An Analysis of the Demand Market of Indonesian Plywood in Japan

Makkarennu\textsuperscript{a*}, A. Nakayasu\textsuperscript{b},
K. Ososawa\textsuperscript{b}, and M. Ichikawa\textsuperscript{c}

\textsuperscript{a}Faculty of Forestry, Hasanuddin University, Indonesia
\textsuperscript{b}Faculty of Agriculture, Ehime University, Japan
\textsuperscript{c}Faculty of Agriculture, Kochi University, Japan

Received: December 4, 2013/ Accepted: September 30, 2014

Abstract

The Indonesian plywood industry began to rapidly develop in the 1980s, since the government stated a new policy regarding a ban on the export of wood logs in 1985. The industry has experienced rapid growth and structural change and played an important part in the Indonesian economy through a significant role as a gross domestic product, foreign exchange, government revenue, and employment contributor. The aims of this study are to analyze the current situation of Indonesian plywood consumption and to estimate the demand market of Indonesian plywood for the next five years in Japan. For the purposes of the study, data of the export of Indonesian plywood to sixteen countries over five years (2008-2012) and data of plywood exported to Japan over thirty one years (1982-2012) was collected. To predict demand market of Indonesian plywood in Japan, the obtained data was analyzed by using an exponential smoothing model. Mean Absolute Percentage Error, Mean Squared Error and Mean Absolute Deviation are also used to calculate demand forecast accuracy. The results indicated that the future market of Indonesian plywood in Japan will remain fairly constant at the level of 1.09 million m\textsuperscript{3} in 2013 until 2017.

Japan is still the dominant market for Indonesian plywood.

Key words: plywood; demand; market.

1. Introduction

Plywood has been the dominant wood industry product in Indonesia, since the government stated a new policy regarding an export ban of wood logs in 1985 \cite{1} and the government issued a policy requiring every forest concessionaire to establish a wood-processing plant \cite{2}.

The policy made Indonesia one of the biggest plywood suppliers in the world \cite{3}, supplying about 70\% of the total global market \cite{4}. The government policy encouraged the growth of domestic wood industries, mainly the plywood industry, which was initially only three companies, which increased to 101 companies by 1986. It further increased by 1987 to 118 companies, and in 1992 the number of companies reached 120 \cite{5}.

The log export ban ensured a cheap source of raw materials, and an export marketing cartel aggressively pursued overseas markets. Approximately 90\% of Indonesia’s plywood production is consumed in the global market, and the rest in domestic markets \cite{1}. The industry is the dominant exporter of plywood in the world. It is also the largest user of industrial logs from tropical rain forests, and so, is paid close attention by conservation interests. The industry was developed to add value to raw materials, to aid industrialization, and to provide employment \cite{6}. Besides, the positive effects of a log export banning policy are improving the foreign currency through forest product exports, expanding the labor market, increasing individual and regional income and enhancing forest development growth \cite{7}. In the labor sector, total employment in wood and wood product industries has increased from roughly 42,000 in 1975 to 562,000 just before the economic crisis before declining to 392,000 in 2000 \cite{8}. Until 1997, the plywood industry's export earnings dominated the sector, with a production level twice the volume of the world's second-largest producer of tropical plywood \cite{1}. Indonesia exports plywood primarily to Japan, China, and the Republic of Korea, although the proportion of its exports shipped to these countries has dropped since 1992, due to increased exports to the US and the European Union \cite{9}.

The rapid growth of the Indonesian plywood industry increased pressure on forests, leading the government to declare the plywood industry closed to new investments and to introduce tighter controls on forest exploitation \cite{10}. In fact, growth in the plywood industry came at a cost.

Domestic log production tapered off and domestic log prices fell relative to world price throughout the 1980s and 1990s \cite{11}.

On the other hand, the rapid industrial growth, particularly in the plywood industry, has created a spatial imbalance of supply and demand for logs as a raw material \cite{12}. The expansion of this industry has decreased in line with the decline in log production from natural forests, while, at the same time the production of logs from