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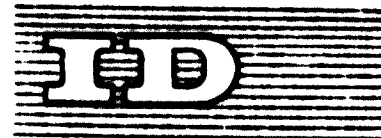
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Furniture and Joinery Industries in Indonesia 1/

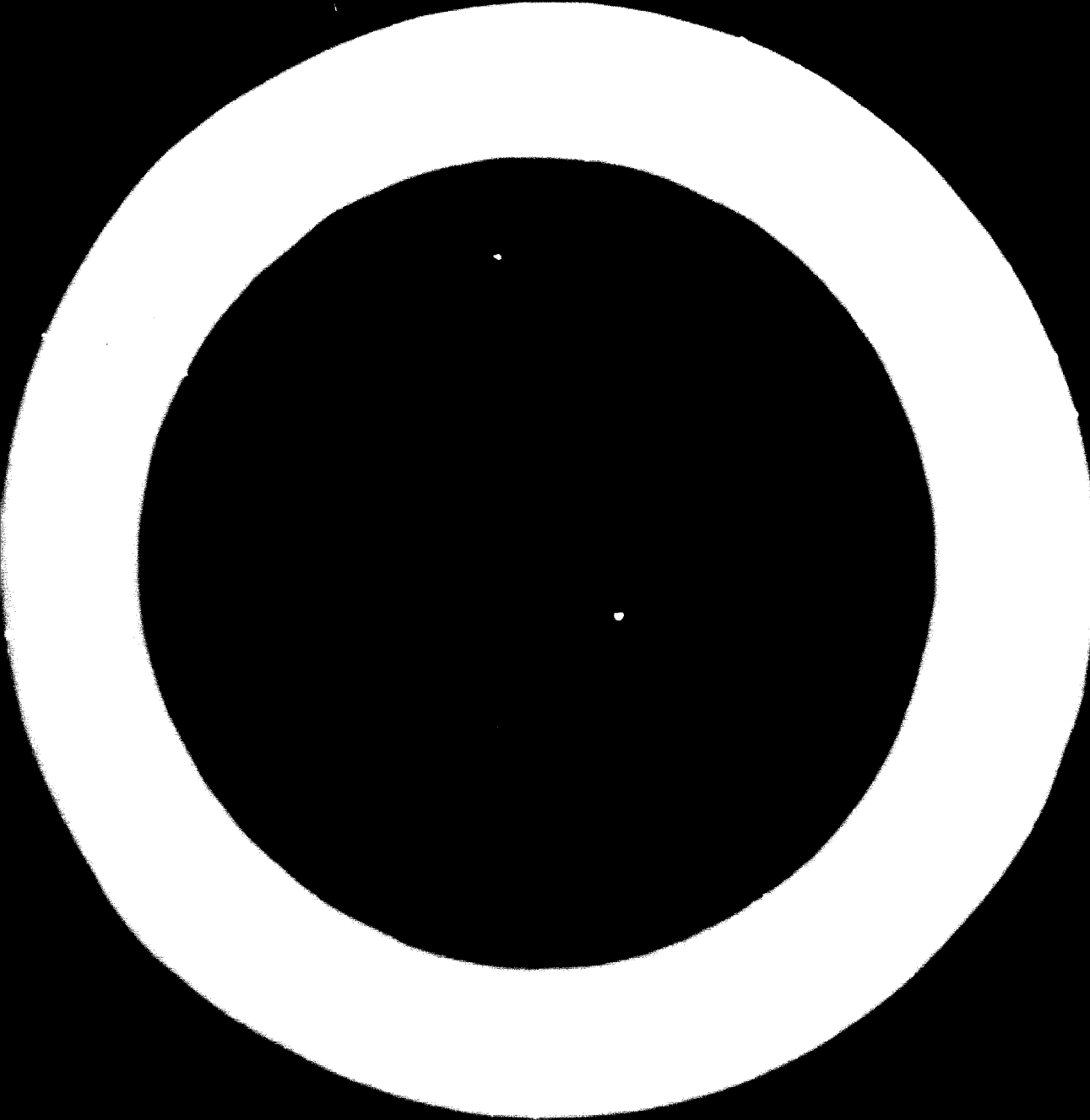
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## I. Introduction

Indonesia is the fifth biggest country in density of population. The present population is about 120,000,000, the greatest part being in Java (80,000,000), too crowded in comparison with the other islands. As a country with a large population, it also has a broad variety of living needs.

Among these needs there is woodware, e.g. furniture, building materials, household utensils and other handicrafts (furniture and joinery industries).

There are plenty of raw materials in Indonesia for the furniture and joinery industries because Indonesia is located in the tropics with a tropical climate, whilst Sumatra, Kalimantan and other islands are still thinly populated.

Teak grows in Java and is a well-known furniture material, partly used for domestic consumption and partly exported, especially to European countries, as a foreign exchange earner. Figures showing the forested area in the Indonesian archipelago are shown in appendix I.

Although there is plenty of wood, Indonesia still belongs to the developing countries as technology in all fields is still in the developing stage and more or less in the preliminary condition; the same can be said for the furniture and joinery industries. There is still no enterprise using many machines to manufacture wooden products, despite the very urgent need :

- . - population growth
- educational progress
- modernization trends

There is also a concomitant growing need for furniture and joinery products.

This phenomenon is to be found in large cities such as Djakarta, Bandung, Surabaya, Medan etc., where the prices for furniture and joinery are very high, for example: sawn teak-wood might reach the price of Rp. 100,000,- (US \$ 250,000) per m<sup>3</sup>.

This is caused by poor infrastructure, which complicates the transportation of these materials to the large cities. Expenditure runs very high for human, as opposed to mechanical, energy is still utilized.

Thus we would greatly appreciate UNIDO giving much technical assistance in the furniture and joinery industries sector to the officials and private enterprises, so that there would also be a modern enterprise in this field in Indonesia, which would be very beneficial in meeting the needs of the developing Indonesian society.

## II. The current status of the wood-processing industry in Indonesia

The wood-processing industry in Indonesia cannot be said to be an industry, owing to the large manual labour component: machines are not used as in developed countries. This phenomenon is not only to be found in the furniture manufacturing sector, but also in forest-exploitation activities where everything is handled by hand, except since 1969 certain forests exploitation activities have been tackled by foreign enterprises in Sumatra and Kalimantan.

Axes are used to cut wood in Java, cows do the drawing while trucks and other vehicles transport the logs from the forests to the towns. The teak areas are already modernized, as several forest areas have railroads and trains transporting wood from the forests to the stockpiles.

The logs will be transported from the storage areas to the harbour cities, such as Semarang, Surabaya and Djakarta, for export or manufacture into furniture and building materials for those cities or for other cities in Java and Sumatra.

Up to now the wood manufacturers are mostly sawmills producing sawn wood to be used as building materials or for furniture to be produced in local furniture manufacturing plants with manual labour on a cottage-industry scale. To date the wood industry has been as follows:

1. Plywood:

Before the Second World War, there was only one plywood plant in Indonesia in Lahat North Sumatra. It made tea cases and the input capacity was 10,000 cu.m./annum logs.

The second plywood plant was built in 1957 in South Sumatra. The input capacity was 10,000 cu.m. of logs/annum. The cases needed to export 60,000 tons of tea 1,200,000 pieces.

Every tea case needs 1.6 sq.m. of plywood, hence the need of plywood per annum for tea cases will be  $1,200,000 \times 1.6 = 1,920,00$  sq.m.

To produce app.2,000,000 sq.m. of plywood one needs 33,000 cu.m. of logs per annum.

This year two projects are being implemented at Palopo (Sulawesi) and Pulo Laut (South Kalimantan), and the Directorate General of Estate built one plant in North Sumatra. It is hoped that all tea case requirements can be met by these plywood plants.

2. Saw mills

There are approximately 600 saw mills in Indonesia, most of which are in East Java, South Sumatra, North Sumatra, and West Borneo. More than 80% of the saw mills were established before the Second World War, and since then only small repairs have been done owing to the lack of spare parts, resulting inevitably in bad maintenance. Hence, it can be understood that most of the saw mills are working at only 30% capacity.

Most of the saw mills in Java process teak (*Tectona grandis*), but in Sumatra, Borneo and Celebes they mostly process demar (*Agathis borneensis*), meranti (*Shorea Sp.*) and some other kinds of wood used for building materials.

The total teak output per year from these sawmills is app.50.000 cu.m. and for other kinds of woods app.400.000 cu.m.

### 3. Wooden Cases

Some thirty plants produce wooden cases in Indonesia, most of which are located in West Java and North Sumatra. Conditions in the wooden case factories are more or less the same as the sawmills above. Machinery is mostly old, and generally speaking almost no replacements have been made since 1955.

Because of the great market demand for wooden cases most of these factories in West Java are working at full capacity. The total output capacity of all factories is app. 30.000 cu.m./annum.

Since wooden cases are the only packing materials available in Indonesia for the delivery of soaps, fruits, bottled beverages, canned products etc., the demand for these products is increasing all the time.

### 4. Wooden building materials plant

Usually wooden building material components are produced by the saw mill, or as part of a saw mill oriented towards the production of building material. Hence conditions are as stated above.

### 5. Furniture Industry

The total number of mechanized/semi-mechanized furniture plants is 300 with a total consumption of about 76.000 cu.m. teak and 38.000 cu.m. non-teak species.

### 6. Prefabricated housing plant

So far no prefabricated housing industry has gone into production. Many private enterprises have tried to produce prefabricated houses, but they have difficulty in preserving the wood for longer periods and making suitable multi-purpose dwellings.



Based on a governmental housing programme, Indonesia will need at least 30 million cu.m. of sawn wood or 7.2 million cu.m. in log equivalent.

#### 7. Hardboard factory

The use of hardboard for many purposes was introduced into Indonesia many years ago.

The raw material used for making hardboard is either waste wood from saw mills and other wood working plants or coconut fibre which is widely available throughout Indonesia as a waste product of no value and no use. The only hardboard project in Banjuwangi (East Java) tried to produce hardboard using coconut as raw material and this year using baggage, but to no avail as yet.

#### 8. Match Factory

There are ten privately owned match factories in Indonesia, five of which are located in Java, four in Sumatra and one in Celebes. The total potential capacity of all factories is 119.250 cases/annum; one case containing 7.200 boxes.

Owing to many factories affecting other industries in Indonesia, production costs in the factories are getting too high and cannot be passed on to the consumers in the selling price.

Sales prices are sometimes even higher than those of imported matches, which are usually better quality; current output is only 46.430 cases per year, i.e. less than 50% of the potential capacity.

#### 9. Pencil factory

There are only two pencil factories in Indonesia with a capacity of about 400.000 gross pencils per year. Consumption of sawn material is estimated at about 4.000 cu.m. logs per year consisting of the species agathis and pulai from Borneo.

Like the match factories, they are working at about 40% of their potential capacity.

### III. Future prospects of the furniture and joinery industries in Indonesia

Indonesia with its 120,000,000 population in 1972, and its abundant wood resources together with other aspects in the development plan, will need many tools in the furniture and joinery industries.

For example, the capital city Djakarta with its 5 million population in 1972 has to meet the needs for furniture and joinery industries for governmental and private offices, for hotels being built and for countless private apartments.

Wood resources, other than teak, are plentiful, though not as good as teak, but using modern processing these woods could be properly utilized. However, the country still lacks enterprises:

- for impregnating wood;
- for manufacturing forest exploitation tools;
- for wood processing;

other factors are:

- the return on finished goods is very small owing to poor processing.
- waste is inordinate;
- production expenditure too high.

The above mentioned phenomena give us a glimpse of the favourable prospects for the furniture and joinery industries.

Indonesia has an area of 120 million ha. forest, consisting of all kinds of wood, which has been underutilized up to now.

To improve economic growth, it is very important that the woods be utilized for both domestic use and export. We thus need modern machinery for exploitation, manufacturing and processing purposes.

I hope that the seminar in Finland will successfully help us to solve our problems. I would be very happy to have the opportunity to put into practice the conclusions reached at the seminar, so that I will be in a position to draft better programmes especially in furniture and joinery.

I do hope that by using modern wood processing techniques and production techniques, the national income will constantly increase.

Thus, it would be very helpful if the International Bodies would grant technical assistance to the furniture and joinery industries, to the officials of the programming division and to Indonesian private enterprises so that Indonesia can have a modern industry capable of manufacturing wooden products to satisfy demands in general and to meet furniture and joinery requirements in particular. In so doing, Indonesia will be able to keep pace with the rapid developments in other fields.

#### IV. Appendix I.

The forest in Indonesia covers an area of 1,219,000 sq.km. or about two thirds of the total land area of 1,904,345 sq.km. Kalimantan has the largest area (414,700 sq.km.) followed by the Moluccas and West Irian (376,000 sq. km.) and Sumatra (284,200 sq.km.)

The following table gives a general picture of the forest area in Indonesia:

#### Forest in Indonesia

Location	Forest area in sq.km.		
	Reserved	Non-reserved	Total
Java & Madura	29,891	-	29,891
Sumatra	77,940	206,260	284,200
Kalimantan	39,084	375,616	414,700
Sulawesi	15,872	82,508	99,380
Moluccas & West Irian	-	376,000	376,000
Nusa Tenggara	12,182	2,656	14,838
Indonesia	175,969	1,044,040	1,219,009

Due to its geographical location between two continents, Asia and Australia, Indonesia has a great variety of forests where the number of species having a diameter at breast height of 40 cm and up amounts to about 3,400 belonging to about 450 genera.

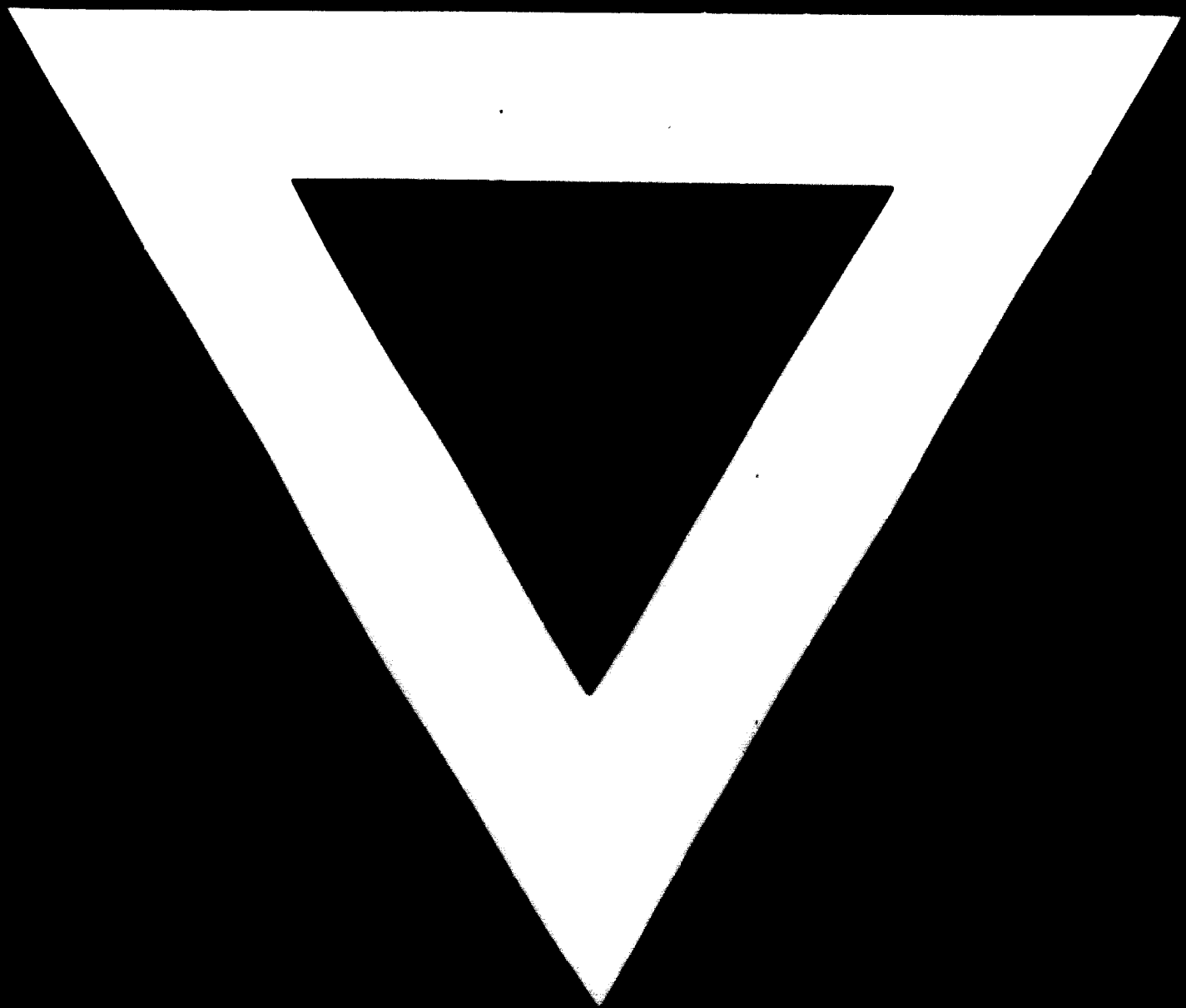
The influence of the Asian flora is more pronounced than that of the Australian flora.

Some species are restricted in distribution while many others are scattered over vast areas. Soil types and climatic factors also greatly influence the distribution of the species. Species of the Dipterocarpaceae are common in Sumatra and Kalimantan.

Pectanra gracilis (Lamk) is more limited to sites in general in East Java, South Sulawesi and Nusa Tenggara. Manifold fires have

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resulted in pure stands of Pinus merkusii in Atjeh, Shorea wallichii in South Sumatra, Bangka and Billiton, Tectona grandis in Java, Cassuarina junghuhniana in West Java, Melaleuca leucandendron in the Maluccas, Palembang and Kalimantan and Eucalyptus alba in Timor.



**10.7.74**



