

Food Security Policies in Maritime Southeast Asia

The Case of Indonesia

Zamroni Salim

2010

Abstract

Although food prices in the Indonesian domestic market were relatively stable at the height of the 2007/08 global food crisis, this catastrophic event nonetheless had significant impacts on the people of Indonesia. The diversification of food consumption, for example, has been observed in a number of relatively poor provinces in Indonesia. The problem of food insecurity in the country is not necessarily due to the lack of food supplies in the domestic market, but has more to do with the inability of people to access the food that is available. The problem of food access in the country is further heightened by poor infrastructure, which prevents the smooth transportation of affordable food products throughout the vast geographical space of the country. Moreover, the preoccupation of the Indonesian government with achieving food self-sufficiency, which emphasizes the production of food products for domestic consumption, has done little to improve the access of poor people to affordable, healthy and nutritious foods to fulfil their dietary needs.

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Food Security Policies in Maritime Southeast Asia: The Case of Indonesia

Zamroni Salim

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This study is part of a larger, multi-region TKN project that seeks to understand better the impacts of trade policy on food security. It includes country case studies and regional analyses from Latin America, Southern Africa and Southeast Asia. It was made possible through the generous support of the Swedish Environment Secretariat for Asia (SENSA) and the Norwegian Agency for Development Cooperation (NORAD). The project outputs are available on the TKN website.

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Table of contents

Abstract	i
About the author	iv
Abbreviations and acronyms	iv
Executive summary	v
1. Introduction	1
2. Food security, food trade and food access: Concepts, understandings and linkages	2
3. Indonesia's food trade	3
4. The 2007/08 global food crisis and its implications for food prices in Indonesia	4
5. The geography of food insecurity in Indonesia	8
5.1 Food insecurity in the Special Region of Yogyakarta	11
5.2 Food insecurity in Nusa Tenggara Barat	12
6. National and provincial policies to address food insecurity	14
6.1 National policy responses	14
6.2 Provincial policy responses	16
7. Conclusion and policy recommendations	16
Bibliography	17
Figures and tables	
Figure 1: Price trends of selected food products in world markets, 2006–09 (USD/ton)	5
Figure 2: Price trends of selected food products in the Indonesian market, 2006–09 (IDR/kg)	6
Figure 3: Inflation rates of raw food and food, 2006–09	7
Figure 4: Indonesia's food insecurity map, 2007	8
Table 1: Agricultural sector share of GDP and number of people living below the poverty line, 1998–2008	1
Table 2: Indonesia's trade balance, 2003–09 (USD thousand)	4
Table 3: Inflation rates of food products and other necessities, 2006–09 (%)	8
Table 4: Per capita expenditure on food by province, 2007–08	9
Table 5: Regional food insecurity in Indonesia, 2009–10	10
Table 6: Income allocation and the changing pattern of food consumption in three Indonesian provinces, 2008–09 (% of income)	11

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Abbreviations and acronyms

ASEAN	Association of Southeast Asian Nations
DIY	Special Region of Yogyakarta (Daerah Istimewa Yogyakarta)
DKP	Food Security Board (Dewan Ketahanan Pangan)
GDP	gross domestic product
IDR	Indonesian rupiah
NTB	West Nusa Tenggara (Nusa Tenggara Barat)
NTT	East Nusa Tenggara (Nusa Tenggara Timur)
RFSB	Regional Food Security Board
USD	U.S. dollar
VFR	Village Food Reserve
WFP	World Food Program

Executive summary

The 2007/08 global food crisis forced countries around the world, including those in Southeast Asia, to revisit their food security policies. Despite the richness of the region's natural resources, the countries in Southeast Asia have long struggled to fight hunger and poverty. This study primarily examines the food security concerns of Indonesia, which is the largest economy in Southeast Asia. More specifically, it looks into the state of food insecurity in three provinces in the country, i.e., East Nusa Tenggara, West Nusa Tenggara and Yogyakarta. Indonesia is known for its abundant natural resources, but this has so far failed to improve the state of food insecurity in the country. One key element that hinders Indonesia's ability to advance its food security objectives is its inability to maximize the potential of its agricultural sector.

This study mainly argues that the attainment of food security should not only be concentrated on the fulfilment of the demand for food supplies in the domestic market, but should also take into account the people's ability to purchase affordable, nutritious and healthy food products. Unfortunately, although the attainment of food security, which has been defined by Indonesian Governmental Decree no. 68/2002 as a condition where households are able to consume sufficient safe and affordable foods, has been proclaimed by the Indonesian government as one of the most prioritized policies in the country, in practice the issue has only been approached through a conservative and rigid food self-sufficiency approach, also known as the Swasembada Pangan initiative. The minimal consideration given to the issue of food access in the country's food security policymaking has aggravated the state of food insecurity in the country.

A number of food security policies adopted by the Indonesian government have incorporated the food access dimension. Initiatives such as the Conditional Direct Aid Cash and Rice for the Poor programs and enhanced access by the poor to state funded health facilities are already in place to improve the food access of the poor to affordable, healthy and nutritious food. These initiatives, however, are still far from perfect. The lack of infrastructure, particularly in the area of transportation, for example, has been regarded by many observers as one of the key factors that undermine Indonesia's effort to become a food secure nation. The vast geographical area of the country and the lack of adequate transportation infrastructure have contributed to the difficulty of food distribution to remote areas. Once food has reached its destination, it is not uncommon for its price to have doubled or more.

Major reform in the food security policy of the country is therefore needed. The enhancement of the food access consideration in the government's existing food security policy would greatly improve the state of food security in Indonesia.

1. Introduction

The 2007/08 global food crisis forced countries around the world, including those in Southeast Asia, to revisit their food security policies. Despite the richness of their natural resources, the countries of maritime Southeast Asia, which include Brunei Darussalam, Indonesia, Malaysia, the Philippines and Singapore, have long struggled to fight hunger and poverty. Since most of these countries are now increasingly becoming net importers of food, the challenges they faced were more pronounced than those exhibited elsewhere in the Southeast Asian region during the global food crisis.

This study primarily analyzes the food security concerns of Indonesia, which is one of the largest economies in maritime Southeast Asia. More specifically, it examines the state of food insecurity in the three provinces of that country: East Nusa Tenggara (Nusa Tenggara Timur, or NTT), West Nusa Tenggara (Nusa Tenggara Barat, or NTB) and the Special Region of Yogyakarta (Daerah Istimewa Yogyakarta, or DIY). Although blessed with abundant natural resources, Indonesia is still far from being a fully food secure country. One of the key elements that hinder the country's ability to advance its food security objectives is its inability to maximize the potential of its agricultural sector. Over the years, the share of the agricultural sector in the country's overall GDP has been decreasing, dropping from 18.06 percent in 1998 to 14.40 percent a decade later (refer to Table 1) as a result of the relative increase of the secondary and tertiary sectors. Moreover, although the number of poor people is on the decrease, the total number of poor families with limited or no access to food, particularly in rural areas, remains large. Relatively recent data, for example, suggests that around 30.76 million people, or 13.63 percent of the total population, were not free from hunger in 2007 (Bappenas, 2007).

Table 1: Agricultural sector share of GDP and number of people living below the poverty line, 1998–2008

Year	GDP		Agriculture value added		Number of people living below the poverty line		
	(USD million)	(USD million)	(% of GDP)	Number (million)		% of total population	% of rural poor
				Total	Rural		
1998	123,744.81	22,348.21	18.06	49.5	31.9	24.2	64.4
2000	148,084.17	23,104.05	15.60	38.7	26.4	19.1	68.2
2002	204,035.55	31,536.41	15.46	38.2	25.1	18.2	65.7
2004	245,254.37	35,159.13	14.34	36.1	24.8	16.7	68.7
2006	345,487.23	44,820.34	12.97	39.1	24.8	17.8	63.4
2007	410,689.49	56,790.74	13.83	37.2	23.6	16.6	63.4
2008	639,724.80	92,108.90	14.40	34.9	22.2	15.42	63.6

Note: Indonesia's population in 2007 was 225 million people; the poverty line is the equivalent of USD 21 per person per month.

Sources: AFSIS (2010); Suryana (2008)

This report argues that, given the persistence widespread poverty and hunger in the country, there is an urgent need for the Indonesian government to reevaluate its food security policy. The 2007/08 global food crisis in particular has illustrated how vulnerable the Indonesian food system is. As is the case with other Southeast Asian countries, the Indonesian government has placed too much emphasis on the principle of food self-sufficiency, while simultaneously giving little importance to the ability of the people to access food. The conservative and rigid adoption of a food self-sufficiency policy does not only contribute to the present state of food insecurity that the country is experiencing currently, but also has the potential to undermine the country's food trade with the rest of the world.

In order to illustrate this argument further, the analysis presented by the report is divided into seven sections. Section 2 provides an overview of the linkages between trade and food security, which is then followed with an analysis of the general patterns of Indonesia's food trade in section 3. Subsequently, section 4 gives an overview of the overall implications of the 2007/08 global food crisis for Indonesia. Section 5 advances a more detailed argument on the state of food insecurity in the country by highlighting case studies of the three Indonesian provinces of NTB, NTT and DIY. Section 6 spells out various policy responses at the provincial and national levels at the height of the global food crisis. Finally, the report is concluded with policy recommendations to improve the state of food security in Indonesia.

2. Food security, food trade and food access: Concepts, understandings and linkages

The Food and Agriculture Organization of the United Nations defines food security as a condition where people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO, 2009). The attainment of food security normally involves the following components: (1) *food availability*, which refers to sufficient quantity and quality of food supplied through domestic production or imports; (2) *food accessibility*, which enables both households and individuals to obtain the appropriate food suitable for their dietary needs; and (3) *food affordability*, which allows individuals to be able to afford to buy food in accordance with their respective socioeconomic conditions, cultural backgrounds and preferences (Suryana, 2008). Crucial in the attainment of the second and third components of food security is the ability of individuals and households to have adequate, sustained incomes through sustainable employment opportunities.

In trade-related matters, food security can be attained through either *food self-sufficiency or food self-reliance* (Panagariya, 2002; Konandreas, 2006). While the former emphasizes the production of food products for domestic consumption, the latter concerns primarily the availability of food in the domestic market. The food self-sufficiency principle generally seeks to minimize a country's dependence on buying food from other countries, whereas the food self-reliance principle advocates reliance on the international market for the availability of food in the domestic market. This, however, does not mean that countries that adopt food self-sufficiency as a principle avoid international trade. In many cases, they export the excess of their food products to their trading partners for the purpose of generating income. The determination of food security among countries that pursue a food self-reliance strategy, on the other hand, is their ability to pay for imported food (Konandreas, 2006). These countries generally import food products that are not easily produced by their domestic producers.

Trade, nevertheless, is increasingly becoming a key policy component for the fulfilment of countries' desire to improve their food security status. Through trade, countries are able to specialize in food products in which they have comparative advantage. This simply means that a country produces a food product that has lower opportunity costs relative to the rest of the world. Apart from that, trade also allows for a more efficient division of production, and the gains from such an economic exchange are significant, particularly since distortion to international trade would be absent. Despite this, the question remains as to whether trade in food products can assist the poor and most vulnerable sections of the community. Indeed, being too dependent on trade could also have significant consequences for the countries concerned, particularly since they would be more vulnerable to changes in international food supply and demand, as well as international food price instability.

Another important aspect of food security–trade linkages is the notion of food access, which mainly refers to people’s ability to have sufficient access to food. While, on the one hand, access to food is readily available to those belonging to the wealthy sections of society, on the other hand, the poor see food access as a matter of daily survival. While giving much attention to the attainment of food self-sufficiency, most developing countries in Southeast Asia have neglected the importance of food access. Increasingly, to ensure the domestic supply of food, Southeast Asian countries are becoming increasingly reliant on the international market. However, the failure of many Southeast Asian governments, including that of Indonesia, to give attention to the issue of food access has prevented countries in the region from being fully food secure.

3. Indonesia’s food trade

Recent data from the World Trade Organization (WTO, 2009) ranks Indonesia as the 8th main agricultural exporter in the world, recording USD 32.86 billion worth of agricultural exports, or 2.4 percent of the total global agricultural exports, in 2008. In terms of imports, Indonesia was ranked 14th in 2008, with a total value of agricultural imports of USD 13.31 billion, or around 0.9 percent of total global agricultural imports. In terms of specific food products, Indonesia was also ranked 8th among the leading food exporting countries with a total value of food product exports of USD 24.09, or around 2.2 percent of the total food exports of the world, and was also among the 15 largest importing countries in the world, with a total value of USD 15.9 billion, or 0.8 percent of total global food imports (WTO, 2009). This data suggests that, while keeping its food self-sufficiency intact, Indonesia remains committed to the global food trade.

Further data on Indonesia’s trade balance between 2003 until 2009, as illustrated in Table 2, also reveals that the country is becoming increasingly more self-sufficient in several food products, such as fish, crustaceans, molluscs and their preparation; coffee, tea and cocoa; miscellaneous food preparations; and animal and vegetable oils and fats. The data in Table 2 also suggests that the ability of Indonesia to export its food products reflects the relative increase in availability of these food products in the Indonesian domestic market. Other food products, particularly rice, remain protected, although Indonesia was a self-sufficient rice producer in the 1980s. This is particularly due to the fact that rice is a politically sensitive food commodity in the country.

At the height of the global food crisis of 2007/08, the quantity of food products in the domestic market was basically sufficient to supply domestic demand. Despite this, significant discrepancies existed among food prices in different provinces. At the time, the further a province was from the food production centres or sea ports, the more the population of that province had to pay for their food supplies. According to this scenario, food prices in the eastern parts of Indonesia, such as Papua, Maluku, NTB and NTT, were higher than those in Java, which is considered to be the centre for food production in the country. Moreover, the lack of adequate infrastructure and transportation further aggravated the food insecurity situation in the eastern parts of the country. Overall, the low per capita income in these provinces did not only prevent people from purchasing food at affordable market prices, but the less profitable market of these provinces also meant that food traders were reluctant to trade there. The limited stock of food subsequently further increased food prices in these provinces.

Table 2: Indonesia's trade balance, 2003–09 (USD thousand)

SITC ^a		2003	2004	2005	2006	2007	2008	2009
01	Meat, meat preparations	-17.68	-50.79	-71.04	-82.70	-144.04	-193.90	-109.40
02	Dairy products, eggs	-175.03	-382.05	-471.99	-520.98	-834.79	-656.28	-251.94
03	Fish, crustaceans, molluscs and preparations	1,417.87	1,496.13	1,826.75	1,862.48	2,047.92	2,350.15	1,033.05
04	Cereal, cereal preparations	-1,131.25	-1,095.09	-936.33	-1,315.87	-1,909.27	-2,332.51	-682.68
05	Fruit, vegetables	19.99	-138.26	66.47	-114.68	-217.55	-148.48	-266.31
06	Sugar, sugar preparations, honey	-289.87	-245.03	-581.33	-587.42	-584.11	-337.37	-99.71
07	Coffee, tea, cocoa, spices	1,033.26	1,018.07	1,310.12	1,611.23	1,742.94	2,546.72	1,046.00
09	Miscellaneous food preparations	50.24	90.60	103.53	123.39	261.18	371.48	121.38
11	Beverages	-7.74	-4.69	-13.09	-28.67	-49.76	-37.53	-7.68
29	Crude animal, vegetable materials, n.e.s.	66.65	60.29	70.51	93.04	112.83	142.50	60.12
41	Animal oils and fats	-6.60	-8.07	-13.34	-19.34	-12.23	-7.86	-3.04
42	Fixed vegetable oils and fats	2,873.86	4,310.78	4,663.76	6,011.70	9,061.58	13,929.63	4,563.16
43	Animal and vegetable oils and fats	119.21	252.59	226.38	452.45	799.06	903.55	9.74

^a Standard International Trade Classification.

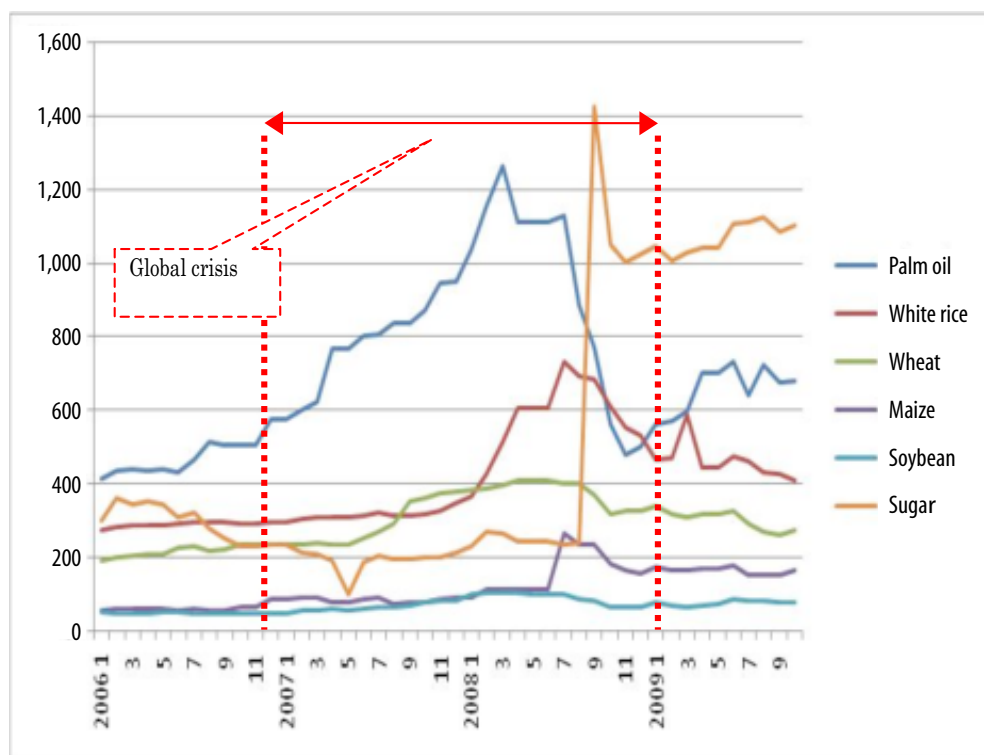
Note: Data for 2009 is up to June only. The shaded area shows the trade balance in surplus.

Source: Bank of Indonesia (2009)

4. The 2007/08 global food crisis and its implications for food prices in Indonesia

There is little doubt that the 2007/08 global food crisis, which was primarily caused by increasing demand for food, declining agricultural productivity and global financial volatility, generated significant negative impacts for people living in both urban and rural areas in Indonesia. Urban areas were in fact hit hardest by the crisis, since they were more dependent on the cash economy than rural areas (ADB, 2008; Baker, 2008; UN, 2009). Overall, however, the global food crisis did not only impact negatively on people's incomes, but also further undermined the health and wellbeing of the poor. This was the case even though the countries concerned were classified as net food exporters. Among other things, this was due to the fact that the majority of people in Indonesia were consumers, and poor people spent much of their income on food consumption (Uzquiza, 2009).

Figure 1: Price trends of some food products in world markets, 2006–09 (USD/ton)



Notes: White rice is 25% Thai rice.

Sources: RI, Ministry of Trade (April 2006–February 2010)

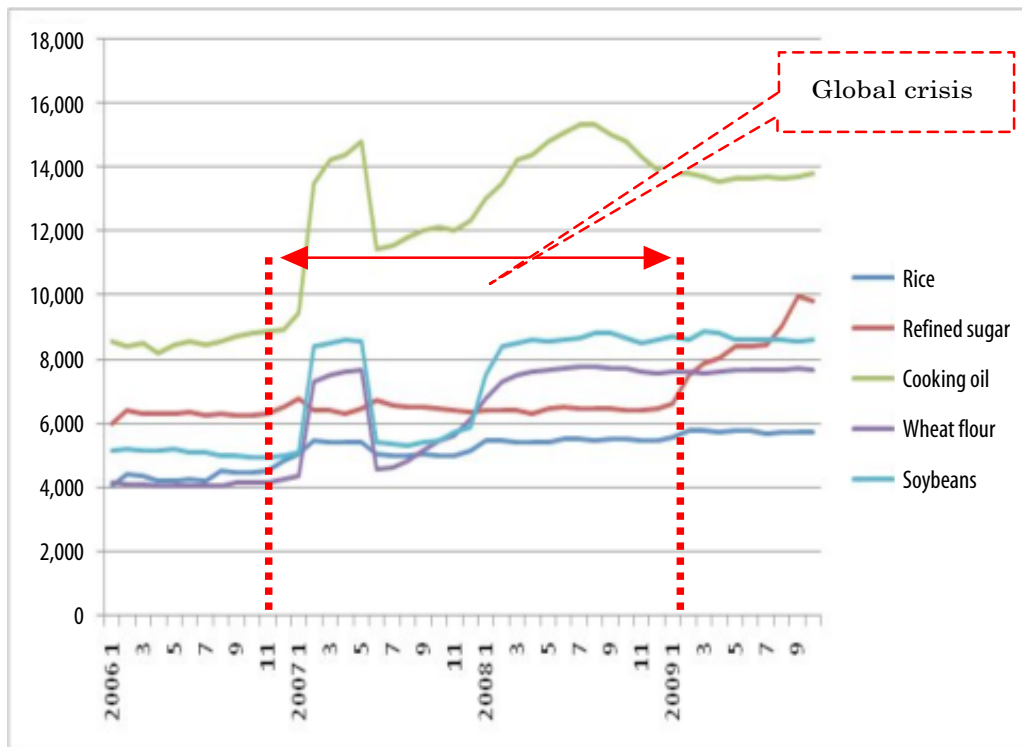
What became clear from the 2007/08 global food crisis was the severe vulnerability of the global food system. Some food producing countries in Southeast Asia, such as Thailand and Indonesia, were affected by the crisis simply because they placed too much emphasis on the principle of food self-sufficiency, with little attention given to the ability of the people to access food. Food exports were maintained despite the inability of people in these countries to access food at affordable prices.

Other contributing factors to the significant food price increases during the global food crisis were global financial instability and speculative behaviour among investors in international financial trading who invested heavily in commodity index funds, including those in agricultural commodities (Uzquiza, 2009). Moreover, the closer relationship between the prices of agricultural products and the price of oil generated a much longer term impact on food security in Indonesia, particularly as the steady increase in the price of oil would likely further increase the price of food in the future.

While generating many negative impacts, the global food crisis was also a blessing disguise, however. State and non-state actors alike are now more attentive to the promotion of sustainable agricultural development and are keener than in the past to address the structural problems that underpin the ineffectiveness of the national and international global food system. Some, such as Apriyantono (2008) and Uzquiza (2009), also saw the global food crisis as an opportunity for countries to pursue green revolutions.

As illustrated in Figure 2, indications of the possible sharp increase of food prices were already detectable in early 2007. Throughout the global food crisis, however, palm oil displayed the greatest volatility, with its price rising from USD 574/ton at the end of 2007 to USD 1,263/ton in 2008. Similar significant increases also occurred for other major agricultural products, including rice, soybeans and wheat.

Figure 2: Price trends of selected food products in the Indonesian market, 2006–09 (IDR/kg)



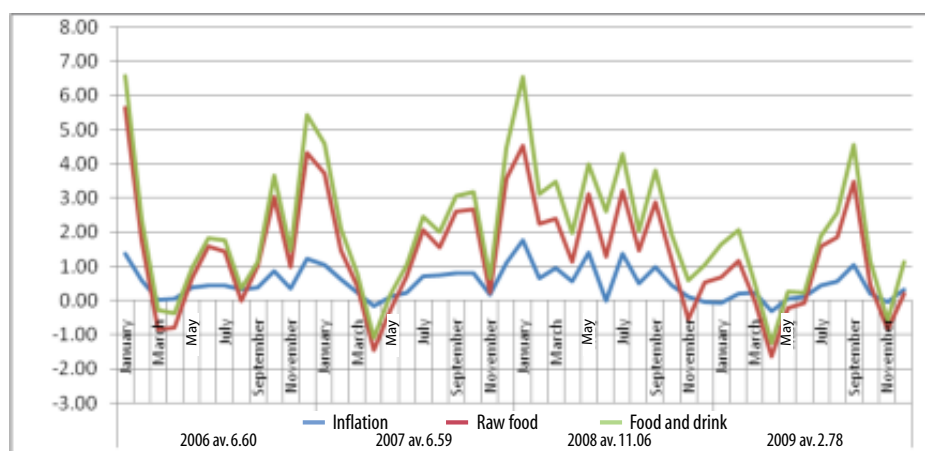
Sources: RI, Ministry of Trade (April 2006–February 2009)

As one of the main world producers and consumers of crude palm oil, Indonesia was naturally affected significantly by the global food price increase. The major increase in the price of crude palm oil led producers to sell their product directly to the international market without first processing it, as would normally be the case. The sudden flows of crude palm oil abroad caused the stock of cooking oils in the Indonesian domestic market to fall. Data in Figure 2 also illustrates the volatility of prices of other agricultural products, such as soybeans, sugar, wheat and flour. As for rice, the price of this highly politically sensitive agricultural product was relatively under control throughout the crisis. The fragility of the price of rice in the domestic market in some parts of 2008 was mainly caused by excessive rice supplies that went beyond the actual needs of the country. It was for this reason that in 2008 Indonesia was relatively successful in attaining its food self-sufficiency objectives.

Despite the eventual decrease of the global price of food during the fourth quarter of 2008, this was not reflected in the prices of food in developing countries' local markets (UN, 2009). Prior to the global food crisis, food prices in the Indonesian domestic market, with the exception of crude palm oil, were relatively more stable in comparison to the fluctuating global food prices (Apriyantono, 2008). The global food crisis, however, helped to shock domestic food prices from the third quarter of 2007, which,

as mentioned earlier, resulted from the shortage of cooking oil in the domestic market due to the uncontrolled export of crude palm oil until the third quarter of 2008 (refer to Figure 2). In the last quarter of 2008, the prices of food began to show some stability, with major price decreases shown by some food commodities, including raw food. In the following year, 2009, food prices were far more stable than the previous year, with the overall inflation rate for raw food reaching only 2.78 percent (refer to Figure 3). Table 3 shows the interaction of food products and other necessities in the domestic market during the global food crisis. The level of inflation in 2008 rose to 11.06 percent, from 6.60 percent in the previous year. In the domestic market, food and food products contributed more than 40 percent of national inflation. The volatility of domestic food prices triggered either an decrease or increase in the price of other products in the country.

Figure 3: Inflation rates of raw food and food, 2006–09 (%)



Note: Data on food and drink includes tobacco and cigarettes.

Source: Statistical Office of Indonesia (2010)

Indonesian households in both rural and urban areas were also hit significantly by the 2007/08 global food crisis, particularly in terms of increased household expenditure on food, as well as the contracting of new debts and problems with repaying existing debts (Apriyantono, 2008). Indonesian households felt the impacts of the global food crisis particularly, since they were forced to use an increasing percentage of their income to buy food. Poor families in rural areas were also faced with the difficulty of accessing food, which was due primarily to the relatively much lower income of these families to those living in urban areas. It is also important to note that to survive, the rural poor did not necessarily purchase food from the market, but instead utilized and consumed non-marketable foods that may have failed to satisfy the minimum requirements of protein and energy intake.

Table 3: Inflation rates of food products and other necessities, 2006–09 (%)

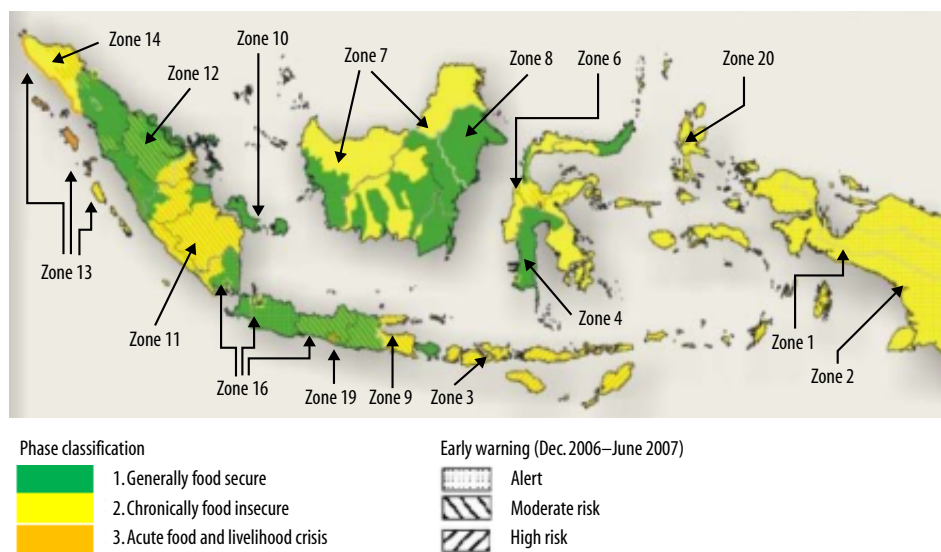
	1	2	3	4	5	6	7	Inflation
2009	3.88	7.81	1.83	6.00	3.89	3.89	-3.67	2.78
2008	16.35	12.53	10.92	7.33	7.96	6.66	7.49	11.06
2007	11.26	6.41	4.88	8.42	4.31	8.83	1.25	6.59
2006	12.94	6.36	4.83	6.84	5.87	8.13	1.02	6.60

Notes: Product: (1) raw food, (2) food & drink, including tobacco & cigarettes, (3) housing, water, electricity, gas & fuel, (4) clothing, (5) health care, (6) education, recreation & sport, (7) transportation, communication & financial services.

Source: Statistical Office of Indonesia (2010)

5. The geography of food insecurity in Indonesia

The World Food Program (WFP) compiled a map of the food insecurity status of Indonesian provinces (WFP, 2007), which highlighted that provinces with low income per capita, such as NTB, NTT, Bengkulu, the southern part of Aceh, Nias and so on, were those categorized as food insecure provinces (refer to Figure 4 and Table 4). The people in these provinces also tended to spend a larger percentage of their incomes on food than those in relatively more food secure provinces. The vast majority of provinces lacking food security were in the eastern part of Indonesia. In order to classify these provinces, the WFP applied several key indicators, including infant mortality rates, poverty rates, the level of underweight people and micronutrient deficiencies, stunting, access to clean water, and livelihood assets (e.g. female literacy, access to health, road access and existing hazards).

Figure 4: Indonesia's food insecurity map, 2007

Note: Food Security map using integrated pphase classification (valid until December 2009)

Zone 1: Papua highlands; Zone 2: Papua lowlands; Zone 3: Southeastern Islands; Zone 4: South & Southeast Sulawesi; Zone 5: Northern Sulawesi; Zone 6: Central & West Sulawesi; Zone 7: West & part of East Kalimantan; Zone 8: East Kalimantan; Zone 9: Madura & part of East Java; Zone 10: Bangka Belitung; Zone 11: Bengkulu, Jambi, etc.; Zone 12: Central Sumatra; Zone 13: Nias, Simeuleu, etc.; Zone 14: Aceh; Zone 15: South Kalimantan; Zone 16: Lampung & part of Java; Zone 17: Java district with high underweight population (some districts in Banten, West Java, Central & East Java, DIY); Zone 18: Urban (Medan, Lampung, Jakarta, Surabaya & Makassar); Zone 19: DIY; Zone 20: North Maluku; Zone 22: Central & part of East Kalimantan.

Sources: WFP (2007); FAO (2009)

Some indicators presented by WFP, which was assisted by the Food Security Board (Dewan Ketahanan Pangan, or DKP), however, were far from perfect (Ariani *et al.*, 2008). For example, according to the benchmark used by WFP, food availability was only calculated based on rice, corn and cassava production, without the incorporation of other local foods, such as *talas*¹ and sago, which were the common staple foods for people in the eastern parts of Indonesia, particularly Papua. Moreover, the indicators WFP used also failed to reflect the potential of each region to improve its food security situation.

Table 4: Per capita expenditure on food consumption by province, 2007–08

Province	Average per capita expenditure on food as % of total spending		Monthly per capita expenditure (IDR)	
	2007	2008	2007 ^a	2008 ^b
Nanggroe Aceh Darussalam	60.62	60.24	336,938.00	382,076.00
North Sumatera	53.48	54.06	351,576.00	391,767.00
West Sumatera	56.22	57.19	378,297.00	402,002.00
Riau	49.19	50.30	492,240.00	520,258.00
Jambi	52.83	53.38	367,568.00	381,042.00
South Sumatera	53.83	54.80	329,688.00	361,314.00
Bengkulu	53.50	52.39	313,497.00	363,602.00
Lampung	49.66	51.89	329,473.00	334,055.00
Bangka Belitung	54.13	53.82	472,171.00	521,091.00
Riau Island	47.08	48.96	516,636.00	560,188.00
DKI Jakarta	35.28	36.34	773,407.00	863,667.00
West Java	49.15	50.23	367,263.00	396,929.00
Central Java	49.97	51.55	281,365.00	306,254.00
DIY	41.80	42.86	390,639.00	416,912.00
East Java	48.59	49.61	295,336.00	331,954.00
Banten	45.68	46.95	431,097.00	454,453.00
Bali	43.82	45.60	440,473.00	429,018.00
West Nusa Tenggara	55.09	55.77	256,407.00	300,443.00
East Nusa Tenggara	59.70	59.66	214,741.00	237,323.00
East Kalimantan	58.14	57.68	297,393.00	349,180.00
Central Kalimantan	57.79	60.21	355,716.00	418,161.00
South Kalimantan	53.70	53.13	414,313.00	443,508.00
East Kalimantan	44.06	43.38	516,114.00	585,302.00
North Sulawesi	52.63	53.66	350,807.00	341,496.00
Central Sulawesi	54.55	54.55	275,294.00	319,637.00
South Sulawesi	52.03	52.35	291,929.00	321,043.00
Southeast Sulawesi	54.45	54.02	260,545.00	274,619.00
Gorontalo	51.80	54.37	264,699.00	275,924.00
West Sulawesi	58.00	57.34	255,256.00	286,585.00
Maluku	57.02	57.47	287,011.00	305,380.00
North Maluku	55.62	52.80	367,317.00	409,363.00
West Papua	57.76	59.19	293,122.00	346,929.00
Papua	59.44	55.97	351,408.00	392,173.00
Indonesia	49.24	50.17	353,421.00	386,370.00

^a IDR 9,800 = USD 1.

^b IDR 10,000 = USD 1.

Sources: Statistical Office of Indonesia (2007; 2008)

1 *Talas* is a root crop consumed by local people as an alternative to the main staple food.

The analysis of the geography of food insecurity in Indonesia in this section focuses on three provinces in the country, including DIY and the two coastal provinces of NTB and NTT. Table 5 details the governance of these provinces and indicates their efforts to attain their food security objectives. Among the three provinces focused on, NTT was recorded with the most food insecure villages, i.e., 923 out of the total of 2,387 villages, or 38.67 percent.

The Indonesian Ministry of Agriculture has recently stated that there are currently about 100 food insecure regencies² among the 346 regencies in Indonesia (Metro TV News, 2010). The ministry used three main categories of food insecure regions: most chronic, chronic and less chronic. The number of most chronic regencies to date is around 30, and this figure includes all the regencies in Papua and some in NTT. Meanwhile, there about 30 chronic regencies in Indonesia, including some in NTT, West Kalimantan and Maluku. Finally, there are 40 less chronic ones, including regencies in Sumatra, Kalimantan, NTB and Java.

The Ministry of Agriculture also added that the food insecure provinces in Indonesia do not necessarily experience a lack of food, but they instead struggle to cope with other developmental factors, including poverty, poor access to electricity, poor infrastructure (e.g. roads), and a lack of clean water and health services (Metro TV News, 2010). Infrastructure in particular is crucial to giving access to food, since it determines the levels of agricultural production, marketing and consumption in these food insecure provinces.

As part of their responses to the global food crisis in 2007/08, the people in food insecure provinces were forced to adjust their consumption patterns. Table 6 highlights the changing consumption patterns in relation to income in DIY, NTB and NTT. There was certainly a decreasing pattern of rice consumption throughout the global food crisis in these provinces. Given the increase in the price of rice and their limited incomes, the people of NTB were forced to reallocate their budget for rice to other consumable foods.

Table 5: Regional food insecurity in Indonesia, 2009–10

	Regency/ municipality	Villages	Food vulnerable people (‘000), as percentage of total population	Factors causing food insecurity	Activities to combat food insecurity
DIY	4 (Gunung Kidul, Kulonprogo, Bantul, Sleman)	137 (77 in Gunung Kidul)	621 (20.0%)	Low production; poverty; poor health	Creating food secure villages; food diversification
NTB	5 (Lombok Barat, Lombok Tengah, Lombok Timur, Dompu, Bima)	102	295 (7.7%)	Limited access to infrastructure	Creating food self-sufficient villages; food diversification
NTT	11 (mostly in coastal areas: Kupang, Timor Tengah Selatan, Belu, Manggarai Timur, Lembata, Rote Ndao, Sabu Raijua)	923	565 (14.9%)	Drought; failed harvests; low purchasing power	Direct help/cash; cheaper rice price program; intensive labour programs; food market operation
Indonesia	100 out of 346 regencies		30,760 (13.63%)		Creating food self-sufficiency villages covering 604 villages in 80 regencies

Sources: Bappenas (2007); Matanews (2009); Vivanews (2010)

2 A regency is a sublevel of a province. Usually, a province consists of several regencies. As an illustration, DIY consists of five regencies, NTB of nine regencies and NTT of 20 regencies.

Table 6: Income allocation and the changing pattern of food consumption in three Indonesian provinces, 2008–09 (% of income)

	DIY		NTB		NTT	
	2007	2008	2007	2008	2007	2008
Food	45.57	57.45	43.79	42.55	65.78	70.60
Rice	7.00	5.61	19.18	17.46	18.81	19.64
Tubers	0.36	0.34	0.92	1.00	0.36	0.32
Fish	1.35	1.10	2.35	2.54	4.79	5.39
Meat	1.71	1.47	2.25	2.21	2.58	2.78
Eggs and milk	3.71	3.55	0.87	0.92	2.57	2.88
Vegetables	3.73	3.17	4.48	4.42	6.06	6.72
Nuts	1.93	1.87	0.66	0.69	1.98	2.07
Fruit	1.89	2.47	1.35	1.29	3.43	3.61
Oil and fats	1.73	2.17	1.55	1.64	2.11	2.48
Drink	2.37	2.28	2.94	2.86	2.55	2.54
Ingredients	0.74	0.68	0.74	0.71	1.43	1.53
Others	1.73	1.39	0.61	0.64	1.80	2.03
Finish Food	12.59	26.81	2.80	3.01	11.78	12.95
Alcohol	0.03	0.03	-	-	-	-
Tobacco and <i>sirih</i> (betel leaf)	4.69	4.50	3.10	3.16	5.53	5.66

Sources: Statistical Office of Indonesia (2007; 2008)

5.1 Food insecurity in the Special Region of Yogyakarta

DIY was classified by the WFP (2007) as one of the Indonesian provinces experiencing an acute food and livelihood crisis. The province was hit by a major earthquake in 2006. While the overall situation is improving at the moment, the problem of food insecurity still exists. DIY is a province in Java with a relatively higher per capita income than other Indonesian provinces. In 2008 alone, for example, the monthly per capita income in the province was around IDR 416,912 (USD 41.69), while the national average was only IDR 386,370 (USD 38.64). The share of income spent on food in this province was also relatively low, or around 42.86 percent of total income, although this figure is much higher than most other provinces in the country. Table 7 illustrates that in the period 2008–09, four regencies in the DIY, i.e., Gunung Kidul, Kulonprogo, Bantul and Sleman, were among those most frequently hit by food shortages and drought.

More recently, Gunung Kidul regency has been identified as the most food insecure regency in Indonesia. The regency records up to 77 villages with extreme food insecurity. There are 18 districts in Gunung Kidul, of which eight are chronically food insecure, while other districts record relatively modest levels of food insecurity. Food insecurity is closely linked with poverty. In 2008 the number of poor families in Gunung Kidul was around 49,422 households, or around 26.72 percent of the total households of 184,974 in the regency. Most of these families lived in the drought stricken areas in the southern part of the regency (Kompas, 2009).

The overall food security status of DIY has shown some improvements since the earthquake that hit the province in 2006. However, such an improvement does not reflect an improvement in food security at the household level (Kedaulatan Rakyat, 2010). Among other things, poverty, poor health services and malnutrition still threaten the wellbeing of the households in the province. One crucial contributor to growing food insecurity in DIY is population growth, which is outpacing the food production growth

rate. Moreover, natural factors such as the earthquake, prolonged drought, etc. have also further undermined the food security of the province.

5.2 Food insecurity in Nusa Tenggara Barat

In geographical terms, NTB includes the two large islands of Lombok and Sumbawa, as well as many smaller islands. NTB is one of the provinces in Indonesia that are rich in natural resources, such as gold, silver and other precious metals. The contribution of the agricultural sector to the overall regional GDP was around 21.42 percent in 2007. Of this figure, 13.30 percent was food crops, while 2.69 percent, 2.90 percent and 2.47 percent were estate crops, livestock and fisheries, respectively. The largest contributor to the region's GDP was mining and quarrying, which accounted for 37.80 percent.

A recent study conducted by the WFP (2007) classified NTB as a chronically food insecure province. The province is at high risk of falling into an acute food and livelihood crisis. Despite the fact that rice production is in surplus, food insecurity still persists in this coastal province. People in this province generally earned about IDR 300,443 (USD 30.04) per month in 2008,³ with an estimated 55.77 percent going on food consumption.

Food stocks in NTB are relatively secure, although the quality and diversity of food consumption in this province remain low in comparison to other provinces. Although the province has managed to grow more rice than it consumed, NTB is still far from being food secure. A key problem in addressing the food security issue in the province is the fact that some districts remain isolated from key infrastructure (Sinar Harapan, 2010).

Moreover, data from the National Socioeconomic Survey in 2008 suggests that energy and protein consumption in the NTB is still dominated by carbohydrates, especially from rice, while consumption of other food, such as tubers, meat, animal and vegetable oil and fats, nuts, and other foods is still much lower than the proposed target (Badan Ketahanan Pangan NTB, 2008). NTB has set itself a target to increase its so-called expected food pattern by 2013, which is a parameter to assess the consumption level of food quality (minimum food intake requirement) and diversification (the difference between the consumption of energy and protein), by 80.3 percent, with the number of food secure villages to reach around 222 villages. The province also aims to reserve as much as 1,325 tons of food, and allow its population to attain consumption of up to 3,105.38 calorie/capita/day of energy and up to 104.53 gram/capita/day of protein (*Berita Daerah*, 2010).

Another initiative to improve food security in NTB involves a food diversification program, which would entail emphasizing other locally produced foods apart from rice and wheat. Corn and tubers, such as sweet potatoes and talas, are among some of the alternatives that can be produced and consumed locally. Moreover, in order to tackle water shortages during the dry season, the provincial government has also encouraged people to create *embungs*, which are water tanks used to store the rain from the wet season. In addition to this, the provincial government also intends to install an irrigation system, which to date has still only been proposed to central government (Vibizconsulting, 2009).

3 The average monthly income of the people in the NTB was lower than the average national monthly income, which stood at IDR 386,370 (USD 38.64) per month in 2008.

5.3 Food insecurity in Nusa Tenggara Timur

NTT consists of many small islands, four of which are relatively larger than the others, i.e., Flores, Sumba, Timor and Alor. This province has a relatively longer dry season than other regions in Indonesia, having seven months of dry season and five months of rainy season (Pemda NTT, 2010). NTT has been classified as one of the most food insecure provinces in Indonesia since 2005. More specifically, the province has been classified as a chronically food insecure province by the Indonesian government. There is a significant risk that NTT could plunge into a worse situation, particularly if the persistent dry conditions in the province cannot be tackled (WFP, 2007).

In comparison to its neighbouring NTB, NTT is much poorer, with the province recording an average poverty rate of 27.58 percent in 2008. In the same year, the province also recorded a monthly average per capita income of around IDR 237,323 (USD 23.73), or roughly only half of the average national level, with 60 percent of income being spent on food. To date, 89 percent of NTT's population are farmers, 79 percent of whom produce corn (Ofong, 2007).

Moreover, based on the data from the NTT provincial government, the agricultural sector contributes around 40.27 percent of the province's GDP. Food crops, livestock and fisheries accounted for about 20.80 percent, 10.54 percent and 4.43 percent, respectively, of this total (*Pos Kupang*, 2010). To date, little value has been added to local agricultural products, with little attention being given to the further processing of agricultural products prior to being sent to market.

Today, the threat of food insecurity is even more real, particularly as there is a shifting pattern from corn to rice in the consumption trend of the main staple of the province. Although corn has been considered as the traditional main staple food in the province since the period of the Dutch occupation (Lassa, 2009), today rice is increasingly not only considered to be the main food of households in the province, but it also gives prestige to those consuming it.

Corn has been an ethnic food in NTT, especially in West Timor, since the period of Dutch colonial rule in Indonesia (Lassa, 2009). Changing patterns of production tend to reduce the supply of corn in the local market and increase not only the corn price, but also the price of rice. Nevertheless, over the last decade NTT has experienced a food surplus. The 20 percent surplus came from cassava, corn and sweet potatoes. Nonetheless, NTT is neither food security nor food self-sufficient (Lassa, 2009).

Several factors have been identified as having caused the state of food insecurity in NTT, including protracted drought, which contributes around 54 percent of the food insecurity prevailing in the province, as well as other factors, such as pests and/or plant diseases (31 percent), floods/landslides (6 percent) and strong wind (6 percent) (Muslimatun & Fanggidae, 2009). Extreme weather conditions, such as the El Niño phenomenon, have aggravated the state of food insecurity in the province (Ofong, 2007). The latest El Niño in 2006/07, for example, caused low rainfall and prolonged crop failure on the northern coast of the province (Kieft & Soekarjo, 2007). All districts in the NTT, with the exception of Ngada in Flores, are among the 100 most food insecure districts in Indonesia (Tokan, 2008).

In order to address the food security problem, the NTT provincial government has established the Regional Food Security Board (RFSB) to coordinate multisectoral responses and carry out the necessary interventions to ensure food security for the population of the province. The RFSB is under purview of the governor and other stakeholders, including government agencies, universities and local think tanks. In terms of its operation, the RFSB has set up several task forces to deal with specific food security issues,

such as those on food production, distribution and price monitoring, food and nutrient diversification, quality monitoring, and infrastructure support (Muslimatun & Fanggidae, 2009). Despite this, there is little effort by the provincial government to improve the ability of the people to purchase food.

As far as the provincial government's interventions are concerned, it has identified coordination among stakeholders as one of the major factors that inhibit the effectiveness of these interventions. Achieving better coordination has been particularly difficult owing to, among other things, the absence of a single decision-making authority and the limited local budget allocated to the program (Muslimatun, 2009).

The utilization of local foods is one of the possible solutions with which NTT could solve its protracted food insecurity problem. The provincial government has pursued a policy of diversification in food production and consumption, which is now focused on the use of local food stocks, such as corn and tubers.

6. National and provincial policies to address food insecurity

6.1 National policy responses

The economic crisis that hit Southeast Asia in the late 1990s forced the central government to make economic and non-economic adjustments in the country. The crisis actually paved the way for a better understanding by the government of the need to pursue the objective of food security, and it finally recognized the importance of food security through the issuing of Presidential Decree no. 132/2001 covering the establishment of the Food Security Board (Dewan Ketahanan Pangan, or DKP). The DKP was tasked to assist the president to formulate a national food security policy, which would cover various areas, such as food availability, food stocks, distribution, consumption, food quality and variety, nutrition, and food safety. In addition, the DKP was also tasked to evaluate and control national food security policies, including matters related to the prevention of and solutions to the food security problems that the country faced. From 2005 onwards, the DKP was required to compile a national Food Insecurity Atlas, which would highlight provinces and districts that face severe food insecurity problems. Using this atlas as a guideline, the central and provincial governments could then pursue the appropriate response to address the problem of food insecurity in the remote areas of the country. While such efforts were useful, little effort has been given to improve the ability of the people to purchase food.

The Indonesian government has adopted a number of policies to improve people's access to food, most of which were implemented after the 1997/98 economic crisis. Policies such as the Conditional Direct Aid Cash and Cheaper Rice for the Poor programs, as well as the improvement of healthcare facilities for the poor, have been put in place to improve the state of food security and general wellbeing in the country. Both the national and provincial governments have also applied the so-called Market Operation policy to control the price of basic food necessities, such as rice, sugar and cooking oil. This policy has been implemented through the selling of targeted food products on the market at a relatively lower price than those offered at the normal market price. Unfortunately, the effectiveness of this policy remains questionable, particularly as it only manages to control the price of basic food products for a very short period (i.e., a few days).

To a large extent, therefore, the so-called pro-poor policies pursued by the government have so far failed to improve people's access to food and tend to provide only very short-term assistance. A critical aspect

of the promotion of food security in the long term is the need by government to pay serious attention to the price stability of key agricultural products, as well as to ensure the establishment of concrete linkages between the industrial and agricultural sectors. Meanwhile, to improve the state of food security at the household level, the central government, through the DKP, established a new initiative known as the Food Self-sufficient Villages Program in 2006.⁴

The implementation of this program is supported by the government through the Village Food Reserve (VFR) program, as stipulated in the Ministry of Internal Affairs' Regulation no. 30/2008. The VFR program forms a subsystem of the national food reserve, which guarantees food availability, quality and safety equally to all the people in a village. The VFR is a food reserve managed and controlled by each village authority in order to supply food for consumption, increase food access, face transient food insecurity, be an input for industry and control fluctuations in the price of food. The VFR covers common staple food such as rice; local staple foods such as corn, sago and tubers; and non-staple food such as mungbeans, nuts and soybeans. The program especially targets poor households, elderly people, ordinary people who suffer from natural disasters, malnourished children, schoolchildren, and women during pregnancy and feeding.

The central government has also issued a policy related to food security and the diversification of food consumption under Presidential Regulation no. 22/2009. Food diversification is important to support the food security program. This effort also supports human resources development and the conservation of natural resources. The government recognizes that food diversification has not reached the optimal state where the consumption of carbohydrates and protein should be in balance. In addition, in some regions, local foods have not used to support food diversification.

Under the leadership of President Soesilo Bambang Yudhoyono, the government has now made food security a national priority, although in practice the target of food security has been approached only through the policy of Food Independence (Swasembada Pangan). This policy emphasizes the supply of foods in the domestic market by domestic suppliers only. As such, food self-sufficiency is a precondition for Indonesia to attain food security.

The problem of food insecurity in Indonesia is not necessarily due to the unavailability of food, but instead is more a question of food access. People's access to food has been undermined through their inability to generate sufficient income to provide adequate food, and is also as the result of poor infrastructure, particularly transportation. Commitment to improve the investment climate for infrastructure projects, especially in the eastern part of Indonesia, is an equally important component of the country's strategy to achieve food security.

Since March 2009 the Indonesian government, together with the other Association of Southeast Asian Nations (ASEAN) members, has promoted the ASEAN Integrated Food Security Framework and the Strategic Plan of Action on Food Security in the ASEAN Region in order to achieve food security in the ASEAN region as a response to the increase in food prices in international markets. In addition, as a practical step, ASEAN has also incorporated its three partners—China, Japan and Korea—into the ASEAN Food Security Information System as a resource to implement food security in the East Asian region.

⁴ The Food Self-sufficient Villages program was first launched by the Indonesian government in 2006. The program was designed to enable Indonesian villages to attain their food self-sufficiency objectives through empowering people and developing the food security system and the necessary infrastructure in villages.

6.2 Provincial policy responses

At the provincial level, the policy responses pursued by authorities to address the problem of food insecurity has varied according to the specific conditions of each province. In the key provinces that are the subject of this study—DIY, NTT and NTB—the authorities have generally applied a similar policy directed at encouraging people to diversify both their food consumption and production (particularly from rice to other non-rice and/or local foods). In the eastern parts of Indonesia, including in both NTB and NTT, the policy of local food consumption has been directed at the promotion of sweet potatoes, talas and sago to become the main staple foods of these provinces.

Moreover, as in the case of the problems faced at the nation level, provincial governments continue to experience serious difficulties in their efforts to distribute foods to the remote areas of their jurisdictions. Consequently, because key infrastructure needed to support the development of the agricultural sector, such as irrigation and roads, is absent, food access in these remote areas is equally problematic.

7. Conclusion and policy recommendations

The 2007/08 global food crisis generated significant negative impacts for people living in both urban and rural areas in Indonesia. Throughout the crisis, the greatest shock came from the price volatility of palm oil. Similar significant increases also occurred in the prices of other major agricultural products, including rice, soybeans and wheat. During the crisis, Indonesian households were forced to use a larger percentage of their income for to buy food. Poor families in rural areas also faced difficulties in accessing food, which were due primarily to their relatively much lower incomes and higher food prices.

Although the supply of food at the national level was adequate during the 2007/08 crisis, the significant divergence among the prices of food throughout the country persisted. Provinces and districts far from the country's food centre, Java, experienced the most damaging effect from the crisis. The problem of food insecurity in Indonesia, however, is not necessarily due to the lack of food supplies, but instead relates more to the issue of people's ability to access food. From the perspective of international trade, during the crisis, Indonesia did not face the problem of food availability, whether from domestic or foreign suppliers; however, domestic trade is the major contributor to the food security problem. Limited stocks of food in some of the most affected regions were caused by the problem of transportation, which in turn caused increases in the prices of food in remote markets.

A key aspect in the food security issue is the ability of people to generate enough income to purchase adequate food for their consumption. The problem is aggravated by the severe natural disasters that still persist throughout the country. Another key factor in the promotion of food security is the development of infrastructure, particularly transportation. The fact that Indonesia is made up of a group of islands requires the country to improve its investment in sea and inland water transportation. In addition, food security policies issued by the central government should also take into account people's ability to secure sustainable and adequate employment so as to improve their ability to access food. The effort of creating sustainable employment in the food sector could be achieved through the development and expansion of the agro industry, which has the capacity to increase the supply of agricultural products during the harvest period. Such an exercise would not only be beneficial to the stability of the price of major agricultural commodities, but would also add more value to the food products produced domestically. It would also mean that small farmers, who make up the vast majority of the Indonesian population, would have larger incomes and therefore better access to food.

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