Chapter 5

The Impact of Palm Oil Plantations on Indonesia's Rural Economy

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CHAPTER 5

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1. Introduction

Background

The word "agriculture" is closely associated with rural economy. The dynamics of rural economies rely on the performance of the agriculture sector. Thus, rural development is equated with growth in the agriculture sector and poverty reduction. The idea that the increase in income per capita would reduce poverty and enhance social development is a narrow concept and focuses only on the economic dimension of development. Nowadays, rural development indicates overall development of rural areas with a view to improving the quality of people's lives in these areas.

Rural development, a comprehensive and multidimensional concept, encompasses several factors: the development of agriculture and allied activities, village and cottage industries and crafts, socioeconomic infrastructure, community services and facilities; raising income levels of families below poverty line; increasing productivity; and development of human resources in rural areas. As a phenomenon, rural development is the end result of interactions between various physical, technological, economic, sociocultural, and institutional factors. As a

strategy, it is designed to improve the economic and social well-being of a specific group of people; namely, the rural poor. As a discipline, it is multidisciplinary in nature, representing an intersection of agricultural, social, behavioral, engineering, and management sciences. An assessment of changes in the quality of life, it is broadly defined to include improvement in health and nutrition, education, environmentally safe living conditions, and reduction in gender and income inequalities (Upadhyay 2008).

Before the positive impacts related to agricultural growth are taken up here, the impacts of plantation agriculture are worth discussing because this sector can also cause negative implications. Environmentalists all over the world are concerned about the conversion of forests into plantations, especially for oil palms. In addition, international environmental groups like Greenpeace believe that the palm oil industry serves as a threat to the environment because its operations may endanger many protected species. They also argue that the expansion of the palm oil industry is a recipe for environmental destruction. Thus, many environmentalists are concerned over oil-palm plantations in rainforests. On the upside, oil-palm plantations offer an alternative means of empowering rural people and boosting rural economies. In 2004, 4.5 million people in Indonesia, especially those in the rural areas, relied on palm oil estates: 900,000 people benefitted through direct employment and 3.6 million people, through downstream processing (Sandker et al. 2007).

Between 1980 and 2000, global palm oil production increased by 360 percent to 20.9 million tons. The global demand for palm oil is expected to double in the next 20 to 30 years (Sandker et al. 2007), making oil-palm plantations a promising industry. In Indonesia and Malaysia, oil palm is an industrial plantation crop that can fulfill global demand for palm oil. Data from the Indonesian Ministry of Agriculture show that private companies own half of the total number of oil-palm plantations in Indonesia. The other half is owned by the state (10 percent to 15 percent) and smallholders (35 percent to 40 percent). Smallholders are farmers who own a few hectares of a company-owned plantation. They own oil palms but they mostly still depend on the company for inputs like pesticides and fertilizers, for marketing, and for the processing of palm oil.

On the global scene, Indonesia and Malaysia dominate the production and exportation of palm oil. In 2001, Malaysia and Indonesia accounted for 83 percent of palm oil production

and 89 percent of global exports (Brown and Jacobson 2005). At present, these two countries continue to dominate palm oil production and exports. Indonesia, in particular, enjoyed a palm oil export boom during the last two decades. From 2004 to 2008, Indonesia recorded a 56.1 percent increase in palm oil production, from 12.38 million tons in 2004 to 19.33 million tons in 2008. It posted a 60.8 percent increase in palm oil exports in 2008 (14.47 million tons) compared to 2004 (8.99 million tons). This development has implications on the rural economy in particular and rural development in general.

Research Questions and Scope of Study

There are several fundamental questions that this research aimed to answer.

a) How is Indonesia's agricultural performance in terms of output and employment, trade, and sources of growth, including palm oil development?
b) What are the government policies related to palm oil development in Indonesia?
c) What are the ecological, social, and economic impacts of palm oil agriculture in Indonesia?
d) What are the effects of palm oil plantations as a concrete realization of rural development?

The data and empirical facts (figures) gathered from several reports on palm oil development in Indonesia will be used as bases for answering the questions. This paper covers all the research questions mentioned above. The questions were organized into several sections. The first section is a brief summary of Indonesia's agricultural performance, including output and employment, trade, and sources of growth. Then there is an overview of the palm oil development in Indonesia and various government policies, which are divided into several phases—the PIR-trans phase, deregulation phase, privatization phase, cooperatives phase, and decentralization phase. Recent government policies will also be dealt with, focusing especially on the government's ten-year plan and the Indonesian Sustainable Palm Oil (ISPO) certification.

The second section is a review of the impacts of palm oil agriculture in Indonesia. This section examines the ecological, social, and economic impacts of palm oil agriculture.

The third section identifies the effects of oil palm plantations on rural development, including employment and growth performance, basic infrastructure, poverty incidence, and migration.

The final section presents the conclusions and the implications on government policies and programs.

2. Indonesia's Agricultural Performance

Table 1 shows that from 2001 to 2007, the agriculture, livestock, forestry, and fishery (ALFF) sectors recorded the biggest contribution in terms of employment while the electricity, gas, and water (EGW) sector posted the smallest contribution to employment in the same period. This means that from 2001 to 2007, the farm sector, represented by ALFF, was the biggest employer in Indonesia's economy.

The manufacturing industry (MFG), the main component in the secondary sector, was the biggest contributor to total gross domestic product (GDP). Meanwhile, the EGW sector posted the smallest contribution to total GDP. The MFG sector proved to be very productive, with a total share to GDP of 27 percent to 29 percent. The employment share of the ALFF sector ranged from 42 percent to 47 percent. This sector was slightly efficient because it posted only 13 percent to 16 percent of GDP share for the period 2001—2007.

Table 1. Employment and GDP Share by Sector, 2001--2007 (in %)

Years	Agriculture, Livestock, Forestry, and Fishery		Mining and Quarrying		Manufacturing Industry	
	Employment	GDP	Employment	GDP	Employment	GDP
2001	43.77	15.54	0.79	11.68	13.31	27.65
2002	44.34	15.39	0.69	11.29	13.21	27.86
2003	46.26	15.24	0.80	10.63	12.04	28.01
2004	43.33	14.92	1.10	9.66	11.81	28.37
2005	43.97	14.50	0.96	9.44	12.72	28.08
2006	42.05	14.20	0.97	9.10	12.46	27.83
2007	43.67	13.83	1.05	8.73	12.39	27.40
Years	Electricity, Gas and Water		Construction		Trade, Hotels, and Restaurants	
	Employment	GDP	Employment	GDP	Employment	GDP
2001	0.20	0.63	4.23	5.56	19.24	16.20
2002	0.19	0.66	4.66	5.61	19.42	16.16
2003	0.17	0.66	4.52	5.68	18.56	16.26
2004	0.25	0.66	4.84	5.82	20.40	16.37
2005	0.21	0.66	4.86	5.92	19.06	16.77
2006	0.24	0.66	4.92	6.08	20.13	16.92
2007	0.26	0.69	4.51	6.21	19.91	17.26
Years	Transportation and Communication		Financial, Ownership and Business		Services	
	Employment	GDP	Employment	GDP	Employment	GDP
2001	4.90	4.88	1.24	8.56	12.12	9.30
2002	5.10	5.06	1.08	8.74	11.30	9.23
2003	5.48	5.42	1.43	8.90	10.74	9.20
2004	5.85	5.85	1.20	9.12	11.22	9.23
2005	6.02	6.24	1.22	9.21	10.99	9.18
2006	5.93	6.77	1.41	9.21	11.90	9.24
2007	5.72	7.28	1.28	9.35	11.23	9.27

***Source*:** CEIC Asia Database

A comparison between employment and GDP shares between the farm and the nonfarm sectors is presented in table 2. There was a fluctuation in the trend in employment share of the farm sector from 43.77 percent in 2001 to 43.67 percent in 2007. The trend in the employment share of the nonfarm sector also fluctuated from 56.02 percent in 2001 to 56.34 percent in 2007.

Table 2. Employment and GDP Share of Farm and Nonfarm Sectors, 2001--2007 (in %)

Years	Farm Activities/Sector		Non-Farm Activities/Sector	
	Employment	GDP	Employment	GDP
2001	43.77	15.54	56.02	84.46
2002	44.34	15.39	55.66	84.61
2003	46.26	15.24	53.74	84.76
2004	43.33	14.92	56.67	85.08
2005	43.97	14.50	56.03	85.50
2006	42.05	14.20	57.95	85.80
2007	43.67	13.83	56.34	86.17

***Source*:** CEIC Asia Database

Oil Palm Plantations in Indonesia

Indonesia is endowed with plenty of natural resources. Its agriculture sector plays a significant role in GDP. One of the commodities of great value in Indonesia's agriculture sector is palm oil. Oil palm plantations were first introduced in Indonesia in the early 20th century. Today, more than 600 companies have joined the bandwagon, and many plantations have become large-scale enterprises, covering about 7 million to 8 million hectares. Provinces with large-scale oil palm plantations are mostly in Sumatera and Kalimantan, specifically in North Sumatera, South Sumatera, West Sumatera, Bangka Belitung, Jambi, Bengkulu, Lampung, Riau, West Kalimantan, Central Kalimantan, East Kalimantan, South Kalimantan, West Sulawesi, South Sulawesi, Central Sulawesi, and Papua.

Sumatera produces the largest amount of palm oil in Indonesia, with Riau and North Sumatera, in particular, having the distinction of being the largest producers because of the large areas allotted for oil palm plantations in these provinces. Table 3 shows that Riau had around 1.5 million hectares of oil palm plantations in 2005 while North Sumatera had 1.1 million hectares. There are plans to expand the number of lands allotted for oil palm plantations to 20 million hectares within the next few years, starting with some provinces in Kalimantan followed by Papua and some provinces in Sulawesi.

Table 3. Area Planted to Oil Palms in 2005 (in hectares)

Province	**Area in 2005 (ha)**
Sumatera	
Aceh	222,389
North Sumatera	**1,093,033**
West Sumatera	489,000
Riau	**1,486,989**
Jambi	350,000
South Sumatera	416,000
Bangka Belitung	112,762
Bengkulu	81,532
Lampung	145,619

Java	
West Java	3,747
Banten	17,375
Kalimantan	
West Kalimantan	349,101
Central Kalimantan	583,000
South Kalimantan	391,671
East Kalimantan	303,040
Sulawesi	
Central Sulawesi	43,032
South Sulawesi	72,133
Southeast Sulawesi	3,602
Papua	
Papua	40,889
TOTAL	**6,059,441**

***Source*:** Marcus Colchester et al. *Promised Land* 2006.

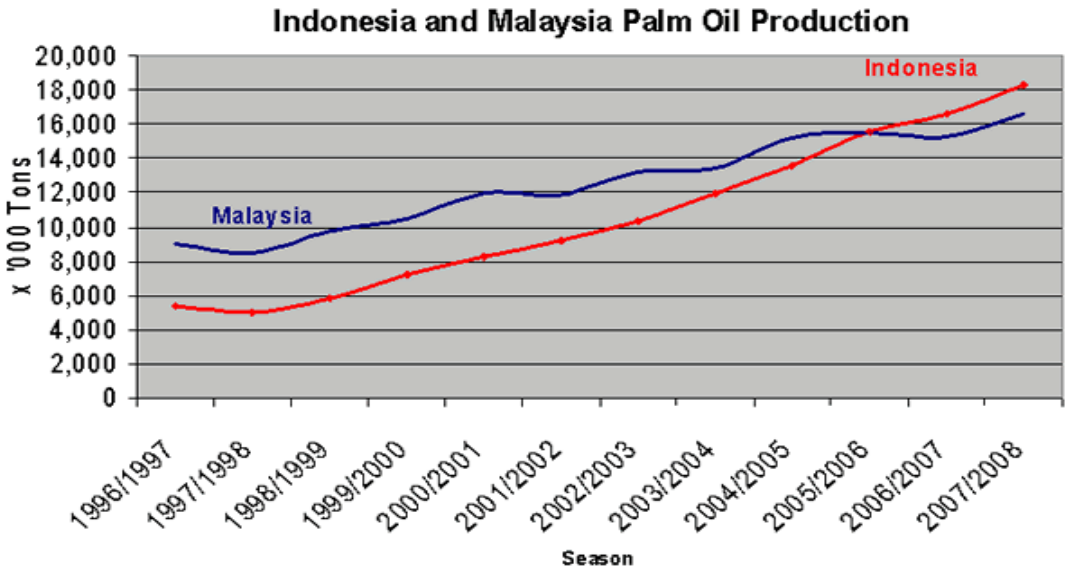
The large-scale operation of oil palm plantations in the country has attracted a significant number of investors, both local and foreign. Most of these investors and palm oil companies are exploring the use of palm oil as raw material for biodiesel and as an important food ingredient. Some of the companies that have joined this industry are PT. Astra Agro Lestari Tbk, PT. Bakrie Group, Surya Dumai Group, Cargill, Robert Kuok's Wilmar International Limited, and Sinar Mas, among others.

Indonesia's Palm Oil Production

Compared to agricultural products from Southeast Asia, from other parts of the Asian region, and even from around the world, Indonesia's agricultural products, especially certain commercial products such as palm oil, have a comparative advantage. Since 2005, Indonesia has been in a tight competition with Malaysia in the production and export of palm oil. Other countries that also produce palm oil are Thailand, Colombia, and Nigeria. Figure 1 shows the trend in palm oil production of Indonesia and Malaysia. The graph shows that Indonesia surpassed Malaysia in the production of palm oil since 2005—2006. The substantial increase

in palm oil production has also made Indonesia the most significant exporter of palm oil in the world as discussed further in the section "Indonesia's Palm Oil Trade."

Figure 1. Palm oil production, Indonesia vs. Malaysia,1996—2008



***Source*:** US Department of Agriculture

Figure 1 also shows Indonesia's progress as a palm oil producer, with palm oil production steadily increasing from season to season. Indonesia produced about 18.3 million tons of palm oil in 2007—2008, which is a good sign because the world's demand for palm oil is expected to remain high and increase even further.

Table 4. Production, Export, and Consumption of Palm Oil in Indonesia, 2004—2008

2004	12.380	8.996	3.347
2005	14.100	10.436	3.546
2006	16.050	12.540	3.711
2007	17.100	12.650	4.105
2008	19.330	14.470	4.430

***Source*:** Oil World Database

In Indonesia, around 75 percent of palm oil production is allocated for export; only 10 percent to 15 percent is distributed for domestic consumption. Table 4 shows Indonesia's palm oil exports to be consistently increasing since 2004, from 8.9 million tons in 2004 to 14.4 million tons in 2008. Domestic consumption has also slightly increased, from 3.3 million tons in 2004 to 4.4 million tons in 2008.

The price of palm oil on the world market has been high, especially between 2005 and 2007, but it has not always been on an upward trend. For instance, there was a drop in the international price of palm oil in 2008 because of the global economic crisis, which caused a fall in demand. It was only in 2009 and 2010 that prices started to pick up again, showing a positive trend as the global economy began to recover (see figure 2). Although Indonesia is the largest palm oil producer, global palm oil prices still influence domestic palm oil prices.

Figure 2. Global palm oil prices, 2000—2010 (in US$/metric ton)

***Source*:** www.mongabay.com/images/commodities/charts/palm_oil.html

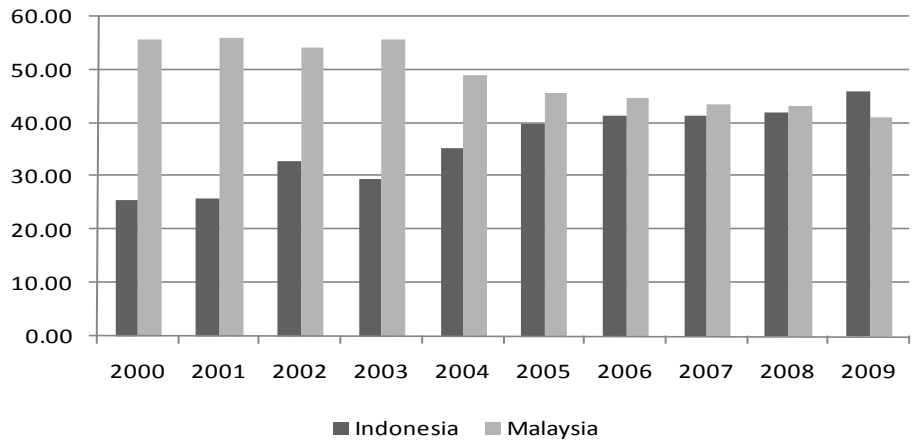
The government introduced two mechanisms to stabilize domestic palm oil prices: domestic market obligations (DMO) and export tax. DMO required high supervision cost and tended to be more difficult to enforce unlike export tax, which was easier to implement. Even though export tax did not have an immediate impact on the stabilization of palm oil prices, it created revenues for the government, which can be used to assist or subsidize poor palm oil farmers and consumers (World Bank 2010).

Indonesia's Palm Oil Trade

In the early years of palm oil production, palm oil was used primarily as an ingredient for food production and for frying. Many consumers preferred palm oil because it is low priced and heart friendly. Palm oil can also be used as raw material for cosmetics and consumer products such as soap, cleaning materials, and shampoo. But because of innovative approaches and technological advancement coupled with research and development (R&D), palm oil can now be used as raw material for biofuel.

The key players in the global palm oil industry are still Indonesia and Malaysia. Both countries are leaders in the production and exportation of palm oil. Malaysia and Indonesia accounted for 83 percent of palm oil production and 89 percent of global palm oil exports in 2001. Until now, these two countries continue to dominate palm oil production and exports, gaining more than 80 percent, especially from trade (see figure 3). From 2004 to 2008, Indonesia recorded a 56.1 percent increase in palm oil production, from 12.38 million tons in 2004 to 19.33 million tons in 2008. Its exports of palm oil increased 60.8 percent from 8.99 million tons in 2004 to 14.47 million tons in 2008.

Figure 3. Indonesia and Malaysia's palm oil market share value in the world, 2000—2009 (in %)



***Source*:** UN Comtrade

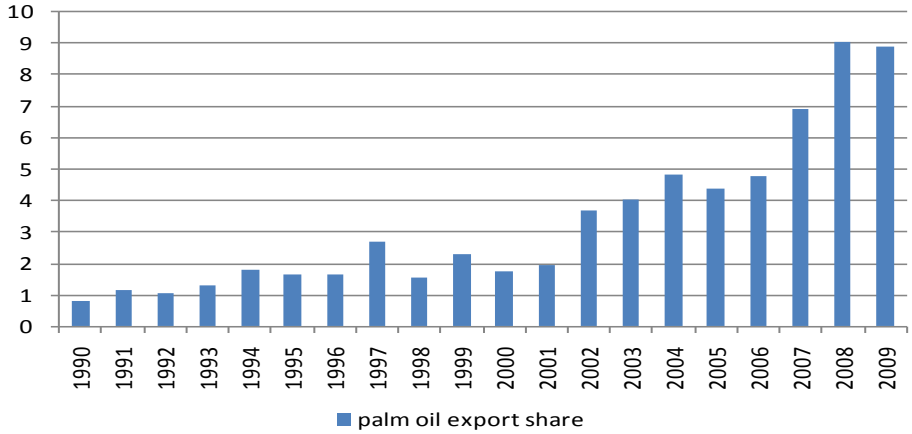
Figure 3 shows Indonesia and Malaysia leading palm oil exports globally (in trade value) since 2000, with a total market share of around 80 percent. This trend was further boosted

when the Indonesian government focused on the expansion of palm oil plantations in 2005. Indonesia's market share continued to make significant growth, breaking Malaysia's dominance in palm oil exports in 2009. The government's consistent intervention remains a major factor in maintaining this positive trend in palm oil production and export. The government's ten-year program to expand oil palm plantation areas to up to 20 million hectares in 2020 should also be backed by a strong legislative foundation.

Palm oil has become a major commodity and has contributed quite significantly to Indonesia's total exports since 2002 (see figure 4). The highest contribution of palm oil exports to total exports was 9 percent in 2008. The significant increase in palm oil export between 2007 and 2008 was due to the high global demand for palm oil. Indonesia, as one of the largest producers of palm oil, tries to meet the high demand by expanding oil palm plantations. The significant contribution of palm oil exports to total exports will benefit Indonesia's balance of payment (BOP), as current account is expected to become positive with trade surplus. Brisk export activities will consequentially boost economic growth.

However, there are major hurdles to contend with in the planned expansion program for palm oil export. These hurdles include the new rules related to renewable energy (e.g., the European Union's Renewable Energy Directive or EU RED), exchange rates, and the export tax policy implemented by the Indonesian government. In June 2007, export tax was 6.5 percent. In February 2008, the Indonesian government implemented a progressive schedule for export tax, which encouraged producers to increase exports because of the hike in prices for palm oil on the world market (World Bank 2009). If the Indonesian rupiah (IDR) depreciates against the US dollar, it can serve as a trigger for palm oil producers to increase their exports. A depreciated rupiah may also reduce the effectiveness of the export tax in achieving the stabilization of domestic prices of palm oil. However, the government should be more prudent in determining an export taxation scheme for palm oil (10 percent in November 2010, 20 percent in January 2011, and 25 percent in February 2011) in order to increase the volume of palm oil exports.

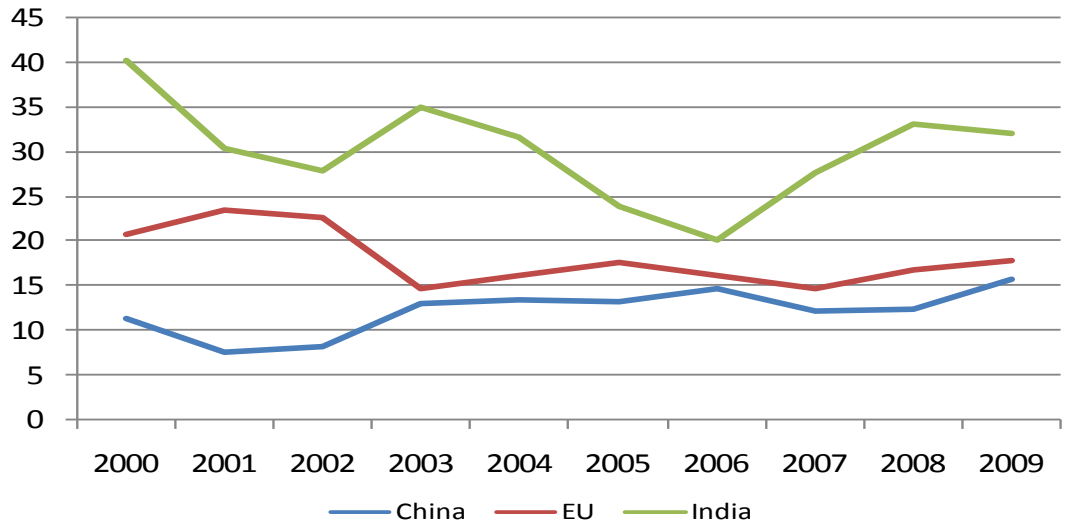
Figure 4. Proportion of Indonesia's palm oil exports to total exports, 1990—2009 (in %)



Source: UN Comtrade

Indonesia's palm oil production is mostly for the global market, and this can generate huge foreign assets for the country. Indonesia's trading partners in palm oil products, India and China, consume huge amounts of vegetable oil. In 2009, China and India imported more than 13 million tons of palm oil; the bulk of this came from Indonesia. Indonesia's other trading partners are some European countries, either members or nonmembers of the EU, that use palm oil as raw material for the production of biodiesel. A portion of Indonesia's palm oil output is intended for domestic consumption. Figure 5 shows the market shares of three of Indonesia's palm oil export destinations. India consistently led as the main importer for the period 2000—2009, followed by the EU and China.

Figure 5. Market share of Indonesia's major palm oil export destinations, 2000—2009 (in %)



***Source*:** UN Comtrade

Government Policies

The palm oil industry is one of Indonesia's strategic industries because it can attract investors, all of whom are seeking high profits and a big return of investment. This makes the industry one of country's engines of economic growth. The prospects for palm oil production are very promising because the huge demand. Palm oil has a wide range of uses-- cooking oil and basic raw material for food products, cosmetics, and soap.

The palm oil industry thus helps boost the economy of Indonesia. It brings in revenues for the state coffers and offers job opportunities. It can also help improve the livelihood of people living around oil palm plantations. However, the development of oil palm plantations has been viewed as a threat to Indonesia's forests since these forests will have to be cleared to make way for said plantations.

Indonesia has rich biodiversity. It covers 1.3 percent of the globe's land surface. Its forests serve as homes for 10 percent of all species of flowering plants, 1.7 percent of bird species, 12 percent of mammalian species, 16 percent of species of reptiles, and 16 percent of amphibian species.

However, the development of the palm oil industry threatens to destroy such rich biodiversity. This calls for solid and effective measures from the government to ensure the protection of biodiversity even as the palm oil industry is further developed. This challenge falls on the eight government institutions that deal directly or indirectly with Indonesia's palm oil industry: the Ministry of Agriculture (MoA) through its Directorate General of Estate Crops (*Dirjen Perkebunan*), the Ministry of Industry (MoI), the Ministry of Trade (MoT), the Ministry of Forestry (MoF), the Ministry of Environment (MoE), the National Land Agency (BPN), the National Bureau of Statistics (BPS), and Indonesia's Investment Coordinating Board (BKPM).

The MoA's supporting agency, the Indonesia Oil Palm Research Institution (IOPRI), is a nonprofit research institution fully funded by the government with business-oriented research areas covering culture techniques, oil processing, engineering, and social economy (Rasiah and Shahrin 2006). IOPRI aims to increase value added and product development through R&D. IOPRI said that it has collaborated with numerous domestic and international institutions on projects related to oil palm research. The MoF, the MoE, and the BPN deal with forest conversion, land uses for oil palm plantations, the ecological impact of oil palm plantations, and other issues related to land property rights, the environment, and forests. BKPM deals mostly with investment facilitation for both local and foreign investors. The MoT and the MoI focus on marketing policies while the BPS provides the necessary data on palm oil (Rasiah and Shahrin 2006).

Besides government institutions, there are also associations that deal with the palm oil industry; namely, the Indonesian Oil Palm Producers Association (*Gabungan Pengusaha Kelapa Sawit Indonesia* or GAPKI) and the Indonesian Edible Oil Association (*Asosiasi Minyak Makan Indonesia* or AIMMI). GAPKI represents state-owned, private estates, cooperatives, and smallholders. AIMMI, on the other hand, represents palm and other edible-oil producers and exporters (Rasiah and Shahrin 2006).

Government policies on palm oil development in Indonesia can be divided into five phases of regulation: PIR-trans phase, deregulation phase, privatization phase, cooperatives phase, and decentralization phase.

PIR-trans Phase (Up to October 1993)

The PIR-trans phase took place during Soeharto's era (before October 1993) with the aim of establishing oil palm plantations in forested areas and allocating these areas to PTPN (*Perseroan Terbatas Perkebunan Nusantara* or state-owned plantation companies). As operators of the plantations, the PTPN controlled both *inti* (large-scale operations in extensive areas) and *plasma* (individual smallholdings) holdings (Colchester et al. 2006). This program was supported by smallholders and workers from the transmigration program. This policy aimed to increase the total land area for oil palm plantations. The total area for oil palm plantations increased from 65,573 hectares in 1967 to 176,406 hectares in 1975. At that time, oil palm plantations were located mostly in Sumatera. In 1985, there was a threefold increase in the total area for oil palm plantations (compared to 1975), or up to 600,000 hectares. Areas of expansion were concentrated in Kalimantan and Papua.

The expansion of land areas for oil palm plantations continued in the succeeding years, aided by the implementation of laws designed to (1) ensure better coordination among government agencies and (2) hasten the processing of permits to convert forest lands into oil palm plantations. The law that facilitated those two objectives was passed in 1986 and further amended in 1990. The supervision of forests in the PIR-trans phase was centralized, with regional forestry offices (*Kanwil Kehutanan*) authorized to release up to 100 hectares of land for plantation use. This condition is related to Presidential Instruction (Inpres) No. 1/1986 and a joint decree among the MoA, the MoF, and the *Badan Pertanahan Nasional* (BPN) No. 364/Kpts-II/1990.

During this period, the customary land rights of communities were mostly not recognized. Protection for the right to property was provided by a law on agrarian and natural resources management, as mentioned in articles 28H and 28I (*Undang-Undang Dasar (UUD)* 1945). Article 28H (which focuses specifically on human rights) of said law states that every person has the right to own property and that this property cannot be taken from any person by anybody. Article 28I, on the other hand, states that the cultural identity and the rights of traditional societies shall be respected in accordance with this age of progress and human civilization.

The interests of indigenous peoples (IPs) were also inserted into the transmigration schemes for economic purposes. The PIR-trans schemes allocated two hectares to each transmigrant family. One hectare should be planted to rice. The other should be developed as an oil palm plantation whose output would go to the mills that were established alongside the nucleus estate. The PIR-trans scheme promoted the growth of smallholdings and encouraged the growth of oil palm smallholdings in particular as a vehicle for rural development (Rasiah and Shahrin 2006).

Deregulation Phase (1993—1996)

During the deregulation phase, which was started in October 1993, the government passed two laws as part of a national deregulation policy package: (1) MoA decree number 753/Kpts/KB.550/12/1993 and (2) MoF decree number 418/Kpts-II/1993. The main objective of the deregulation policy was to empower local governors to promote regional development and to ensure that private companies had a long-term commitment in areas they were investing in.

Under those two laws, the local government (through its governor) could issue permits for the conversion of forest areas up to 200 hectares, a 100 percent increase (equivalent to 100 hectares) on what was allowed before the passage of said laws. Meanwhile, areas over 200 hectares were still under the jurisdiction of the Directorate General of Estate Crops in Jakarta. Private companies that applied for forest-conversion permits were not allowed to transfer ownership of leaseholds (Colchester et al. 2006).

Still in this phase, the implementation of private sector development and the joint government scheme was maintained in order to promote the growth of smallholdings, which was first introduced in the PIR-trans phase.

Privatization Phase (1996—1998)

The privatization phase took place between 1996 and 1999, the last years of Soeharto's dictatorial era. The government policy during this phase aimed to encourage private sector

initiatives and to facilitate foreign direct investment (FDI). Several laws passed during this phase were designed to accelerate estate-crop development and ensure fair play among companies (Colchester et al. 2006).

MoA decree number 786/10.96 provided for a clear-cut permit procedure for developing estates. A temporary, one-year start-up permit (*ijin prinsip*) could be extended for an additional two years. *Ijin prinsip* could be converted to a permanent permit (*ijin tetap*) and added as an expansion permit (*ijin perluasan*). Requirements of permits were introduced to ensure that companies that wanted to convert forests into oil palm plantations would first secure the consent of any logging companies with logging permits (*Hak Pengelolaan Hutan* or HPH) that operated in the same areas (MoF decree number 250/Kpts-II/1996).

The new laws also clarified that forest lands cleared and planted to estate crops were classified in Provincial Spatial Plans as agricultural lands without attaching plantation permits (MoF decree number 376/Kpts-II/1998). This resulted to the expansion of oil palm plantations. A total of 9.13 million hectares of land were allocated for oil palm plantations in the eastern part of Indonesia, including 5.56 million hectares in Papua, 1.70 million hectares in East Kalimantan, and 1.8 million hectares in Maluku.

Cooperatives Phase (1998—2002)

The cooperatives phase was a result of the fall of Soeharto's regime, specifically during the *reformasi* era. During this phase, politicians were allowed to come up with new ideas to develop rural areas in order to gain temporary power. They used jargon like *wong cilik*, and *ekonomi kerakyatan* in order to earn support from society. This policy allowed local communities to benefit more directly from lands and natural resources.

In the last period of the cooperative phase, specifically in 2002, the government started to introduce the KKPA scheme, which was a form of investment in which the government supported private sector and cooperative investments. In this scheme, potential investors from the private sector were required to form a partnership with a cooperative. The cooperative itself consisted of a group of smallholders that had realized economies of scale. The KKPA was quite successful in expanding the oil palm plantations in Indonesia. The increase was

more than tenfold, from about 210,000 hectares in 1980 to 2.42 million hectares in 2002 (Rasiah and Shahrin 2006).

Also during this phase, the government prohibited the conversion of forests in protected areas (*hutan lindung*) into oil palm plantations and harmonized local and regional spatial planning procedures, as mentioned in the MoF and Estate Crops (EC) decree number 728/Kpts-II/1998. One year later, with MoF and EC decree number 107/Kpts-II/1999, the government allowed the issuance of three-year plantation permits (*ijin usaha perkebunan*) by provincial governors to cooperatives for areas of up to 1,000 hectares, or up to 20,000 hectares by the MoF and EC (Colchester et al. 2006). From 1998 to 2002, the expansion of oil palm plantations was sluggish because of conflicts related to land conversion.

Decentralization Phase (2002—2006)

Finally, the decentralization phase was introduced after fundamental political changes were implemented in Indonesia. During this phase, local government was authorized to control lands and resources. It was also entrusted to administer regional budgets along with local legislature. The decentralization phase has had an impact on the development of oil palm plantations since 2002 because the power of the local government to encourage medium-scale plantations was limited.

During this phase, a new law allowed district-level regents (*bupati)* to issue permits for up to 1,000 hectares. Meanwhile, areas with overlapping district boundaries remained under the jurisdiction of provincial governors. Furthermore, the authority to issue permits for the development of more than 1,000 hectares was entrusted to the MoA. The consequence of this policy was that a lot of protected forests were cleared for oil palm plantations even though vast areas of degraded lands were available for planting.

In 2005, the government passed a law establishing a moratorium on forest conversion for estate crops as stated in MoF decree number 603/2000, MoA decree number 357/Kpts/HK.350/5/2002, and MoF circular letter number S.112/Menhut-VIII/2005. This moratorium resulted in a signed letter of intent (LOI) between the government of Indonesia and the International Monetary Fund (IMF) about forest conversion and changing the status

of forest lands for planting. In February 2005, the MoF also released two conflicting policies to be implemented by the local governments. One policy stated that the moratorium was still in effect while the other stated that to optimize the use of forest land for estate crops, the MoF would evaluate proposals for conversion based on their merits (Colchester et al. 2006). Those policies resulted in the establishment of 1.8 million hectares of oil palm plantations in Kalimantan, as written in MoF circular letters S.51/2005 and S.52/2005.

Recent Government Policies

Under the government of President Susilo Bambang Yudhoyono (SBY) and especially in the second period (2009—2014) of his leadership, the expansion of oil palm plantation areas was based on the Medium-Term National Development Plan (RPJMN 2010—2014). The national government has already planned for the further expansion of oil palm estates as shown in table 4. Table 5 shows the extent of expansion in Sumatera, Kalimantan, Sulawesi, and Papua, which is expected to reach a total of 19,840,000 hectares by 2020. This expansion plan has become a signal for Indonesia to encourage export-oriented policies, which are expected to increase competitiveness and attain economies of scale as well as technical efficiencies.

Table 5. Provincial Government Plan on Expansion of Oil Palm Plantations

Province	**Area in 2005 (ha)**	**Expansion Area Plan by 2020 (ha)**
Sumatera		
Aceh	222,389	340,000
North Sumatera	1,093,033	1,000,000
West Sumatera	489,000	500,000
Riau	1,486,989	3,000,000
Jambi	350,000	1,000,000
South Sumatera	416,000	1,000,000
Bangka Belitung	112,762	-
Bengkulu	81,532	-
Lampung	145,619	500,000
Java		

West Java	3,747	-
Banten	17,375	-
Kalimantan		
West Kalimantan	349,101	5,000,000
Central Kalimantan	583,000	1,000,000
South Kalimantan	391,671	500,000
East Kalimantan	303,040	1,000,000
Sulawesi		
Central Sulawesi	43,032	500,000
South Sulawesi	72,133	500,000
Southeast Sulawesi	3,602	500,000
Papua		
Papua	40,889	3,000,000
TOTAL	**6,059,441**	**19,840,000**

Source**:** Marcus Colchester et al. *Promised Land* 2006.

The national government's ten-year plan only allocates land already used for agricultural purposes. It does not particularly allocate forests for future production. The expansion plan is also considered for several provinces in Indonesia like Jambi, West Sumatera, and West Kalimantan, which have the most suitable land for oil palm plantations. The plan is also aimed at promoting growth and establishing an industrial area cluster program for palm oil in order to achieve economies of scale.

Besides opening a new area for oil palm plantations, the plan allows the national government to provide monetary incentives to palm oil businesses, especially those situated in the economic zones in North Sumatera (Sei Mangke and Kuala Tanjung), Riau (Kuala Eno and Dumai), and East Kalimantan (Maloy). Furthermore, the ten-year plan also focuses on the development of biofuel based on crude palm oil (CPO), the revitalization of oil palm plantations, and refining and downstream processing.

To address the deforestation issue, the global palm oil industry started the promotion of green certification through the Roundtable for Sustainable Palm Oil (RSPO) in 2004. The RSPO was formed to develop ethical practices and elicit commitments from stakeholders in preserving rainforests and wildlife. There are currently seventy-five Indonesian companies involved in palm oil production that already signed up with the RSPO; a significant number

of companies have yet to sign up. The RSPO comes in useful when applying for bank loans; banks use the RSPO in determining the approval of loan applications. Companies that are already signed up with the RSPO have easy access to banks. RSPO is also a good measure to create a cohesive network among private firms and the government in terms of policy formulation, R&D, and other things related to the development of the palm oil industry.

As another response to the issue of forest destruction, the national government also plans to introduce another certification scheme called the Indonesian Sustainable Palm Oil (ISPO) certification. This certification will be awarded to producers who can meet sustainability standards at all stages, starting from processing up to production. However, some areas in the ISPO need to be clarified, especially about the body that will be authorized to award the certification and the standards/requirements that should be achieved in order to earn the certification.

Table 6. Estate Production, 2005—2008 (in tons)

Crop	**2005**	**2006**	**2007**	**2008**
Dry rubber	432,221	554,634	578,486	613,487
Crude palm oil	10,119,061	10,961,756	11,437,986	11,623,822
Palm kernel	2,139,652	2,363,147	2,593,198	2,646,577
Cocoa	55,127	67,200	68,600	71,300
Coffee	24,809	28,900	24,100	25,600
Tea	128,154	115,436	116,501	114,861
Cinchona bark	825	800	500	500
Cane sugar	2,241,742	2,307,000	2,623,800	2,800,900
Tobacco	4,003	4,200	3,100	3,200

***Source*:** BPS

Under SBY's government, palm oil has become a more promising industry as global demand for it increases, brought about largely by the increasing applications for it. As shown in table 6, crude palm oil led other commodities in terms of output from 2005 to 2008.

3. Economic, Social, and Ecological Impacts of Indonesia's Palm Oil

Palm oil is a component of many things used or consumed on a daily basis, from food to cleaning materials. The burgeoning world population and the various activities of that population have triggered the soaring demand for palm oil. To some extent, the increasing demand for palm oil has social implications. It has, for example, caused a shift in human activities and land uses. Oil palm plantations are concentrated in tropical areas, specifically, in rainforests. This has created problems because forests are a vital organ of the earth. They do not only produce oxygen for all living things but are also an integral part of a healthy ecosystem. This reality gives palm oil economic, social and ecological importance. The impacts resulting from the conversion of forests into oil palm plantations are keenly felt in Indonesia. As a tropical country, Indonesia has a large share in global palm oil production. This section will give a brief inquiry into the economic, social, and ecological impacts of oil palm plantations in Indonesia.

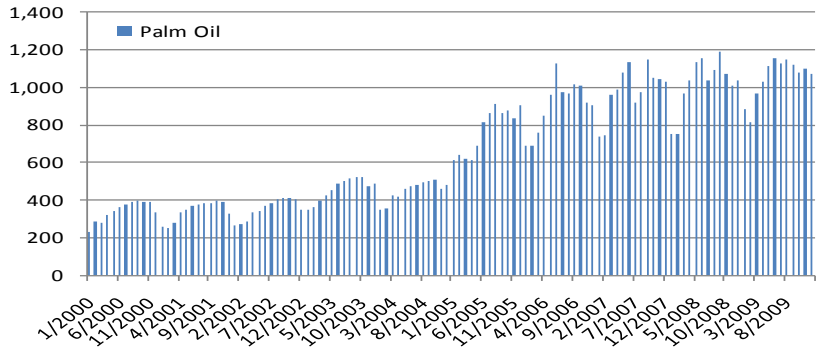
Economic Impact

Palm tree is a tropical tree. Naturally, palm plantations can only be established in tropical countries. This is an opportunity for Indonesia. As one of the largest tropical countries in the world, Indonesia can reap great benefits from oil palm plantations. There has been a massive expansion of oil palm plantations from 1967 up to the present time. Although oil palm estates suffered some setbacks because of the global economic crisis, the overall progress still showed a positive trend. Toward the end of 1970, the total area devoted to oil palm plantations was 260,000 hectares. This increased to 7,020,000 hectares in 2008. But the most notable development was that oil palm plantations are now spread out over 22 provinces across Indonesia.

Indonesia has become the largest player in the world in terms of palm tree cultivation, maintaining brisk production palm oil since 2000 (see figure 6). Palm oil is used to produce many consumer products and intermediary goods and is present in many commodities, including food, shampoo, soap, cleanser, and now biofuels; hence, the increasing demand.

In a 2006 report, the Food and Agriculture Organization (FAO) predicted that by 2030, the demand for palm oil will double. It is imperative then that supply keep up with demand. Under the market mechanism, large demand combined with low production cost has fueled the growth of the palm oil industry.

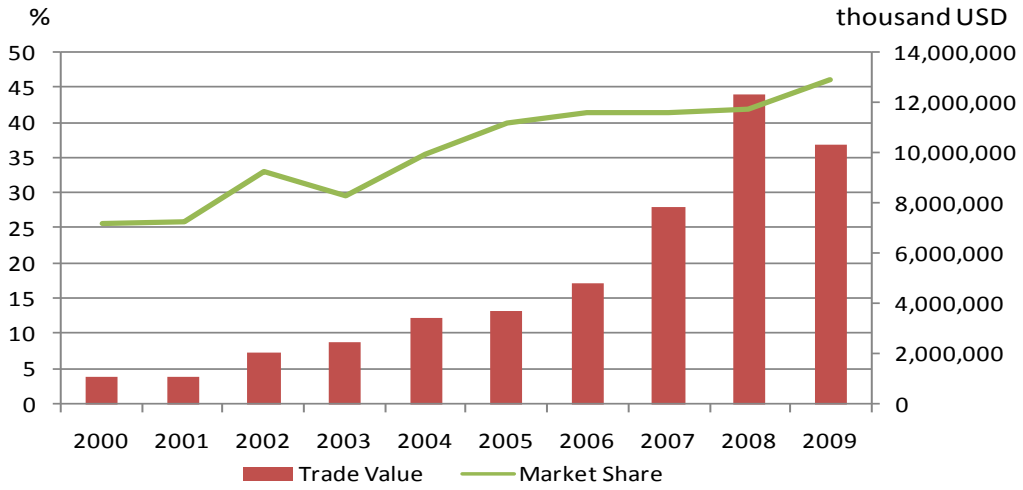
Figure 6. Monthly production of palm oil in Indonesia, 2000—2009 (in thousand tons)



***Source*:** BPS

The growing palm oil industry has benefited palm oil-producing countries, many of which, including Indonesia, are developing countries. The benefits for palm oil-producing countries were interrelated. First, the robust industry boosted revenues from raw-material exports. Palm oil was exported as raw material to giant manufacturers, usually American or European companies such as Nestlé, Unilever, and Burger King. From 2000 to 2009, the market share of Indonesia's palm oil exports continued to increase. Its trade value also steadily increased until 2008 but declined in 2009 due to the global economic crisis that started in 2008 (see figure 7).

Figure 7. Market share and trade value of Indonesia's palm oil exports, 2000—2009

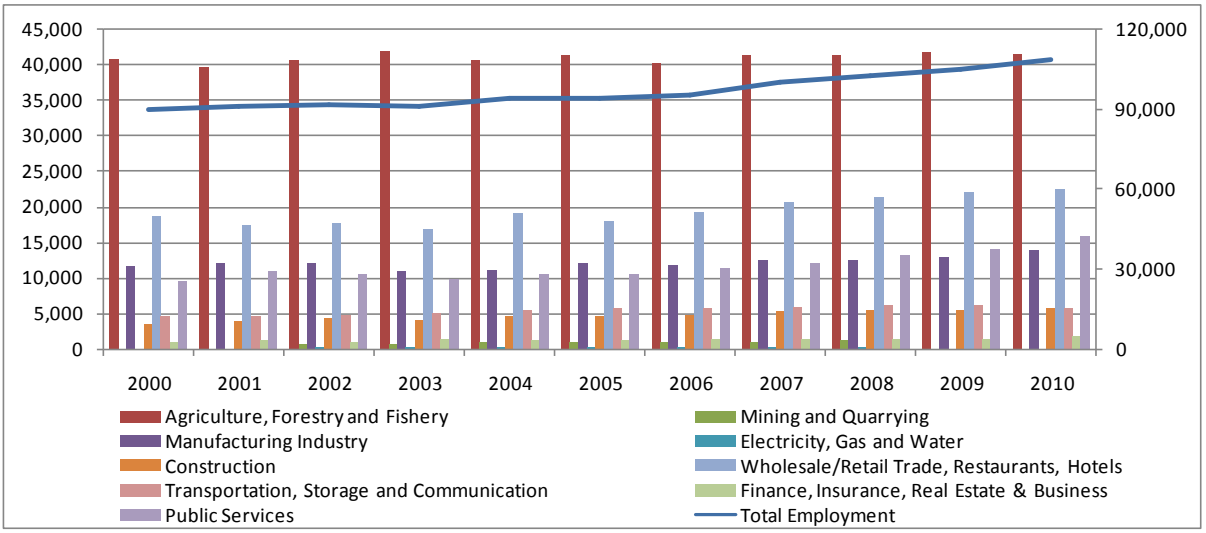


***Source*:** UN Comtrade

Second, the palm oil industry created more job opportunities. As one of the most densely populated countries in the world, Indonesia has an advantage in terms of land and labor. The government can use these advantages to reduce poverty by employing more workers. The palm oil industry is a labor-intensive sector. More oil palm plantations will mean more job opportunities, especially for people in the rural areas or those who live near plantations.

For an agricultural country like Indonesia, the palm oil industry offers opportunities to not only enhance the agricultural sector but also to develop the rural areas. It is a fact that most of Indonesia's poor live in the rural areas and are working in the agricultural sector. Developing the agricultural sector will thus mean developing the rural areas. Moreover, developing the rural areas can be a strategy for poverty reduction. In brief, the growing palm oil industry has helped palm oil-producing countries, including Indonesia, address the issue of poverty by generating job opportunities. Figure 8 shows the growing trend of employment in Indonesia, especially from 2006 to 2010. Employment in ALFF sector has significantly contributed to total employment since 2000.

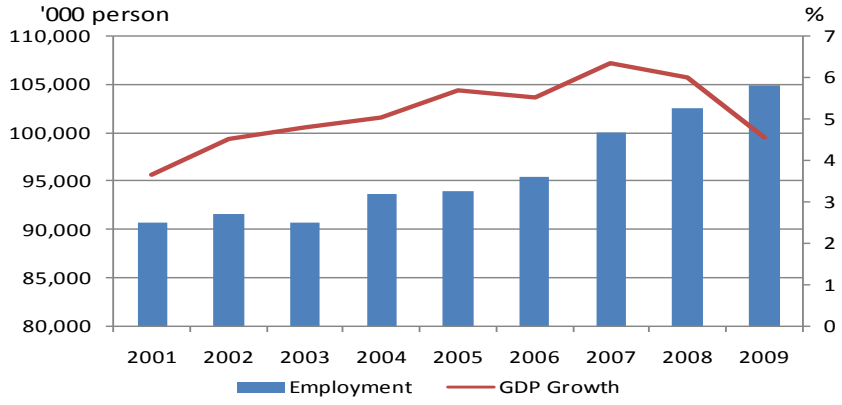
Figure 8. Indonesia's employment by sector and total employment, 2000—2010 (in '000)



***Source*:** BPS

Unfortunately, the consistent increase in the number of jobs in Indonesia did not translate to a steady growth in GDP. Indonesia's employment increased from 93.7 million in 2004 to 108.2 million in 2009. GDP growth, however, fluctuated. In 2009, GDP dropped by 4.55 percent, from 6.01 percent in 2008 (see figure 9). This was due to the global economic crisis in 2008, which decelerated GDP growth by slowing down exports in almost all countries, including Indonesia.

Figure 9. Indonesia's total employment and GDP growth (2001—2009)



***Source*:** BPS

Social Impact

The palm oil industry also exerts a social impact, not just an economic one. The social impact can be seen in society's willingness to change a certain way of life. People are naturally eager to take on opportunities that will help them attain a better life. There is no doubt that oil palm plantations create job opportunities because it is a labor-intensive industry.

The social change caused by oil palm plantations can be related to how society gains knowledge about concepts like debt. Putting up a new oil palm plantation requires high start-up costs, making smallholders indebted to existing palm oil companies. Through oil palm plantations, society is also introduced to the concepts of corruption and gratification. In order to get the approval of community leaders or individual households for the establishment of a new plantation, palm oil companies have to give presents or gifts (compensation), such as electronics, motorcycles, etc. Sometimes, the palm oil companies would promise to extend assistance to communities by building new schools, clinics, and other necessary infrastructure. However, such promises usually never get fulfilled at all.

With the growing number of oil palm plantations all over Indonesia, the locals have started to worry about the destruction of natural resources and their culture. People in older communities in some regions in Indonesia believe that they have a spiritual relationship with the environment. That is why they often oppose proposals for the establishment of oil palm plantations. They dislike the idea of having children and women work in the plantations. These plantations will bring about a shift in society's perception about their culture.

Oil palm plantations have also changed land use. There used to be an aggressive conversion of rainforests into farming and housing areas in Sumatera and Kalimantan. The shift in economic activities from farming to oil palm cultivation has made the locals stop growing their own food because they have become more dependent on palm oil companies.

Social groups, particularly the ethnic/indigenous tribes or groups, are also affected by the conversion of rainforests to oil palm plantations. Many of these groups still live in the rainforests. They are part of the rainforest ecosystem. The conversion of rainforests into oil palm plantations has pushed them out of their natural habitat.

Ecological Impact

Oil palm plantations have caused the degradation of rainforests, especially in Sumatera and Kalimantan. Rainforests produce oxygen; they are the lungs of the planet. Second, rainforests serve as habitat for thousands of species of plants and animals like the endangered *orangutan* and the Sumatera tiger. Third, trees support water reservoirs and help prevent floods. Deforestation results in floods, droughts, and forest fires. Smoke and haze from the annual forest fires that occur in Sumatera and Kalimantan disrupt human and economic activities, even reaching neighboring countries like Malaysia and Singapore. Deforestation and haze contribute to carbon emissions and global warming. During a meeting with business and political leaders in Singapore in April 2008, Nicholas Stern, former chief economist of the World Bank and a climate expert, said that "deforestation and burning for land clearance are huge problems for the world in terms of carbon emissions." Indonesia is one of the biggest carbon emitters in the world.

A study by the World Agroforestry Center (ICRAF) published in 2007 reveals that a hectare of forest would potentially absorb 50 tons to 200 tons of carbon. According to this study, forests in Sumatera in the 1950s could absorb 2.35 tons to 9.38 tons of carbon. However, 55 years later, the same forests can absorb only 1.1 tons to 4.5 tons of carbon. The ability of Sumatera's forests to absorb carbon has declined sharply over the years and has no doubt played a significant role in increasing greenhouse gas (GHG) emissions. This is a warning about environmental damage. The national government should exercise prudence when it comes to expansion plans for oil palm plantations.

In response to environmental concerns, the Indonesian government pledged during the Copenhagen meeting in December 2009 to reduce Indonesia's contribution to GHG emissions by 26 percent by 2020 (Warr and Yusuf 2011). Indonesia has prepared seven programs/actions to achieve GHG reduction; namely (1) sustainable peatland management; (2) decrease in the rate of deforestation and land degradation; (3) development of carbon sequestration projects in forestry and agriculture; (4) promotion of energy efficiency; (5) development of alternative and renewable energy sources; (6) reduction of solid and liquid waste; and (7) shift to low-emission transportation facilities. These programs pose a tough challenge for palm oil producers.

Another challenge for them to contend with is the EU RED, which has set certain criteria on the use of palm oil as raw material for biofuel production. One criterion states that plantations established after 2008 should not come from lands that are rich in biodiversity or that contain high carbon stock. The palm oil industry views such criteria as a burden, especially for producers who set up their plantations in forests and peatland areas.

In May 2010, Indonesia signed an LoI with Norway to reduce GHG emissions from deforestation and forest degradation and to stop new land clearing between 2011 and 2013. This action goes against the government's goal to expand oil palm plantations to around 20 million hectares in 2020 and to achieve food self-sufficiency by establishing new plantation/agricultural areas in several provinces in Indonesia. In this case, the national government should be consistent in implementing any agreement with other countries or international institutions related to environmental issues.

Another environmental provision applied in Indonesia is the ISPO, which supports the government's commitment to: (1) reduce GHG emissions: (2) raise awareness on the importance of sustainable palm oil production; (3) accelerate the implementation of a sustainable production system and certification; (4) enhance the competitiveness of Indonesia's palm oil on the global market; and (5) reduce GHG emissions caused by the establishment and operation of palm oil plantations. The Indonesia-based ISPO has a clear legal framework. It involves four implementing agencies: MoA, MoF, MoE, and the National Land Agency. ISPO implementation started in 2011. It helps to realize the objective of directing oil palm plantations to contribute to economic growth and boost the livelihood of people living around oil palm plantations.

4. The Effect of Oil Palm Plantations as a Concrete Realization of Rural Development

Gains from Oil Palm Plantations

Large-scale expansion of oil palm plantations benefits the areas or provinces where the plantations are located. Oil palm plantations are located mostly in the rural areas. The

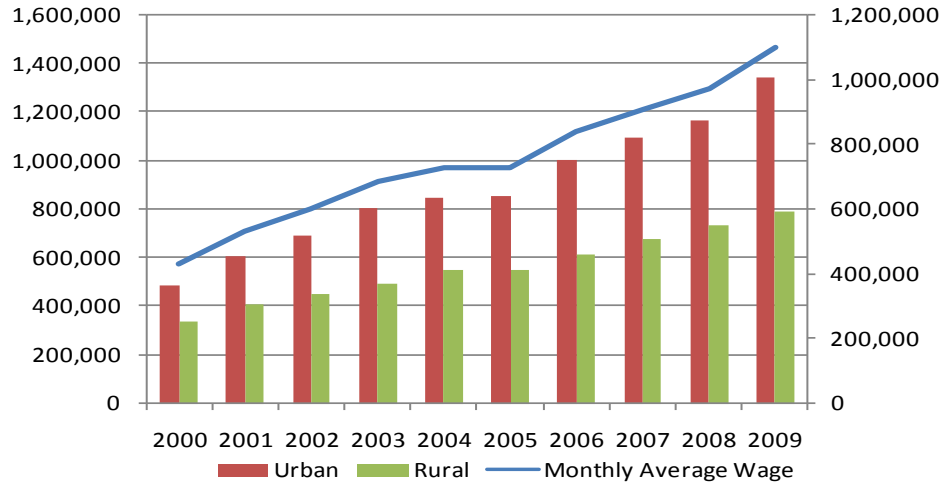
development of a rural area and the improvement of the quality of life of the locals living around or near plantation areas are the important gains in the expansion of oil palm plantations.

Rural development requires infrastructure development and an improvement in the standard of living of the people. Rural development resulting from the expansion of oil palm plantations can be realized if there are effective and sustainable government regulations related to this industry. It should also consider the locals as important stakeholders who should receive as much gains as the palm oil company gets.

Gains from the expansion of oil palm plantations can be classified into three, all of which support the development of the area where the plantation is located: (1) it can generate additional income for local government; (2) it can improve the income and standard of living of the locals living around the plantation; and (3) it can develop the infrastructure in the area.

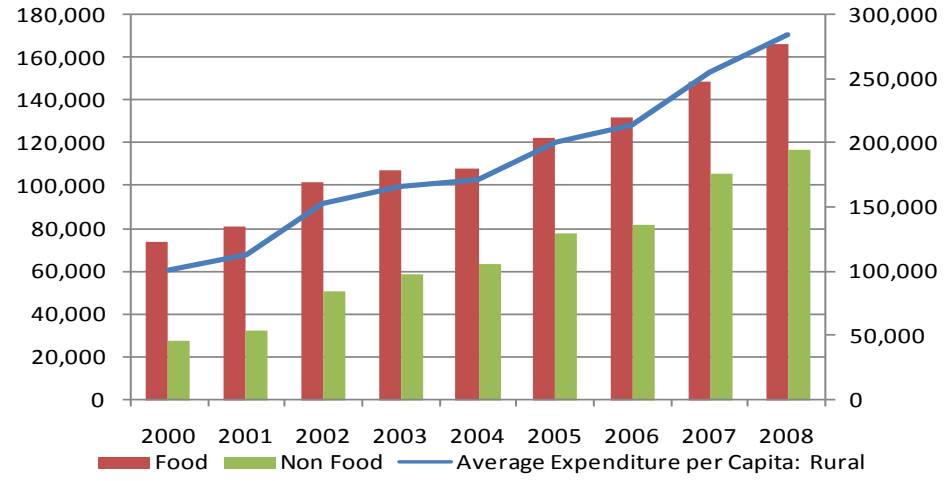
Rapid growth in investments generates additional income for the local government through foreign investment and taxes. Companies that set up their businesses pay taxes as do their employees (on income). An increase in the average monthly wage of workers in the rural areas (see figure 10) would mean an increase in the consumption of consumer items like food and nonfood stuff (see figure 11). Nonfood stuff includes taxes, which are regarded as mandatory expenditures. The additional income that the local government would earn, especially from taxes, can be used for infrastructure and other projects.

Figure 10. Average monthly wage in rural and urban areas, 2000—2009 (in IDR)



***Source*:** Ministry of Manpower and Transmigration, BPS.

Figure 11. Average expenditure per capita in rural areas, 2000—2008 (in IDR)

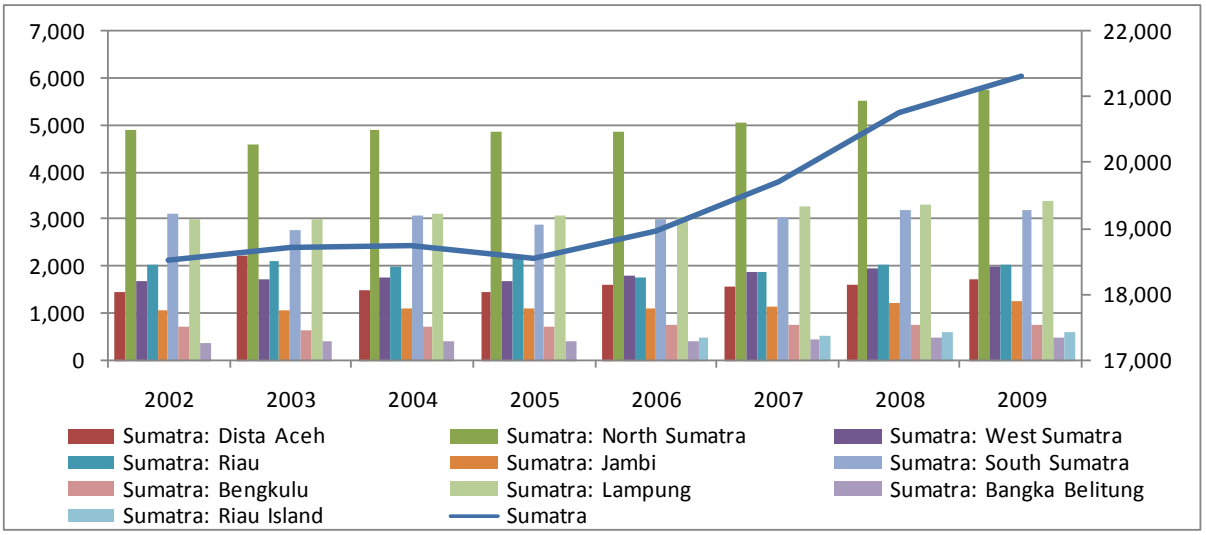


***Source*:** BPS

The expansion of oil palm plantations may improve the standard of living in local communities as shown by the consistent increase in the average monthly wage and average expenditure per capita since 2000. Expansion has a multiplier effect, that is, it creates job opportunities for the locals and triggers the establishment of other industries that use palm trees or palm oil as raw material. Locals can work as farm laborers or in administrative positions. Those who own large tracts of land can enter into a partnership scheme with

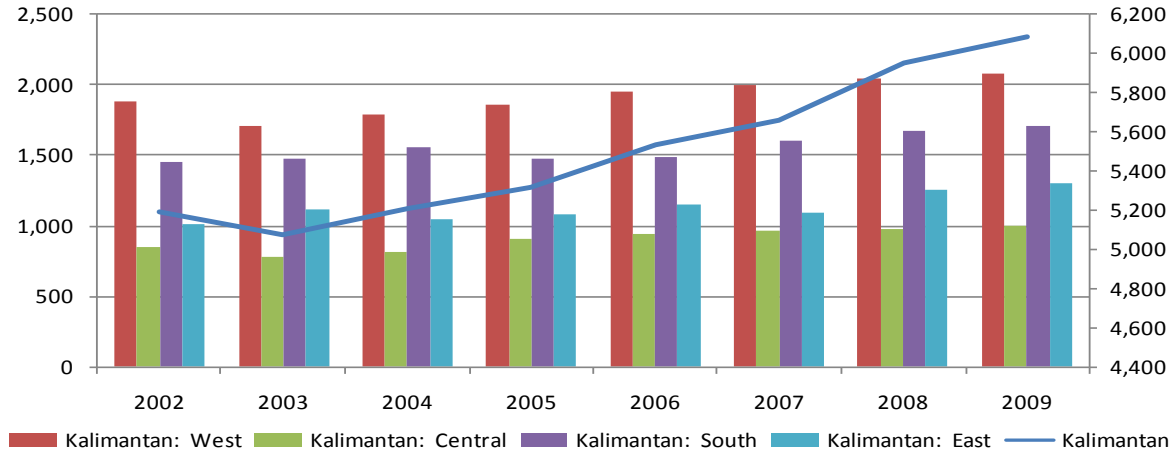
private companies where they plant the oil palm trees. Figures 12 and 13 show the significant increase in employment in the two big islands in Indonesia (Sumatera and Kalimantan), which are the biggest producers of palm oil in the country.

Figure 12. Total employment in Sumatera's provinces, 2002—2009 (in thousand people)



***Source*:** BPS

Figure 13. Total employment in Kalimantan's provinces, 2002—2009 (in thousand people)



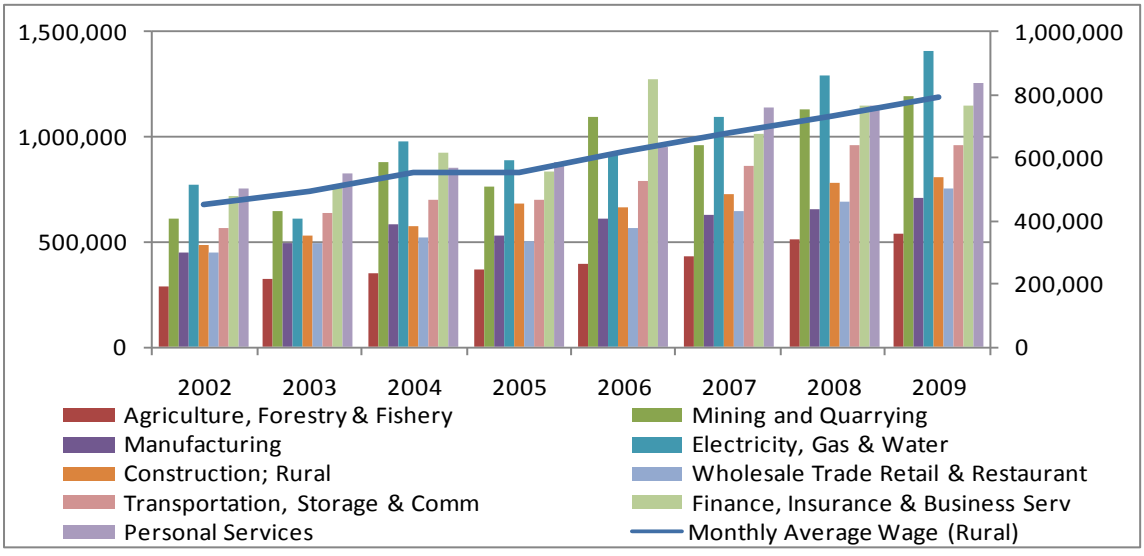
***Source*:** BPS

A study done by Almasdi Syahza (2005) titled "Development Impact of Palm Oil Plantation Toward Rural Economic Multiplier Effect in Riau Province" shows that the expansion of oil

palm plantations in Riau province had a multiplier effect for the people living there in terms of improvement in their standard of living. Having a steady job means having the purchasing power to buy goods to fulfill primary and secondary needs. The oil palm plantations also provided downstream income-generating opportunities for the locals in the form of small businesses like restaurants, inns, kiosks, grocery shops, and transportation services. An increase in income and purchasing power translates to an increase in consumption. When the market grows, it stimulates economic activities, many traditional markets will be built, and the trading of other goods and services will increase.

Figure 14 shows an increasing trend in the average monthly wage in the rural areas. The positive trend in the total average monthly wage is a result of the increase in the average monthly wage in several sectors, including agriculture, forestry, fishery, manufacturing, construction, wholesale trade, retail, restaurant, transportation, storage, communication, and personal services. Meanwhile, the average monthly wage in finance, insurance, and business services as well as in mining and quarrying has been fluctuating since 2002.

Figure 14. Average monthly wage in rural areas by sector, 2002—2009 (in IDR)

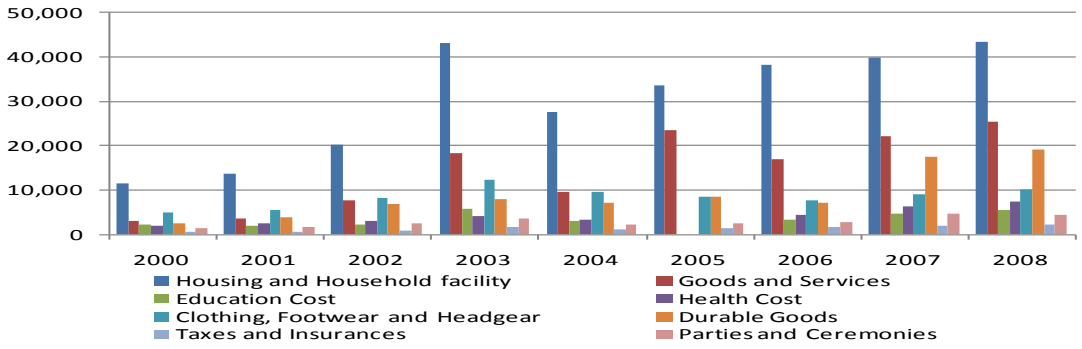


***Source*:** BPS

Improving the income and standard of living of people in the rural areas creates a better socioeconomic life for them. With improved income, they will be able to afford better

education for their children and have access to more nutritious food, medicine, and appropriate health services. Figure 15 shows the average expenditure per capita in the rural areas for nonfood consumer goods. Housing and household facilities take a bigger slice of the average expenditure per capita followed by goods and services, clothing, footwear and headgear, and durable goods.

Figure 15. Average expenditure per capita in rural areas for nonfood stuff, 2000—2008 (in IDR)



***Source*:** BPS

Oil palm plantations spur the development and expansion of infrastructure in the rural areas, such as roads, bridges, and power supply facilities, all of which are necessary to ensure efficient production and delivery of produce. These also benefit the local community because they can trigger the construction of local government offices, school buildings, markets, and health service centers (*Puskesmas*). Thus, infrastructure development can help improve the quality of life (in terms of access to education, health care services, and better social involvement) for residents near an oil palm plantation area.

Cost of Oil Palm Plantations

The expansion of oil palm plantations in a rural area can also generate some problems, specifically, environmental problems. Expansion entails clearing of large forest areas but many of these cleared areas are left unused for some time. Indonesia's vast tropical forests are home to a wide variety of flora and fauna; deforestation disturbs these flora and fauna and

threatens their existence. Deforestation is too high of an ecological price to pay because its effects last through generations.

This problem requires from the government and the palm oil companies a commitment to protect the forests and to stop large-scale deforestation even as plantation areas are expanded. The cleared areas must be utilized as soon as possible and must not be left barren.

The expansion of oil palm plantations can generate conflicts between the locals and the plantation companies. These conflicts usually arise during the land acquisition process and may be due to the minimal participation in the plantation offered to the locals or because of the unpleasant relationship between the locals and the company's employees who come from other communities.

Such conflicts can be avoided if the local government has strong, clear, and fair regulations. The regulations must favor the palm oil company but must also protect the interests of the locals. Conflicts can also be avoided if the palm oil company recognizes the community as an important stakeholder and gives the locals the chance to benefit from the plantation by allowing them to become part of its operations.

Oil palm plantations in Indonesia's rural areas have been expanding at a substantial scale since the early 20th century, attracting both local and foreign investors. For Indonesia, the palm oil industry can create employment opportunities, foreign investments as well as huge revenues for the government through international trade.

To summarize, the large-scale expansion of oil palm plantations in the rural areas provide economic benefits to local communities through the development of infrastructure and the creation of employment and income-generating opportunities. The locals are important stakeholders in the plantations, and they have to get the most economic and social benefits from this exercise.

As expansion may also bring ecological and social problems, the local government and the palm oil companies must work toward creating a harmonious relationship with the

community. The local government must put in place regulations that are fair and beneficial to both parties.

Palm Oil-Producing Provinces versus Non-Palm Oil-Producing Provinces

To compare developments in palm oil-producing provinces and provinces not involved in palm oil production, this section will present a brief overview on the employment and growth performance, basic infrastructure, and poverty incidence in such provinces. Palm oil-producing provinces are located mostly in Sumatera and Kalimantan. Based on data on palm oil plantation areas in 2005, the palm oil-producing provinces are Riau, North Sumatera, Central Kalimantan, West Sumatera, South Kalimantan, Jambi, West Kalimantan, East Kalimantan, Aceh, Lampung, Bangka Belitung, Bengkulu, South Sulawesi, Central Sulawesi, Papua, Banten, West Java, and Southeast Sulawesi. Among these nineteen provinces, Riau and North Sumatera have become the largest producers of palm oil, with 1.5 million and 1.1 million hectares of oil palm plantations in 2005, respectively. The provinces not mentioned in the first group are provinces are those that do not produce palm oil; namely, DKI Jakarta, Central Java, Yogyakarta, East Java, Bali, West Nusa Tenggara, East Nusa Tenggara, North Sulawesi, West Sulawesi, Gorontalo, Maluku, and North Maluku. For the complete summary of these two groups of provinces, see table 7.

Table 7. Palm Oil-Producing Provinces versus Non-Palm Oil-Producing Provinces

Palm Oil-Producing Provinces	**Non-Palm Oil-Producing Provinces**
Sumatera	***Java***
Aceh	DKI Jakarta
North Sumatera	Central Java
West Sumatera	Yogyakarta
Riau	East Java
Jambi	***Bali***
South Sumatera	Bali
Bangka Belitung	***Nusa Tenggara***
Bengkulu	West Nusa Tenggara
Lampung	East Nusa Tenggara
Java	***Sulawesi***
West Java	North Sulawesi

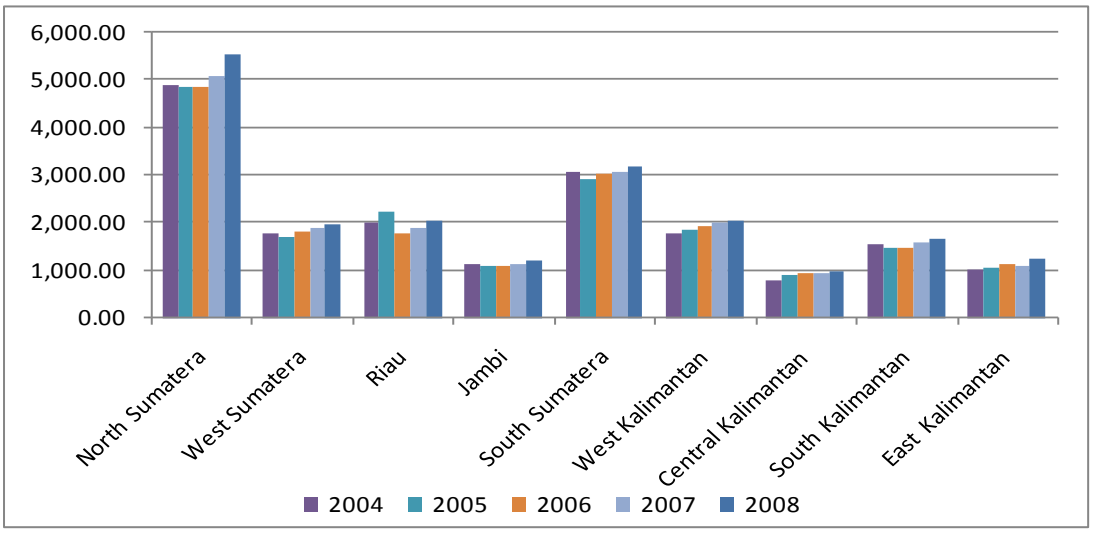
Banten	West Sulawesi
Kalimantan	Gorontalo
West Kalimantan	***Maluku***
Central Kalimantan	Maluku
South Kalimantan	***North Maluku***
East Kalimantan	North Maluku
Sulawesi	
Central Sulawesi	
South Sulawesi	
Southeast Sulawesi	
Papua	
Papua	

Employment and Growth Performance

The labor-intensive palm oil industry offers economic benefits for Indonesia because it creates jobs and promotes economic growth. Indonesia's palm oil exports have been increasing since 2004. Its market share of palm oil exports has reached the highest mark since 2009, making Indonesia the biggest palm oil exporter in the world.

Provinces producing palm oil have enjoyed an increasing trend in employment since 2006, especially when palm oil became a major industry in Indonesia (figure 16). Riau and North Sumatera, as the biggest producers in Indonesia, showed the most positive trend in employment for the period 2006—2008. Employment in North Sumatera increased from 1.57 million in 2007 to 1.62 million in 2008. Figure 16 shows the rate of employment for the top nine palm oil-producing provinces, based on the plantation area that they had in 2005, which totaled more than 300,000 hectares.

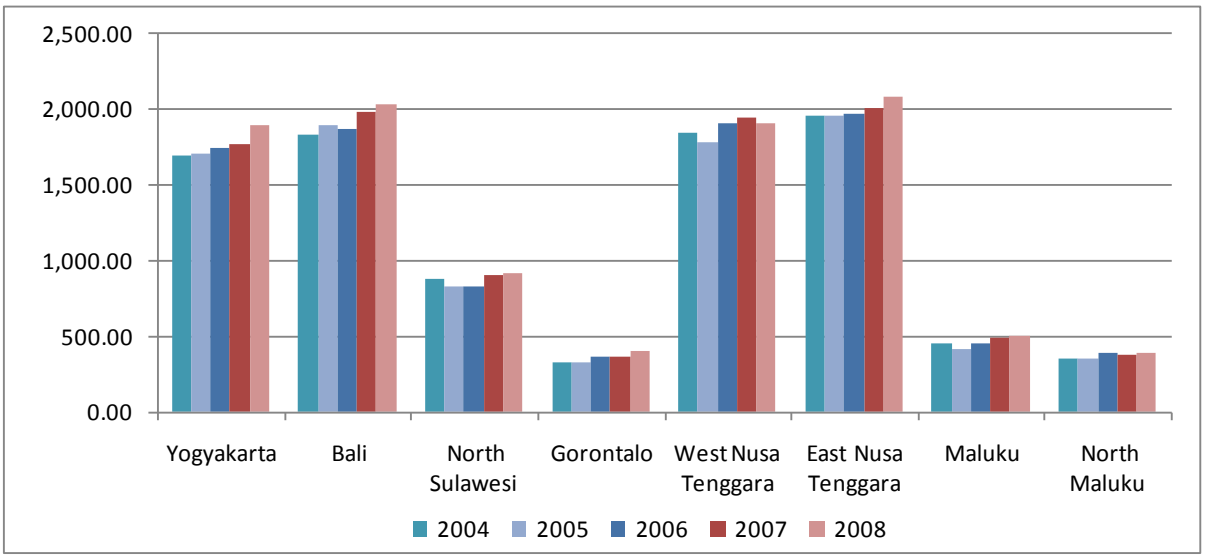
Figure 16. Employment performance of palm oil producers in Indonesia, 2004—2008 (in '000 person)



***Source*:** BPS

Meanwhile, the employment trend in several provinces that do not produce palm oil or do not have oil palm plantations was identical with palm oil-producing provinces. Excluding the three biggest industrial zones in Indonesia; namely, Jakarta, Central Java, and East Java, most provinces showed a positive trend in employment between 2007 and 2008. Among the non-palm oil-producing provinces, only West Nusa Tenggara had a negative trend in employment between 2007 and 2008 (see figure 17).

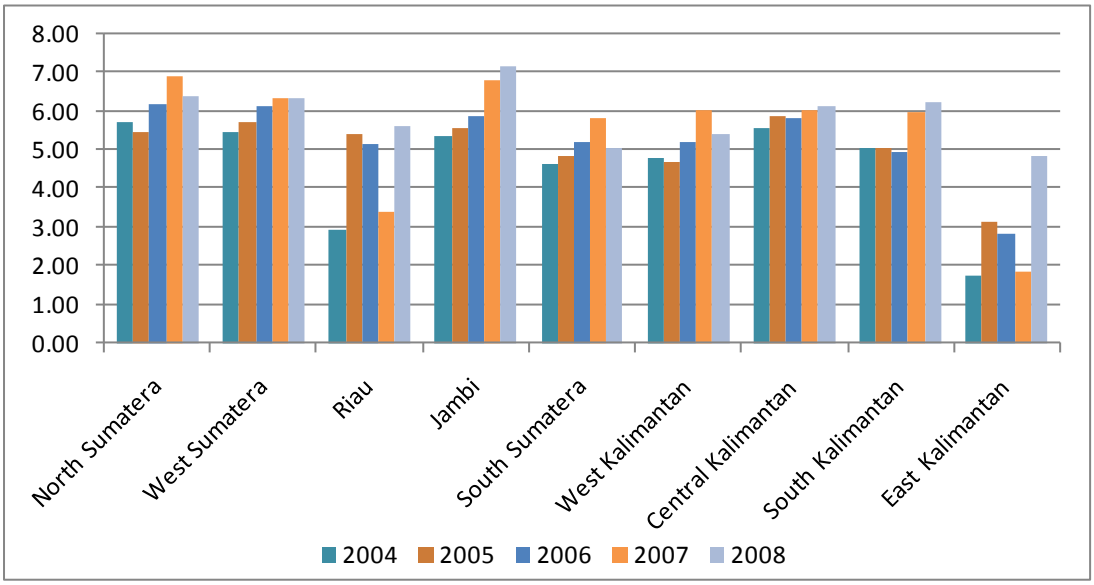
Figure 17. Employment performance of non-palm oil producers in Indonesia, 2004—2008 (in '000 person)



***Source*:** BPS

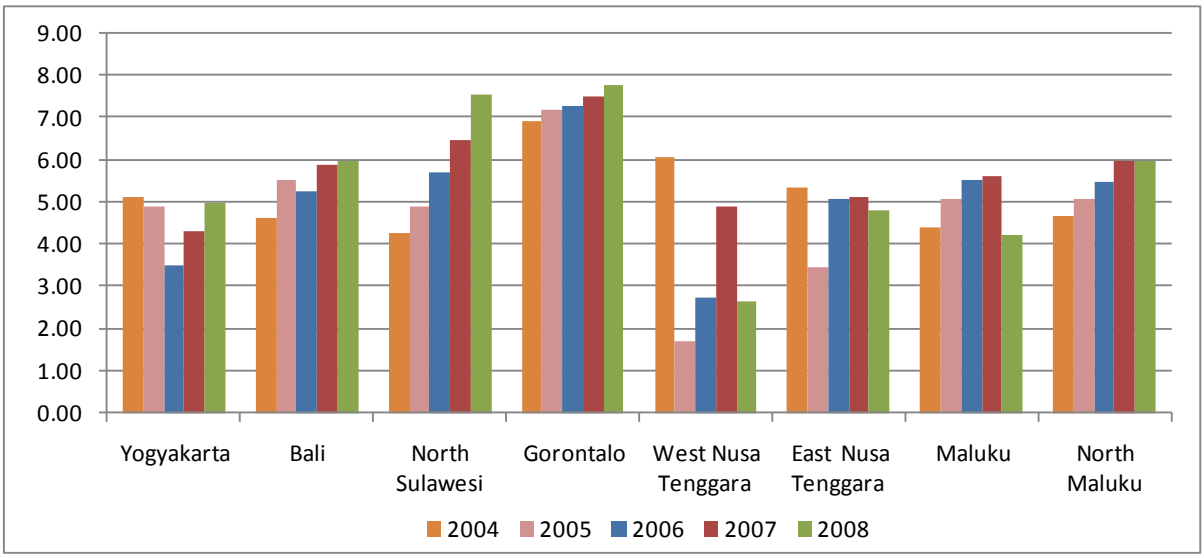
The palm oil industry started becoming a major industry in Indonesia around 2005—2006. A comparison of GDP growth between two groups of provinces shows that the palm oil industry effected positive trends in GDP growth in 2008, notably in the biggest palm oil-producing provinces (e.g., Riau, Jambi, and East Kalimantan). The situation did not hold true for North Sumatera, South Sumatera, and West Kalimantan. There was no extraordinary GDP growth from 2004 to 2008 for provinces that do not produce palm oil; GDP growth for these provinces showed a fluctuating trend. Only three provinces showed a positive trend since 2004: North Sulawesi, Gorontalo, and North Maluku (see figure 19).

Figure 18. GDP growth of palm oil-producing provinces in Indonesia, 2004—2008 (in %)



***Source*:** BPS

Figure 19. GDP growth of non-palm oil-producing provinces in Indonesia, 2004—2008 (in %)



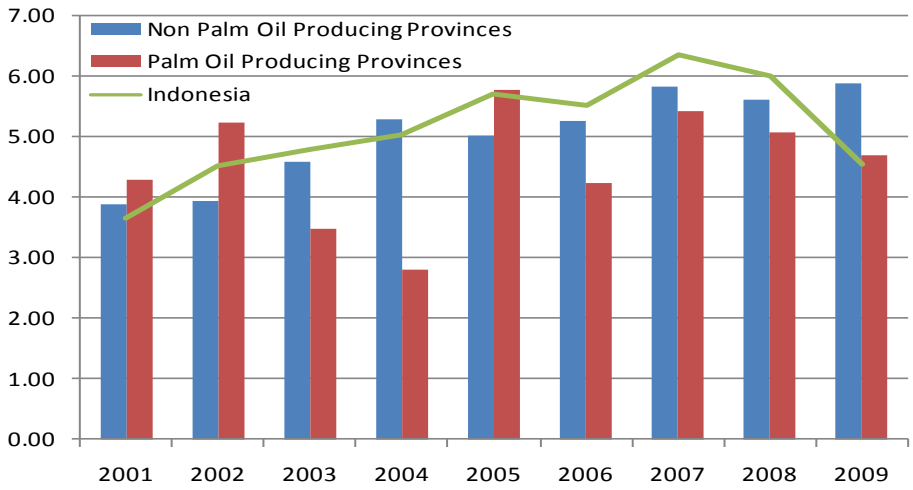
***Source*:** BPS

The figures indicate that the palm oil industry has not yet made a significant impact on the employment and growth performance of the provinces and the nation in general. This is due to the fact that the palm oil industry in Indonesia started to develop only in the early 2000s.

The employment performance reflects the positive progress as the palm oil industry became a labor-intensive industry and served as trigger for creating employment in other sectors. Although the contribution of palm oil exports to GDP growth ranged between 7 percent and 9 percent during the period 2007—2009, palm oil exports did not actually boost GDP growth significantly in the provinces in particular and Indonesia in general.

Figure 20 shows the fluctuation of Indonesia's GDP growth and average GDP growth in the two groups of provinces. National GDP growth was influenced by economic activities in non-palm oil-producing provinces before 2005. Palm oil-producing provinces started to influence national GDP growth only in 2005 as the palm oil industry began to post increasing export value. Overall, GDP growth in palm oil-producing provinces is smaller than GDP growth in non-palm oil-producing provinces because most economic activities and industrial areas are located in Java, which neither produces palm oil nor depends on the palm oil industry.

Figure 20. National GDP growth and average GDP growth in two groups of provinces, 2001— 2009



***Source*:** BPS

Basic Infrastructure

This section analyzes the basic infrastructure necessary for delivering clean water, proper sanitation, and electricity in the two groups of provinces. Table 8 shows the percentage of households in the two groups of provinces that have access to clean water. It also shows the

improvement in the percentage of households with access to clean water in the palm oil-producing provinces from 1993—1999. Meanwhile, non-palm oil-producing provinces also experienced a significant increase in the number of households with access to clean water in the same period. However, the percentage increase was higher in the palm oil-producing provinces (7 percent) than in the non-palm oil-producing provinces (5 percent). Between 2003 and 2009, the gap between the two groups of provinces narrowed, with more than 40 percent of households having access to clean water (table 8). Overall, this gap has been shrinking since 1993. For the years 1993, 1999, 2003, and 2009, the gap progressively narrowed—9.23 percent in 1993, 7.02 percent in 1999, 5.2 percent in 2003, and 4.42 percent in 2009.

Table 8. Households with Access to Clean Water in Indonesia (average in %)

Province	1993	1999	2003	2009
Palm Oil Producing Provinces	33.22	40.30	44.25	43.93
Non Palm Oil Producing Provinces	42.45	47.32	49.45	48.35

***Source*:** BPS

Another basic infrastructure is proper sanitation facilities. The two groups of provinces showed positive improvement from 1993 to 2009 (table 9). Between 1993 and 1999, palm oil-producing provinces lagged in access to proper sanitation facilities, with only between 20 percent and 27 percent having access to proper sanitation. Meanwhile, in the same period, between 31 percent and 39 percent) of people living in non-palm oil-producing provinces had access to proper sanitation facilities. Between 2003 and 2009, there was a significant increase in the percentage of households with proper sanitation. Note in table 9 that the gap between the two groups of provinces narrowed. In 1993 and 1999, for example, the gaps between the two groups of provinces were 10.95 percent and 11.89 percent, respectively. Then in 2003 and 2009, the gaps further narrowed, from 7.91 percent in 2003 to 5.82 percent in 2009. This significant improvement was likely caused by increasing economic activities in both groups of provinces, especially in the palm oil-producing provinces.

Table 9. Households with Access to Good Sanitation in Indonesia (average in %)

Province	1993	1999	2003	2009
Palm Oil Producing Provinces	20.25	27.88	30.42	44.51
Non Palm Oil Producing Provinces	31.20	39.77	38.33	50.33

***Source*:** BPS

Electricity can be viewed as the engine that facilitates economic activities. That is why many provinces with no sufficient supply of electricity find alternative sources. To meet this need, the government commissioned PT Perusahaan Listrik Negara (PLN), a state-owned enterprise, to provide electricity to households and businesses all over Indonesia. There are also private companies that provide electricity through generators and power plants.

In table 10, we can see the significant improvement posted by palm oil-producing provinces in terms of access to electricity. In the 1990s, PLN focused only on non-palm oil-producing provinces because the main engine of economic growth at that time were mostly the Java-based provinces. In the late 1990s, PLN boosted its electricity supply for both groups of provinces, posting an increase of 23.58 percent for non-palm oil-producing provinces and 26.93 percent in palm oil-producing provinces. Between 2003 and 2009, the gap between the two groups of provinces narrowed. In 2009, people from both groups of provinces enjoyed the same access to electricity, with more than 70 percent of households having access to electricity from PLN. However, in 2009, palm oil-producing provinces overtook the non-palm oil-producing provinces in access to electricity because there were many private companies that provided electricity in the former.

Table 10. Access to Electricity of Households in Indonesia (average in %)

Province	1993		1999		2003		2009	
	PLN	TOTAL	PLN	TOTAL	PLN	TOTAL	PLN	TOTAL
Palm Oil Producing Provinces	36.33	44.61	63.26	69.11	68.04	74.29	77.04	86.10
Non Palm Oil Producing Provinces	57.42	-	81.00	-	76.71	80.29	77.20	85.41

***Source*:** BPS

There is sustainable progress for households with access to the three basic types of infrastructure, both in the palm oil-producing provinces and in the non-palm oil-producing provinces. Most palm oil-producing provinces did not have access to good basic

infrastructure in the early 1990s compared to the non-palm oil-producing provinces that were already enjoying good infrastructure (especially electricity) then. The growing palm oil industry effectively narrowed the gap between the provinces that produce palm oil and those that do not. This shows that the palm oil industry, whose players are mostly based in the provinces, can help people in the rural areas gain access to, and enjoy, basic infrastructure.

Poverty Incidence

The word "rural" tends to connote poverty. Rural areas are commonly identified as a "source" of poverty in Indonesia. The general view is that poor people usually come from the rural areas. In this section, we will investigate the progress of the poor in the palm oil-producing provinces and in the non-palm oil-producing provinces.

Table 11 illustrates the number and percentage of poor people in palm oil-producing provinces from 2007—2010. Between 2007 and 2008, there was an increasing number and percentage of poor people, especially in 2008, because Indonesia was hit by the global economic crisis, particularly the food crisis. However, the number of poor people gradually started to decrease between 2008 and 2010. In 2010, South Kalimantan, Bangka Belitung, and Central Kalimantan provinces had the lowest percentage of poor people, at 5.21 percent, 6.51 percent, and 6.77 percent, respectively. Meanwhile, Papua (36.8 percent) and Aceh (20.98 percent) had the highest percentage of poor people in the same year.

Table 11. Number and Percentage of Poor People in Palm Oil-Producing Provinces, 2007--2010

Provinces	Poor People ('000 person)				Percentage of Poor People (%)			
	2007	2008	2009	2010	2007	2008	2009	2010
Aceh	892.9	959.7	892.9	861.9	21.8	23.53	21.8	20.98
North Sumatera	1 499.7	1 613.8	1 499.7	1490.9	11.51	12.55	11.51	11.31
West Sumatera	429.3	477.2	429.3	430	9.54	10.67	9.54	9.5
Riau	527.5	566.7	527.5	500.3	9.48	10.63	9.48	8.65
Jambi	249.7	260.3	249.7	241.6	8.77	9.32	8.77	8.34
South Sumatera	1 167.9	1 249.6	1 167.9	1125.7	16.28	17.73	16.28	15.47
Bengkulu	324.1	352	324.1	324.9	18.59	20.64	18.59	18.3
Lampung	1 558.3	1 591.6	1 558.3	1479.9	20.22	20.98	20.22	18.94
Bangka Belitung	76.6	86.7	76.6	67.8	7.46	8.58	7.46	6.51
West Java	4 983.6	5 322.4	4 983.6	4773.7	11.96	13.01	11.96	11.27
Banten	788.1	816.7	788.1	758.2	7.64	8.15	7.64	7.16
West Kalimantan	434.8	508.8	434.8	428.8	9.3	11.07	9.3	9.02
Central Kalimantan	165.9	200	165.9	164.2	7.02	8.71	7.02	6.77
South Kalimantan	176	218.9	176	182	5.12	6.48	5.12	5.21
East Kalimantan	239.2	286.4	239.2	243	7.73	9.51	7.73	7.66
Central Sulawesi	489.8	524.7	489.8	475	18.98	20.75	18.98	18.07
South Sulawesi	963.6	1 031.7	963.6	913.4	12.31	13.34	12.31	11.6
Southeast Sulawesi	434.3	435.9	434.3	400.7	18.93	19.53	18.93	17.05
Papua	760.3	733.1	760.3	761.6	37.53	37.08	37.53	36.8

***Source*:** BPS

This section also describes the poverty line in palm oil-producing provinces. Poverty line is an addition to food and nonfood poverty lines. The food poverty line is standardized with minimum food needs (i.e., 2,100 kcal per capita per day) and is represented by 52 commodities. The nonfood poverty line covers the minimum needs on housing, clothing, education, and health.

People with per capita income below the poverty line can be categorized as poor. In table 12, we can see that the highest poverty line in 2010 occurred in Bangka Belitung, followed by East Kalimantan, Aceh, and Papua. From this data, we also can see the cost of living in each province. A higher poverty line means a higher cost of living. Meanwhile, the provinces with lowest poverty line in 2010 were South Sulawesi, Southeast Sulawesi, and West Kalimantan.

Table 12. Poverty Line in Palm Oil-Producing Provinces, 2007—2010

Provinces	Poverty Line (Rupiah)			
	2007	2008	2009	2010
Aceh	261 898	239 873	261 898	278 389
North Sumatera	210 241	193 321	210 241	222 898
West Sumatera	217 469	195 733	217 469	230 823
Riau	246 481	229 371	246 481	256 112
Jambi	199 623	182 229	199 623	216 187
South Sumatera	212 381	196 452	212 381	221 687
Bengkulu	210 084	189 607	210 084	225 857
Lampung	188 812	172 332	188 812	202 414
Bangka Belitung	266 843	246 169	266 843	286 334
West Java	191 985	176 216	191 985	201 138
Banten	198 750	181 076	198 750	208 023
West Kalimantan	174 617	158 834	174 617	189 407
Central Kalimantan	202 612	186 003	202 612	215 466
South Kalimantan	195 787	180 263	195 787	210 850
East Kalimantan	261 185	237 979	261 185	285 218
Central Sulawesi	189 653	168 025	189 653	203 237
South Sulawesi	153 715	138 334	153 715	163 089
Southeast Sulawesi	161 583	141 919	161 583	165 208
Papua	246 225	225 195	246 225	259 128

***Source*:** BPS

For deeper analysis, the poverty gap index and the poverty severity index were used to help us understand the impacts of oil palm plantations in the provinces that produce palm oil. Table 13 shows that Papua, Aceh, Southeast Sulawesi, and Central Sulawesi were the palm oil-producing provinces with the highest poverty gap index. A high poverty gap index means that the average expenditure per capita are far from the poverty line. Thus, Papua and Aceh were not only the provinces with highest poverty gap index but also the highest poverty severity index. This suggests that Papua and Aceh should get more attention from the national government in terms of antipoverty interventions (e.g., credit for small and medium enterprises or SMEs, cash transfer programs).

Table 13. Poverty Gap and Severity Index in Palm Oil-Producing Provinces, 2007--2010

Provinces	Poverty Gap Index				Poverty Severity Index			
	2007	2008	2009	2010	2007	2008	2009	2010
Aceh	4.46	4.92	4.46	4.11	1.34	1.5	1.34	1.26
North Sumatera	1.92	2.17	1.92	2.04	0.5	0.58	0.5	0.57
West Sumatera	1.41	1.6	1.41	1.49	0.32	0.39	0.32	0.35
Riau	1.25	1.63	1.25	1.38	0.25	0.4	0.25	0.37
Jambi	1.38	1.56	1.38	1.05	0.36	0.41	0.36	0.23
South Sumatera	3.06	3.15	3.06	2.63	0.86	0.85	0.86	0.71
Bengkulu	2.98	3.74	2.98	2.75	0.77	1.07	0.77	0.69
Lampung	3.94	3.83	3.94	2.98	1.12	1.03	1.12	0.72
Bangka Belitung	1.2	1.28	1.2	0.93	0.31	0.31	0.31	0.23
West Java	1.95	2.17	1.95	1.93	0.5	0.58	0.5	0.52
Banten	1.32	1.12	1.32	1	0.33	0.28	0.33	0.24
West Kalimantan	1.55	1.66	1.55	1.18	0.4	0.42	0.4	0.24
Central Kalimantan	1.03	1.47	1.03	1.02	0.22	0.37	0.22	0.24
South Kalimantan	0.73	1.03	0.73	0.69	0.17	0.27	0.17	0.18
East Kalimantan	1.51	1.61	1.51	1.27	0.43	0.39	0.43	0.34
Central Sulawesi	4.09	4.33	4.09	3.09	1.37	1.41	1.37	0.8
South Sulawesi	2.08	2.44	2.08	1.91	0.55	0.67	0.55	0.49
Southeast Sulawesi	3.44	3.74	3.44	3.18	0.98	1.08	0.98	0.89
Papua	9.07	10.89	9.07	9.36	2.98	4.01	2.98	3.37

***Source*:** BPS

It can be noted that there is also poverty incidence in several provinces without oil palm plantations. Table 14 shows that in 2010, there were many provinces with more than 20 percent of their population classified as poor. These provinces were West Papua (34.88 percent), Maluku (27.74 percent), Gorontalo (23.19 percent), East Nusa Tenggara (23.03 percent cent), and West Nusa Tenggara (21.55 percent). The provinces with the lowest percentage of poor people were DKI Jakarta and Bali.

Taable 14. Number and Percentage of Poor People in Non-Palm Oil-Producing Provinces, 2007—2010

Provinces	Poor People ('000 person)				Percentage of Poor People (%)			
	2007	2008	2009	2010	2007	2008	2009	2010
Riau Island	128.2	136.4	128.2	129.7	8.27	9.18	8.27	8.05
DKI Jakarta	323.2	379.6	323.2	312.2	3.62	4.29	3.62	3.48
Central Java	5 725.7	6 189.6	5 725.7	5369.2	17.72	19.23	17.72	16.56
DI Yogyakarta	585.8	616.3	585.8	577.3	17.23	18.32	17.23	16.83
East Java	6 022.6	6 651.3	6 022.6	5529.3	16.68	18.51	16.68	15.26
Bali	181.7	215.7	181.7	174.9	5.13	6.17	5.13	4.88
West Nusa Tenggara	1 050.9	1 080.6	1 050.9	1009.4	22.78	23.81	22.78	21.55
East Nusa Tenggara	1 013.1	1 098.3	1 013.1	1014.1	23.31	25.65	23.31	23.03
North Sulawesi	219.6	223.5	219.6	206.7	9.79	10.1	9.79	9.1
Gorontalo	224.6	221.6	224.6	209.9	25.01	24.88	25.01	23.19
West Sulawesi	158.2	171.1	158.2	141.3	15.29	16.73	15.29	13.58
Maluku	380	391.3	380	378.6	28.23	29.66	28.23	27.74
North Maluku	98	105.1	98	91.1	10.36	11.28	10.36	9.42
West Papua	256.8	246.5	256.8	256.3	35.71	35.12	35.71	34.88

***Source*:** BPS

Table 15 shows that DKI Jakarta, as Indonesia's capital, remains the most expensive province in Indonesia. Its poverty line is the highest among the non-palm oil-producing provinces. West Sulawesi has the lowest poverty line.

Table 15. Poverty Line in Non-Palm Oil-Producing Provinces, 2007--2010

Provinces	Poverty Line (Rupiah)			
	2007	2008	2009	2010
Riau Island	283 965	262 232	283 965	295 095
DKI Jakarta	316 936	290 268	316 936	331 169
Central Java	182 515	168 168	182 515	192 435
DI Yogyakarta	211 978	194 830	211 978	224 258
East Java	188 317	169 112	188 317	199 327
Bali	196 466	176 569	196 466	208 152
West Nusa Tenggara	185 025	167 536	185 025	196 185
East Nusa Tenggara	156 191	139 731	156 191	175 308
North Sulawesi	184 772	168 160	184 772	194 334
Gorontalo	162 189	147 154	162 189	171 371
West Sulawesi	163 224	146 492	163 224	171 356
Maluku	207 771	188 931	207 771	226 030
North Maluku	201 500	187 671	201 500	212 982
West Papua	277 416	233 570	277 416	294 727

***Source*:** BPS

Table 16 further shows the provinces with highest poverty gap index. These were West Papua (10.47 percent), Maluku (5.23 percent), East Nusa Tenggara (4.74 percent), Gorontalo (4.14

percent), and West Nusa Tenggara (3.77 percent). The provinces with high poverty severity indexes in 2010 were West Papua (4.3 percent), Maluku (1.47 percent), and East Nusa Tenggara (1.43 percent).

Table 16. Poverty Gap and Severity Index in Non-Palm Oil-Producing Provinces, 2007--2010

Provinces	Poverty Gap Index				Poverty Severity Index			
	2007	2008	2009	2010	2007	2008	2009	2010
Riau Island	2.02	2.07	2.02	1.05	0.77	0.72	0.77	0.25
DKI Jakarta	0.57	0.72	0.57	0.45	0.14	0.19	0.14	0.11
Central Java	2.96	3.39	2.96	2.49	0.74	0.9	0.74	0.6
DI Yogyakarta	3.52	3.35	3.52	2.85	1.04	0.92	1.04	0.73
East Java	2.88	3.38	2.88	2.38	0.76	0.93	0.76	0.59
Bali	0.74	0.84	0.74	0.71	0.17	0.18	0.17	0.14
West Nusa Tenggara	5.15	4.49	5.15	3.77	1.68	1.28	1.68	1.01
East Nusa Tenggara	4.14	4.87	4.14	4.74	1.14	1.35	1.14	1.43
North Sulawesi	1.55	1.53	1.55	1.14	0.36	0.38	0.36	0.24
Gorontalo	4.59	4.59	4.59	4.14	1.27	1.27	1.27	1
West Sulawesi	2.47	2.63	2.47	1.55	0.6	0.66	0.6	0.35
Maluku	5.59	5.89	5.59	5.23	1.67	1.75	1.67	1.47
North Maluku	1.44	1.65	1.44	1.47	0.36	0.39	0.36	0.33
West Papua	9.75	9.18	9.75	10.47	3.57	3.5	3.57	4.3

***Source*:** BPS

Table 17 sums up several important indicators in the two groups of provinces. Table 17 shows that palm oil-producing provinces performed better, with a lower average percentage of poor people and higher poverty line than non-palm oil-producing provinces. From 2007 until 2010, the percentage of poor people in palm oil-producing provinces, on average, was around 13 percent to 14 percent. Meanwhile, the same indicator in non-palm oil-producing provinces was between 16 percent and 18 percent. If we compare those two groups of provinces in terms of the average number of poor people, table 17 shows that both groups had quite a similar number of poor people, on average, because the population in palm oil-producing provinces was higher than that in the non-palm oil-producing provinces. On average, the number of poor people in both groups totaled around 15 million to 17 million. In addition, the average poverty line in palm oil-producing provinces was also higher than in the non-palm oil-producing provinces. This can be an indication that the standard of living in the palm oil-producing provinces is better than in the non-palm oil-producing provinces. .

Table 17. Performance of Indicators between Palm Oil-Producing and Non-Palm Oil-Producing Provinces, 2007—2010

Indicators	Year	Palm Oil Producing Provinces	Non Palm Oil Producing Provinces
Population ('000 person)	2007	118,026.83	114,235.40
	2008	116,697.51	114,430.50
	2009	118,026.83	114,235.40
	2010	118,206.93	114,243.25
Average Number of Poor People ('000 person)	2007	16,161.60	16,368.40
	2008	16,204.50	17,726.90
	2009	16,161.60	16,368.40
	2010	15,623.60	15,400.00
Average Percentage of Poor People (%)	2007	13.69	17.08
	2008	14.86	18.07
	2009	13.69	17.08
	2010	13.08	16.25
Average Poverty Line (Rupiah)	2007	209,997	208,448
	2008	191,523	188,602
	2009	209,997	208,448
	2010	223,235	220,909

***Source*:** BPS

The section on poverty incidence wraps up the comparative values between the palm oil-producing provinces and the non-palm oil-producing provinces. With data on the number and percentage of poor people, poverty line, poverty gap index, and poverty severity index, it can be concluded that palm oil-producing provinces were substantially successful in reducing poverty when the palm oil industry took off in the 2000s. The image of rural areas, which used to be connected with poverty, has now shifted.

The expansion of oil palm plantations and the various government initiatives to promote the palm oil industry has created job opportunities and helped increase average monthly income as well as the average per capita expenditure.

Migration

Another indicator of how the palm oil industry affects the performance of palm oil-producing provinces is migration. Table 18 shows the magnitude of recent migration to palm oil-producing provinces based on population censuses conducted in 1980, 1985, 1990, 1995, 2000, and 2005. The term "recent migration" refers to migration where people were counted in the provinces they migrated to compared to where they lived five years before the census took place. In palm oil-producing provinces (see table 18), net migration showed a positive trend, which means that people migrated from outside palm oil-producing provinces. The highest migration in the palm oil-producing provinces was recorded in 1990 (1.28 million) and 2000 (1.22 million).

Table18. Recent Migration in Palm Oil-Producing Provinces

Provinces	1980	1985	1990	1995	2000	2005
Aceh	22,960	16,423	6,937	-19,980	-146,212	na
North Sumatera	-81,703	-104,258	-169,765	-95,615	-218,634	-94,568
West Sumatera	-60,122	-57,528	-44,171	-6,076	-124,929	-20,506
Riau	44,895	46,225	152,562	21,146	435,431	115,073
Jambi	71,095	20,487	72,364	4,362	26,188	14,980
South Sumatera	89,154	-6,581	13,355	-59,202	11,294	-40,778
Bengkulu	51,003	19,304	54,236	30,194	33,001	2,686
Lampung	462,209	41,541	76,391	-51,715	-245	-19,011
Bangka Belitung	na	na	na	na	2,763	2,115
West Java	83,519	210,386	854,869	668,836	465,268	287,839
Banten	na	na	na	na	412,941	158,009
West Kalimantan	10,949	797	-877	10,722	3,520	-16,506
Central Kalimantan	33,710	15,022	41,776	-6,594	99,484	-15,760
South Kalimantan	15,643	4,970	21,883	12,884	26,708	20,750
East Kalimantan	92,286	53,520	126,339	62,618	112,681	101,911
Central Sulawesi	66,313	16,059	41,996	42,816	44,773	24,833
South Sulawesi	-82,647	-41,366	-41,595	-11,807	-89,906	-36,127
Southeast Sulawesi	21,439	56,776	34,462	18,131	88,038	10,031
Papua	17,229	34,011	42,145	26,802	33,674	17,761
Net Migration	**857,932**	**325,788**	**1,282,907**	**647,522**	**1,215,838**	**512,732**

***Source*:** BPS (Population Censuses of 1980, 1985, 1990, 1995, 2000, and 2005)

Meanwhile, non-palm oil-producing provinces posted negative net migration, which means that people in these provinces moved out to other provinces. Table 19 shows that the highest migration (out of non-palm oil-producing provinces) was posted in 1990 and 2000, which totaled 1.21 million and 1.12 million people, respectively. Tables 18 and 19 show that a

significant number of people transferred to palm oil-producing provinces because these provinces offered promising job prospects and a better standard of living. The growing number of oil palm plantations in palm oil-producing provinces attracted many people to settle in these provinces. In 2000, there were about 400,000 people who migrated to Riau, the largest palm oil producer in Indonesia.

Migration statistics indicate that many people from non-palm oil-producing provinces moved to palm oil-producing provinces because of the promise of a better standard of living. The transmigration program supported by the national government through the Ministry of Manpower and Transmigration (MoMT) also played a significant role in helping people move to palm oil-producing provinces, which have more rural areas than urban areas, more lands, and are less populated. Rural progress becomes possible when people can live comfortably in a rural area with better jobs and income. Such progress is also sustainable when people in rural areas who dream of better lives do not have to move to urban areas anymore because they can already achieve their dreams in the rural areas.

Table 19. Recent Migration in Non-Palm Oil-Producing Provinces

Provinces	1980	1985	1990	1995	2000	2005
Riau Island	na	na	na	na	na	145,686
DKI Jakarta	384,037	285,264	-160,348	-228,503	-148,141	-159,411
Central Java	-724,541	-436,059	-774,941	-380,473	-663,290	-334,589
DI Yogyakarta	25,923	9,878	40,963	54,305	67,056	102,149
East Java	-367,380	-170,446	-318,741	27,837	-343,071	-94,111
B a l i	-15,150	-3,123	9,840	12,879	39,872	37,630
West Nusa Tenggara	-12,766	11,040	548	10,998	9,250	-5,393
East Nusa Tenggara	-8,737	-4,548	-18,513	-10,507	14,921	3,148
North Sulawesi	7,239	-15,447	-16,536	-26,290	15,674	-2,950
Gorontalo	na	na	na	na	-24,191	-4,534
West Sulawesi	na	na	na	na	na	na
Maluku	19,909	-687	29,802	-22,968	-74,124	-20,802
North Maluku	na	na	na	na	-13,716	-6,164
West Papua	na	na	na	na	na	na
Net Migration	**-691,466**	**-324,128**	**-1,207,926**	**-562,722**	**-1,119,760**	**-339,341**

***Source*:** BPS (Population Censuses of 1980, 1985, 1990, 1995, 2000, and 2005)

5. Summary and Conclusion

Large-scale oil palm plantations have attracted many investors hoping to gain profits from the trading of palm oil as a raw material for biodiesel and to fulfill global market demands. As palm oil production continues to rise, the national government plans to expand plantation areas to up to 19 million hectares in 2020. In terms of market share, Indonesia has been leading other palm oil-exporting countries since 2009.

The current government under SBY is focusing on the expansion of palm oil plantations in order to create more job opportunities. This is expected to boost economic growth and reduce poverty. The government's ten-year plan, which includes increasing oil palm plantations to about 19 million hectares in 2020, aims to: (1) revitalize palm oil plantations; (2) focus on CPO-based biofuel development; and (3) establish a palm oil industrial area cluster program to achieve economies of scale. The national government also provides financial incentives such as people-based small-business loans (*Kredit Usaha Rakyat/KUR*) to palm oil producers, especially smallholders, to help them operate their palm oil businesses in economic zones in Sumatera and Kalimantan,

The global palm oil industry has been promoting green certification through RSPO since 2004 as a response to the deforestation issue. The RSPO is meant to encourage ethical practices and commitment from stakeholders to preserve rainforests and wildlife. It also serves as a network linkage among firms in the palm oil industry and between these firms and the government. The Indonesian government also plans to issue ISPO certification in 2011 to producers who can meet the sustainability standards from the processing to the production stages. However, certain questions about the ISPO implementation process itself still need to be clarified, such as the body authorized to award the certification and the standards or requirements that firms should achieve in order to get certified. At this point, the government should craft proactive and clear regulations or policy instruments, including effective coordination, R&D, and funding/financial assistance to create a certain business climate in Indonesia.

The impacts of oil palm plantations range from economic to ecological. In terms of economic impact, the palm-oil industry can improve Indonesia's export revenues. However, there is the

issue of export taxes being levied on palm oil The export tax on palm oil is meant to stabilize domestic palm oil prices, but the national government should be more prudent in determining and implementing it to avoid snags in Indonesia's palm oil exports. Palm oil producers are concerned about the 25 percent export tax because they think it will make palm oil trading more complicated and may turn off local and foreign investors.

In addition, the palm oil industry creates jobs, especially for people who live in the rural areas. The industry helps bring about progress by improving the standard of living and the infrastructure in rural areas. Comparing the performance indicators between palm oil-producing provinces and the non-palm oil-producing provinces would show that palm oil-producing provinces had a significantly narrowed the gap in performance and access to basic infrastructure like clean water, proper sanitation, and electricity.

Moreover, since 2004—2005, the growth in Indonesia's GDP has followed the trend in the GDP growth of palm oil-producing provinces. There is a strong relationship between these two indicators. There has been a consistently positive net migration (migration in) in palm oil-producing provinces since 1980 while non-palm oil-producing provinces have had a negative net migration (migration out). This phenomenon was due to the implementation of the transmigration program and the increasing economic activities in the palm oil industry, which enticed people to come to, and operate businesses in, palm oil-producing provinces, which are mostly in Sumatera and Kalimantan.

On the social aspect, it is evident that the palm oil industry can cause a shift in human activities and perception as well as land usage. In the gradual transition from old to new communities, there has also been a shift in society's perception about culture (e.g., on women and child workers, corruption/gratification, debt, and horizontal conflict). The palm oil industry has also made the locals more dependent on food companies as a result of which they have stopped growing their own food. This brings about the shift in land usage.

Finally, on the ecological aspect, oil palm plantations affect the environment negatively because it causes forest degradation. In this case, the government should be more cautious in implementing several agreements it has made with other countries and international institutions regarding the reduction of GHG emissions, deforestation, and forest degradation

in order to minimize inconsistencies. A case in point is the government's plan to further expand oil palm plantations by 2020 even as it forged an LoI with Norway about stopping land expansion in 2011—2013.

In conclusion, the expansion of oil palm plantations in Indonesia's rural areas can economically benefit local communities via infrastructure development and job creation. It can stimulate the establishment of small businesses in rural areas. The government should factor in the role of the local communities in oil palm plantations because they are important stakeholders in the palm oil industry. The expansion of oil palm plantations can damage nature and create conflict between the locals and palm oil companies. These problems, however, can be minimized, if not avoided, if a good relationship can be established among the local community, the local government, and the palm oil companies. Through right, strong, clear, and fair policies, the government will be able to promote rural development and poverty alleviation in Indonesia.

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