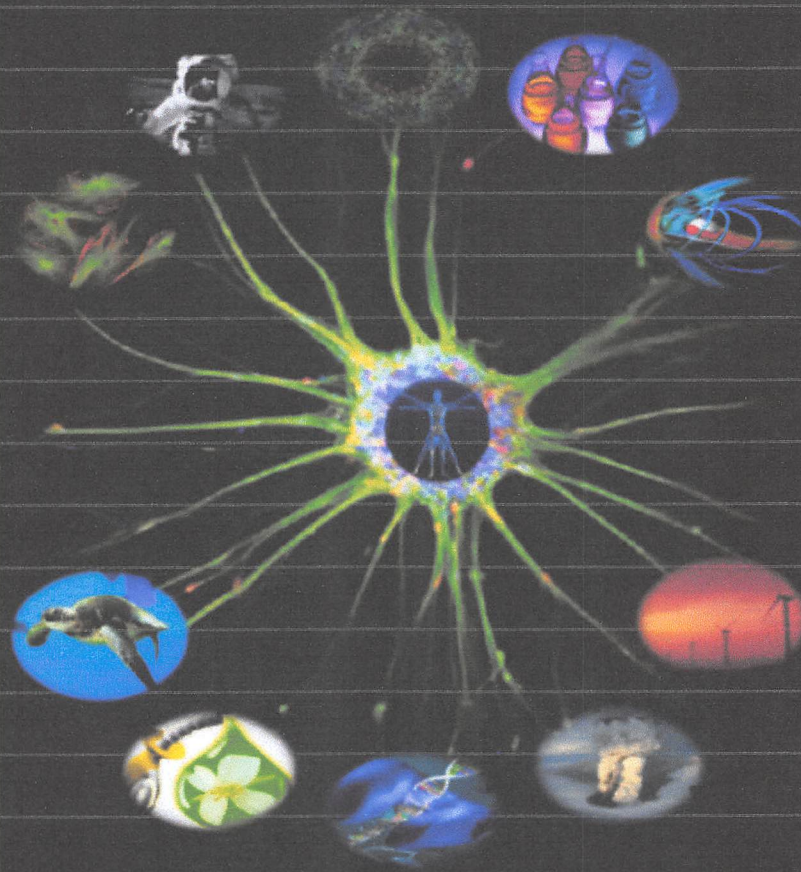


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ARTICLE

AN ANALYSIS OF THE INDONESIAN WOOD BASED INDUSTRY

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ABSTRACT

In this research, the Indonesian wood-based industry is studied. This is one of the largest industries in the country and has significantly contributed to the economic growth of the country. A special focus is made on the sources of wood in the industry, consumption versus the production capacity, and lastly the exported and imported quantities of both the raw materials used and the industry's finished products. The research takes a qualitative approach as there have been several researchers whose work has focused on the wood based industry in Indonesia. For this case, therefore, secondary data is used. This data type is selected because of the advantages it has such as availability and reliability. Time constraint is another considerable reason secondary data has been used in this research. The results are presented using graphs which are accompanied by brief explanations of the data represented on the graph. A summary table on the production quantities is also given. It is noted that plywood has got the highest demand thus the second largest in the production quantity. Indonesia exports more plywood than it consumes. Veneer, Sawn wood, and round wood are the other produced wood products by the industry. The study concludes by pointing out the major aspects of the wood-based industry in Indonesia. Of the materials exported, plywood is taken the largest percentage followed by sawn wood. The country does not import as much as it consumes. The research later gives some recommendations that are appropriate for improving the state of the wood based industry based on the results of the study. Some of the recommendations given include planting more production forests and failing to increase the production capacity in order to bring about the sufficiency of the current production.

INTRODUCTION

Urban Indonesia is a country that is located in South East Asia [1]. It is one of the industrialized countries in the region especially when it comes to the wood based industry. It is one of the largest economies globally in terms of both the GDP and nominal GDP. The wood based industry has contributed significantly to the economic growth of this country. With about 91.0 million hectares of land under forest cover, the country is literally a home for the wood industry because this constitutes about 53% of Indonesia. Some of these forests are natural while others are planted forests. The planted forests are majorly aimed at providing the raw material for the industry which leads to the conclusion that a lot of entrepreneurs in Indonesia have ventured into the wood based industry [2]. This has been supported by information from ITS Global (2011) that half of the forests in Indonesia are production forests.

The percentage of forest cover in Indonesia is also increasing steadily as can be noted by the increase that took place in Bali, Maluku, Sulawesi, Papua, and Java, between the years 2000 and 2003[3]. Most of these increases in the forest cover are due to the protection and production forest gains. This is clear indication that the people of Indonesia have embraced forestry as it considerably supports the country's wood based industry. This study focuses on the production forests which cover about 60.9 hectares in millions. These are the forests that are used in the provision of raw materials for the wood based industry in Indonesia.

In 2014, 67 million m³ of round wood were produced by the Indonesian wood based industry. This wood type is used within the country. Exports of the same timber products account for \$2593.4 million of the total export value. Plywood and to a smaller extent sawn wood are the most exported wood types in this case [4]. The species that are commonly harvested in Indonesia include Kapur (*Dryobalanops spp.*), Misawa (*Anisoptera spp.*), Keruing (*Dipterocarpus spp.*), Meranti (*Shorea spp.*), and Teak (*Tectona grandis*) [1]. [Table 1] below gives a list of the wood types produced in Indonesia, coupled with the details on domestic consumption, the quantity exported, quantity imported, and the production quantity according to ITTO, 2005.

Table 1: List of the wood types produced, imported, exported, consumed by Indonesia

	Production quantity (*1000m3)	Imports quantity (*1000m3)	Domestic Consumption (*1000m3)	Exports quantity (*1000m3)
Logs (Ind. Round wood)	67272	72	67310	34
Sawn Wood	4169	132	3339	962
Veneer	816	34	836	13
Ply Wood	5768	105	2110	3763

The Indonesian wood based industry consumes a higher percentage of the produced wood in the country as has been proven by the higher values of domestic consumption [5]. This is attributed to the paper and pulp

KEY WORDS

Indonesia, furniture, Plywood, Sawn wood, Production capacity

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industry and other tertiary industries that utilize the wood through furniture production. It is also noteworthy that the country is a net exporter of the products of timber and timber itself. The major exports comprise already manufactured wood products such as paper and pulp, joinery and moldings, plywood, veneer, sawn timber, and furniture. Wood charcoal and articles of wood comprise 40% of the wood-based products that are exported while the products of paper and pulp, on the other hand make up 50% of the total exported wood based products in Indonesia [6]. This is a clear demonstration of how important the wood-based industry is to the Indonesian economy [1]. This research article is aimed at finding out the most important wood products that are of significant value to the Indonesian economy.

MATERIALS AND METHODS

The methodology of this research will take a qualitative approach [7]. Secondary data from previous studies will be used because of its time-saving ability. Secondly, the data is easily available and has been used by previous researchers in their respective studies and institutions. This, to some extent, proves the reliability of the data [8]. The use of secondary data will also lead to new discoveries that may not have been noticeable at the time the data was being collected. Secondary data is also less expensive as compared to other data collection procedures [9]. Larger data sets over a long period of time like those that have been used in this study have been analyzed at no extra cost. This, compared to primary data collection is the best option for purposes of this study [10].

Various literatures will be reviewed to get information of the manufactured wood products from Indonesia, some of which are Round wood, Sawn wood, Veneer, and Plywood [11]. The sources of the wood will be evaluated and consumption will also be highlighted in comparison to the demand of the same. The current situation of the wood based industry over a period of time in the recent past will be analyzed then compared with the potential of the current resources for the most relevant recommendations and conclusions to be drawn from the research.

RESULTS

The [Fig.1] below gives a summary of the information on the development of the Indonesian wood based industry from 1991 to 2013 in terms of the sources of supply of wood used in the industry as earlier outlined in this research. The industry has been dominated by the manufacture of plywood and paper and pulp earlier in the 21st century.

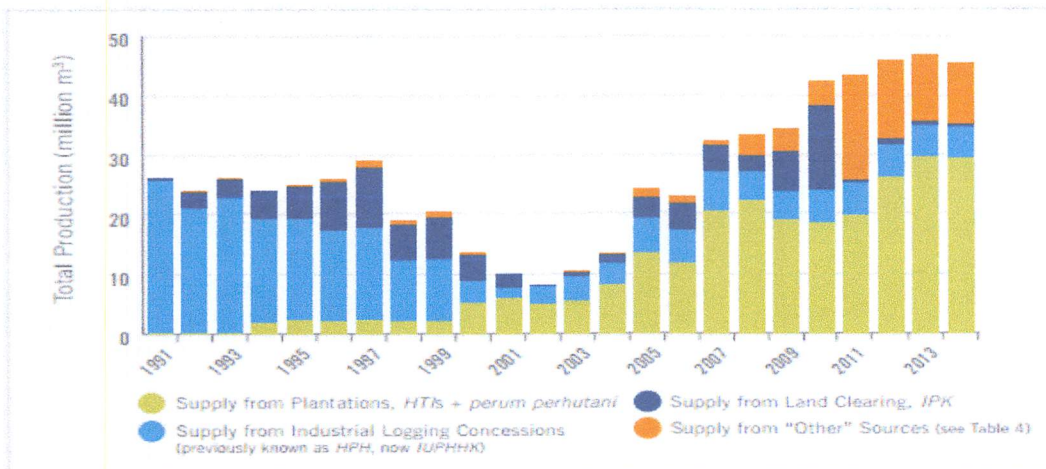


Fig. 1: Wood supply.

It is noteworthy that most of the wood used in the Indonesian wood industry is from the production plantations. It can also be noticed that the plantations started being dominant during the late 20th century. Before then, a major source was the industrial logging concessions.

It is also important that we delve into the types of wood produced in Indonesia and what type of wood dominates the wood based industry in terms of manufacturing [13]. The [Fig. 2] below gives information on the development of the industry from 1978 to 2014. It can be noted that the industry manufactured plywood in plenty from the late 1980s to the earlier 21st century.

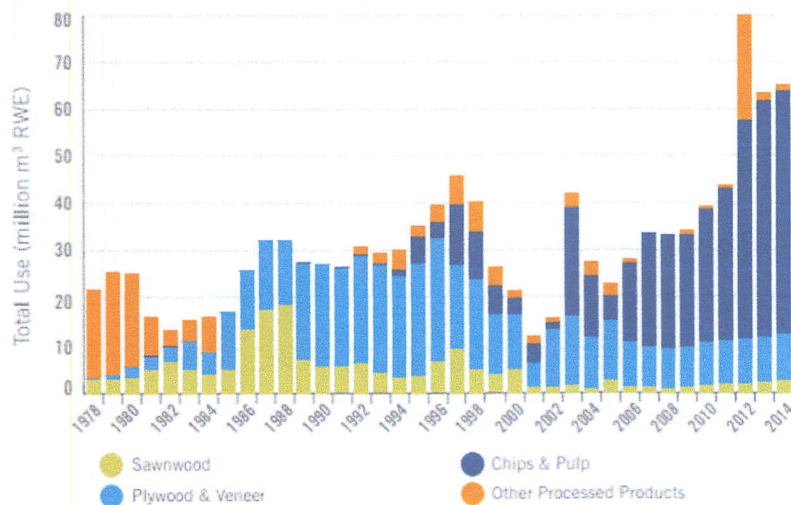


Fig. 2: Use by industry.

Research has also proven that the consumption of wood in Indonesia is greater than the production of the same. This means that supply cannot meet the demand for these products [14]. The consumption is too high in that the imports can still not solve this problem. This is an indication that there is a gap in the production of wood for the industry which is undoubtedly filled by illegal sources, the [Fig.3] below is an illustration of this scenario [12]

A Comparison of Reported Timber Use vs. Supply

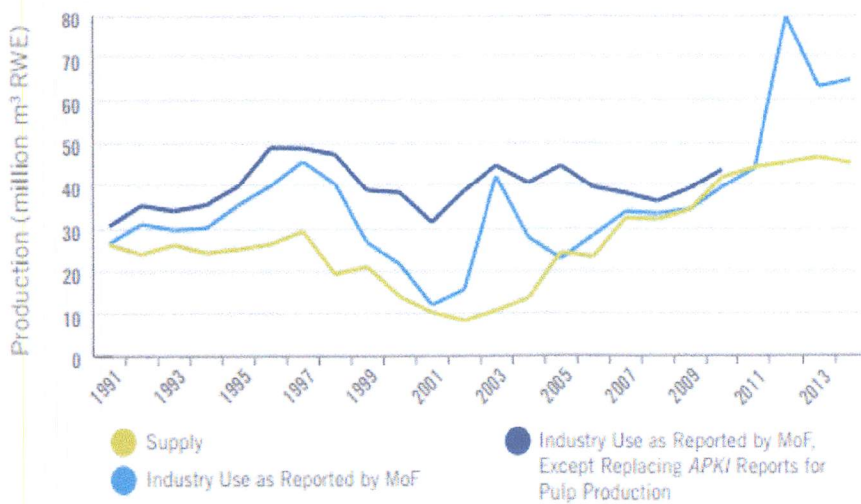


Fig. 3: Consumption versus supply.

It can be deduced that there is a need for more production plantations in Indonesia to sustain the wood based industry because consumption exceeds the supply of raw wood, which is an important raw material in the wood based industry.

CONCLUSION

Conclusively, the Indonesian wood-based industry is one of the largest in the world and has been supported by the geographical location of Indonesia and the climatic conditions of the area (14). These have supported the forestry sector that provides a major resource and raw material to the wood based industry. The supply of wood for the industry is majorly from plantations as has been shown in the results of the study. The study also shows that plywood and Veneer are the most used wood types in the industry both currently and in the recent past. Of the produced goods, the country consumes most of it and exports the rest [16]. Of the

materials exported, plywood is taken the largest percentage followed by sawn wood. The country does not import as much as it consumes. As a result, consumption of wood materials is higher than the available supply which has led to companies sourcing the raw materials illegally from natural forests. A number of imports should be increased if demand is to be met.

RECOMMENDATION

The Indonesian wood industry being one of the largest industries on the planet has faced a lot of pressure as a result of struggling to meet demand. Wood production is only about half of the expectations of the ministry of forestry as illustrated in the data displayed on graphs earlier in this research report [17]. The current plantations are not sufficient to support the ever-growing industry [18]. The industry is, therefore, exerting a lot of pressure on natural forests as their only reliable source of raw materials which are quickly becoming extinct. Producers are demolishing natural forests which have remained as the only source of raw material for the wood based industry. This is not a legal supply of wood as it is slowly leading to deforestation [19].

It can, therefore, be recommended that any investors and financial institutions find other ways of obtaining raw materials legally. This can be through increasing imports or planting more forests. In addition, the production capacities of the wood products should not be increased. These include milling capacities and mills. The current ones should be utilized to meet the demand for wood products because increasing the production capacity would mean an increase in the demand for the raw materials that are unavailable [20]. This will, in turn, contribute significantly to criminal activities as firms in the industry will seek to obtain wood at any costs. The Indonesian wood based industry has to be stable before any other mills are added in a bid to increase the production capacity.

CONFLICT OF INTEREST

No conflict of Interest stated.

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