UNIVERSITI PUTRA MALAYSIA

IMPACT OF FORESTRY ON REGIONAL ECONOMY OF EAST KALIMANTAN PROVINCE, INDONESIA

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IMPACT OF FORESTRY ON REGIONAL ECONOMY OF EAST KALIMANTAN PROVINCE, INDONESIA

By
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Dissertation Submitted in Fulfilment of the Requirements for the Degree of Doctor of Philosophy in the Faculty of Forestry Universiti Putra Malaysia

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DEDICATION

To my wife, Rika, and our children
Galih, Vita, and Wira,
and to my parents

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LIST OF ABBREVIATIONS

AAC : Annual Allowable Cut

ADB : Asian Development Bank

APKINDO : *Asosiasi Panel Kayu Indonesia* (Indonesia Wood Panel Association)

ASEAN : Association of Southeast Asian Nations

BAPPENAS : *Badan Perencanaan Pembangunan Nasional* (National Development Planning Board)

BFL : Basic Forestry Law

BUMN : *Badan Usaha Milik Negara* (State Owned Enterprises)

CBS : Central Bureau of Statistics

CDK : *Cabang Dinas Kehutanan* (District Forest Services)

dbh : Diameter at Breast Height

DKI : *Daerah Khusus Ibukota* (Jakarta metropolitan City)

DR : *Dana Reboisasi* (Reforestation Fund)

FAO : The Food and Agriculture Organisation of the United Nations

FCR : Forest Concession Right

GBHN : *Garis-Garis Besar Haluan Negara* (National Conceptual Development Guidelines)

GDP : Gross Domestic Product

GDRP : Gross Domestic Regional Product

ha : hectare = 10,000 square meters

HPH : *Hak Pengusahaan Hutan* (Forest Concession Rights)

HPHH : *Hak Pemungutan Hasil Hutan* (Forest Products Collection Rights)

HTI : *Hutan Tanaman Industri* (Industrial Forest Plantations)

IHH : *Iuran Hasil Hutan* (Forest Products Royalty)

IHPH : *Iuran Hak Pengusahaan Hutan* (Forest Concession Licence Fee)

ITTO : International Tropical Timber Organisation

I-O : Input-Output

INPRES : *Instruksi Presiden* (Presidential Instruction)

IPB : *Institut Pertanian Bogor* Bogor Agricultural University)

IPB : *Institut Pertanian Bogor* Bogor Agricultural University)

km : kilometre

KPHP : *Kesatuan Pengusahaan Hutan Produksi* (Production Forest Utilisation System Unit)

m : metre

m^3 : cubic metre

MOF : The Ministry of Forestry

MOT : The Ministry of Transmigration

NFI : National Forest Inventory

NGO : Non-government Organisation

OECF : Overseas Economic Co-operation Fund

PBB : *Pajak Bumi dan Bangunan* (Land and Building Tax)

% : percent

PJP : *Pembangunan Jangka Panjang* (Long-term Development Planning)

PMDH : *Pembangunan Masyarakat Desa Hutan* (Forest Village-Community Development Programme)

PT : *Perseroan Terbatas* (Limited Liability Company)

Repelita : *Pembangunan Lima Tahun* (Five-Year Development Plan)

RPH : *Resort Pemangkuan Hutan* (Forest Sub-Rangers)

RePPProt : Regional Physical Planning Programme for Tranmigration

Rp : Rupiah, Indonesian Rupiah

SCDK : *Sub Cabang Dinas Kehutanan* (Sub District Forest Services)

SMES : Small and Medium Scale Enterprises

TGHK : *Tata Guna Hutan Kesepakatan* (Forest Land-Use by Concensus)

THPA : *Tebang Habis dengan Permudaan Alam* (Clear Cutting with Natural Regeneration)

THPB : *Tebang Habis dengan Permudaan Buatan* (Clear Cutting with Artificial Regeneration)

TPI : *Tebang Pilih Indonesia* (Indonesian Selective Cutting System)

TPTI : *Tebang Pilih Tanam Indonesia* (Indonesian Selective Cutting and Planting System)

US $: American Dollar, in 1996 US $ 1 = Rp 2,200

Abstract of Dissertation presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirements for the degree of Doctor of Philosophy

IMPACT OF FORESTRY ON REGIONAL ECONOMY OF EAST KALIMANTAN PROVINCE, INDONESIA

By

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April 1999

Chairman: Khamurudin Mohd. Noor, Ph.D.

Faculty: Faculty of Forestry

Forestry development in Indonesia has given many advantages to the Indonesian economy. However, some provinces which are rich in forest products are not receiving maximum impact of the sector. Many number of research projects have shown that the presence of this sector was unable to stimulate the growth of downstream industries and has been disadvantageous to regional development.

The East Kalimantan has a large area of forest, covering more than 76% of the total land area. This province leads in the forestry activity in Indonesia. In 1997, there were 72 FCRs, 28 plywood mills, 116 sawmills, and 49 other wood industries. This study aims to identify the impact of the forestry sector on the regional economy of East Kalimantan with regards to its GDRP, multipliers, linkages, and regional leakage using I-O analysis. This study also analyses several alternative policies and inter-sectoral linkages in the forestry sector.

The experimental results indicate that the contribution of forestry in East Kalimantan in 1995 to GDRP amounted to 11.70% (rank 3 out of 10 sectors) after Mining and Quarrying (34.10%) and Manufacturing Industry (24.10%). This contribution can be increased further through various government policies.

The forestry sector has a high value of multipliers, namely 1.8211 (total output), 1.5388 and 1.8416 (Type I and Type II income multipliers), 1.4196 and 1.5997 (Type I and Type II employment multipliers). Plywood and sawntimber industries are the two forestry activities that have good prospects. This sector has high value of output backward linkage (1.8211), low value of output forward linkage (0.8014), low value of income backward and forward linkage (0.8550 and 0.6494), and low value of employment backward and forward linkage (0.9755 and 0.8529). The level of regional leakage of the forestry sector in this province is high (ranks 4 out of 10 sectors). Plywood and sawntimber have the highest value of regional leakage among all of the forestry activities.

To increase the role of the forestry sector in the future, fourteen policy scenarios of exports have been incorporated in this study. The selection of the policy scenarios are dependent on the forest potential in this province. Inter-sectoral linkage needs to be more developed to obtain value-added. incentives need to be provided to promote the development of integrated wood-based industrial complexes, including ways to overcome constraints and bottlenecks in the input-supplying sector, and development of small and medium scale enterprises (SMES).

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor

KESAN DARI PERHUTANAN PADA PEREKONOMIAN WILAYAH DARI KAWASAN KALIMANTAN TIMUR, INDONESIA

Oleh

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April 1999

Pengerusi: Khamurudin Mohd. Noor, Ph.D.

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Pembangunan perhutanan di Indonesia telah menyumbangkan banyak kelebihan kepada ekonomi kerajaan. Tetapi terdapat beberapa kawasan yang kaya dengan produk perhutanan tidak menerima kesan yang maksima dari sektor ini. Beberapa penyelidikan menunjukkan bahawa kehadiran sektor ini tidak dapat menggalakkan pertumbuhan industri pinggiran dan memberi kerugian kepada pembangunan kawasan.

Kawasan Kalimantan Timur mempunyai hutan yang luas, meliputi lebih dari 76% luas kawasan tersebut. Kawasan ini tertumpu kepada aktiviti perhutanan. Pada tahun 1997, di kawasan ini telah wujud 72 konsesi hutan, 28 kilang papan lapis, 116 kilang papan dan 49 kilang kayu olahan yang lain. Penyelidikan ini adalah untuk mengenalpasti kesan sektor perhutanan terhadap ekonomi kawasan (sumbangan kepada kerajaan, pengkali, kaitan dengan sektor lain, dan bocoran wilayah) dengan analisa input-output. Beberapa polisi alternatif juga dianalisis dalam penyelidikan ini.

Keputusan penyelidikan menunjukkan bahawa sektor perhutanan di Kalimantan Timur pada tahun 1995 menyumbang kepada ekonomi kerajaan sebanyak 11.70% (tahap 3 daripada 10 sektor) selepas perlombongan dan kuari (34.10%) dan industri pembuatan (24.10%). Sektor ini juga mempunyai pengkali yang baik, iaitu 1.8211 (keluaran), 1.5388 dan 1.8416 (Jenis I dan II pendapatan), 1.4196 dan 1.5997 (Jenis I dan II tenaga kerja). Sektor ini juga mempunyai kaitan ke belakang output yang tinggi (1.8211), tetapi nilai yang rendah pada kaitan ke depan output (0.8014), kaitan ke depan dan ke belakang pendapatan (0.6494 dan 0.8550), dan kaitan ke belakang dan ke depan tenaga kerja (0.9755 dan 0.8529). Kawasan ini mempunyai nilai bocoran wilayah yang tinggi (tahap 4 daripada 10 sektor). Industri papan lapis dan kayu bergergaji mempunyai nilai yang tertinggi diantara aktiviti perhutanan lainnya.

Untuk meningkatkan peranan sektor perhutanan dimasa hadapan, 14 senario dasar didalam ekspot telah digabungkan didalam penyelidikan ini. Pemilihan dasar senario bergantung kepada keadaan hutan di wilayah ini. Percantuman inter-sektor perlu lebih digalakkan untuk mencapai nilai penambahan. Insentif perlu disediakan untuk meningkatkan pembangunan didalam persepaduan industri kompleks berasaskan perkayuan, termasuk cara-cara untuk mengatasi perbatasan pada sektor penyedia input, dan pengembangan usaha kecil dan menengah.

CHAPTER I

INTRODUCTION

The Background

The forestry sector in Indonesia has contributed greatly to the economic growth of the country. The last three decades has seen a significant contribution of this sector in helping to stabilise the Indonesian economy. In 1994, export earnings from this sector amounted to about US$ 6 billion, approximately 20% of the total value of all export earnings.

In addition, Indonesia's forests earn the largest foreign exchange besides oil. Forest products, especially wood, are among the major non-oil products. This is because Indonesia has about 144 million hectares of forest area. Sixty four million hectares of this total area are production forest. During the top logging activities in 1992, there were 580 Forest Concession Rights (FCRs) which managed more than 60 million hectares of production forest.

According to Sukadri (1996), the important role of the forestry sector to economic development has been made possible by a series of national policies. The national economic policy adjustment in 1983, for example, which was aimed at reducing Indonesia's dependence on oil exports and improving economic efficiency, brought about a change in the forestry sector's policy. The major change since 1983 was the restriction on log export which was followed by a

total ban in 1985. This policy resulted in the rapid development of the wood-based industries. Consequently, wood-based industries have grown from small and primary-based into large integrated and modern processing facilities.

Results of investment policies by Indonesian Government in late 1960's can be seen vis-a-vis with the following development of events. Log production increased from 5.8 million m^3 in 1968 to 26.8 million m^3 in 1994. The production of plywood increased from 0.4 million m^3 in 1968 to 9.9 million m^3 in 1994, and sawntimber production also increased from 0.17 million m^3 in 1968 to 10.2 million m^3 in 1989. According to the Ministry of Forestry of the Republic of Indonesia (1995), Indonesia's contribution came close to 80% of the world's hardwood plywood market in 1993, amounting to 9.8 million m^3, equivalent to US$ 3,594 billion. Thus, forestry has become particularly important in terms of foreign exchange earnings.

The forestry sector also plays an important role in providing employment. This sector employs about 6.4 million people in forest-related activities. In addition, another 1.1 million people are employed in activities attributable to forest products such as construction, transportation, services, and secondary processing (Khan and Satjapradja, 1997). Meanwhile, the Ministry of Forestry (1995) expects that by the year 2000 the forestry sector will have a contribution of some 6 to 8 million jobs. Therefore, the present management of the sector should be maintained and improved upon in order to provide an economic base for the on-going development of Indonesia.

Problem Statement

Forestry development in Indonesia has provided many advantages to the economic and regional development in Indonesia. However, some provinces which are rich in forest products are not receiving maximum impact of the sector. Previous studies have shown that this sector is unable to stimulate the growth of downstream industries and regional development. Generally, the forestry sector has a low forward linkage, low multipliers, and high regional leakages (Siagian, 1995; Darusman, 1989; Sudharto,1996). It is believed that this situation had caused the disparity of income distribution of the people in the region, as well as, low regional development.

Other illustrations showed that out of 25.9 million poor inhabitants in 1993 who were distributed in 22,994 villages, approximately 34% were located in the rural areas around the forest (Ministry of Forestry, 1995). Meanwhile Sutopo (1995) stated that the presence of FCRs have caused a decline in the income and brought about a major difference in the income level of the Dayak community in the interior of Kalimantan.

Therefore, efforts are being made by the forestry sector of Indonesia to play a bigger role, especially in the regional development through the increase of multiplier effects and linkages of this sector. Providing incentives, infrastructure, capital, and encouraging small and medium enterprises, and developing downstream wood-based industries are efforts that should to be

implemented. In other words, efforts are being made to ensure that these multiplier effects can be better absorbed by the local region and inter-sectoral linkage in both backward and forward linkage of the forestry sector can be further increased in the regional economy.

East Kalimantan is one of 27 provinces in Indonesia that leads in the forest activity and produces large amounts of forest products. In 1996, out of 437 FCRs in Indonesia, 72 FCRs (16.47%) were located in East Kalimantan. There were also 28 plywood industries, 116 sawmills, and 49 other wood industries in this province. In 1995/1996, this province produced about 1.44 million m^3 plywood (15.78% of Indonesia's produce), 5.16 million m^3 log (20.76% of Indonesia's log), and about 419,128 m^3 sawntimber (20.81% of Indonesia's sawntimber).

Despite the fact that East Kalimantan has been successful in producing the primary and secondary forest products, there remain various questions that need to be answered in order to better understand the usefulness of the forestry sector to East Kalimantan in general and its people in particular. These questions are pertinent with regards to the impact of forestry on regional economy of East Kalimantan. What is the quantum of the contribution of the forestry sector to the regional economy? What is the multiplier effects of the forestry in this province? How does the forestry sector in East Kalimantan relate to the other economic sectors of the economy? How can the forward and backward linkage of this sector stimulate the growth of the other sectors, and to what extent? To what extent the revenue from the forest is being trickled down back to the people in