

AGRICULTURAL PRODUCTION AND POLICY IN INDONESIA IN THE LAST TWO DECADES – TASKS AND CHALLENGES

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ABSTRACT

With its geographical and climate features Indonesia belongs to the greatest agricultural producers in the world; there are more than 50 million hectares under agricultural cultivation. The tropical climate excludes the possibility of growing ordinary cereals such as wheat or barley, but provides favourable circumstances for rice, palm oil, natural rubber, cocoa and other tropical plantations. The sector is the biggest employer, in 2008 nearly 45% of the Indonesian employees worked in agriculture. The sector's GDP share – although it decreased after the industrialization – is still considerable (14% in 2006). The Asian crisis in 1997 affected the Indonesian agriculture, just like the other sectors in the economy in spite of having been the only sector which was able to achieve growth even in the middle of the economic crisis. The external trade (including both export and import) fell back partly because of the crisis and also due to the drought that had never been seen for 50 years. Nowadays Indonesian agriculture faces several challenges. People living in poverty stricken regions strongly depend on the sector that is why the government strives for improving the quality and the quantity of the production. Development is not always sustainable, though. Extension of arable lands often means deforestation decreasing the area of the unique tropical rainforests that provide biotope for several living creatures and contribute to the maintenance of biodiversity, which is the most important criterion of sustainability. Consecutively, achieving sustainable development is the first priority of the Indonesian agriculture.

Keywords: agriculture, economic crisis, sustainable development, Indonesia

INTRODUCTION

The agricultural sector in Indonesia

Due to its geographical and climatic features, Indonesia is basically an agricultural country. Most of Indonesia's poor people live in rural areas and depend on the agricultural sector for their life. The sector is the biggest employer in the country.

During the colonialization the sector focused primarily on exportable products such as sugarcane, tea or natural rubber; food and forage plant production decreased. After gaining its independence (1945) Indonesia strongly depended on the former export products, while it was unable to provide the required amount of foodstuff from domestic production. Self-sufficiency became one of the main objectives of the Indonesian government. In order to attain this aim new technologies were developed and introduced in the seventies and eighties, which resulted in a more than 3% growth in agricultural production besides a 2% population growth.

In this period about 9,3% of the public budget was used to improve the sector, more than the 7,5% average of 40 other developing countries (*Asian Development Bank*, 2006). The export of agricultural products increased by 11% a year besides a 23% proportion from the total Indonesian export. Due to the improvements the number of citizens living under the poverty threshold decreased from 40% of the whole society in 1976 to 21,2% in 1987. Agriculture gives work to nearly 45% of the total Indonesian labour force, and its GDP share is still high enough to be the most important sector in the country.

Aim of the study

The study aims to examine the Indonesian agricultural sector's features considering the tendencies in the last two decades, and also to point at the strengths and weaknesses of the sector. Based on the researches, those tasks and challenges are going to be emphasized that the Indonesian political decision makers are facing. The study was motivated by a couple of months the author spent in Indonesia and by experiencing the reality of the Indonesian rural life.

MATERIALS AND METHODS

The study is mostly based on secondary researches using information and data of the Asian Development Bank, the World Bank, the Indonesian statistics and former studies from different universities. The most important source was the database of Business Monitor International, which provided for a three week free trial focusing on the Indonesian agricultural sector. Besides the secondary researches, a personal interview with a Balinese entrepreneur helped the work, who mostly shared information about the Asian crisis in 1997 and the present political and regulatory system.

RESULTS AND DISCUSSION

Main crops; geographical and climate conditions in Indonesia

Rice is the main food staple in most areas, with the expectation of some parts of eastern Indonesia, where the sago palm is more suitable for cultivation. Indonesia is the world's third largest producer of rice. Despite this fact it is also a considerable importer, since self-sufficiency can only be attained in a few years' time¹. The main rice producing regions are the fertile islands² of Java and Bali, where industrialization and high population density have resulted in the loss of large swatches of arable land. Indonesia lost a total of 1m ha rice paddy between 1983 and 1993. To reverse this trend, the government has been developing paddies in the less fertile provinces of Riau, Jambi, South Sumatra, Bengkulu and West Kalimantan (*EUI*, 2007).

¹ Self-sufficiency was briefly attained in 1985 and again in 2004, but during the intervening years Indonesia was one of the world's largest rice importers.

² Indonesia consists of nearly 18 000 islands, about 6000 of which are inhabited. The largest islands are Java, Sumatra, Kalimantan, New Guinea.

Table 1

Contribution of Area and Yield of Total Rice Output Growth

Decade	Java		Off-Java		Indonesia	
	area	yield	area	yield	area	yield
	%					
1951-1961	19,8	81,1	94,0	6,4	54,4	45,9
1961-1970	-	-	-	-	35,5	64,5
1970-1980	24,1	75,2	25,1	74,8	24,4	75,2
1980-1990	27,4	73,2	39,0	61,1	33,9	66,4
1990-2000	143,1	-43,5	80,6	19,5	91,7	8,4

Source: *Asian Development Bank*, 2006

Owing to low rice prices, in January 2004 the government succumbed the pressure from producers and announced that rice import would be banned for six months to protect farmers during the main harvest. The ban has since been extended on several occasions and remains in place. The restriction on imports has stoked domestic prices, which rose by an average of 33% and have hit Indonesia's poorest citizens hard, who spend a disproportionately large share of their disposable income on rice³. The government softened the import restrictions by allowing limited quantities to be imported (*EUI*, 2007).

Table 2

Rice production in Indonesia (2004-2008)

Year	Area (ha)	Yield/hectare (t)	Total yield (t)	Growth (%)
2004	11 922 974	4,541	54 088 468	3,74
2005	11 839 060	4,574	54 151 097	0,12
2006	11 786 430	4,620	54 454 937	0,56
2007	12 147 637	4,705	57 157 435	4,96
2008*	12 343 617	4,883	60 279 897	5,46

* Estimated data considering the first three quarters.

Source: *Statistics Indonesia*, 2008

In recent years **palm oil** production has expanded rapidly, and Indonesia may precede Malaysia as the world's largest producer of this commodity. Indonesia and Malaysia together account for around 85% of global palm oil production. The planted area in Indonesia increased from only 106 000 hectares in 1967 to 3,7 million in 2006 and more than 2 million people are now employed in the subsector.

³ The proportion of citizens living under poverty threshold was 40% in 1976, 16,6% in 2007. Today 7,7% of the society realizes less than one dollar income a day (*Asian Development Bank*, 2008).

Crude palm oil production rose from 168 000 tons in 1967 to 10.9 million in 2006, out of which around 75% was exported. Production has recently been boosted by China's removal of import quotas on edible oil and by a growing demand for crude palm oil in biofuel production.

Indonesia used to be the world's largest producer of **natural rubber**. Together with Thailand and Malaysia it provides more than 85% of the world's production, from which the Indonesian yield was 2,4 million tons in 2006. The three countries entered into an agreement in 2002 lifting world prices past the USD 1/kg.

Indonesia is the world's fourth largest producer of **coffee**. The main coffee growing regions are found in the southern provinces of Sumatra and parts of Sulawesi. Typically 85% of the output is exported. Over 90% of Indonesia's coffee output is produced by smallholders, who own 2 hectares or less each. In the recent years either the output or the area planted has been falling slowly and the age of the plantations is another problem. Around 30% of coffee trees are over 30 years old and are no longer at peak productivity level.

In 2002 Indonesia became the second largest **cocoa** producer in the world⁴. Higher prices partly accounted for the increase in Indonesian output, as farmers had the means and the incentive to increase the use of fertilizers, to improve farm maintenance and to use more effective methods to counter the main pest affecting the crop: the cocoa pod borer. However, in 2004 production fell by 40% as approximately 80% of the plantation were affected by pests and production has not yet shown any signs of recovery. Export goes mainly to the US, Brazil, Malaysia and Singapore. The total estate area is estimated at 86 000 hectares, with some 350 000 growers involved.

Some of Indonesia's most remote Moluccan islands used to be the center of the global spice-trading routes. Ternate, Tidore and later Ambon were the source of cloves. The Banda islands were the only producers of mace and nutmeg, and Indonesia remains the world's largest of the latter. Pepper, historically a key commodity in Java and Sumatra, is growing steadily in importance, with the world demand rising by around 5% a year. The spice trade has diminished in importance in recent years, partly because of civil unrest in the Moluccas.

A host of other crops are of great importance to smallholders in various regions of the country. Coconuts and cashew nuts are of particular importance in parts of Sulawesi, tea is grown in Java and North Sumatra, and Central Sulawesi have acquired a reputation as producers of passion fruit. Most production is carried out by smallholders (EUI, 2007).

Soybean is an important source of protein for the citizens with lower income, and provides around 15% of the total protein consumption in the country. The tofu and tempeh are considerably cheaper than animal protein. Domestic production is used only for domestic consumption (BMI, 2008).

1997 Asian financial crisis and its effect on the Indonesian agricultural sector

In 1997 a serious financial crisis began in the Southeast Asian countries, which later caused an economic meltdown in the region (*Figure 1*). The crisis started in

⁴ Today it is the third one.

Thailand with the financial collapse of the Thai bath caused by the decision of the Thai government to float the bath, cutting its peg to the USD. At the time, Thailand had acquired a burden of foreign debt that made the country effectively bankrupt even before the collapse of its currency. Indonesia, South Korea and Thailand were the countries most affected by the crisis. Although the International Monetary Fund stepped in to initiate a \$40 billion program to stabilize the currencies in the three countries, their economies were particularly hard hit by the crisis (*Wikipedia*, 2008).

Figure 1

Countries most affected by the Asian crisis

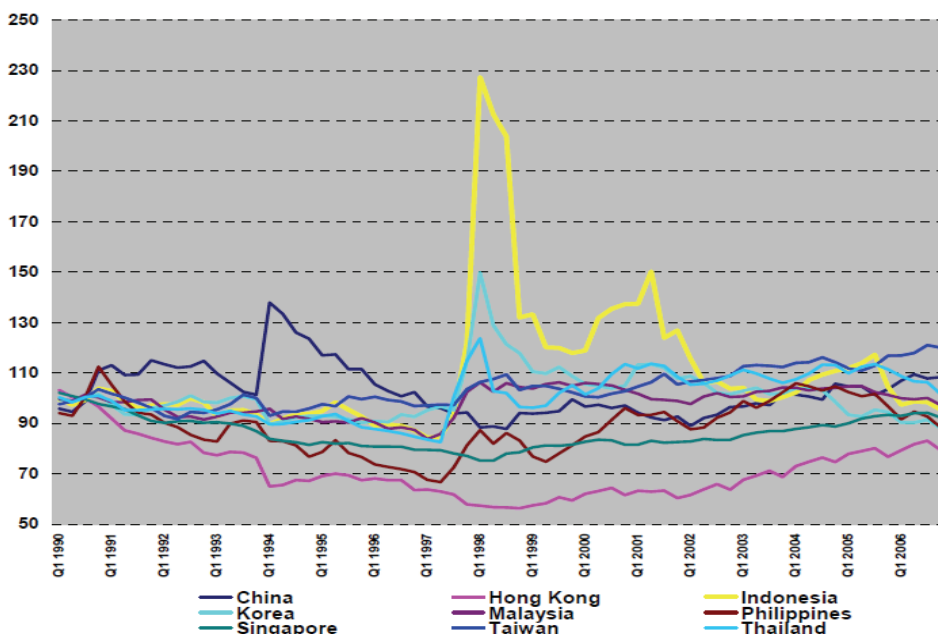


Source: *WIKIPEDIA*, 2009

One month following the events in Thailand the Indonesian central bank widened the rupiah trading band from 8% to 12%, later the free-floating exchange rate was introduced (*Figure 2*). In the meanwhile the interest rate was increased and the fiscal policy restricted, but the country was not able to avoid the crisis: the exchange rate plunged to over 18 000 rupiah to 1 USD. The inflation rate reached 77%, Indonesia lost 13,5% of its GDP that year.

Figure 2

East Asian real exchange rates (%), 1990-2006



Source: *The Australian National University*, 2008⁵

The crisis hit Indonesia's islands differently. In Java the huge exchange deficit made the industrial production based on imported raw materials almost impossible. Bali's survival was relatively easy thanks to the well-developed tourism sector (about 75-80% of the population are specialized in tourism), where most of the income are realized in USD, making it possible for Balinese people to avoid exchange losses.

The Indonesian agricultural sector was the only one to be able to grow during the crisis, however, its 40% share from the Indonesian GDP decreased (it was only 15,4% in 1996). After the financial and economic crisis this proportion extended mainly because of the other sectors' shrinking. Agriculture is still the largest employer in the country: in 2001 nearly 40 million employees, 44% of the total labour force worked in the sector. Between 1998 and 2001, the number of workers increased by an average of 13,3% a year, which means that rural areas were able to absorb a considerable number of urban unemployed workers.

The financial crisis hit when the country was being subjected to one of its worst droughts in 50 years. The El Nino-induced drought lowered the production of food, including rice, the staple. Food shortages and the inflationary pressure from devaluation led to rapidly rising food prices. As prices for food and other

⁵ Primary source: Asian Development Outlook, 2007.

necessities soared and unemployment increased, the buying power of the large segment of the population eroded.

The consequences of the crisis and the drought for Indonesians were uneven. Many farmers were benefiting from higher export demand for their produce with the devaluation of the country's currency and farmers outside the drought areas were receiving higher prices for food crops. The urban poor were most affected by food shortages and high food prices.

Soybeans are an important protein source for many lower income Indonesians and soybean products are a more affordable source of protein than livestock products. As soybean prices rose and incomes fell with the onset of the crisis, a decline in soybean consumption by low income consumers was offset by middle class consumers switching from livestock products to soybean-based protein sources.

Soybean meal and corn usage plummeted with the collapse of Indonesia's poultry production, which consumed more than 90% of the country's manufactured feed before the crisis and was the largest and fastest growing Indonesian livestock sector. Poultry producers faced a profit squeeze due to reduced consumer demand from the economic slowdown and escalating feed costs following the currency devaluation. The crisis also sharply reduced the availability of short-term credit for poultry producers. Due to the declining conditions broiler and egg production in 1999 was only 30-40% of the pre-crisis level (*Economic Research...*, 2008).

Because of the financial crisis and the drought Indonesia was forced to import a record 5.7 million tons of rice in calendar year 1998, almost one-fourth of total world rice trade and the largest amount of rice ever imported by a single country. The difficulties of the sector affected the Indonesian people directly. The number of citizens getting under the poverty threshold increased (this share was nearly 17% even in 2007!), and the Indonesian government decided to support the poorest Indonesians with food support (10 kg rice/month). The programs helped the survival of several millions of families.

CONCLUSIONS

Challenges and opportunities in the Indonesian agricultural sector nowadays

Indonesia's agricultural areas are over 50 million hectares which provide for being one of the largest producers of agricultural products in the world. Although the area is huge, it comprises only 26% of the country's total area. Most of the production is based on Java and Bali, where the climate and the soil quality are the most suitable for agricultural production.

Being the largest sector in the country, agriculture is expected to mitigate poverty especially in rural areas. Citizens in rural areas very much depend on the sector which seems to be one of the key means for the Government to reduce poverty and unemployment. To improve food safety and quality, to attain self-sufficiency (at least in case of rice) and to increase the quantity of production all mean serious challenges for the sector.

To expand agricultural land means deforestation most of the time, which raises environmental problems such as the lack (or decrease) of biodiversity. One of the largest rainforests can be found in Indonesia, but the size of it is continuously shrinking due to the conversion into arable land and also the illegal lumbering. Sustainability in the agriculture is a pressing necessity; the sector should both fulfill the customers' requirements and provide environmentally friendly production methods.

The Indonesian government has to face the low qualification of agricultural producers. The lack of competence is one of the most serious wheel-drags of high-level production, introduction of new technologies and mechanization. Beyond that, farmers have to cope with all of the disadvantages of small size farms. A great number of Indonesian farms are smaller than one hectare, which means higher expenditures and less possibility to switch over to modern technologies.

Overspread corruption strikes not only the agricultural sector, but the whole country as well. At the end of the nineties Indonesia was the fifth on the list of the most corrupt countries in the world. Since 2002, however when the Anti-Corruption Commission was formed it has improved its position. Corruption levels by any objective standards still appear very high, and make the vast majority of Indonesians see corruption as an evil that must be eradicated. Corruption weakens the ability of the state to deliver basic public goods: essential services and the rules that allow societies to function effectively. As such it taxes most the poor and vulnerable Indonesia's silent majority, creates high macro-economic risks, jeopardizes financial stability, compromises public safety, law and order, and above all, it undermines the legitimacy and creditability of the state in the eyes of people. Corruption therefore represents a significant threat to a successful political and economic transition for Indonesia (*World Bank*, 2003).

Due to the high GDP share and the great number of agricultural employees, the Indonesian agriculture has a strong bargaining power either in economic or political stages. The considerable number of the stakeholders provides a significant voting power, thus the government pays a particular attention to improving the farmers' living standards. The positive discrimination also increases due to the basic features of the sector: the product is essential, the number of customers is huge and the sector fights the lack of capital.

SWOT analysis of the Indonesian agriculture

Strengths

- Indonesia has a strong agricultural tradition centered on the fertile soil of Java, which is home to the bulk of the country's food production
- Indonesia is the world's fourth largest producer of coffee and the third largest of cocoa. Both these crops provide valuable export revenues
- The large population and rising incomes provide a vast market for agricultural products
- The agricultural sector is the biggest employer in the country

Weaknesses

- Yield in Indonesia is often very low by international standards, particularly on land outside Java
- The Indonesian agricultural sector is tightly regulated, with import and exports strictly controlled
- Farms in Indonesia are small with the majority less than one hectare in size, limiting economies of scale and opportunities for mechanization of production
- Areas off-Java strive with the lack of infrastructure
- Lack of qualifications among agricultural producers causes difficulties in developing technology
- Poverty retards increasing the share of higher value added products

Opportunities

- With more than half of Indonesia production of sugar, rice and corn coming from Java, which comprises only 6.7% of the country's land area, Indonesia's outer islands offer a vast reserve of untapped land
- The government's aim of making Indonesia self-sufficient in production of key food staples such as rice and corn will provide assistance for farmers to increase output
- Rising incomes and urbanization will increase demand for more higher value food such as dairy, confectionery and meat

Threats

- The conversion of land in Java to other uses such as habitation and industry threatens to deprive Indonesia of some of its most productive agricultural lands
- Indonesia has been struck by some major disease outbreaks in recent years, most significantly avian flu in the livestock industry and vascular-streak dieback in the cocoa industry
- Demand for non-essential foodstuffs such as meat, dairy and wheat-based products is highly elastic and is likely to suffer if income growth is faltered, or if elevated food prices persist in the long term
- Deforestation to increase agricultural areas results in lower biodiversity and threatens ecological equilibrium
- Natural disasters like volcanic eruptions flow, earthquakes threaten the agricultural production and the producers as well (BMI, 2008).

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ANNEXES

Rice production and harvest in Indonesia



