	2,5
Uses:						
a.Mining	30,000	30,000	30,000	0,0	0,0	0,0
b.Railway sleepers	9,000	9,000	9,000	8,0	0,0	0,0
c.Others:						
-Construction						
-Furniture and joinery						
-Raw material for wood based products	54,400	150,000	273,000	7,0	5,0	4,0

1/ of which 46,900 m^3 was imported.

Notes:

1. Hardwood requirements will be 30 percent of which over 20 percent will be eucalyptus.
2. Softwood requirements will be 70 percent as follows:

   upto 1980 total volume 82,000 m^3

   upto 1985 total volume 105,000 m^3

   upto 2000 total volume 191,000 m^3

Source:

FAO technical report no. 6 of 1972.

Wood processing industries in Zambia:

This topic can be subdivided into two major groups - those who convert the round logs into sawn timber (sawmillers) and those who utilize the sawn timber for finished products (timber users). In the early days sawmilling was by pitsawing. The arrival of the railway line from the south in the early 1900's and the establishment of the mines on the copperbelt saw some change from pitsawing to mechanized sawing to meet the increased demand for railway sleepers and mining timbers.

To-date, the development of the sawmilling industry has been gradual and in line with the government's policy of self-sufficiency in local timber supplies. To this end the Zambian government has participated fully either in the acquisition of shares or the provision of financial and technical assistance. As a result, by the end of 1977 there were 19 sawmills in the country (see table 3)

Table 3: Sawmills in Zambia as on 31 December 1977:

Name	No. of mills owned	Ownership	Species cut, average annual volume m^3 cut in brackets
Industrial Plantations	2	Fully Government	Eucalyptus and Pines (10,560) 1/
Forest Products Division (FPD)	1	Fully Government (research/ commercial)	Mainly eucalyptus and pines, but also indigenous hardwoods.
Mining Timbers Ltd.	3	Jointy Government RCM +NCCM (formerly INDECO)	Branchy stegia hardwoods (25,347)
Zambezi sawmills	2	INDECO (Industrial Development co-operation)	Specializing in cutting Zambian Teak (20,096)
Forest + Maize Enterprise (FAME)	1	Private	Indigenous and plantation species (6,600)

1/ Figures from KITE only. These will be stepped up when the new Metex mill will be fully operational.

Name	No.of mills owned	Ownership	Species cut, average annual volume m^3 in brackets.
Minga timber co.	1	Private	Indigenous, Mukwa (2,000)
Lwankuni sawmills	1	Private	Indigenous, all species (4,802)
Mobile Moser mills	S	Co-operative with Government assistance	Indigenous for rural timber supplies (12 each)

Note:

1. All are circular mills except for one of FPD at Kafubu which has both circular and frame saws.
2. All mills are labour intensive.

The furniture and joinery industries are still in their infancy. There is great room for development. So far there are three well established furniture companies (Willykit, Furncoz and Form Plastics). In addition to these, there are several individually owned furniture and joinery workshops scattered throughout the country. The government through INDECO owns one blockboard factory, which now is operating at only 40 percent of its capacity. A major reason for the slow development of the industry is the high operational costs (eg. procurement of raw materials, machinery, technical personnel, etc.) and the low home market demand. The industry could improve if the government encouraged large scale production for export and encouraged the substitution of steel and plastic items by items made from wood and wood based products on the local market.

Future development and UNIDO assistance

Since the introduction of the economic reforms in 1967 and the worsening economic situation, there has been a reduction in the importation of sawntimber and wood products into Zambia, as well as some promotion of local industries utilizing local wood materials. Also the Forest Department (through Industrial Plantations Division) has embarked on large scale commercial plantations. This means there will be a considerable quantity of material demanding utilization. It is in this field of raw material (both indigenous and exotic) utilization that both Zambian government and UNIDO could work hand in hand in the following fields:

(a) Industrial development and establishment for particle board, waferboard, blockboard,veneer and plywood, pulp and paper, lamination and finger jointing. Included in this is both product and machinery development. Some of these projects are already in the pipeline. Zambia has both the raw material and the markets for the above products.

(b) Personnel training (or development) at both technical and managerial levels to run the industries developed. This is one of the major problems affecting both the sawmilling and furniture and joinery industries. Expatriate experts on two or three year contracts is not the answer, but Zambians need to be sent for training both locally and abroad. When abroad, they should be acquainted with the techniques and machines that they will use on return. There is no need for computerized techniques, but there should be an emphasis on appropriate progressive technology.