AGRICULTURAL DEVELOPMENT POLICY STRATEGIES FOR INDONESIA: ENHANCING THE CONTRIBUTION OF AGRICULTURE TO POVERTY REDUCTION AND FOOD SECURITY[1]

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ABSTRAK

Tujuan penulisan paper ini adalah mendeskripsikan status ketahanan pangan nasional, kebijakan strategis terkait dalam pengentasan kemiskinan, dan kebijakan pembangunan pertanian dalam rangka peningkatan kesejahteraan petani. Dalam satu dasa warsa terakhir ini, terdapat indikasi instabilitas ketahanan pangan yang ditunjukkan oleh adanya peningkatan ketergantungan impor pangan. Peningkatan kinerja pembangunan pertanian dan pedesaan diyakini akan memberikan kontribusi positif terhadap perbaikan aksesibilitas dan ketahanan pangan rumah tangga. Sedikitnya terdapat empat program pemerintah terkait dengan pengentasan kemiskinan, yaitu pengadaan beras bersubsidi, program padat karya, program pemberdayaan usaha mikro/kecil/menengah, dan dana kompensasi kenaikan harga bahan bakar minyak untuk golongan miskin. Dalam rangka penguatan ketahanan pangan dan pengentasan kemiskinan, kebijakan pembangunan pertanian berikut ini perlu dipertimbangkan, yaitu : (1) Perluasan spektrum pengembangan irigasi dengan sasaran peningkatan produktivitas lahan beririgasi; (2) Pembaharuan arah kebijakan sebelumnya dalam rangka mengatasi kendala penawaran/produksi pertanian; (3) Reformulasi kebijakan proteksi harga melalui pembatasan impor, penegakan hukum, dan mengkaitkan program beras untuk masyarakat miskin dengan program pengadaan gabah oleh pemerintah; (4) Mendorong diversifikasi pertanian dengan menjamin ketersediaan, akssessibilitas, dan perbaikan faktor pendukung pengembangan komoditas non-beras; dan (5) Ratifikasi perlakuan khusus (special product) bagi komoditas pertanian strategis, dan kembali kepada regulasi awal AoA-WTO berdasarkan pada komitmen dan Skedul XXI.

Kata kunci : *pembangunan pertanian, ketahanan pangan, pengentasan kemiskinan*

ABSTRACT

The objectives of the paper are to describe the state of national food security, related strategies for poverty eradication, and the respective policies on agricultural development for the benefit of the people. Over the last decade, the achievement of national food security depended on imports, indicating the instability of food security. The improvement of agricultural and rural development will contribute greatly to better food accessibility and a higher food security status of the population. There are at least four main government programs aimed at helping the poor, i.e. the provision of subsidized rice, public work programs, the empowerment program for micro-small-and medium enterprises, and low-income assistance funds to alleviate the burden of the poor. To strengthen food security and to eradicate the poverty, the following agricultural development policies should be taken into account, i.e.: (1) The widening of the irrigation development spectrum with the main objective of improving irrigation productivity; (2) To complete reversing the previous policy direction in order to eliminate agricultural supply constraint; (3) The reformulation of price support policy implementing rice import through prohibition, strong law enforcement, and to integrate the rice program for the poor with the government procurement floor price policy; (4) To enhance agricultural diversification through the availability, accessibility, and improvement of the supporting factors for non-rice commodities; (5) The ratification of special products for agricultural strategic commodities, in addition to return with the initial AoA-WTO regulation based on the commitment and Schedule of XXI

Key words: *agricultural development, food security, poverty reduction*

[1] Paper presented in "The Workshop on Linking Agricultural Policies with Food Security and Poverty Reduction", FAO hq., Rome, June 1 - 2, 2005.

INTRODUCTION

Background

Previously, Indonesia's food security program was based on an obsolete food availability approach with a twin-strategy: rice stability and rice self-sufficiency. This policy framework is unsustainable economically, politically and ecologically, and hence bound to fail. There are at least four inherent weaknesess of the previous food security policy (Simatupang, 1999): (1) The objective was directed primarily toward the achievement of political and economic stability rather than sustainable food security, by assuring availability of food (rice) at a low and stable price; (2) The policy failed to address income and non-market mechanisms of food access, by not including the household income promotion element, which led to food crisis as a result of economic crisis rather than a decline of food availability; (3) The old food security paradigm is primarily focused on food security at the national level, but failed to address the local and household dimensions for individual food security, which are particularly relevant in remote local areas (hunger paradox); and (4) The policy promotes domestic production for self-sufficiency while keeping the price stable at an affordable level. This is not conducive for increasing food production and farmer income and is counter-productive with regard to the poverty eradication program.

Based on these weaknesses, the sustainable food security paradigm (SFSP) proposed four primary dimensions (Simatupang, 1999), i.e.: availability, accessibility, vulnerability (stability and reliability), and sustainability. In addition, the food security system must also include three elements which have been neglected in previous years, i.e. monitoring and early warning systems, social security systems, and social safety net systems. The sustainable food security paradigm (SFSP) asserts that sufficient food availability is necessary but not sufficient to guarantee food security. Accessibility is another necessary component of food security. Access to food can be either through market exchange or non-market exchange (aid and transfer).

Both food availability and access are highly vulnerable to various risks such as production, trade, price, income, political, and social risks. Accordingly, social security systems or social safety net systems are also necessary components of sustainable food security systems. The lack of social security systems or social safety net systems contributed to the emergence of 1998 food security crisis in Indonesia.

Sustainability addresses long-term food security. Practical indicators for sustainability are non-negative long term trends of both food availability (caloric supply) and access (economic). Food farming sustainability is especially important in this respect. In general, the food security program must be environmentally friendly or ecologically sustainable. Ecological sustainability has been a global concern in recent years. The sustainability element will also be important to draw international support for the national food security program.

The Objectives

In this context the objectives of this paper are: (1) to describe the state of national food security; (2) to outline the incidence of poverty and related strategies and programs for poverty eradication; (3) to describe the nature and related policies on agricultural land and irrigation; (4) to analyze the performance and factors affecting agricultural production; (5) to analyze the structure of household income and the prospect of agricultural diversification; and (6) To describe the prospect of agricultural trade policies in relation to market globalization.

THE STATUS OF NATIONAL FOOD SECURITY

We focus here on 3 aspects of national food security, i.e.: (1) The nature of macroeconomic food stability as indicated by the import dependency ratio of the main staple foods in Indonesia; (2) The accessibility of food, represented by the expenditure share on food by region, group of income, and the main economic activity of the household; (3) The achievement of food security by region, main

economic activity, and spatial distribution of household food vulnerability in Indonesia.

The Stability of National Food Security

Three main staple crops, i.e. rice, corn, soybean and sugar, were considered (Table 1). Within the two periods of analysis rice production was relatively stagnant, while rice imports increased by 118 percent from 1.50 to 3.27 million tons. As a consequence, the import dependency ratio (IDR – definition in table 1) of rice increased from about 4.5 percent to 9.3 percent.

Production growth trends for corn are relatively stable. Between the two periods of analysis, domestic corn production increased by 9.4 percent, while net import of corn decreased by 30 percent from 853 thousand to 598 thousand tons. As a result, the IDR for corn fell from about 9.3 percent to 7.9 percent.

On the other hand, soybean and sugar experienced a substantial increase in the IDR. The IDR of soybean and sugar were originally very high and increased from 30.2 percent to 47.3 percent, and from 31.8 percent to 47.4 percent respectively. This increase is driven by the weak capacity to improve domestic production of the respective commodities. Soybean and sugar domestic production decreased by 25.4 percent and 17.8 percent, while imports increased substantially by 54.5 percent and 58.7 percent, respectively.

The above data shows that since implementing trade globalization (WTO), starting in 1995, food security stability in Indonesia has been deteriorating. The capacity of farmers to maintain and improve domestic production was very weak, due to the low amount of government support and incentive granted to them. In addition, the institutional and law enforcement capacity of the government to manage import by imposing import tariff, as well as to handle illegal import was relatively weak. Considerably low world food prices imposed great burden to farmers in developing countries like Indonesia due to the dominant role of agriculture on household income structure and employment in rural areas.

An Overview of Food Accessibility

We use the expenditure share of food as a proxy for food accessibility. The higher the food expenditure share, the lower the food accessibility of the people. The high proportion of food expenditure meaning small amount available for the consumption on non-food commodity, therefore also indicating the lower wealth status of the people.

The proportion of food expenditure at the national level (aggregate) is substantial (Susenas, CBS, Jakarta). During the economic crisis, it increased to 62.9 percent in 1999, and then fell to 58.5 percent in 2002. Comparing rural to urban, the food expenditure share is

Table 1. Production, Import and Import Dependency Ratios (IDR) of the Main Staple Food Crops in Indonesia, 1995 – 2001/03

Commodities	Production (1000 tons)	Import (1000 tons)	Export (1000 tons)	Availability (1000 tons)[1)]	IDR (%)[2)]
Rice:					
1995 – 97	32,252	1,503	0	33,755	4.5
1998 – 03	32,040	3,271	0	35,311	9.3
Corn:					
1995 – 97	8,775	895	42	9,628	9.3
1998 – 01	9,599	808	210	10,197	7.9
Soybean:					
1995 – 97	1,518	657	0.11	2,175	30.2
1998 – 01	1,133	1,015	0.58	2,147	47,3
Sugar:					
1995 – 97	2,124	988	3	3,109	31.8
1998 – 02	1,746	1,568	5	3,309	47.4

1) Availability is production + imports – exports.
2) The import dependency ratio (IDR) is the proportion of import with respect to availability of the respective commodity.

Source: Basic data from CBS, Jakarta and FAO (various years).

found to be relatively higher in rural areas, but with a lower magnitude of total expenditure. As an illustration, in 2002 the food expenditure share in rural area was 66.6 percent (vs. 52.8% in urban areas), but total expenditure was 44.1 percent lower than urban areas. These figures indicate relatively lower levels of wealth and food accessibility for people in rural areas.

The household expenditure structure by group of income and main activity, indicates that higher income levels correspond to lower food expenditure shares (Susenas, CBS, Jakarta). People whose main activity is in agriculture have a higher food expenditure share than people engaged in other sub-sectors (services and industry). Similar patterns can be traced both before (1996) and during the economic crisis (1999). During the economic crisis, the food expenditure share increased substantially across income groups.

That evidence indicates that people resident in rural areas, mainly employed in agriculture and belonging to a low income category group, tend to have lower food accessibility compared to those who reside in urban areas with their main activity in the formal sector (services and industry). Clearly raising the incomes of rural dwellers will contribute greatly to higher accessibility of food.

The Food Security Situation

Measured as the ratio of calorie availability to domestic demand we note that food security at the national level has improved and appears to be stable over time (Saliem *et al.*, 2003). The ratio increased from 144 percent (1969-1973) to 215 percent (1999-2001), with an average growth rate of 1.4 percent /year and a coefficient of variation of 16 percent.

Table 2 represents the distribution of household level food security (defined as the proportion of household calorie demand met by household food availability) by region and main activities. In 1999, the percentage of households achieving food sufficiency approached 70 percent, i.e. 30 percent of households were vulnerable to food insecurity. The number of households resident in rural areas experiencing food insecurity was about 32.5 percent, with most of these (62.2%) being engaged in the agricultural sector. In urban areas, 27 percent of households experienced food insecurity, with most of these (48.4%) being occupied in the industrial sector. These categories should be the target of social safety-nets.

Table 2. The Distribution of the Proportion of Households Experiencing Food Security by Region and Main Activity in Indonesia, 1999

Description	Household food Sufficiency (%)	Household food vulnerability (%)
Region		
• Urban + Rural	69.7	30.3
• Urban	73.0	27.0
• Rural	67.5	32.5
Main activity		
a. Urban		
• Agriculture	7.1	12.2
• Industry	42.6	48.4
• Services	36.9	33.6
• Others	13.5	5.8
b. Rural		
• Agriculture	47.9	62.2
• Industry	25.5	22.4
• Services	19.3	12.2
• Others	7.3	3.3

Source: Saliem *et al.* (2001)

The geographical distribution of household food insecurity indicates that the regions with the highest magnitude (34.5 – 43.4%) are East Java, Central Java, Yogyakarta, East Nusa Tenggara, Jambi, and South Sumatera (Saliem *et al.*, 2001). The second highest level of food insecurity with a range of 31.2–34.5 percent is experienced by 6 provinces, and the third level (25.7 – 31.2%) by a further 6. The provinces with the lowest food insecurity are West Sumatera, Jakarta, and Bali. This information is important on the implementation of the related program on poverty eradication or empowering household food security.

POVERTY ERADICATION PROGRAMS

In this section two main aspects will be elaborated, i.e.: (1) the incidence of poverty, today and historically, this in relation to

Table 3. The Incidence of Poverty (Headcount Index) by Sector of Occupation in Indonesia, 2002-2003 (%)

Description	Poor (Headcount Index)		Population (%)	
	2002	2003	2002	2003
Formal Occupation				
⬮ Urban	9.5	9.7	15.1	12.5
⬮ Rural	13.4	11.6	8.3	7.4
⬮ Total	10.9	10.4	23.3	19.9
Informal Occupation				
⬮ Urban	14.1	15.1	31.6	30.7
⬮ Rural	18.8	16.3	45.1	49.4
⬮ Total	16.9	15.8	76.7	80.1
Formal + Informal				
⬮ Urban	12.6	13.5	46.7	43.2
⬮ Rural	18.0	15.7	53.4	56.8
⬮ National	15.5	14.8	100	100

Source: LPEM FEUI (2004).

sectoral occupation, and resource endowment in rural areas; (2) describe the related strategies and programs on poverty eradication in the country.

The Existing Condition of Poverty

Over time, there has been substantial progress on alleviating poverty in the country during the period 1980 – 1996 (Irawan and Romdiati, 2000; LPEM-FEUI, 2004). During this 16 year time span the rate of poverty (the head count index) decreased from 28.6 to 11.3 percent. Then, due to the economic crisis which began in the middle of 1997, the poverty rate increased markedly to reach 24.1 percent in 1999.

After 1999, the poverty rate decreased from 18.2 percent in 2002 to 16.6 percent in the following year. The economic crisis seriously hurt people in rural areas, but during the period of recovery the poverty level decreased substantially. In 2003 the incidence of poverty in urban and rural areas was 15.0 percent and 17.7 percent, respectively. The period of severe economic crisis that prevailed during the last six years might be over, with the country experiencing relative macroeconomic stability, as indicated by modest economic growth and moderate inflation (Brodjonegoro, 2004). The economy is expected to recover, leading to stronger annual economic growth and eventually employment, easing the severe unemployment and poverty.

The rural population is increased from 53.4 percent (2002) to 56.8 percent in 2003. Most (49.4%) are engage in the informal sector and the rest (7.4%) in formal sector (Table 3). In general, those in the informal sector experience a higher incidence of poverty as compared to those who hold a formal sector job. For the case of inhabitants of rural areas who engage in activities in the informal sector the poverty rate was 18.8 percent in 2002 and fell to 16.3 percent in 2003. For the formal sector the magnitude of poverty was 13.4 percent which fell to 11.6 percent in 2003. The information on main occupation is also important in the formulation of poverty eradication policies and programs focusing on the people engaged in informal sector activities, both in rural and urban area.

The other information indicates a strong correlation of farm size (owned land) and the poverty index and the poverty gap index.[2] The greater the farm size, the lower the poverty headcount index (LPEM – FEUI, 2004). For the landless the magnitude of poverty approaches 31.0 percent, and for a farm size of less than 0.10 ha the poverty rate reaches 28.3 percent. It, then, decreases consistently to 5.6 percent for those households that have farms of between 2.0 and 5.0 ha.

Related Strategies and Programs for Poverty Eradication

Like most other development strategies and policies, there is no single model to tackle poverty reduction that is suitable for all

[2] The higher the poverty gap index indicated the more severe the intensity of poverty faced by the respected people.

countries. In this regard, it is important to identify a number of key factors that are crucial for sustainable and effective poverty reduction programs. Those key factors are (Anonymous, 2004): (1) Macroeconomic and political stability is critical for employment creation and economic growth. This requires strong economic fundamentals, a supportive investment climate and good governance in the public and private sector; (2) The empowerment and involvement of poor people, the participatory process in conceiving programs, transparent budget rules, processes and procedures, adequate sequencing of reforms and adapting implementing institutions, as well as adequate and assured long-term financing.

The Indonesian government has been successful in pursuing macroeconomic stability as indicated by economic growth of almost 4 percent per year over the past four years. This has certainly been the primary factor in reducing poverty in Indonesia. However, the experiences of many countries has shown that economic growth is not sufficient for improving the well being of poor people. While economic growth helps poor people through the creation of jobs, additional efforts are still needed to address the needs of poor people. The participatory process ensures that programs designed to reduce poverty address the most pressing needs of a large number of people, thereby making them effective, efficient, and politically sustainable.

There are at least 4 main government programs for the poor: 1) the rice program for the poor; 2) the public works program; 3) the empowerment program for micro-small-and medium enterprise, and; 4) the low-income assistance funds disbursement due to the recent (2005) fuel price hikes in response to the reduction of the fuel price subsidy. The following session will elaborate the description, achievement, and the problems faced by the respective programs.

During the economic crisis on 1998, government implemented special market operations (SMO) of subsidized rice price for the poor. Four years later (2002) the government converted this program into the rice program for the poor (Suryana and Hermanto, 2004). The new program changed the general price subsidy to a targeted rice price subsidy directed to poor people. During the period of 1998 – 2003, through SMOs and rice program for the poor, the government distributed at least 10 millions tons of rice (on average 1.7 million ton/ year) to around 7.0 million poor households in the country.

The implementation of the rice program for the poor (RPP) faced some problems, such as poor quality of the distributed rice, the high variation of the rice price paid by the poor, inaccurate rice weight, location of the targeted household, as well as the negative impact of the program on the paddy price received by farmers especially during the harvested season. Dealing with these problems, the disbursement of the RPP should be improved by meeting the RPP through domestic rice procurement as well as by implementation the decentralization of the rice program for the poor.

Another program is the public works program that hires local men and women (usually without any direct screening) for temporary employment on projects that built roads or provide other public services (evidence from the PATANAS survey, CASER and World Bank, 2000). The evidence shows that wages paid varied by project and by region, indicates the existence of some screening in a certain places to restrict the number of entrants to the program. The respective safety net program had moderate success in targeting transfers to reach the poor during the crisis. The median income share from public works programs to households from the lowest per capita income quintile that participated in the program is only 3.1 percent. These public work program provided only a modest degree of support to poor household. Steps should be taken to reduce leakages of the program benefits to the non-poor.

This year (2005), the government is implementing action programs for poverty eradication through empowering the micro-small-medium enterprise (MSME), in accordance with the implementation of the Indonesia Micro Finance Year of 2005. In 2005, there are 41.3 million units of MSME with the targeting credit disbursement of Rp 60.44 trillion, or 57.0 percent of bank loans growth potential of Rp 106 trillion (Anonymous, 2005). In addition to bank loans, there are other sources of funding for MSME, i.e. the allocation of national state enterprise profit of 1 – 3

percent or by amount of Rp 1.47 trillion, and fuel price hike compensation fund of Rp 250 billion in 2005. All of the funds sourced in this way are dedicated to empowering MSME in order to create employment and eradicate poverty in the country. Given an actual to planned credit disbursement ratio of 187 percent for the MSME in 2004 and a credit repayment rate of 96.7 percent, the program is considered successful in reducing poverty.

In 2005, the government will disburse an amount of Rp 7.3 trillion (US$ 784 million) from funds set aside in this year's budget for various assistance programs to alleviate the burden of the poor arising from the recent fuel price hikes (Hudiono 2005). The funds are part of a total of Rp 17.8 trillion resulting from the 29 percent average hike in domestic fuel prices. The low-income assistance programs will mainly consist of educational assistance, the provision of rice, health services for the poor, and rural infrastructure schemes.

POLICIES ON LAND AND IRRIGATION

The most binding constraint for Indonesian agricultural development is the availability of farm land. Agricultural land development can not be separated from the irrigation infrastructure development. Several factors constrain the availability of agricultural land: 1) High conversion rates to non agricultural uses due to the rapid growth in demand for the development of infrastructure, and economic and social facilities; 2) The growth of productive agricultural land in Java will continue to decelerate and the potential for new agricultural land is very limited; 3) The possibility of new agricultural land develop-ment outside of Java is still large, but faces serious constraints such as a lack of infra-structure, transportation systems, electricity, capital investment, etc.

The trend of agricultural land utilization by region (Java and outside Java) gives some interesting information (Simatupang *et al.*, 2004): 1) There will be a significant change in the regional structure of Indonesian agriculture, in which the historically dominant role of Java in food production will gradually decline, and the future growth will occur outside of Java; 2) The growth of wet paddy area both in Java and outside of Java has decelerated over time, and this will impact negatively on the harvested area of rice, and other food crops, and some horticultural crops which can also be planted in such land; 3) In Java, dry land area has been contracting since the early 1990's, and dry land area expansion outside Java has been the result of significant developments achieved through the transmigration programs; 4) Total land allocated for estate crops continued to increase very rapidly, especially outside of Java, in particular due to heavy government investments in its Nuclear Estate Smallholder (NES) development program and private corporate investment with concessional credit facilities from the government.

The constraints faced by agricultural land development in Indonesia are reflected in the decline in total agricultural land area: 0.4 percent /year in the last two decades (1980 – 2000). The expansion of irrigated wetland area has been very sluggish, i.e. 0.2 percent/year, and its proportion is relatively small, i.e. 27 percent (2.59 million hectare) in 2000 (Pasandaran *et al.*, 2004). The data suggest that increasing food crop production and improving household farmer welfare will be a serious challenge. The size of land ownership tends to decrease due to the increasing trend of population and the number of farm households.

The large proportion of irrigated wetland, located in Java, decrease from 60 percent (1985) to 52 percent in 2000 (Table 4). The real challenge with respect to food production in the near future is the increasing trend of productive land conversion in Java as well as budgetary constraints which limit the expansion of land outside of Java. Over the next two decades an additional 1.4 million hectare of irrigated land, or 20 percent of the current level, will be required to maintain the existing level of national food security (Pasandaran *et al.,* 2004), everything else staying equal.

The potential area suitable for irrigation expansion is relatively restricted, based on the consideration of land suitability and water availability. In the future, the broadening of the irrigation development spectrum will be very important, due to the increased frequency and severity of water shortages in the country. The

Table 4. The Change in Land Under Irrigated Wetland Area in Indonesia, 1985 – 2000

Region	1985		2000	
	Area (Ha)	Proportion (%)	Area (Ha)	Proportion (%)
Java	2,482,376	60	2,604,782	52
Sumatera	803,113	19	1,077,444	21
Kalimantan	144,514	3	239,898	5
Sulawesi	436,164	11	607,449	12
Bali + Nusa Tenggara	287,445	7	502,898	10
Indonesia	4,153,612	100	5,032,471	100

Source: Pasandaran *et al.*, (2004).

main objective is the improvement of irrigation productivity through the implementation of market based irrigation management, and the development of micro irrigation on dry land areas, swampland areas, and at the existing wetland areas. The respective options are reasonable based on the evidence of government budget allocation to irrigation development, with a range of 4.2 percent up to 6.7 percent for the period of 1990 – 2000 (Simatupang and Rusastra, 2004).

FACTORS AFFECTING AGRICULTURAL PRODUCTION

This section gives an overview of: 1) the agricultural production at an aggregate level; 2) the growth rate of production, harvested area, and yield of main staple food crops in Indonesia, and; 3) the main factors affecting agricultural production such as the availability of technology (NHYV), government expenditure, and government incentive.

Agricultural GDP and Aggregate Production

The evidence regarding the above subject gives some interesting information: (Arifin, 2003; Simatupang *et al.*, 2004): (1) Both, agricultural GDP and crop production experienced increasing strong growth during the 1967-1986 period in part due to significant government support in the form of extensive infrastructure and land development, massive supporting institutions such as extension services and rural cooperatives, concessional credit and price incentives; 2) Following a reversal of government policy that led to a drop in expenditure on agricultural development and incentives for agriculture production, leading to increasingly tighter production constraints; 3) The livestock sub sector, that achieved the historical highest growth rate among the agricultural sub sectors, contracted in 1997-2001, indicating the worst record of agricultural performance since the early 1970's; 4) The main source of production growth during the 1967-1986 period was productivity, which then dropped dramatically during 1986-1997 and was even negative during 1997-2001, due to the decline of both land and labor productivity.

The Performance of Commodity Production

Analysis of commodity production growth reveals a persistent stagnation. Table 5 indicates that the growth pattern of the three major food crops (paddy, maize, and soybean) and sugar cane were similar to overall agricultural GDP, i.e. accelerated up to the first half of the 1980's and then decelerated rapidly. Since the mid 1980's food crop production and sugar cane has experienced a persistently low growth rate. In particular soybean and sugar cane production has been contracting rapidly since the early 1990's. There is strong indication that food crops production has grown below the population growth rate at 1.6 percent per year (Simatupang *et al.*, 2004). The cause of this decelerating growth for food and sugarcane since the early 1990's are the contraction of harvested area and/ or the stagnation of yield.

The performance of the other agricultural commodities over the period (1976-2003) are as follows (Simatupang *et.al.*, 2004): 1) Starting in the second half of the 1990's, the growth rates of all vegetable crops dropped drastically and continued deceleratingdue to either stagnant or a drop in both harvested

Table 5. The Growth Rate of Production, Harvested Area, and Yield of Staple Food Crops in Indonesia, 1976 - 2003 (%/year)

Description	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2003
Paddy	6.0	4.8	3.7	1.8	0.3	0.9
⬮ Production	2.0	1.9	1.6	1.8	0.8	-0.1
⬮ Harvested area	4.0	2.9	2.1	-0.0	-0.5	1.1
⬮ Yield	(3.0)	(3.8)	(4.1)	(4.4)	(4.3)	(4.4)
Maize	10.2	4.1	4.3	4.0	1.6	1.7
⬮ Production	5.4	0.2	1.2	2.6	-1.1	-1.2
⬮ Harvested area	4.8	3.9	3.0	1.4	2.7	2.9
⬮ Yield	(1.3)	(1.7)	(2.0)	(2.2)	(2.6)	(3.0)
Soybean	7.1	8.1	5.1	-0.3	-8.0	-5.5
⬮ Production	4.4	5.5	2.2	-0.2	-8.5	-5.5
⬮ Harvested area	2.6	2.6	3.0	-0.1	0.5	0.1
⬮ Yield	(0.8)	(0.9)	(1.1)	(1.1)	(1.2)	(1.2)
Sugarcane	-2.3	9.8	0.7	-1.2	-8.1	-
⬮ Production	12.1	1.0	2.9	3.0	-6.6	-
⬮ Harvested area	-14.4	10.7	-2.2	-4.2	-1.5	-
⬮ Yield	(5.1)	(4.6)	(6.0)	(5.5)	(4.7)	-

1) Figure in parenthesis are yield of the respective commodities (ton)/ha)
Source: Basis data from CBS, Jakarta (various years) (Simatupang *et al.,* 2004).

area and yield; 2) Fruit production growth rates generally fluctuated substantially and declined significantly in the second half of 1990's due to either stagnation or a drop in harvested area and yield; 3) Estate crop production, as a whole fell since the early 1990's, with the primary reason being the sharp decline of harvested area growth rates combined with stagnant or declining yields, and because of internal capital and external credit constraints.

Factors Affecting Agricultural Production

Three factors are considered in this respect: 1) the availability of biotechnological breakthrough (new high yielding varieties); 2) government expenditure for agricultural development, and; 3) the availability of government incentives in order to foster farmer income and agricultural production.

The Availability of New High Yielding Varieties (NHYV)

Most agricultural crops have faced either declining or stagnating land productivity since the second half of the 1980's. Lack of technological innovation may be the most critical restraint for most agricultural crops. The government R&D program, has been heavily biased towards food crops, and rice in particular. Of the 194 NHYV of food crops, during the period of 1976-2003 the corresponding number for fruit, vegetables (excluding sugarcane), estate crops and sugarcane was 17, 69, 43 and 30, respectively (Simatupang *et al.*, 2004). The nonexistent or limited research and development may be the main reason why land productivity for almost all non-food crops remains low and exhibits a declining trend. Even for food crops, based on yield potential, there has been no significant technological breakthrough since the mid 1990's. This is true for all agricultural crops.

Government Investment in Agriculture

The entire development budget (constant 1993 prices) for irrigation, R&D and extension in 2002 is only 48.2 percent of the 1985/86 level (Rp 418 million vs Rp 867 million). Except for R&D (1990/91 – 1995/96), the growth rate of the development budget for the three categories declined consistently and substantially over time (Ministry of Agriculture, Jakarta). We consider government expenditure on irrigation, R&D and extension as instrumental to agricultural development and find that a drop in spending reflects stagnant or falling yields of most agricultural commodities.

Fertilizer is a key input that significantly affects agricultural production. Fertilizer is a complementary input for infrastructure development (R & D, extension/training, and irrigation) in fostering agricultural production. However, since the mid 1980's government expenditure for input subsidies, fertilizer in particular, declined markedly. This was due to the massive economic deregulation policies conducted by the Indonesian Government since 1983 and expanded and intensified in 1986. Clearly this sharp decline in government subsidies also contributed to the sharp decline in agricultural output growth since the late 1980's.

The world fertilizer price increased in 2000, and to avoid its serious impact on agricultural production, the government implemented, since 2003, a fertilizer subsidy for all kinds of fertilizers (Urea, SP-36, ZA, and NPK). The new fertilizer subsidy policy stipulated that the fertilizer industry has to guarantee sufficient fertilizer supply at the right place, time, and price (ceiling fertilizer price) as set by the government [for Urea Rp 1,050/ kg, SP-36 Rp 1,400/kg, ZA Rp 950/kg, and NPK Rp 1,600/ kg].

The empirical evidence, in 2004, indicates that the fertilizer subsidy policy was not effective in that prices paid by farmers were actually higher than the fertilizer ceiling price, a reflection of a shortage of fertilizer at the farm level. Based on this evidence Simatupang *et al.* (2004) proposed the following change for the fertilizer subsidy policy for 2005: 1) the subsidized fertilizer has to be distributed through cooperative/ kiosk at the village level based on the requirements set by the farmer groups and its payment directly to the government; 2) the magnitude of the fertilizer subsidy based on the gap between the fertilizer ceiling price (FCP) and the domestic fertilizer production cost; 3) the fertilizer subsidy dedicated to Urea, reflecting its significant effect on yield and its wide use among farmers; 4) the fertilizer industry has to give highest priority to meet domestic demand of fertilizer; 5) subsidized fertilizer has to be distributed to all user in order to avoid market distortion; and 6) the price disparity between the subsidized fertilizer price and fertilizer world price can be reduced by increasing FCP of Urea from Rp 1,050/kg to Rp 1,240/kg.

The Existence of Farming Incentive

Incentives received by farmers consist of at least two main components, i.e. input provision facilities and output price support. A non-exhaustive list of incentives includes input subsidies (fertilizer, seed), price support, subsidized credits, and machinery provision for farmer groups. Since the mid 1980's, the government has gradually reduced its support for agricultural development.

The reduction of input subsidies translated into higher production costs and a fall in farmer incomes. Fertilizer prices have been increasing much faster than many product prices, as indicated by the declining paddy-fertilizer price ratio (Table 6). Due to the reduction of price support, farmers' welfare has been deteriorating as indicated by the declining trend of farmer terms-of-trade (FTT) during the period 1986/90 – 1991/95. This coincided with a sharp decline of agricultural production growth. But since 2001, the FTT increased significantly due to a change in the government policy (Simatupang *et al.*, 2004). For the last three years, the government has repeatedly pledged to protect and promote the agricultural sector. The government has imposed import tariffs to support paddy and sugar prices. The government also reversed the fertilizer subsidy. The effectiveness and sustainability of these policies remain to be seen in the coming years.

An assessment of the paddy price support policy for 2004 by Simatupang *et al.* (2004) shows that: 1) the floor price policy for paddy (GPFP) was not effective spatially and overtime; 2) the Paddy price received by farmers for the last three years (2002-2004) has trended downwards; 3) the GPFP for GKG and rice were not relevant as most paddy farmers sold their output as harvested dried paddy (GKP) and never in terms of rice; 4) the government policy of import restrictions due to the low world rice price tends to be beneficial for the consumer but detrimental for the farmer.

Based on the achievements of the GPFP policy in 2004, the following policy change are recommended for 2005/06: 1) rice imports must be prohibited during the harvest season (March to May), but for the rest of the season imports, subject to tariffs, should be allowed; 2) smuggling of rice (from abroad)

must be curtailed to prevent such illegal imports from undermining the (GPFP) policy; 3) to integrate the program of rice for the poor (*Raskin*) with the GPFP policy, through implementing domestic procurement regionally without additional supplies from other regions so that "Raskin" will not put downward pressure on farmer paddy price, during the harvesting season in particular.

Table 6. Farmer Terms-of-Trade (FTT) (1983 = 100) and Paddy Fertilizer Price Ratio, 1976-2002 in Java

Description	FTT	Paddy Fertilizer price Ratio	
		Urea	TSP
Average			
● 1976-1980	87.7	1.3	1.5
● 1981-1985	95.8	1.8	1.8
● 1986-1990	106.4	1.5	1.5
● 1991-1995	103.1	1.4	1.1
● 1996-2002	108.8	1.2	0.9
Growth (%)			
● 1976/80-1981/85	9.2	43.0	21.3
● 1981/85-1986/90	11.0	-16.4	-19.2
● 1986/90-1991/95	-3.1	-11.8	-23.8
● 1991/95-1996/02	5.5	-8.9	-17.9

Source: Producer Price Economic Indicators, CBS, Jakarta (various years).

HOUSEHOLD INCOME STRUCTURE AND AGRICULTURAL DIVERSIFICATION

This section outlines two complementary aspects: 1) the structure of household income by region and income group, as well as household income distribution, and; 2) the nature of and prospects for agricultural diversification in the irrigated wetland areas in Java. This information is important in determining strategic policies to improve farmer incomes, eradicate poverty, and enhance household food security.

The Structure and Distribution of Household Income

The income structure of rural households (based on the PATANAS rural household survey) is dominated by agricultural, both in Java and outside Java (Adnyana *et al.*, 2000). The contribution of agriculture is slightly higher outside Java, and, even if though 1995-99 has seen a slight decline in both regions, on-farm activity still plays an important role with a share more than 50 percent of household income. Among the non-agricultural income sources, entrepreneurs, both in Java and outside Java, and labor, especially in Java, are important activities. In general the structure of household income has diversified, with non-agricultural activities playing a greater role in 1999.

Recent information (2004) indicated that household income in wetland areas is 16.5 percent higher and a bit more diversified as compared to dry land areas (Nurmanaf *et al.*, 2004). The contribution of agriculture to income in the two agro ecosystems is 51.9 percent and 54.2 percent respectively. Compared to previous years (1999), this indicates a substantial change of household income structure in rural areas.

The Gini coefficient of about 0.5 indicates relatively unequal income distribution, in both AEZs. (Oshima, 1976 cited by Rusastra and Sudaryanto, 1999). As an illustration, the lowest income group consisting of 40 percent household receive only 11.7-12.6 percent of overall income, while for the highest group this is almost 3.3 times higher. The unequal distribution of income among the rural population is a reflection of their poor resource endowment (land in particular), their lack of access to information, technology, capital, markets, and non-agricultural sources of income.

Prospects of Agricultural Diversification

Regional Agricultural Diversification

In general, regional agricultural diversification in the major rice-producing areas was stagnant, as indicated by a small change in the multiple-cropping index (MCI – indicating the degree of planting intensity) and the harvest diversity index (HDI – indicating the degree of land utilization diversification) during the period 1996-2002 (Table 7). A higher value of the respective indicator, implies a greater degree of the regional agricultural diversification status. While the MCI and HDI have changed little, the diversity index (DI - the level of income diversity) fell by 1.6 percent - 4.4 percent per year, mainly due to the

instability of relative prices of input/output and farm income.

Table 7. The Average and Growth of Regional Agricultural Diversification Index in Four Regencies in Java, 1996 – 2002 [1]

Regencies	MCI (%)	DI	HDI
Indramayu	174.77	1.36	1.10
	(0.3)	(-3.4)	(-0.7)
Klaten	244.62	2.10	1.90
	(0.6)	(-2.5)	(-0.1)
Kediri	280.45	4.03	2.92
	(-0.1)	(-4.4)	(-2.9)
Ngawi	275.43	2.07	2.03
	(-0.2)	(-1.6)	(-2.1)

1) MCI = Multiple Cropping Index; DI = Diversity Index; HDI = Harvest Diversity Index. Figure in parenthesis are the growth rate of the respective agricultural diversification's indicator.

Source: Simatupang *et al.* (2003).

Indramayu has a lower agricultural diversification status as compared to the others three of regions. This is due to (Simatupang *et al.*, 2004): 1) farmers in this region tend to cultivate rice, and if water is not available, they fallow the land; 2) farmers who cultivate rice are not well informed about farm technology of the other commodities; 3) the scarcity of capital and the risk-adverse nature of most farmers in this region; and 4) in addition to technical and economic dimensions, cultural factors reduce the degree of diversification.

Farm Agricultural Diversification

In general, there is no clear evidence that technical irrigation has a lower diversification status, and that is also true for semi-technical irrigation as compared to simple irrigation (Simatupang *et al.*, 2003). This indicates that the availability of water does not automatically encourage farmers to plant rice. The real drivers of diversification are economic considerations, not technical ones.

Based on the information of agricultural diversification indicators by region and type of irrigation on wetland rice areas, there is still room to improve farm diversification (Simatupang *et al.*, 2003), as follows: 1) to improve the availability and accessibility of non-rice agricultural farm technology; 2) to enhance farmers' management capacity through improving extension services especially for non-rice commodities; 3) to improve the availability and accessibility of capital to support high value capital intensive commodities such as horticulture; 4) to develop deep water irrigation infrastructure (pump irrigation) to foster agricultural diversification; 5) to improve farm productivity or implementing price stabilization programs for alternative commodities with high risk but high profitability; 6) to empower the farm group institution and the partnership with the investor in order to solve the problem of access to capital and marketing constraints for alternative commodities; 7) to develop infrastructure (physical and institutional) at the farm level, agricultural market, agricultural processing, and networking to related parties in order to improve marketing efficiency and price stabilization for secondary crops and horticulture in particular.

AGRICULTURAL TRADE POLICY AND MARKET GLOBALIZATION

This section reviews: 1) the nature of agricultural support and subsidies in developed countries and its impact on agricultural commodity prices and wage rates in developing countries; 2) the current status of the comparative advantage of main food crop commodities in Indonesia; 3) the current situation of applied tariffs and the proposed agricultural trade policies for Indonesian agricultural economies.

The Nature and Impact of Market Globalization

In 2000, the aggregate Nominal Protection Coefficient for Producers (NPCp) in OECD countries was 1.38, indicating that farmers in developed countries received support of 38 percent in excess of what they would receiver under output parity price, calculated at farm gate level (Table 8). The commodities receiving support are: rice (NPCp 5.43), sugar (2.04), and milk (1.85). This kind of protection places a substantial burden on developing countries, where these commodities are considered as import substitution commodities and a source of employment generation.

Table 8. The Magnitude of Agricultural Commodity Protection and Subsidy for Developed Countries (OECD), 2000

Commodities	NPCp [1)]	NACp [2)]	PSE (%) [3)]
Wheat	1.11	1.66	40
Maize	1.15	1.51	34
Rice	5.43	5.69	82
Soybean oil	1.18	1.33	25
Sugar	2.04	1.99	50
Milk	1.85	1.92	48
Bovine meat	1.31	1.48	32
Poultry meat	1.19	1.23	18
Egg	1.07	1.09	9
Aggregate	1.38	1.52	34

1) NPCp = The Nominal Protection Coefficient for Producers is the ratio of actual farm gate price to border price at the farm gate level;
2) NACp = The Nominal Assistance Coefficient for Producer is the ratio of actual output value received by the farmer (including support) to output value at the world price (without support);
3) PSE = The Producer Support Estimate indicates the magnitude of agricultural protection received by the farmers with respect to actual output value at the farm gate level (%).

Source: OECD, 2001 (www.oecd.org) (in Sawit and Rusastra, 2005).

As with price support, the agricultural commodities in developed countries which receive a high level of assistance are rice (with NACp = 5.69), sugar (1.99), milk (1.92), wheat (1.66) with the magnitude of assistance above the aggregate level (1.52). Commodities which receive assistance approaching the aggregate value is maize (1.51) and bovine meat with a NACp value of 1.48. By considering the value of output (productivity and output price has been taken into account), it is clear that all of these strategic food commodities received very substantial protection in developed countries.

Aggregate producer protection (PSE) awarded by developed countries, in 2000 approached 34 percent of the total output value received by farmers. The commodities with PSE's above aggregate level are rice (82%), sugar (50%), milk (48%), wheat (40%). For maize, bovine meat and soybean oil the PSEs were 34 percent, 32 percent, and 25 percent, respectively (Table 2). For poultry meat and egg the level of protection was 18 percent and 9 percent, respectively. On the other hand, in Indonesia the said commodities (rice, corn, soybean, and sugar), although considered to be strategic commodities, received little protection due to the weak financing capacity of the government. Indeed the development of livestock products such as milk, bovine meat and poultry (broiler and layer) are almost without support from the government.

The increasing globalization of food trade since 1995 had a negative impact on the main staple foods as import substitution commodities in Indonesia. Important factors are the huge protection for the producer and export subsidies in developed countries, in addition to the weak institutional capacity of the government in implementing price stabilization policies through imposing import tariffs. During the period 1996-2000, the prices of rice, maize, soybean, and sugar have fallen at the rate of 8.0 percent, 10.5 percent, 12.1 percent, and 15.0 percent/year, respectively (Table 9). This fall came after a period of price growth. Compared to the subsequent period of 2001-2003, the real output price decreased further. As an illustration, the average rice price decreased by 10.4 percent (from US $ 156 to US $ 140 per ton), maize by 3.4 percent, soybean by 9.7 percent, and sugar by 8.1 percent.

Stagnation of agricultural commodities and falling output prices received by farmers led to a drop in demand for agricultural labor. The real wage rate for labor on rice farms tended to be stagnant during 1981-1985, and then decreased substantially over the following years (Table 9). Implicitly, the implementation of trade globalization had a negative impact on both farmer income and agricultural labor welfare in rural areas.

Comparative Advantage of Food Crops

The existence of a comparative advantage in main staple food in Indonesia is presented on table 24. On the basis of the Domestic Resource Cost (DRC) the comparative advantage of all food crops under consideration (rice, corn, soybean, and sugarcane) has decreased slightly over time (Table 10).[3]

[3] The higher the value of the DRC, the lower the comparative advantage of the commodity. A DRC equal to one means the breakeven point in economic terms of the commodity economic development.

Table 9. The Magnitude and Trend of Agricultural Commodity Real Prices and Real Wage Rate in Indonesia, 1981-2003 [3)]

Description	1981-1985	1986-1990	1991-1995	1996-2000	2001-2003
Price (US $/Ton) [1)]					
Rice	149.6	142.9	173.1	156.4	140.1
	(-9.0)	(4.4)	(6.0)	-8.0)	(19.6)
Corn	126.6	108.4	132.5	125.0	120.6
	(-6.3)	(2.1)	(5.9)	(-10.5)	(21.0)
Soybean	441.3	383.4	441.8	345.4	311.9
	(-0.5)	(-0.7)	(2.3)	(-12.1)	(19.6)
Sugar	554.5	457.7	536.4	390.6	359.1
	(-4.3)	(2.9)	(1.2)	(-15.0)	(3.1)
Real Wage	5,044	5,051	5,476	4,780	3,743
(Rp/day) [2)]	(-0.6)	(0.7)	(3.2)	(-14.1)	(-4.7)

1) Price of rice, corn, and soybean are producer prices, but sugar is wholesale price;
2) Real wage rate for hoeing activity in rice farming (Rp/day);
3) Figure is parenthesis is growth rate (%/year)
Source: Basic date from CBS, Jakarta (various years, in Sawit and Rusastra, 2005).

Table 10. Trend of Main Food Crop's Comparative Advantage in Indonesia, 1986-2001/2002

Description	Location	Comparative Advantage (DRCR)
Rice		
a. Kasryno, F (1989)	East Java, 1986	0.45
	Sumatera, 1986	0.31
b. Hutagaol *et al.* (1998)	Java (irrigated land), 1998	0.78
c. Rachman *et al.* (2002)	Java (5 regencies), 2001	0.90 – 0.98
	Off-Java (2 regencies), 2001	0.83 – 0.96
Corn		
a. Kasryno, F (1989)	Sumatera, 1986	0.47
b. Kariyasa and Adnyana (1998)	Java, 1996	0.71 – 0.99
	South Sulawesi, 1996	0.71 – 0.77
c. Hutagaol *et al.* (1998)	Java (irrigated land), 1998	0.80
Soybean		
a. Kasryno, F (1989)	Sumatera, 1986	0.56
b. Hutagaol *et al.* (1998)	Java (irrigated land), 1998	0.99
c. Rusastra *et al.* (2002)	Java (2 regencies), 2001	0.94
Sugarcane		
a. Rusastra *et al.* (1997)	Java (TRI, Ratoon I, Wetland), 1998	1.89
b. Hutagaol *et al.* (1998)	Lampung (TRI, Ratoon I, Dryland), 1998	0.80
c. Saptana *et al.* (2002)	Java (three regencies), 2001	1.41 – 1.59

As an illustration, between 1986-2001, the comparative advantage of rice decreased both in Java and Outside Java, as indicated by the increasing value of DRC from 0.45 to between 0.90 and 0.98 in Java, and from 0.31 to 0.96 outside Java (Table 10). The DRCR of corn increased from 0.47 (1986) to 0.80 (1998), soybean from 0.56 (1986) to 0.94 (2001) and sugarcane from 0.92 (1996) to 1.59 (2001). With the value of the DRC approaching one, the commodities comparative advantage tends to be more sensitive to a yield decline or lower agricultural productivity. Most agricultural commodities in Indonesia experienced stagnant growth of yield due to reduced incentives received by farmers. There is a strong indication that the decline of agricultural commodity comparative advantage is a consequence of trade globalization, in addition to the weak capacity of the government to give sufficient subsidy and support to the farmers.

Current and Future Agricultural Trade Policy

The government of Indonesia has been implementing trade policy reforms since 1998, as indicated by the low average applied tariff for agricultural products of only 5 percent, far below the average bound tariff of 40 percent (Sawit and Rusastra, 2005). As an illustration, there is a substantial gap between bound tariff and actual applied tariff of milk/butter (210 % vs 5%), rice (160% vs 30%), sugar (95% vs 25%), meat (50% vs 5%) and peanut (40% vs 5%). Other commodities, i.e. maize, soybean, and wheat, are not protected all, even though the bound tariffs of these commodities are 40 percent, 27 percent, and 18 percent, respectively. The implementation of such low tariffs has a serious negative impact on the output price received by the farmers, agricultural productivity, labor agricultural wage, and the welfare of both farmers and agricultural farm labor.

Sawit *et al.* (2004) has tried to identify and determine special products among Indonesian agricultural product as presented in Table 11. There are 11 agricultural products that will be proposed as special products consisting of paddy/rice, vegetable and fruits and its processed product, corn/feed, livestock products (except fresh milk)/meat/offal and processed meat, poultry products, soybean/ soybean processing, cane/sugar, fresh milk/ milk products, other foods and meals. All of these primary products and processed products will generate total employment for 31.14 million people (92.2% from primary products and 7.8% from processed products).

Based on trade policy reform in Indonesia and its negative impact on domestic output prices, agricultural yield, wage rates, the welfare of both farmers and agricultural labor, the comparative advantage of agricultural commodities, and stability or sustainability of food security, Sawit and Rusastra (2005) proposed the following trade policy options, i.e: (a) the government should focus on the proposed eleven special products in order to maintain and speed up agricultural and rural development, employment generation, poverty eradication, rural livelihood development, and strengthen national as well as household food security; (b) the respective special products (SP) should be complemented with special safeguard mechanisms (SSM) in order to protect domestic agricultural products from outside competition; (c) the agricultural products outside the SPs should be facilitated with SSM for the benefit of small scale farmers as well as to prevent them from dumping trade; (d) it is not necessary for Indonesia to widen and intensify the implementation of food liberalization, and it is better to return to AoA-WTO regulation based on commitment and Schedule of XXI.

Table 11. The Proposed Special Product for Agricultural Commodities (Primary and Processed Product) and Employment Generation, Indonesia, 2004

Primary Product	Employment (Head)	Processed product	Employment (Head)	Total employment (Head)
Paddy	11,320,533	Rice	734,443	12,054,976
Vegetable	5,829,887	Processed Fruit and	59,155	5.889,042
Fruits	5,130,436	Vegetable	-	5.130,436
Corn	2,318,914	Feed	157,938	2,476,852
Livestock product, except fresh milk	805,260	Meat/offal + Processed meat	865,651	1,670,911
Poultry product	1,537,561	-	-	1,537,561
Soybean	881,730	Soybean processing	161,449	1,043,179
Cane	822,882	Sugar	160,132	983,014
Fresh milk	76,312	Milk's food and Beverages	112,732	189,044
-	-	Other goods	139,806	139,806
-	-	Other meals	23,654	23,654
Total	28,723,515	-	2,414,961	31,138,926

Source: Sawit *et al.* (2004)

CONCLUSIONS AND POLICY IMPLICATIONS

Over the last decade, the achievement of national food security depended on imports. The import dependency ratio (IDR) for the main staple foods, such as rice, corn, soybean, and sugar increased remarkably, indicating the instability of food security. The IDR for these commodities for the last five year was 9.3 percent, 7.9 percent, 47.3 percent, and 47.4 percent, respectively. About 32.5 percent of the rural population experienced food insecurity of which most of whom (62.2%) were engaged in the agricultural sector. The improvement of agricultural and rural development will contribute greatly to better food accessibility and a higher food security status of the population.

Following the economic crisis of 1997-98 Indonesia has made consistent progress towards macroeconomic stability as indicated by modest economic growth and moderate inflation. The poverty rate at the national level has been declining consistently from 24.1 percent (1999) to 16.6 percent in 2003. In rural areas the rate decreased from 27.7 percent to 17.7 percent over the same period. It is interesting to note that there is a strong relationship between farm size owned and poverty, in which the smallest farm size has the highest poverty rate and poverty gap. For the landless the poverty rate approached 31 percent in 1999, with the highest poverty gap index of 5.9 percent.

There are at least four main government programs aimed at helping the poor: 1) the provision of 1.7 million tones of subsidized rice per year (1998-2003) to around of 7.0 million poor households in the country; 2) public work programs for temporary employment on projects that build roads or provide other public goods; 3) the empowerment program for micro-small-and medium enter-prises (MSME) covering 41.3 million MSMEs with a credit disbursement target of Rp 60.44 trillion in 2005; 4) low-income assistance funds of which Rp 7.3 trillion (US$ 784 millions) have been disbursed in 2005 to alleviate the burden of the poor due to the recent fuel price hike.

Most important for Indonesian agricultural development is the availability of land. This constraint is reflected in the decrease in agricultural land growth by 0.4 percent per year. In addition to the sluggish expansion of irrigated wetland of 0.27 percent per year (which is already a relatively small proportion (27%) of the total agricultural land of 2.59 million hectare. For the next two decades 1.4 million hectares of irrigated land is required to maintain the existing level of national food security. In the future, a widening of the irrigation development spectrum will be very important with the main objective of improving irrigation productivity through implementing market based irrigation management, and the development of micro irrigation in dry land areas, swamp land areas, as well as at the existing wetland areas.

Indonesian agricultural production is falling for almost all agricultural commodities. This phenomenon has serious negative implications for the livelihood of the majority, especially for those in the poorest segment of the population. In addition to major constraints with regard to increasing agricultural land, agricultural supply constraints are substantial but can be eliminated through completely reversing the previous policy direction by: (a) Government expenditure on agricultural infrastructure development has to be increased to reverse the current declining trend; (b) the government must create an enabling environ-ment to foster private sector involvement in critical infrastructure development such as irrigation, R&D, and extension; (c) the R&D sector should be deregulated to facilitate private sector participation both in technology generation and dissemination, including international sources; (d) the government should resume its provision of farming incen-tives and facilities in the spirit of market failure correction.

In addition to input price policy, the price support policy demonstrates the most direct positive impact on farmer incomes. Based on the assessment of the current government procurement floor price policy for rice (GPFP), there should be a reformulation of policy, as follow: (a) rice import prohibition must be implemented during the harvested season, but for the rest of the year rice imports should be unconstrained subject to the import tariff; (b) to implement strong law enforcement to prevent illegal rice imports in order to successfully implement the GPFP rice policy;

(c) to integrate the rice program for the poor (Raskin) with the GPFP in order to improve the paddy price received by the farmers, especially during the harvesting season.

Over the last five years (1999 – 2004) the household income structure, has changed substantially, but agricultural activities still play an important role, accounting for more than 50 percent of income. Income is unequally distributed as indicated by the Gini coefficient of 0.5. As for the assessment of farm agricul-tural diversification, the empirical evidence indicates that economic factors are the main ones encouraging farmers to plant high value commodities to improve their household income. To enhance agricultural diversification the availability, accessibility, and improvement of the following factors must be strengthened for non-rice commodities, i.e technology, farm management, capital, irrigation infrastructure, farmer group institution, the partnership program with the investor, and agribusiness infrastructure development.

Agricultural commodities in developed countries receive substantial producer support (PSE) for soybean oil (25%) and rice (82%), while in Indonesia protection is weak. The existence of this asymmetry in the course of the implementation of world trade globalization has resulted in serious negative impacts on Indonesian agriculture such as a fall in real output prices, agricultural productivity, comparative advantage, real wage rates of agricultural labor, and yield instability. Based on these negative impacts, the proposed trade policy reforms are the ratification of special products (complemented with SSM) for eleven agricultural strategic commodities, other agricultural commodities related to small farmers should also be facilitated with SSM, and Indonesia should return to the initial AoA-WTO regulation based on the commitment and Schedule of XXI.

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