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Food Security and Poverty in the Era of Decentralization in Indonesia

Edited by
I Wayan Rusastra
Geoff Thompson
J.W. Taco Bottema
Robert Baldwin

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List of Abbreviations

AGs	Autonomous groups
APBD	Regional budgets *(Anggaran Pendapatan dan Belanja Daerah)*
BKP	Food Security Board *(Badan Ketahanan Pangan)*
BLT	Direct cash transfer *(Bantuan Langsung Tunai)*
BPS	Central Agency of Statistics *(Badan Pusat Statistik)*
C2-GEL	Economically vulnerable
CAPSA	Centre for Alleviation of Poverty through Secondary Crops' Development in Asia and the Pacific
CSF-REVI	Capital Strengthening Fund of Rural Economic Venture Institutions
DAU	General allocated funds *(Dana Alokasi Umum)*
DCA	Direct cash aid
DDP	Desirable dietary pattern
DKP	Food Security Council *(Dewan Ketahanan Pangan)*
DOLOG	Logistics depots *(Depot Logistik)*
EFIA	Programme to Empower Food Insecure Areas
ESR	Energy sufficiency rate
FAO	Food and Agriculture Organization of the United Nations
FGDP	Farmers Group Development Plan
FH	Family heads
FNSS	Food and Nutrition Surveillance System
FNVS	Food and Nutrition Vigilance System

FSB	Food Security Board
FSC	Food Security Council
FTT	Farmers' terms of trade
GDP	Gross domestic product
GKP	Dried unhusked paddy *(gabah kering panen)*
GVCE	Group venture capital empowerment
HDI	Human development index
IDR	Import dependency ratio
IFAD	International Fund for Agriculture Development
IP	Price index paid by farmers
IR	The ratio of the price index received by farmers to the price index paid by farmers
Kg	Kilograms
MDGs	Millennium Development Goals
nd	No data
NGOs	Non-governmental organizations
P_1	Poverty Gap Index
P_2	Distribution Sensitive Index
PFI3P	Poor Farmers Income Improvement through Innovation Project
PIDRA	Participatory Integrated Development in Rainfed Areas Programme
Raskin	Rice for the poor *(Beras Miskin)*
REVIs	Rural economic venture institutions
Rp	Indonesian Rupiah
SPFS	Special Programme for Food Security
SRMO	Special Rice Marketing Operation
SSN	Social security net
SSR	Self-sufficiency ratio
Susenas	National Socio-economic Survey
TSWP	Tackling Skilled Workers Programme
UNDP	United Nations Development Programme
WFP	World Food Programme
WHO	World Health Organization

Foreword

Food security enhancement is one of the main objectives of agricultural development. The achievement of food security is known to make a substantial contribution to poverty reduction and the empowerment of food-insecure households. An effective strategy for food security and poverty reduction can be achieved through pro-poor and sustainable economic policies, inclusive social development and good governance. These three pillars are mutually reinforcing; their relative importance depends on a country's particular circumstances. Food is therefore an issue of regional importance.

In Indonesia, agricultural and rural development, such as food security and the reduction of poverty and the number of food-insecure households, is being determined by the changing dynamics of the international economy and the domestic strategic environment. Examples of the latter include local infrastructure development, agricultural production capacity, and programmes for increasing agricultural development. Throughout the region, decentralization of government is important as development challenges are centred at the local government level.

The studies contained in this working paper provide an analysis of the current status and suggest future policy directions for poverty reduction strategies in the context of decentralization in Indonesia. In addition to an aggregate analysis at the national level, the studies focus on three provinces: East Java, West Kalimantan and West Nusa Tenggara. They examine important characteristics and indicators of poverty and food security, and review fifteen ongoing government programmes in these regions.

Dr. I Wayan Rusastra, Programme Leader of Research and Development of UNESCAP-CAPSA, requires special thanks for his devoted services as the team leader of this important groundbreaking study and his valuable contribution to planning, implementing, reporting on and publishing this study. I would like to express my sincere appreciation for the researchers from the Indonesian Center for Agriculture Socio Economic and Policy Studies (ICASEPS) and their valuable contribution to the study. My appreciation also extends to Mr. Geoff Thompson for his contribution to the synopsis, and his collaboration with Mr. Robert Baldwin in editing this working paper. I would like to thank the Bureau of

Planning, Ministry of Agriculture of the Republic of Indonesia for its generous support in funding this study.

One thing is very clear after the completion of this groundbreaking study: there is a real need for strengthening methodology that connects central-level and local-level policies, and the measuring of their impact on household welfare.

I sincerely hope that this study will contribute to further improvement of food security and poverty alleviation in Indonesia as well as other Asia-Pacific countries with similar economic conditions.

September 2008

Taco Bottema
Head
UNESCAP-CAPSA

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The Editors
September 2008

Synopsis and Overview

Food Security, Poverty and the Complexity of Rural Development in Indonesia – Achievements and Policy Directions

I W. Rusastra, Geoff Thompson and Taco Bottema[*]

1. Background and objectives

The three thematic aspects of food security, poverty and food insecure households that are referred to in the Indonesian Government's Food Security and Community Development Programme (FSCD) are an integral part of achieving the targets for the first Millennium Development Goal. The initial concept and implementation of the FSCD changed as a result of the changes in the national and international economic environment. During the New Order Era (1967 to 1998), the food security paradigm was essentially focused on achieving food availability at the national level to support the wage goods policy for the benefit of industrial sector development. However, this policy failed to sustain the agricultural and rural development agenda.

In the following era, from 1999 to the present – the era of reformation and decentralization – government policy has concentrated on sustaining household food security through increasing food availability and accessibility, decreasing vulnerability to food insecurity, initiating community-based monitoring and social safety net programmes, and early warning systems for poor people (Simatupang, 1999). This policy orientation was a part of the government's incentive system that aimed to increase food production and strengthen food security in order to improve farmers' incomes and welfare. Through this approach, the FSCD can be achieved simultaneously at the national, provincial and household levels.

In the context of decentralization, the complexity of rural development has provided serious constraints and challenges to the achievement of the FSCD; for example: (a) people in the field have different perceptions of the programmes and their implementation; (b) problems in the synergy of implementation of programme activities at the national and provincial levels; (c) difficulties in implementing the concept of comparative advantage of

[*] Respectively Programme Leader of R&D, Associate Information and Communication Officer, and Director, UNESCAP-CAPSA, Bogor, Indonesia.

commodity development; (d) problems related to a high-cost economy resulting from difficulties in achieving marketing efficiency by better inter-regional trade and marketing efficiency; (e) a disparity in resource endowment, economic structure, and the levels of interest in achieving food security through agricultural and rural development or other sectoral economic development; and (f) difficulties in implementing, adopting and replicating central government programmes at the provincial and district levels.

With this background in mind, a study was initiated to analyse policy performance and constraints, and short-term policy orientations on food security and poverty reduction. The specific objectives of the study were: (a) to describe the performance and achievements of the FSCD; (b) to analyse the achievements and reorientations of the FSCD-related programmes; and (c) to prepare recommendations for formulating policy on FSCD improvement. The study was conducted in three parts as recorded in this working paper:

- Part 1 – Food Security in the Era of Decentralization in Indonesia
- Part 2 – Poverty in the Era of Decentralization in Indonesia
- Part 3 – Empowerment of Households Facing Food Insecurity in the Era of Decentralization in Indonesia

2. Decentralization and rural development in Indonesia

There is consensus that the rural sector plays a critically important role in achieving food security, poverty alleviation and the enhancement of natural resource management, and that the effectiveness of action aimed at developing the rural sector can be improved by decentralization (FAO, 1997). One of the arguments put forward to suggest decentralization benefits rural development is that large and centrally administered bureaucracies are an inefficient and potentially destructive means of allocating resources within society (Johnson, 2001). Decentralization brings the government closer to the governed, spatially and in an institutional sense, so in these circumstances it is assumed that the government will be more knowledgeable and therefore more responsive to the people's needs (Crook and Sverrisson, 2001). Generally, decentralization is seen to be a process that offers greater political participation to ordinary citizens at the grass roots and enhances the relevance and effectiveness of government's developmental outputs.

Decentralization can enhance rural livelihoods through: improving the ways in which local people manage and use natural resources; creating 'synergistic' outcomes via collaboration between public agencies and the people who use the local resources; and

empowering local administrative bodies and enhancing participation in decision-making, especially among those who traditionally have been politically marginalized (Johnson, 2001). It should be noted, however, that the process of decentralization has successes and set-backs (Parker, 1995) and that decentralization is not a guarantee of poverty reduction. A recurring theme in more recent literature suggests the correlation between democratic decentralization and poverty reduction is relatively weak (Johnson, 2001).

Decentralization is the transfer of significant degrees of authority and responsibility for government expenditures and revenues from the central government to lower levels of government (Alm *et al*., 2001). In Indonesia, decentralization came after the Asian financial crisis and the end of Suharto's authoritarian presidency. Until this time Indonesia had had a unitary and centralized government since independence. The breakdown of the economy initiated the fall of the regime, and this opened the door for extensive policy changes: decentralization laws revising the country's administrative architecture were passed in the Lower House in 1999 and implemented in January 2001. District governments were given the responsibility for managing all their tasks autonomously except for national affairs such as justice, defence, foreign affairs, fiscal management and religion. All local services – infrastructure, health, education, agriculture, business promotion, local administration and local taxation – are now managed at a district level. The heads of district governments no longer report to the Governor of the province, but to the locally elected assembly (Alm *et al*., 2001).

The speed and scope of the reform initiative were great, shifting Indonesia's governance system from one of the most centralized to one of the more decentralized in the world (von Luebke, 2007). The transition was not without drawbacks: the rapid and broad devolution of responsibility to local districts resulted in: some ambiguity and conflict in the assignments of national, provincial and district tasks; high dependence on national funding; regional inequalities; and, in some districts burdensome tax and compliance regulations (von Luebke, 2007). Nonetheless, it is anticipated that with decentralized governance the assignment of the new expenditure responsibilities to provincial and district levels will have the potential benefits of: efficiency gains, in that government decisions are more responsive to the local people's needs and wishes; and improved resource mobilization (Alm *et al*., 2001).

The three studies recorded in this working paper examine the achievements made in rural and agricultural development and poverty alleviation in the era of decentralization in Indonesia. Parts 1 and 2 directly address food security and poverty. Part 3 focuses on the

empowerment of rural households facing food insecurity. The studies investigate the achievements since 2001 and consider how future poverty reduction and food security can be optimized under the new governance arrangements.

3. Research methodology

Each of the three studies is a policy analysis of the macro and micro perspectives of FSCD based on a review and synthesis of relevant national and provincial indicators. Detailed analysis of the FSCD-related programmes at the micro level was conducted in three selected provinces, namely East Java, West Kalimantan and West Nusa Tenggara. Fifteen FSCD-related programmes undertaken in these locations were assessed (*Badan Ketahanan Pangan* (BKP), 2006; Pasaribu, 2006; Hermanto, 2005). The assessment covered the description, implementation, impact and future policy directions of the programmes.

Two indicators that are relevant to food security and poverty issues at the regional and national levels were identified: (i) an indicator relating to food availability and consumption, food commodity price, farmers' terms of trade, and desirable dietary patterns (*pola pangan harapan*, PPH); and (ii) an indicator that was connected to poverty and transient food insecurity. These indicators were based on the data in the timeframe 1990 to 2004 that indicated the state of affairs before and after the implementation of decentralization. A food-insecure household indicator was based on the National Socio-Economic Survey (*Survei Sosial Ekonomi Nasional/* SUSENAS) data released in 1996, 1999 and 2002, and it covered the rate of food and nutrition consumption, the rate of food consumption participation, and food expenditure share. It was anticipated that comprehensive and integrated information on local-level poverty and food insecurity enhanced by empirical evidence from the field would clarify the nature of the three themes in the context of decentralization and the complexity of rural development.

4. Achievements in food security

The major findings of the study on national food security in the decentralization era (Part 1) are: (a) there has been a paradigm shift from 'food self-sufficiency at all costs' to 'sustainable household food security'; (b) an important and positive trend in food production growth (including reaching food price stability) has been observed, however, this has been accompanied by a higher import dependency ratio; (c) there has been an improvement in farmers' terms of trade, which indicates the situation in Java is better than outside Java; and

(d) a decreasing trend in food availability and consumption for the main commodities including rice, soybean and sugar, has been observed.

Based on three main dimensions of food security (food production, food availability and food price), there are substantial differences in the food security achievement across the region in Indonesia (Table 1). In West Kalimantan, there was significant growth in maize and livestock production. Better achievement and stability in livestock production growth (self-sufficiency ratio (SSR), 100 per cent) in this region yielded an appropriate local price stability of this commodity. Generally, there was a substantial gain in food security in East Java indicated by a surplus of most of the main food commodities with better price stability. While the trend in consumer prices was relatively high (14 per cent per year) in West Nusa Tenggara, this region has experienced substantial progress in the production growth and surplus of energy availability. The existence of malnutrition in this region was affected by low economic access and a poor food distribution system.

Table 1. The achievement of food security during the decentralization era in Indonesia, 2000-2004

Indicator	National	East Java	West Kalimantan	West Nusa Tenggara
1. Food production	• Positive trend in main food production growth (except soybean) • Higher food production growth	• Decreasing trend in rice production growth rate (0.2% per year) • Fluctuation and increasing trends in other commodity production growth	• Better growth of livestock product • Four-fold increase in maize production growth (35.5% per year) • Decreasing trend in for soybean (18% per year)	• Higher growth in soybean, sweet potato, beef and egg production • Maize production growth rate 5.5% per year
2. Food availability	• Negative trend for soybean (5.7%), sugar (3.3%) and beef (2.0%) • Higher import depedency ratio (IDR)	• Soybean and egg production shortages • Surplus of other main commodities	• Decrease in rice IDR, and its SSR is low (45.5%) • SSR for livestock product is 100%	• Energy surplus around 900 kcal/capita/day • Existence of malnutrition affected by low economic access
3. Food price	• Better price stability	• Better price stability	• Better price stability particularly for rice commodity compared to livestock products	• High trend in consumer price, (14% per year)

Source: Saliem *et al*., 2007.

5. Achievements in poverty alleviation

An assessment of poverty alleviation at the national level (Part 2) found that during the decentralization era: (a) poverty has been more severe and widespread in rural areas (22 per cent versus 13 per cent) and most poor people are engaged in the agricultural sector (59 per cent); (b) most poor people have low education levels (80 per cent had attained less than or equal to primary school level); (c) the slow-down of poverty alleviation in 2000 to 2007 was due to the reduction of the government fuel subsidy in 2005; (d) there was an insignificant improvement in other poverty indicators such as the poverty gap, and poverty distributional and human poverty indexes. Derived from this assessment, the projected relative poverty in 2015 is estimated at 14.2 per cent – far from the first MDG target of 7.5 per cent (Rusastra and Bottema, 2008).

The characteristics and the spatial achievement of poverty alleviation in Indonesia in 2004 are described in Table 2. Compared to the national poverty incidence (16.7 per cent), the level of poverty is much more severe in West Nusa Tenggara (25.4 per cent) and East Java (20.1 per cent). Most of the poor population in West Kalimantan, 69.8 per cent, are engaged in the agricultural sector. There was no spatial difference in indicators such as education level, poverty gap index (or P1, < 5.0), or the distribution sensitive index, (or P2, approaching 1.0). On the other hand, in West Kalimantan and West Nusa Tenggara, the human development index (HDI) was relatively low while human poverty index was slightly high, with low access to clean water. Compared to the access to clean water at the national level (57.1 per cent), the magnitude of accessibility in West Kalimantan and West Nusa Tenggara were 16.7 per cent and 43.6 per cent, respectively.

Table 2. The characteristics and spatial achievement of poverty alleviation in Indonesia, 2004

Indicator	National	East Java	West Kalimantan	West Nusa Tenggara
1. Percentage of poor people (%)	16.7	20.1	13.9	25.4
2. Poor people engaged in agricultural sector (%)	58.8	58.9	69.8	49.2
3. Education level ≤ primary school (%)	80.0	86.1	81.4	83.4
4. Poverty gap index (P_1)	2.9	3.4	2.3	4.4
5. Distribution sensitive index (P_2)	0.8	0.9	0.6	1.2
6. Human development index (HDI), 2002	65.8	64.1	62.9	57.8
7. Human poverty index (HPI), 2002	22.7	21.7	38.0	30.2
8. Provision of clean water (%)	57.1	64.9	16.7	43.6

Source: Swastika *et al*., 2007.

6. Achievements in food insecurity empowerment

There was no substantial improvement in the related indicators for national food insecure households (Part 3) during 1996 to 2002. This was shown by the stagnant proportion of food expenditure share (70 per cent), and by the food self-sufficiency rate of energy and protein consumption, which tend to be decreasing (they respectively had magnitudes of 70 per cent and 73.1 per cent in 2002). The proportion of food-insecure households increased from 5.2 per cent to 9.8 per cent. Other indicators are the prevalence of underweight children under-five years of age, and an increase in the proportion of the population below the minimum level of dietary energy consumption (2,100 kcal/capita/day). In 1989-2002, both indicators tended to fluctuate but were stagnant with the average magnitudes of 29.8 per cent and 70 per cent, respectively. In view of this evidence and the MDG1 target for these indicators (18.3 per cent and 34.8 per cent ; GOI and UN System, 2004), Indonesia is not on track to achieve the MDG1 target of eradicating extreme hunger, by 2015.

The characteristics of food-insecure households and the spatial achievement of overcoming food insecurity in Indonesia during 2002 are presented in Table 3. There is no significant difference in the proportions of all indicators. In the three provinces, the education level of family heads was less than 4 years, food expenditure share was approaching 70 per cent, and the energy and protein consumption rates were around 71 and 74 per cent. Low education attainment and high food expenditure share (> 60 per cent) will seriously affect the welfare of food-insecure households. The proportion of food-insecure households had a relatively high range, from 9.9 per cent in West Kalimantan to 13.1 per cent in West Nusa Tenggara. The energy consumption rate in the three provinces and at the national level was low, less than 80 per cent of the minimum dietary energy requirement of FAO.

Table 3. Characteristics and spatial achievement of food insecurity empowerment in Indonesia during 2002

Indicator	National	East Java	West Kalimantan	West Nusa Tenggara
1. Education level of family head (years)	4.4	3.6	3.9	3.5
2. Food expenditure share (%)	69.4	68.3	71.0	70.2
3. Energy consumption rate (%)	70.4	71.2	72.4	69.9
4. Protein consumption rate (%)	73.1	76.0	72.7	74.3
5. Food insecure household (%)	9.8	12.4	9.9	13.1

Source: Ariani *et al*., 2007.

7. Future policy directions

The assessment of the Food Security and Community Development Programme suggests its policies and programmes require reorientation. Food security development cannot be separated from agricultural and rural development (Simatupang *et al*., 2004; ODI, 2008). Consequently, a number of strategic actions are needed to achieve the development targets. For instance: improvement in production capacity and infrastructure; improvement in availability and distribution of, as well as access to, productive assets; improvement in productivity and market development; promotion of economic and employment diversification; and enhancement of the private sector as well as the improvement of its contribution to agricultural and rural development. In relation to agribusiness development, there is a need to improve and fine-tune the food security programme, by considering dimensions such as (Suryana, 2008): enhancement of community economic capacity; improvement of food production capacity; improvement of food market and distribution management; and improvement in food consumption quality. To increase food security and accelerate poverty alleviation in the country, development of the horizontal, vertical, institutional and regional integration of agricultural commodity development is required (Adnyana, 2008).

Pertaining to the food security programme, several successful programmes such as Participatory Integrated Development in Rainfed Areas (PIDRA), the Special Programme for Food Security (SPFS) and the *Desa Mandiri Pangan* (Village Food Security Programme) should be replicated. The provincial governments should allocate special funding and prepare policy support for disseminating and adopting these productive programmes in order to accelerate agricultural and rural development. To support regional development, local governments are necessary because they give special attention to the programme for accelerating food diversification, which is strategic in nature and has a high likelihood of success. Because the capacity of the rice economy has been exhausted, a programme for food security which focuses on non-rice commodities has important potential as a 'pro-poor growth strategy'.

To support the poverty alleviation programme, the government has initiated a partial sectoral programme in addition to the social safety net and unconditional cash transfer programmes. The direct cash transfer has handed out money to more than 19 million poor and low-income households, or around 76 million people (*Jakarta Post*, 4 September 2006). However, this programme did not adequately improve the livelihoods of the poor. The failure

is not just a matter of the effectiveness of this individual programme but the entire approach guiding poverty reduction in Indonesia.

The approach must be adjusted to multi-sector community development as described as follows (Mubyarto, 2002; Adiyoga and Herawati, 2003): (a) to acknowledge the capacity and social capital of the poor; (b) to make the poverty reduction agenda relevant, contextual and sustainable by considering the characteristics of the poor and involving them in decision-making processes; (c) to encourage and support transparent and accountable poverty reduction activities at the community level; and (d) to reposition the role of poverty reduction-related parties from development agents to community empowerment facilitators.

In addition to the reorientation of the poverty reduction approach, Rusastra and Bottema (2008) proposed a strategy based on: (a) optimality and synergetic economic activities and programmes to support economic growth, empowerment and a social safety net system; (b) a combination of conditional direct cash transfer with compulsory basic education programmes and family health and nutrition programmes that particularly focus on children under five years; (c) the implementation of conditional direct cash transfer in the regions that have applied holistic community empowerment and development programmes; (d) strengthening the capacity, authority and mandate of regional institutions; and (e) accelerating rural economic structural transformation and the convergence of the productivity of agricultural and non-agricultural sectors, and to speed up the integration of rural and urban economies.

8. Conclusion

The achievement of food security development and poverty alleviation has a direct link with agricultural and rural development. The main problem of food security and poverty is not food availability, but the purchasing power of disadvantaged people. Besides the issue of decentralization and the optimal approach to poverty reduction, the following problems are faced by developing countries in achieving agricultural and rural development: (a) an imbalance in capacity of, and the asymmetric implementation of trade liberalization, low commitment from developed countries and a decreasing trend in overseas development assistance in the agricultural sector; (b) the impact of the fuel energy crisis on the food crisis, and the conflicting policies within developing countries to deal with the food crisis; (c) low agricultural production capacity, resulting from the saturation of technology, degradation of land quality, lack of agricultural incentives and infrastructure, all of which have led to decreasing total factor productivity and decreasing competitive advantage of agricultural

commodities; and (d) low capacity of poor people and poor access to employment and economic activities that generate a source of income.

To address food security and poverty reduction issues, there is a need to widen and diversify agricultural and rural development policy by considering the following dimensions: (a) improving production capacity, agricultural and rural infrastructure; (b) increasing the availability and distribution of productive assets, and improving access to them, particularly access to land for marginal farmers; (c) improving agricultural productivity and market systems; (d) promoting the diversification of agricultural and non-agricultural economic activities and employment; (e) acknowledging the participation of the private sector in research and development, infrastructure development, and market efficiency improvement, and enhancing this participation; and (f) speeding up structural transformation through balanced rural-urban investment and development to bring about the convergence of levels of agricultural and non-agricultural productivity.

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Part I

Food Security in the Era of Decentralization in Indonesia

by

Handewi P. Saliem, Supriyati, Erna Maria Lokollo and Kurnia Suci Indraningsih

Summary

The objective of this research was to discuss the performance and prospects of food security in the era of decentralization. Aspects discussed include: changes in the application of concepts of food security; production development, food availability, consumption and independence; development of food prices and farmers' terms of trade as a proxy for food accessibility; problems and handling of food insecurity, stabilization of national, regional and household food security; performance and prospects of food security programmes; and performance and impacts of decentralization on food security. An analysis at the national level was conducted, but several components were based on cases in three provinces, East Java, West Kalimantan and West Nusa Tenggara. The data analysed were secondary data in the form of documents, reports and data originating from relevant agencies/offices at the central and regional levels. In the provincial case studies, in addition to secondary data, primary data from observations on several programmes concerning food security in the three provinces were also used. Research results show better performance in development of national food production during the era of decentralization; however, from the point of view of food availability and independence, there was no improvement in performance. An increased tendency to dependence on imported food is apparent, meaning that domestic food production was unable to meet the growth of demand for food. In the near term, stabilization of national, regional and household food security needs should focus on: facing the challenges of the food demand rate; productivity stagnation; limited food production capacity; food distribution problems; and consumption diversification. This will lead to more diverse food consumption as well as more-nutritious and more-balanced food production. To overcome food insecurity, the management of government food reserves as well as community food reserves has to be strengthened. In the era of decentralization, regional governments should have a bigger role in amassing food reserves. Dissemination of the results of the Participative Integrated Development in Rainfed Areas Programme (PIDRA) and the Special Programme for Food Security needs to be encouraged. This may lead to the results being replicated in the other regions. In the era of regional-autonomy, regional governments should be empowered to allocate funds from regional government budgets to create sustainable food security for all the people in their region. Simultaneously, efforts are needed to control the population growth through a revitalization of the family planning programme.

1. Introduction

1.1 Background

Food security has a strategic role in the development of a nation due to the facts that: (a) access to sufficient food and nutrition forms the most basic human right; (b) food holds an important role in the creation of quality human resources; and (c) food security is one of the main pillars supporting sustainable economic and national security (Hermanto, 2005).

Changes have occurred in the concept and management of food security implementation, along with changes in the domestic and international economic environment. In the New Order era, the food security paradigm was focused on stabilization of food security at the national level and supported by a policy of inexpensive food targeted at enhancing the industrial sector. This paradigm was based on a food availability approach with a principle strategy to achieve rice self-sufficiency at a stable, affordable price.

In the reformation and decentralization era, the government approach to sustainable food security development has been to take into consideration availability, accessibility, vulnerability, and sustainability of food supplies as well as to monitor food and early warning systems and the social security network (Simatupang, 1999). The focus of this policy is to raise farmers' income and prosperity as an element of the Government's incentive system to increase food production and security. By using this approach it is expected that food security of farmers' households might well be achieved simultaneously with sustainable national and regional food security.

The introduction of the decentralization policy, has been accompanied by several constraints to reaching food security targets, namely, (a) differences in interpretation and implementation of concepts in the field; (b) co-ordination and consolidation of synergies with national and regional interests, specifically linked to aspects of comparative advantage and inter-regional trade; (c) differences in resources, economic structure and regional interest linked to attainment of food security targets and other interests of economic development; and (d) implementation of food security programmes and handling of problems concerning food scarcity or poverty from the central government level in relation to regional programmes.

1.2 Research objectives

The objectives of this study are to: (a) review the inter-temporal application of concepts concerning food security (the New Order era versus the reformation and decentralization era); (b) analyse the performance and prospects of food security; (c) analyse performance and stabilization of the structure of food security; and (d) analyse performance and prospects of food security programmes.

Discussions will be focused on performance at the national level and include case-studies of three provinces, East Java, West Kalimantan and West Nusa Tenggara.

2. Dynamics of Food Security Concepts

2.1 Performance in the New Order Era[1]

The food security issue emerged in the 1970s along with the global food crisis (Soekirman, 2000). Countries with populations facing starvation are considered to be countries without food security. Therefore, at that time, the concept of food security was mostly discussed from the point of view of food availability at the national and global level (Foster, 1992; Maxwell and Frankenberger, 1992). During the 1980s and up to the mid-1990s, Indonesia also adopted a policy of stabilization of food security at the national level. This was supported by an inexpensive food policy with the aim of encouraging development of the industrial sector. The policy was based on a food availability approach aimed at achieving rice self-sufficiency at stable and affordable prices.

However, every year the concept of food security has developed. In the 1980s when the food crisis abated, actual cases of starvation tended to increase (Foster, 1992; Soekirman, 2000). This indicated that food availability at the national level was unable to guarantee food sufficiency at the individual or household level (Braun *et al*.,1992). According to Foster (1992), a shift occurred in the focus of food security analysis from availability of food nationally or globally to availability of food for groups (individuals) experiencing starvation. This led to the understanding that there were internal factors which impeded food acquisition at the household or individual level.

This impediment to food access was related to weak entitlement at the household or individual level (Sen, 1981), causing an inability to exercise 'control' over food. The degree of entitlement has a linear relation with the level of stability of household or individual access, which is affected by what a person owns, produces and sells, and what he or she inherited or were given (Sen, 1981; Maxwell and Frankenberger, 1992).

Availability of food and access to food as described above, are two important determinants of food security according to Braun *et al*. (1992). However, availability of food in itself does not guarantee accessibility to food. Access to food includes physical and economic dimensions. Physical access is linked to authority over food production at the household level, while food purchasing power is a reflection of the capability to have

[1] Cited *in* Rachman, *et al*., 2005. "Kebijakan pengelolaan cadangan pangan pada era Otonomi Daerah dan perum Bulog". *FAE, Vol. 23, No. 2, December 2005*, pp.73-83.

economic access to food (Maxwell and Frankenberger, 1992; Braun *et al.,* 1992; Haddad, 1997).

In the context of analysis coverage or unit of analysis, Soehardjo (1996) was of the opinion that the concept of food security may be applied to various levels, namely, global, national, and down to the household or individual level. He also stated that the aforementioned inter-level situation of food security may be mutually supporting. Hardiansyah *et al.* (1998) stated that since not all households or individuals have access to the food production process due to limitations in land ownership, in order to achieve household food security the support of food availability at the local and national level is necessary. Furthermore, Simatupang (1999) considered the relationship between food security at the global, national, local and household or individual level as a hierarchical system.

The generally accepted definition of food security was agreed upon at the World Food Summit in Rome, Italy, in 1996. Food security was defined as “the condition where the need for nutritious food of each and every individual is met in terms of quantity and quality, in order to lead an active and healthy life sustainably, in conformity with local culture”. In Indonesia, the meaning of food security is standardized in Law No. 7/1996 (concerning food), in which Chapter 1, Article 1 states that food security is “satisfactory fulfillment of food for households as reflected by sufficient food availability in terms of quantity and quality, security, equality and accessibility”.

2.2 Performance in the reformation and decentralization era

The concept of food security in the reformation and decentralization era is stipulated in Law No. 7/1996, while the regional autonomy (decentralization) era commenced with the introduction of Law No. 22/1999 (concerning regional governments). Based on Law No. 22/1999, regional governments have been given the authority to manage national resources available in their regions. The introduction of regional autonomy caused policies on food security to become more and more complex. Each district and municipality has different comparative and competitive advantages. It is possible that a certain region can shift from rice production to another agricultural commodity that is more profitable. In such a case, food security specifically related to rice would be jeopardized. Aside from that, big investments made, for instance in construction of irrigation structures and other infrastructures, become redundant (Masyhuri, 2002).

In the decentralization era, to bring food security into reality, the government introduced Government Regulation No. 68/2002 (concerning food security). The Regulation states that food production to meet household food consumption should be enhanced by: (a) developing a food production system based on local resources, institutions and culture; (b) developing efficiency in systems of food enterprise; (c) developing food production technologies; (d) developing food production infrastructure and related means; and (e) maintaining and developing productive land.

Implementation of Government Regulation No. 68/2002 is actually a process of empowering the community. This means increasing people's independence and capacity to have an active role in food provision, distribution and consumption by using existing socio-economic institutions that may be developed at the village level with rural households as the main focus (Hermanto, 2005).

Law No. 22/1999 followed by Government Regulation No. 25/2000 (concerning authority of the Central Government and regions as autonomous entities) stated that the development of management of food security systems should be spelled out in conformity to the authority map of the Central and Regional Governments, by giving greater opportunity for active public participation.

However, the introduction of Law No. 32/2004 (concerning regional autonomy), which was a revision of Law No. 22/1999, caused a change in the role of central and regional governments related to food security. Food security development is the responsibility of government (central and regional) together with the public or the whole society. The public are the main actors in the national development, while the government functions more as a provider of services, an agent of support, facilitator and advocate. According to Law No. 32/2004, the Central Government arranges, supervises and develops food security programmes implemented at a national level. Provincial governments have the role of stabilizers of food security, while district and municipal governments have the role of bringing into reality the public's food security. The public or society as a whole (farmers, fishermen, private entrepreneurs, NGOs and social organizations) are the main actors in the development of food security (DKP, 2006b).

The role of the Central Government in arranging, supervising and developing food security programmes implemented at a national level, among other things includes the following (DKP, 2006b): (a) arranging, supervising and developing increased availability and diversity of food; (b) arranging and co-ordinating government food reserves and developing public food reserves; (c) arranging and co-ordinating increased access to food for the poor

facing food insecurity; (d) upgrading the distribution infrastructure of strategic food and co-ordinating control over the stability of strategic food prices; (e) developing increased consumption diversity and the quality, nutrition and safety of food; (f) facilitating the public's participation and co-operation with NGOs; (g) managing and stabilizing national food security; (h) creating training modules for the training of food safety inspectors and facilitators; (i) developing a management system for the national food quality and safety test laboratory; and (j) monitoring the provincial competence authority.

The role of the provincial government in food security stabilization, among other things, includes the following (DKP, 2006b): (a) identifying: availability and diversity of food products; production and consumption needs of the public; food distribution infrastructure; and staple foods, NGOs and public figures; (b) co-ordinating: prevention and management of food problems caused by decline in food availability; management of government and public food reserves; the handling of provincial food insecurity; the prevention and management of food problems caused by the decline in food quality, nutrition and safety; the maintenance and upgrading of the public's access to food; (c) to develop: public food reserves; increased quality of public food consumption leading to balanced nutrition based on local raw material; quality and safety standards of factory processed food; and a management system for the food quality and safety test laboratory; (d) to develop: reserves of certain staple foods; food distribution infrastructure; regional market networks; institutional certification for fresh food products and products of small-scale/home industry factories; and public forum facilities and trust funds; (e) managing food insecurity; providing price information; compiling and analysing food security information; training food safety inspectors and facilitators; and (f) monitoring district and municipal competence authorities; and implementing provincial area certification and first-quality labelling.

The role of district governments in realizing public or society food security includes (DKP, 2006b): (a) identifying: food resources and production potentials as well as diversity of public consumption; communities' food reserves; groups facing food insecurity; staple foods; and distribution infrastructures; (b) developing food production and food products with local raw materials; the development of food product diversification and public food reserves; and supervision of public food products quality and safety; (c) preventing and managing food problems caused by the decline in food availability and accessibility; (d) developing and arranging certain staple food reserves; (e) handling and distributing food to groups facing food insecurity; (f) preventing and overcoming food problems caused by a decline in quality, nutrition or food safety; (g) providing price information; and developing

markets for food products produced by the society; (h) raising public awareness of the importance of consuming quality food; (i) analysing quality, nutrition, and safety of food products and public food consumption; and (j) developing institutionalized standards for certification of fresh food products and food products produced by home industries and small-scale processors.

Farmers and fishermen, private entrepreneurs, NGOs, and social organizations that are the main actors in the food security system, have the following roles: (a) supplying food (including raw-food and processed-food) and managing food reserves to meet household needs and the need of all households within the surrounding community; (b) implementing food distribution and marketing processes to support the society's power to reach food security in the region, both physically and economically; (c) managing consumption at the level of community groups and households that encourages awareness, ability and readiness of each and every individual to consume a balanced nutritious diet; (d) developing food servicing services as efficient ventures that apply nutritional quality and food safety principles; (e) conducting public education programmes and campaigns to improve awareness of efficient food production patterns and distribution, healthy and safe food consumption patterns, and efficient and accountable food management patterns; and (f) increasing people's solidarity in order to assist community groups experiencing food and nutrition scarcity, from the local, up to the regional and national level.

3. Performance and Prospects of Food Security

3.1 Development of food production

Efforts to increase food production to meet national food demand have been an ongoing endeavour. National food needs have kept increasing due to relatively high population growth that has been spread unevenly throughout the country (Suryana, 2004). Between 1990 and 2004, production of rice, corn, tubers, meats, eggs and milk increased. Even though rice production has a positive growth rate, in 1994, 1997 and 1998, rice production declined due to the El Nino climate anomaly (Departemen Pertanian, 2005). The growth in rice production was not stable – the rate of growth fluctuated between 0.62 and 2.04 per cent. Declines in soybean production were caused by a decrease in acreage planted, especially since 1992. The reduction in acreage planted was caused by considerable imports of inexpensive soybean. Local farmers could not compete with imported soybean. Decreases in sugar production were caused by a reduction in acreage planted with sugar cane and by the condition of sugar mills in Indonesia (Departemen Pertanian, 2005).

Before decentralization (1990-2000), national rice production increased at a rate of 1.26 per cent per year, while corn production increased at a much higher rate of 4.80 per cent per year (DKP, 2006b). The increase in corn production is a product of extending the area under corn cultivation and intensifying the use of hybrid corn seed and composites. In the same period, production of soybean, sugar and tubers tended to decrease. Sugar production showed the highest rate of decline (3.69 per cent per year), followed by soybean and tubers (Table 3.1).

After decentralization (2000-2004), food production performance in Indonesia improved (DKP, 2006a). In the period between 2000 and 2004, food production grew, although average growth in rice production was relatively small. At the same time there was a relatively large average decline of 9.32 per cent in soybean production. The rise in sugar production in this period was due to the Programme to Accelerate Increased Production of Sugar (Departemen Pertanian, 2005).

Table 3.1 Development of food production in Indonesia, 1990-2004 (thousands of tons)

Year	Rice	Corn	Soybean	Tubers[a]	Sugar	Meats	Eggs	Milk
1990	45 178.8	6 734.0	1 487.4	17 757.5	2 119.6	1 027.7	848.4	345.6
1991	44 688.2	6 255.9	1 555.5	17 934.1	2 252.7	1 099.1	902.0	360.2
1992	48 240.0	7 995.5	1 869.7	18 619.1	2 306.5	1 139.3	1 016.8	367.2
1993	48 181.1	6 459.7	1 708.5	19 283.6	2 329.8	1 378.4	1 021.2	387.5
1994	46 641.5	6 868.9	1 564.8	17 481.3	2 453.9	1 492.9	1 231.6	426.7
1995	49 744.1	8 245.9	1 680.0	17 518.1	2 059.6	1 509.3	1 318.3	433.4
1996	51 101.5	9 307.4	1 517.2	18 949.8	2 094.2	1 632.2	1 409.2	441.2
1997	49 377.1	8 770.9	1 356.9	16 924.4	2 192.0	1 555.2	1 371.8	423.7
1998	49 236.7	10 169.5	1 305.6	16 586.3	1 488.3	1 225.6	923.0	375.4
1999	50 866.4	9 204.0	1 382.8	18 122.8	1 493.9	1 193.4	1 164.3	436.0
2000	51 179.4	9 676.9	1 009.9	17 915.0	1 690.0	1 445.3	1 425.3	495.7
2001	50 460.8	9 347.2	826.9	18 803.7	1 725.5	1 560.6	1 542.7	480.0
2002	51 489.7	9 654.1	673.1	18 684.7	1 755.4	1 769.9	1 721.8	493.4
2003	52 137.6	10 886.4	671.6	20 515.3	1 634.6	1 872.5	1 762.2	553.4
2004	54 088.5	11 225.2	723.5	21 326.5	2 020.0	2 020.4	2 041.5	550.0
Growth (% per year)								
90-04	1.06	3.70	(6.27)	0.76	(2.46)	3.49	5.14	3.05
90-99	1.26	4.80	(2.24)	(0.53)	(3.69)	2.39	3.25	2.08
00-04	1.44	4.56	(9.32)	4.39	3.22	8.43	8.55	3.54

Source: Food Balance Sheet, Central Agency of Statistics, 1990-2004.
Note: [a] Cassava and sweet potatoes.

The pattern of food production development in East Java, West Kalimantan and West Nusa Tenggara does not differ much from that shown at the national level. Research by Hardono and Kariyasa (2006) showed that foodstuff production grew in the period between 1990 and 2004, except soybean and sweet potatoes, which declined 3.5 and 3.0 per cent per year respectively. The rate of production decline in the period between 2000 and 2004 compared to that period between 1990 and 2000 was relatively large.

Research by Ariani and Lokollo (2006) in West Kalimantan showed that only rice and corn production did not decline between 1990 and 2000. The largest decline during this period was recorded by soybean in which production dropped 5.7 per cent per year. Growth in rice production in West Kalimantan after the economic crisis and in the decentralization era was relatively similar to the growth before the economic crisis, that is, 2.4 per cent per year. No significant changes occurred in productivity or in the acreage planted. In this province no conversion of land for rice cultivation took place and/or the same relative rice production technology was applied throughout the period.

In West Nusa Tenggara, Saliem and Supriyati (2006) recorded that rice production increased at between 0.55 and 2.5 per cent per year. With rice as the main staple and with population growth at current levels, then the possibility of food insecurity in West Nusa Tenggara is indeed high. Therefore, in West Nusa Tenggara priority should be given to

develop a pattern of food consumption that is diversified, nutritious and balanced. The rate of increase in corn production in the province is quite high (2.75 to 6.6 per cent per year). This is a new source of growth in food production.

3.2 Indicators of food supply and independency

Food supply comes from three sources: (a) domestic production; (b) food imports; and (c) management of food reserves. Food supply for consumption in the Food Balance Sheet is calculated by totalling domestic production, net imports and stocks, and subtracting non-consumption needs (seed, non-food industries and other uses). Based on this calculation, national food supply increased in the period between 1990 and 2003, except for soybean and tubers. However, growth in supply of rice, sugar and beef was relatively small. Soybean supply declined. Production levels of tubers increased; however, the availability of tubers declined, indicating that non-food use of tubers increased. National food supply in periods before decentralization showed positive growth, except for soybean and tubers. In the era of decentralization, national food supply showed positive growth, except of soybean, sugar and beef (Table 3.2).

Table 3.2 Development of national food availability in Indonesia, 1990-2003 (thousands of tons)

Year	Rice	Corn	Soybean	Cassava	Sweet potato	Sugar	Beef	Meats	Eggs	Milk
1990	26 735	5 287	1 910	7 674	1 735	2 386	161	714	422	621
1991	26 575	5 206	2 014	8 993	1 793	2 522	178	806	459	794
1992	27 411	6 297	2 322	10 862	1 906	2 411	186	857	493	790
1993	28 175	5 412	2 206	10 733	1 830	2 171	214	964	505	749
1994	28 590	6 321	2 131	9 883	1 620	1 099	209	1 034	603	835
1995	29 369	6 400	2 138	10 341	1 906	2 848	197	1 042	646	1 277
1996	31 457	6 901	2 182	12 159	1 773	3 126	226	1 133	707	1 042
1997	29 817	7 250	1 795	12 033	1 616	3 114	237	1 085	692	995
1998	29 781	8 401	1 283	11 454	1 697	2 165	217	861	465	824
1999	33 471	6 403	598	6 415	1 429	2 472	195	837	574	982
2000	30 129	7 203	2 049	2 832	1 574	2 276	229	1 046	720	1 206
2001	28 410	6 792	1 758	5 828	1 499	3 075	218	1 088	728	1 085
2002	29 665	7 130	1 833	7 466	1 514	2 435	199	1 182	871	1 381
2003	30 123	8 065	1 675	8 859	1 706	2 215	221	1 251	894	1 267
Growth (% per year)										
90-03	0.94	2.68	(2.59)	(2.85)	(1.39)	0.75	1.50	2.70	4.76	4.45
90-99	2.20	3.96	(6.40)	0.99	(1.67)	1.60	2.57	2.04	3.33	3.95
00-03	0.42	4.01	(5.73)	31.57	2.61	(3.29)	(1.98)	6.21	8.28	3.88

Source: Food Balance Sheet, Central Agency of Statistics, 1990-2004.

National food independence is understood as the ability of the nation to supply all of its population with sufficient quantity, proper quality, safe and *halal* (proper according to Islamic law) food, through optimizing use and diversity of domestic resources. According to Saliem *et al.* (2003), indicators that can be used to measure food independence, are the dependence of national food supply on: (a) domestic food production; (b) imported food and/or net imports; and (c) food transfers from other parties or countries.

Food independence in this paper uses the degree of dependence of national food supply on food imports. In the period between 1990 and 2003 supply of some food commodities were met by domestic food production. This is indicated by the 0 per cent ratio of dependence on imports in the case of cassava, sweet potatoes and eggs. Relatively high figures of dependence on imports were shown for milk, soybean and sugar (Table 3.3). Average dependence on rice imports in the aforementioned period amounted to 4.55 per cent per year, fluctuating between 0.08 and 16.35 per cent per year, with a tendency to increase.

Table 3.3 Development of import dependency ratio of agricultural commodities in Indonesia, 1990-2003[a]

Year	Rice	Corn	Soybean	Sugar	Beef	Meats	Milk
1990	0.18	0.13	36.38	13.25	2.41	0.54	96.53
1991	0.64	5.16	43.28	13.72	3.31	0.72	139.56
1992	2.11	0.70	41.56	12.75	1.55	1.25	146.86
1993	0.08	7.65	42.36	7.21	1.35	1.11	131.70
1994	2.25	16.28	51.12	0.00	2.33	1.41	127.63
1995	6.10	11.75	36.13	10.69	3.50	2.06	232.33
1996	7.06	6.63	49.18	49.47	7.21	2.52	180.73
1997	1.17	12.52	45.39	51.37	10.18	3.10	173.35
1998	10.19	3.08	26.26	65.39	4.11	1.47	156.80
1999	16.35	6.71	94.14	129.57	5.95	2.81	188.53
2000	4.57	13.07	125.54	82.78	13.24	7.22	298.39
2001	2.21	11.08	137.36	65.51	8.37	4.26	292.28
2002	6.07	11.95	202.82	45.45	6.06	3.86	280.53
2003	4.78	n.a*	177.53	41.73	4.95	3.72	257.22
90-03	4.55	8.21	79.22	42.06	5.32	2.57	193.03
90-99	4.61	7.06	46.58	35.34	4.19	1.70	157.40
00-03	4.41	12.04	160.81	58.87	8.16	4.76	282.10

Source: Food Balance Sheet, processed, Central Agency of Statistics, 1990-2004.
Notes: [a] Units expressed as a percentage of imports with respect to supply (domestic production plus imports minus exports). There is no import dependency for cassava, sweet potato and egg.
* n.a. = not available.

Average dependence on corn imports in the 1990-2004 period amounted to 8.21 per cent. This is an increase over previous periods. In the period between 1961 and 1979 domestic corn production was higher than domestic demand, however, since the 1980s,

corn has been imported to meet domestic demand. The rate of growth of domestic corn production could not meet the rate of increase for corn demand (Saliem *et al.*, 2003).

In Indonesia, dependence on food imports in the decentralization period worsened compared to previous periods. There has been an increase in dependence on food imports, with only dependence on rice imports declining. A relatively high dependence on imports was shown by milk, soybean and sugar. The decline in dependence on rice imports after decentralization indicates the effectiveness of rice policy since 2000. This rice policy was primarily aimed at protecting domestic farmers from the negative impacts of free trade on the international rice market, by imposing a rice import tariff of Rp 430/kg from 2000 to 2004 (DKP, 2006a).

In East Java in the decentralization period, after subtracting food consumption demand from food supply, the food balance showed a surplus in food supply (Hardono and Kariyasa, 2006). Food supply shortages only occurred in soybean and eggs. In the last five years, soybean supplies to East Java have been falling. Shortages in egg supplies only occurred between 2001 and 2003. Since 2004 the egg supply in East Java has exceeded consumption demands. However, several food commodities showed a decline, namely, cassava, sweet potatoes, mung beans, eggs, milk and fish. Viewed from a perspective of sustainable food provision, such a situation indicates the need to create strategic policies to raise production and supply of the aforementioned food commodities to support increasingly stable food security.

Ariani and Lokollo (2006) in their research on food independency in West Kalimantan measured the import dependency ratio (IDR) and self-sufficiency ratio (SSR) of the province. The IDR is the result of dividing imports of certain food by domestic production, while the SSR is the result of dividing production of certain food by its supply. The IDR of rice shows a decline, meaning that dependence on rice imports is decreasing. Or, in West Kalimantan, people's need for rice is met by rice production. The IDR between 1982 and 2004 ranged from 0.08 to 3.97. In this period, a decline in the IDR occurred at a rate of 22.3 per cent per year. This rate of decline was similar both before and after decentralization, i.e. 27 and 28 per cent per year.

West Nusa Tenggara is known as a province with surplus food production, and this surplus continues to increase over time (Saliem and Supriyati, 2006). In the period between 1997 and 2004 food supply measured in the form of energy ranged from 2,863 to 3,456 kcal/capita/day. Consumption demand in the form of energy in that period ranged from 2,144 to 2,332 kcal/capita/day. Thus, in that period a surplus occurred in food supply,

ranging from 531 to 1,266 kcal/capita/day. In West Nusa Tenggara, food supply in the form of energy originates from cereals (more than 60 per cent), followed by beans, fruit and vegetables.

3.3 Food prices

Food prices are one of the factors that affect food security, because it is directly related to the purchasing power of the people. Stability of prices at the consumer level has to be maintained at an appropriate level within the purchasing power of the people. On the other hand, when viewed from the production side, farmers expect sufficiently high prices for their products as incentive to continue farming.

Table 3.4 Development of consumer food prices in Indonesia, 1990-2004 (Rupiah per/kg)

Year	Rice	Corn	Soybean	Cassava	Sweet potato	Sugar	Beef	Milk
1990	519	290	956	139	179	1 038	6 654	1 272
1991	558	318	1 042	156	199	1 128	7 428	1 360
1992	604	324	1 078	171	223	1 230	7 801	1 432
1993	592	351	1 142	174	228	1 285	8 550	1 559
1994	660	415	1 234	198	226	1 288	9 682	1 671
1995	776	498	1 272	275	343	1 429	11 613	1 763
1996	885	528	1 325	301	367	1 507	12 078	1 908
1997	1 064	560	1 488	318	409	1 582	12 308	2 020
1998	2 099	1 089	3 108	565	742	2 978	19 107	4 441
1999	2 666	1 382	3 442	659	891	2 681	26 411	4 266
2000	2 424	1 466	3 060	681	940	3 028	27 901	3 972
2001	2 537	1 747	3 485	690	1 063	3 739	32 434	4 381
2002	2 826	2 002	3 682	918	1 213	3 611	41 610	4 795
2003	2 786	1 738	3 794	943	1 326	4 330	40 458	4 935
2004	2 851	1 700	4 206	989	1 429	4 956	40 227	4 944
Growth (%)								
90-04	13.22	14.07	11.44	14.15	15.02	11.60	13.89	10.75
90-99	19.42	17.92	14.87	17.91	18.58	11.38	14.68	14.70
00-04	4.10	2.65	7.13	10.31	10.38	11.31	8.95	5.42
Coefficient of variation								
90-04	62.99	67.02	54.47	65.61	69.81	54.91	65.45	51.45
90-99	70.78	63.70	55.61	60.67	64.26	41.17	50.72	54.20
00-04	7.15	11.00	11.52	17.44	16.45	18.71	16.55	9.16

Source: Central Agency of Statistics, Jakarta.

In the period between 1990 and 2004 average food prices nationally increased at a rate ranging from 11 to 15 per cent per year, with a co-efficient of variation between 54 and 70 per cent (Table 3.4), indicating that no serious fluctuations affected food prices. The relatively high rate of growth and coefficient of variation were caused by a drop in the value

of the Rupiah both during and since the economic crisis in mid-1997. In the case of rice, the coefficient of price variation was highest in the period between 1990 and 1999 when compared to other food commodities, while in the following period, the policy to stabilize rice prices was considered a success. This was indicated by rice having the smallest coefficient of price variation when compared to other food commodities.

In the period between 1990 and 2004, producer food prices rose at a rate of increase ranging from 12 to 15 per cent per year with a coefficient of variation ranging from 56 to 72 per cent (Table 3.5). This indicates that producer food prices did not experience great fluctuations. Moreover, a similar pattern tended to appear between the rate of growth of prices and coefficient of variation of prices for both consumers and producers.

Table 3.5 Development of producer prices of food commodities in Indonesia, 1990-2004

(Rupiah/kg)

Year	Rice	Corn	Soybean	Cassava	Sweet potato
1990	299	233	767	93	100
1991	304	257	843	106	127
1992	284	264	848	118	141
1993	326	286	917	118	144
1994	420	325	1 002	132	166
1995	433	368	1 034	160	203
1996	498	428	1 115	171	221
1997	933	460	1 219	172	288
1998	1 234	632	2 024	312	522
1999	1 081	1 045	2 521	435	542
2000	1 141	1 029	2 696	452	662
2001	1 255	1 139	2 992	520	743
2002	1 249	1 212	3 084	588	833
2003	1 258	1 255	3 278	646	926
2004	1 573	1 367	3 499	672	955
Growth (% per year)					
90-04	11.94	13.39	11.96	14.73	15.58
90-99	18.07	16.04	13.08	16.62	19.14
00-04	6.68	6.61	6.09	9.85	9.33
Coefficient of variation					
90-04	56.23	62.69	56.08	69.19	72.38
90-99	61.90	57.62	47.04	59.76	65.37
00-04	12.55	10.55	9.72	15.75	14.91

Source: Central Agency of Statistics, Jakarta.

In the 1990-2004 period, the rate of growth of consumer rice and corn prices was higher than the rate of growth of producer prices. During the same period the rate of growth of consumer soybean, cassava and sweet potato prices was lower than the rate of growth of producer prices. From 1990 to 1999 the rate of growth of consumer food prices out-stripped the rate of growth of producer food prices, except for sweet potato. Meanwhile, in the 2000-2004 period, the rate of growth of consumer rice and corn prices was lower than the rate of growth of producer rice and corn prices. The opposite was the case for soybean, cassava and sweet potato. The coefficient of variation of producer prices was relatively similar to the rate of growth of producer prices, except in the 2000-2004 period, when producer prices were more stable. Rice was the exception.

In East Java sharp hikes in food prices occurred after 1999. The hike in prices of all kinds of food commodities in general rose by more than 200 per cent (Hardono and Kariyasa, 2006). This escalation of high food prices was caused by the 1998-1999 economic crisis. Viewed from the growth side, the rate of price increases in the 2000-2004 period was lower than in the 1990-1999 period. But, price levels in the 2000-2004 period were actually two to three times higher than the previous period. The slow rate of growth did not indicate market saturation.

In West Kalimantan producer prices of food crops rose year after year. During the 1991-2004 period, the rate of growth of food crop commodities was relatively similar, between 12.3 and 17.0 per cent (Ariani and Lokollo, 2006). The rise in producer rice prices in the same period amounted to 14.4 per cent; however, in the 2001-2004 (decentralization) period fluctuations in rice prices were small compared to other food crop commodities.

Saliem and Supriyati (2006) showed that in West Nusa Tenggara the rise in prices of various foods was relatively high in the 1990-1999 period compared to the rise in prices in the 1990-2004 period, as well as in the 2000-2004 period. Generally, the rise in prices of foodstuffs in the 1990-1999 period amounted to 15 to 23 per cent per year. In the 2000-2004 period it amounted to 1.18 to 12.26 per cent per year. During the same period, soybean showed a decline in prices amounting to 0.38 per cent per year. The rise in prices of various food commodities in the 1990-2004 period amounted to 11 to 17 per cent per year.

3.4 Farmers' terms of trade as a proxy for food accessibility

The level of prosperity of households can be used as an indicator of the accessibility of households to food, which also correlates with household purchasing power. Farmers'

household prosperity can be measured using the development of the farmers' terms of trade (FTT). FTT is the ratio of the price index received by farmers (IR) to the price index that has to be paid by farmers (IP). If FTT is more than 100, it can be concluded that farmers are in a good financial condition. If it is less than 100 then farmers are not doing well.

On average, in Indonesia in the period between 1993 and 2004, the FTT increased with a relatively small rate of 0.21 per cent per year. In comparing FTT in Java and outside Java, FTT increased in the former and decreased in the latter. The drop in FTT outside Java continued from 1998 up to and including 2003 when it reached a value of 72.35. In 2004 it then increased to a value of 113.49. Such a performance indicates that farmers outside Java have less accessibility to food than farmers in Java.

Table 3.6 Farmers' terms of trade (FTT) in Indonesia, 1990-2004

Year [a]	Java			Outside Java			Indonesia		
	IR	IP	FTT	IR	IP	FTT	IR	IP	FTT
1993	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1994	121.6	112.4	108.2	116.5	112.1	103.9	119.1	112.3	106.1
1995	143.0	128.0	111.8	139.0	128.2	108.4	141.0	128.1	110.1
1996	156.1	138.8	112.5	138.2	138.5	99.8	147.1	138.7	106.1
1997	171.4	150.0	114.2	153.2	150.2	102.0	162.3	150.1	108.1
1998	296.1	261.7	113.1	250.2	250.4	100.0	273.2	256.0	106.6
1999	337.7	320.8	105.3	278.8	303.2	92.0	308.3	312.0	98.6
2000	343.6	330.4	104.0	285.9	318.2	89.9	314.8	324.3	96.9
2001	428.4	379.7	112.8	309.8	360.8	85.9	369.1	370.3	99.3
2002	536.1	451.5	118.7	369.7	420.0	88.0	452.9	435.8	103.4
2003	633.2	497.6	127.8	214.9	180.3	72.4	578.1	485.1	119.2
2004	816.4	555.3	146.3	507.3	446.6	113.5	812.4	548.8	148.0
Growth (%)									
93-04	15.28	14.82	1.26	9.60	10.67	-2.83	14.12	14.54	0.21
93-99	20.56	20.28	0.92	17.39	19.20	-1.36	19.07	19.74	-0.17
00-04	17.70	12.95	6.34	-4.53	-10.26	-5.60	17.29	12.66	6.24

Source: Central Agency of Statistics, Jakarta.
Note: [a] Base Year 1993 = 100.

In the period before decentralization (1993-1999), FTT for all Indonesia tended to decline at a rate of decline of 0.17 per cent per year. This was caused by the drop in FTT outside Java at a rate of 1.36 per cent per year (which outweighed Java's increasing FTT rate of 0.92 per cent per year). By the time of implementation of decentralization (2000-2004) the FTT at the national level increased by 6.24 per per year, mainly due to a positive trend of FTT in Java of 6.34 per cent per year. Outside of Java, FTT decreased by 5.6 per

cent, because of consistent decreases up until 2003. This indicates the existence of poverty and food insecurity outside of Java.

People outside Java who have less access to food are mainly those living in isolated areas and archipelagoes, and in areas bordering other countries. This is due to the lack of availability of infrastructure and means of overland, river and/or air transportation. Provinces where overland access to rural villages is still exceedingly low are Aceh, North Sumatera, West Sumatera, East Nusa Tenggara, West Kalimantan, the Moluccas and Papua (DKP, 2006a).

3.5 Food supply and consumption

Table 3.7 shows supply of foodstuffs for consumption. Vegetable foodstuff supply in the period before decentralization tended to decrease except for rice and corn, while the supply of food produced by animals (meats, eggs, milk) for consumption tended to increase. In the 2000-2003 period, rice, soybean and sugar supply decreased, but supplies of other food commodities increased.

Table 3.7 Development of per capita food availability for consumption in Indonesia, 1990-2003

(kg)

Year	Rice	Corn	Soybean	Cassava	Sweet potato	Sugar	Meats	Eggs	Milk
1990	150.05	29.68	10.72	43.07	9.74	13.39	4.01	2.36	3.49
1991	146.74	28.75	11.12	49.66	9.90	13.93	4.44	2.53	4.42
1992	148.58	34.13	12.59	58.87	10.33	13.07	4.65	2.68	4.35
1993	150.20	28.85	11.76	57.21	9.76	11.57	5.13	2.68	4.08
1994	149.94	33.15	11.18	51.83	8.50	14.29	5.41	3.16	4.50
1995	151.79	33.08	11.05	53.45	9.85	14.72	5.40	3.35	6.74
1996	159.84	35.06	11.09	61.78	9.01	15.88	5.76	3.59	5.46
1997	149.21	36.28	8.98	60.21	8.09	15.58	5.45	3.47	5.17
1998	146.80	41.41	6.32	54.46	8.36	10.67	4.23	2.29	4.27
1999	165.02	31.57	2.95	31.63	7.04	12.19	4.13	2.83	5.05
2000	146.37	34.99	9.95	13.76	7.65	11.05	5.10	3.51	6.09
2001	136.30	32.58	8.43	27.96	7.19	14.75	5.24	3.49	5.46
2002	140.55	33.78	8.68	35.37	7.17	11.54	5.59	4.13	6.81
2003	140.95	37.74	7.84	41.45	7.98	10.36	5.87	4.19	6.21
Growth (%)									
90-03	-0.40	1.36	-3.99	-4.13	-2.77	-1.30	1.39	3.44	3.45
90-99	0.67	2.46	-7.67	-0.55	-3.16	-0.35	0.68	1.97	2.99
00-03	-0.85	2.72	-6.97	30.53	1.29	-4.43	4.88	7.00	2.78

Source: FBS (Food Balance Sheet), Central Agency of Statistics.

Table 3.8 Development of average food consumption in Indonesia, 1996-2002 (kg/capita/year)

Year and region	Rice	Corn	Soy-bean	Cassava	Sweet potato	Sugar	Meats	Eggs
1996								
Indonesia	147.9	3.68	5.98	14.84	4.12	12.93	6.29	7.29
Urban	133.7	0.89	6.9	7.12	2.79	13.77	8.73	9.26
Rural	157.3	5.53	5.37	19.96	5.00	12.37	4.68	5.98
Java	132.2	3.49	9.02	11.97	3.29	10.18	6.46	7.28
Outside Java	160.7	3.84	3.5	17.17	4.79	15.17	6.16	7.3
1999								
Indonesia	103.6	3.14	5.42	12.47	2.72	9.19	2.54	3.83
Urban	91.65	0.67	6.43	6.57	1.96	9.8	3.56	4.92
Rural	112.1	4.88	4.7	16.66	3.26	8.76	1.81	3.06
Java	96.02	3.22	8.1	11.66	2.61	7.61	2.51	3.72
Outside Java	110.6	3.06	2.97	13.22	2.83	10.64	2.57	3.94
2002								
Indonesia	100.4	3.60	6.77	12.03	2.64	10.23	4.52	5.91
Urban	87.56	0.72	7.93	5.7	2.11	10.4	6.5	7.49
Rural	110.9	5.96	5.82	17.23	3.08	10.1	2.91	4.6
Java	88.98	3.32	9.75	11.26	2.69	8.97	4.87	6.34
Outside Java	112.1	3.89	3.71	12.83	2.6	11.53	4.17	5.47
Growth 1996-1999 (%)								
Indonesia	-29.95	-14.67	-9.36	-15.97	-33.98	-28.92	-59.62	-47.46
Urban	-31.45	-24.72	-6.81	-7.72	-29.75	-28.83	-59.22	-46.87
Rural	-28.73	-11.75	-12.48	-16.53	-34.8	-29.18	-61.32	-48.83
Java	-27.37	-7.74	-10.2	-2.59	-20.67	-25.25	-61.15	-48.9
Outside Java	-31.18	-20.31	-15.14	-23.01	-40.92	-29.86	-58.28	-46.03
Growth 1999-2002 (%)								
Indonesia	-3.09	14.65	24.91	-3.53	-2.94	11.32	77.95	54.31
Urban	-4.46	7.46	23.33	-13.24	7.65	6.12	82.58	52.24
Rural	-1.07	22.13	23.83	3.42	-5.52	15.3	60.77	50.33
Java	-7.33	3.11	20.37	-3.43	3.07	17.87	94.02	70.43
Outside Java	1.36	27.12	24.92	-2.95	-8.13	8.36	62.26	38.83

Source: *Susenas* (National Socio-economic Survey) 1996, 1999 and 2002.

In the 1996-1999 period, on average, food consumption in Indonesia decreased, both in rural and urban areas, both inside and outside Java. The economic crisis in 1997 that caused a crash in the value of the Rupiah, subsequently caused a decrease in food consumption throughout Indonesia. In the 1999-2002 period, consumption of corn, soybean, sugar, meats and milk increased, while the average consumption of rice and tubers continued to decrease. Focusing on differences between Java and outside Java, the

average consumption of rice, corn, tubers and sugar was lower in Java than outside Java, but consumption of soybean, meats and eggs in Java was higher than outside Java (Table 3.8).

Per capita per day food supply in the form of energy had already reached 3,030 kcal per day and 76.30 grams of protein per day, which was above recommended levels (DKP, 2006b). However, the *Susenas* (National Socio-economic Survey) data show that on average across the country in 2005, per capita per day food consumption in the form of energy amounted to 1,996 kcal per day and 55.27 grams protein per day. Consumption levels in rural areas were higher than in urban areas (Table 3.9).

Table 3.9 Average consumption of energy, protein and desirable dietary pattern (DDP) scores in Indonesia, 1996-2005

Year	Urban	Rural	National	DDP Score
1996				69.9
Energy (kcal)	1 984	2 040	2 020	
Protein (grams)	55.87	53.72	54.49	
1999				66.3
Energy (kcal)	1 802	1 878	1 849	
Protein (grams)	49.32	48.24	48.67	
2002				72.6
Energy (kcal)	1 954	2 011	1 986	
Protein (grams)	55.98	53.19	54.42	
2003				77.6
Energy (kcal)	1 951	2 018	1 990	
Protein (grams)	56.71	54.38	55.37	
2004				76.9
Energy (kcal)	1 942	2 018	1 986	
Protein (grams)	55.91	53.68	54.65	
2005				79.1
Energy (kcal)	1 923	2 060	1 996	
Protein (grams)	55.26	55.28	55.27	

Source: Agency of Food Security, Ministry of Agriculture, Jakarta.

Consumption levels in 1999 declined compared to 1996. This was related to the generally weakened purchasing power of the people during the economic crisis. In the following years, consumption levels increased. The expected normative standards of balanced consumption based on Desirable Dietary Pattern (DDP) during the period of 1999-2005 increased from 66.3 to 79.1. The achievement in 2005 seems to be approaching the expected score of 79.3. For 2009 the expected score is 87.3 and is anticipated to be 100 in 2015.

3.6 Causes and handling of food insecurity cases

Food insecurity is food scarcity faced by a group of households or individuals, and is caused by an extraordinary event that occurs at certain times only. Food insecurity may be caused by sudden and unexpected shocks that are generated by natural factors, such as natural disasters, and socio-economic factors, such as dismissals, unemployment, fluctuation of food prices, unstable economic conditions and social conflicts (man-made disasters). Several variables (natural conditions) used as indicators of food insecurity, are: (a) region (percentage of land) without forest; (b) districts prone to floods; (c) extent of rice harvest failure; and (d) fluctuations in rainfall. In the 1975-2001 period, occurrences of food insecurity in Indonesia were the third worst among ASEAN countries (Puspoyo, 2006).

Reduction in forest area caused by illegal logging, forest fires, slash and burn systems of agriculture, conversion of natural forests into production forests producing industrial woods, mining activities in forests, and the use of forests as transmigration sites has contributed to the frequency of natural disasters. In South Sulawesi, various activities in forest areas of the province during 1985-1997 caused an 11 per cent reduction in forest area. Districts in provinces prone to floods and land slides, such as in Sumatra and Papua, have high rainfalls. Records since 1974, show that practically every year floods occur in Jambi, South Sumatera, Riau, Aceh, Central Java, East Java, North Sulawesi, North Sumatera, West Java and South Sulawesi, causing these provinces to be sensitive to food insecurity.

Based on ten years (1993-1994 up to 2002-2003) of average rainfall data, many regions in Indonesia experienced reductions in rainfall. This indicates climate change that is not conducive to sustainable agriculture. Regions experiencing significant reductions in rainfall are northern and southern Sumatera, and West Kalimantan, East Java, East Nusa Tenggara, West Nusa Tenggara and South-east Sulawesi.

The number of natural disasters occurring in Indonesia from 1997 to 2005 increased. Examples of disasters are as follows:

a. In 1997-1998 a prolonged draught caused by the *El Nino* phenomenon caused a drop of 3 million tons in rice production (Hermanto and Kusumaningrum, 2006).
b. Between 1990 and 2001, 1,093 social conflicts occurred. The most serious were in the form of community conflicts in Poso and the Moluccas, which claimed at least 5,000 lives. Separatist conflicts in Aceh and Papua claimed 1,307 lives. All these conflicts were followed by large-scale evacuations of around 1.2 million people in 2001.

c. Natural disasters occurring in the last three years (2004-2006) include tsunamis in Aceh and West Java, and earthquakes in Papua, Yogyakarta and Central Java. These disasters claimed around 0.5 million victims and caused hundreds of thousand of people to evacuate (Puspoyo, 2006).

Puspoyo (2006) reported the following significant disasters in Indonesia in between 1975 and 2001: (a) floods claiming four million victims; (b) twenty seven volcanic eruptions claiming 700 lives and affecting almost 600,000 people; and (c) droughts occurring once in three years caused by *El Nino* and resulting in starvation of around 1.6 million people.

Table 3.10 shows the various disasters occurring in Indonesia in 2005, the number of locations, number of victims, and magnitude of financial losses (BKP, 2006e).

Table 3.10 Incidence and location of disasters, numbers of victims, and financial losses in Indonesia, 2005

Disaster	Locations (number)	Inci-dence (cases)	Lives claimed (people)	Evacuees (people)	Badly damaged houses	Losses (million Rp)
Floods	43	66	81	82 900	529	269 349
Epidemics	30	37	342	-	20	-
Landslides	20	36	174	2 255	260	1 014
Earth quakes	10	11	916	104 167	43 812	0
Cyclones	22	35	2	200	907	3 569
Fires	32	54	17	3 404	2 440	43 036
Tidal waves	3	3	-	-	20	1 297
Volcanic eruptions	1	1	-	48 805	-	-
Sabotage	3	3	53	-	-	-
Accidents	4	5	281	-	-	-
Technological failures	3	3	-	-	-	-
Forest fires	1	1	-	28	-	-
Droughts	1	1	1	1 400	800	-
Flash floods	1	1	25	0	-	-
Landslides & floods	1	3	7	2 702	242	2 008
OPT(Insect attacks)	1	1	-	-	-	-
Starvation	1	1	55	-	-	
Total	177	261	1 953	245 861	49 030	320 273

Source: BKP, Departemen Pertanian (2006).

National food reserves are important in overcoming the incidence of food insecurity. Article 47 of Law No. 7/1996 (concerning food), states that national food reserves consists of government and public/society food reserves (at rice milling units, with traders and at the household level). Government food reserves are food reserves managed or controlled by the Central Government, because up to now only the Central Government has controlled

significant food reserves (Rachman *et al*., 2005). In the era of decentralization, Law No. 6/2002 enables provincial, district, municipal and village governments to have a role in the management of regional food reserves to overcome food insecurity in their regions. However, according to Rachman *et al.* (2005), food reserves of regional governments are not yet significant.

Disasters have to be viewed from the framework of development, so that the public is better prepared to face all forms of disasters. Better preparedness to face disasters may be achieved by: (a) construction of food and seed barns at the local community level; (b) use of rain water; and (c) development of disaster contingency plans for sites prone to disasters is imperative.

For earlier detection and intervention in the prevention and management of incidence of food insecurity, a set of tools has been prepared as a component of the Food and Nutrition Vigilance System (FNVS). The provincial, district and municipal governments have made use of the system, however, it has not yet been optimally put into operation because of the extent of the areas covered and the very limited resources available for intervention. To optimize the FNVS it must be better co-ordinated and more synergistic in managing disasters. For that purpose, contact persons have been established in almost all districts and municipalities to strengthen the FNVS network. The system is requires further strengthening (BKP, 2006b).

4. The Stabilization of the Food Security Structure

4.1 Stabilization of national and regional food security

The major problem for food security at the national level is that the growth of food demand is greater than the growth of food supply. The increase in food demand is caused by population and economic growth, increased purchasing power, and broadening tastes. Nationally, these factors have caused a rapid increase in food demand in terms of quantity, quality and diversity (BKP, 2006b; DKP, 2006b). In response, the Food Security Council (FSC) identified the problems and challenges facing the supply, distribution and accessibility of food. Problems facing food supply are: (a) the rate of increase in demand for several food commodities is faster than the rate of increase in their production; (b) productivity of several food commodities is relatively stagnant; and (c) there is limited production capacity.

Productivity stagnation is caused by scarcity of inventions and lack of knowledge provided to farmers and fishermen about innovative technologies, limited access of farmers to sources of capital, limited implementation of technology and means of production, and low financial incentives for optimum application of technology. The lack of knowledge provided to farmers and fishermen about innovative technologies is caused by the weakness of the agriculture extension system.

National food production capacity is also limited by: (a) continued conversion of agricultural land into non-agricultural land (especially in Java); (b) decrease in land quality and fertility caused by environmental damage; (c) increasingly limited water provision, and uncertainty of water provision for food production, as result of deforestation; (d) the state of disrepair of about 30 per cent of the irrigation infrastructure; (e) the lack of assurances about supplies and prices of gas required to produce sufficient fertilizers; (f) the lack of determination of highest retail prices for subsidized fertilizers; (g) limited capital lending institutes in rural areas and increasing interest rates (2 per cent on average) on food security credit; and (h) a slow rate of application of technology caused by a lack of economic incentive.

Food supply is considered to be assured in the following provinces: West Kalimantan, Yogyakarta, Lampung and North Sulawesi (Saliem *et al.,* 2001). However, stabilization of food security in these provinces still has to be carried out by: (a) raising food production; (b) developing food reserves; (c) developing appropriate local food technology;

and (d) importing food as a last alternative to assure stability of supplies and prices of food, when needed.

In the near term, productivity stagnation has to be dealt with by upgrading production, farmers' institutional capacity and extension quality. Upgrading production is still possible because there are still 16.1 million hectares of potential wet rice fields for food crops and 25.4 million hectares of land for the cultivation of perennial plants. The availability of technologies to support agribusiness systems – upstream to downstream – would generate opportunities to increase food production and productivity capacity, business efficiency and profits of food agribusiness enterprises. In 2007 the Department of Agriculture developed the so-called *Prima Tani* programme, a pioneer programme to accelerate public and farmer education about agricultural innovation technologies in 200 districts in Indonesia. The *Prima Tani* Programme was initiated by the Indonesian Agency for Agricultural Research and Development in 2005, with the main objective of accelerating dissemination and adoption of innovative technologies pioneered by the Agency, and acquiring feedback on the character and appropriateness of technologies for specific consumers and locations (Departemen Pertanian, 2006).

In the medium term (2006-2009), the general policy of Dewan Ketahanan Pangan (Food Security Council – DKP, 2006a) for food security includes: (a) assuring food supply: (b) putting in order land affairs and spatial and regional arrangements; and (c) developing food reserves.

The policy to assure food supply covers the following activities in three broad groups. The first group covers aspects relating to infrastructure and agriculture-supporting enterprise, land, water resources preservation, the fertilizer industry, availability of superior seed/seedlings, agricultural tools and machineries, and capital/cash money. The second group relates to farm operations, activities leading to productivity increases, efficiency in post-harvest handling and agricultural processing. The third group relates to other supporting levels, for example, the creation of investment incentives in agricultural fields, strengthening the extension system, farmers' institutions and partnerships.

The policy for land reforms and spatial and regional arrangements recommends measures such as the application of a progressive taxation system on fertile land conversion and permitting abandonment of agricultural land. Development of food reserves is implemented through both government and public food reserves.

Problems and challenges facing food distribution are: (a) inter-regional and seasonal diversity of food production; (b) limited communication infrastructure, especially in isolated

areas; (c) limited marketing means and institutions; (d) extensive collection of legal and illegal taxes; (e) high costs of transportation compared to other countries; and (f) security issues such as weaknesses in arranging and implementing security.

The problems stated above are supported by findings of Saliem *et al.* (2001). Even though at the regional level food supply was sufficient, food insecurity at the household level still occurred. This led to the conclusion that the problems faced were linked to the distribution of and/or access to the food supply. Requirements in the near term to overcome distribution problems are: (a) developing infrastructure and the means to distribute food and agricultural products to all regions in order to prevent scarcities in supplies; (b) perfecting food commodity standardization and quality systems; (c) implementing policies that provide incentives and an environment conducive to market actors; for example, fiscal policies that provide incentives to agricultural enterprises, proper allocations from the state and regional budgets to develop the agricultural sector, and trade policies that provide protection and promotion of strategic agricultural products.

In the medium term (2006-2009), the general policy of the DKP (2006a) is to develop an efficient food distribution system by: (a) development and rehabilitation of distribution infrastructure and means; (b) abolishing agricultural and fisheries product retribution; (c) subsidizing transportation to areas seriously affected by food insecurity and to isolated areas; and (d) surveillance of improper trade systems.

The problems facing food consumption and diversification are: (a) a great number of the poor and unemployed with low access to food; (b) insufficient knowledge and awareness of the community regarding food diversification and nutrition; (c) the still dominant consumption of rice as a source of energy; (d) insufficient awareness and application of sanitation systems and household hygiene; and (e) insufficient public awareness about food security.

Factors that can potentially be linked to food consumption and diversification are: (a) natural resources diversity, biological diversity and diversity of local food sources and traditional foods, which may be used in the development of food diversification; and (b) increasing levels of public education**,** information technology and public communication strategies, which may provide opportunities to accelerate awareness about nutrition.

In the medium term (2006-2009) the DKP's (2006a) general policy on food diversification includes improving balanced food and nutrition consumption, as well as developing food technologies and diversified farming operations and local developments.

4.2 Enhancement of household food security

At the household level, the main problem in the stabilization of food security is the large proportion of people that have low purchasing power and limited access to food, which leads to chronic food insecurity. If such conditions continue the physical and intellectual quality of part of the population will be harmed and the country will be unable to benefit from its vast human resources (Saliem *et al*., 2001; BKP, 2006e). According to Saliem *et al.* (2001), household access to food is affected by purchasing power (measured by the level of household income and food commodity prices), household ability to produce food, and social institutions involved in the transfer of food (inter-community group donations and hand outs of food).

Efforts to enhance household food security include maintaining stability of food prices, and improving farmers' prosperity (DKP, 2006b), which together form one of the pillars of regional and national food security. Programmes to stabilize food supply in households can be achieved by raising productivity and efficiency in post-harvest handling and processing, among other approaches. According to DKP (2006a) specific programmes to raise household access to food include: (a) empowering the poor facing food insecurity; (b) raising the effectiveness of the Rice for the Poor Programme; and (c) strengthening food management institutions in rural areas.

Empowering households to purchase food may be achieved by policies to raise household incomes and stabilize food prices as well as by providing food subsidies to households facing food insecurity and poor households (Saliem *et al.,* 2001). If policies are implemented simultaneously, this will generate significant multiplier effects on raising households' power to purchase food and subsequently raise households' food security.

5. Food Security Programmes

5.1 Programme on Capital Strengthening Fund of Rural Economic Venture Institutions

5.1.1 Programme performance

The Capital Strengthening Fund of Rural Economic Venture Institutions (CSF-REVI) Programme assists farmers to receive government purchasing prices (GPP) or floor prices. CSF-REVI programme was initiated in 2000 pursuant to a presidential decree (concerning national rice affairs) to stabilize prices of dried unhusked paddy (*gabah)* and rice. This programme has not established any new institutions, but co-operates with established institutions in rural communities, such as village unit co-operatives, agricultural co-operatives and rice milling units, etc. Through this programme the Government allocates and advances funds from the National Budget to rural economic venture institutions (REVIs) to buy dried unhusked paddy from farmers at the main harvesting time and at the minimum purchasing prices or floor prices as set by the Government. The CSF-REVI Programme has been in operation since 2003 in 15 provinces that are designated rice production centres. Every year these rice production centres produce a rice surplus that tends to destabilize prices.

CSF-REVI programmes, whether funded by the Central Government or regional governments, are complementary and are expected to work in synergy with other activities. Other activities include the development of modern village barns, empowerment of the community barns, and development of a rice sale and procurement cancellation system for the National Logistics Agency or BULOG. CSF-REVI programmes also aim to encourage regional governments, provincial, district and municipal governments to increase funding from their budgets for similar activities. Because the working capital used is funded or channelled through the National Budget, these funds have to be repaid in accordance with CSF-REVI procedures (BKP, 2006a). The CSF is channelled to REVIs in the form of interest-free loans to be used repeatedly through contracts with groups of farmers for purchasing paddy stalks and or rice in accordance with the Liquidity, Channelling and Procurement Procedures.

CSF-REVI programmes aim to: (a) reduce the surplus of paddy/rice production by strengthening the smooth distribution of paddy/rice; (b) assure market prices for making rice farming profitable; (c) improve the ability of rice processors, millers, collectors and traders in

the rural areas to distribute locally produced paddy/rice; and (d) stabilize regional food security, especially sustainable rice.

The objectives of CSF-REVI activities are to: (a) carry out procurement of paddy/rice in such a way that price stability of paddy/rice is secured, so that farmers receive minimum purchasing prices or floor prices as set by government; (b) bring farmers and/or farmers' groups closer to markets by co-operation with REVIs (c) develop and activate rural enterprises in the rural areas; and (d) strengthen the territorial and rural position in regional food security.

The general target of CSF-REVI programmes is to: (a) procure paddy/rice by REVI in accordance with government purchasing prices and floor prices; (b) develop co-operative relationships between REVI and farmers and/or farmers' groups; (c) develop rural enterprises and institutions; and (d) strengthen the level of regional food security.

The targets of CSF-REVI activities are: (a) farmers and/or farmers' groups that form partnerships with REVIs and are active in the field of paddy/rice trade; and (b) REVIs that use CSF to purchase farmers' paddy/rice at the right prices and the right quantities, and repay CSF on time and in the right amount.

Provinces with CSF-REVI programmes are provinces which have districts and or municipalities that are rice production centres. Table 5.1 shows the REVI locations and performance over the last three years. It shows that the number of participating provinces grew from 15 at the beginning of the programme to 19 in 2004 and 2005. In 2006, programmes were developed in 25 provinces. In the second year of programme (2004) the number of REVIs and farmers' groups increased, but the following year the number decreased. This was a significant decrease, because several REVIs were no longer provided with loans due to their failure to repay (Supriyati and Purwantini, 2006).

Table 5.1 The spatial distribution and number of REVI and target farmers' groups in Indonesia, 2003-2005

Description	Year			Cumulative number
	2003	2004	2005	
Number of provinces	15	19	19	19
Number of districts	121	145	125	145
Number of REVI	1 149	1 328	843	1 328
Number of farmers' groups	3 475	1 278	1 641	3 475

Source: BKP (2006b).

There are five performance indicators to measure the success of CSF-REVI activities, (i) input indicator, (ii) output indicator, (iii) outcome indicator, (iv) benefit indicator, and (v) impact indicator.

Input indicators include: (a) the number of REVIs; (b) the total of CSF allocations per REVI; (c) the number of farmers/farmers' groups in agreement with the contracts; and (d) the quantity of paddy/rice to be purchased per partner farmer group of REVI.

Several output indicators of success are: (a) the total CSF appropriately dispersed by a REVI according to time and value targets; (b) the total CSF used by REVI to purchase paddy/rice; (c) the average price of paddy/rice purchased by a REVI in agreement with the prices stipulated by the government; (d) the total volume of paddy/rice purchased by a REVI is at least twice the contracted volume; and (e) the total CSF is fully repaid on time by a REVI.

Outcome indicators are: (a) prices received by farmers who are REVI partners or who are residents in the CSF-REVI programme area are in agreement with government reference prices; and (b) profits generated caused a rise in the working capital of REVI.

Benefit indicators that show success are: (a) an increase in the absorption of paddy/rice in regions where activities of CSF-REVI are implemented; and (b) the price of dried unhusked paddy *(gabah)* in target regions of CSF-REVI programmes becomes stable and controlled.

Implementation of the aforementioned programmes is expected to raise farmers' incomes in REVI areas, which may lead to a stabilization of food security in these areas. Data in Table 5.2 imply that the CSF-REVI programmes have not yet been completely successful. During the last three years, the amount of funds allocated has decreased. This was partially caused by non-repayments. Presently, these non-repayments are still outstanding (BKP, 2006b).

Table 5.2 National cumulative development performance of fund allocation, purchasing volume and price, REVI selling value and fines, 2003-2005

Description	Year			Cumulative total
	2003	2004	2005	
Fund allocation (million Rp)	162 190	161 550	99 920	423 660
Liquefaction (million Rp)	159 540	157 510	89 632	406 682
% liquefaction	98	98	90	95
Purchasing volume equivalent to GKP [a] (ton)	488 604	469 888	224 947	1 183 439
Purchasing value of *paddy/rice* (million Rp)	600 983	624 951	299 179	1 525 113
% purchasing of liquefaction	376	397	339	-
Average purchasing price of GKP [a] (Rp/kg)	1 230	1 330	1 330	-
Sale's value of rice (million Rp)	531 019	603 078	292 470	1 426 567
% sales of purchasing	88	96	99	-
% sales to logistics depot /*DOLOG*	52	30	27	-
% sales to outside logistics depot parties	48	70	73	-
Repayment (million Rp) [b]	149 510	149 008	79 211	377 729
% repayment	94	95	88	
CSF arrears (million Rp)	10 030	8 502	10 421	28 953
Fines (million Rp)	1 618	937	5 573	8 128
Fines paid (million Rp)	644	287	n.d [*]	-
Fines not yet paid (million Rp)	974	650	n.d	-
Total CSF repayments and fines (million Rp)	150 154	149 295	n.d	-
Total arrears (CSF + fines)	11 004	9 152	n.d	-

Source: BKP (2006b).
Notes: [a] GKP= Dried unhusked paddy.
[b] Data up to and including 31 December 2005.
[*] n.d = no data.

At the beginning of the programme, sales allocations were predominantly marketed to logistics depots (DOLOG) because generally market prices were lower than the purchasing prices of DOLOGs. In 2003 in Central Java and West Nusa Tenggara provinces, more than 70 per cent of the sales allocations were channelled to DOLOGs (BKP, 2003). On the other hand, the actual mission of the CSF-REVI programme was to attain relatively stable market prices of paddy/rice. Consequently sales allocations were channelled more to parties outside logistics depots in anticipation of the drop in paddy/rice prices, especially during main harvest. This policy was implemented after the second year of the programme and subsequently the paddy/rice segment sold to parties other than DOLOGs increased. On a macro scale, benefit from the CSF-REVI programme was less significant, because funds allocated to this programme were still relatively small (BKP, 2006e). However, on a micro

scale, the programme's benefits included reducing the number of middlemen, improving the bargaining position of farmers, contributing to the hike in prices of paddy/rice, improving the quality of paddy/rice produced by farmers, and encouraging regional governments to allocate additional funds. Furthermore, funds provided by the programme were strategic funds for the region and became embryos to develop economic ventures in rural areas.

5.1.2 Problems and prospects

Monitoring by BKP (2006b) showed that during 2005 Government purchasing prices or floor prices of paddy as stipulated in Presidential Decree No. 2/2005 were effectively implemented. In other words, the programme raised the income of farmers cultivating rice, because the majority of farmers sold their paddy in the form of dried unhusked paddy or *gabah kering panen* (GKP). The improved incomes were also caused, among other things, by the implementation of the CSF-REVI programme, which indirectly improved paddy market prices.

Research by Saliem *et al.* (2004) revealed that the opinion among unhusked paddy *(gabah)* traders in Demak District, Central Java, was that disbursement of CSF-REVI funds indirectly affects the market price of unhusked paddy, especially during the main harvest period, leading to effective control of local paddy and unhusked paddy prices. Similar research in West Sumatera and South Kalimantan, where no main harvests exist because rice is harvested almost every month, showed that the disbursement of REVI funds had little significant impact. Unhusked paddy *(gabah)* prices in these two provinces were relatively stable inter-temporally and tended to be higher (than Government purchasing prices or floor prices), especially in West Sumatera.

Late disbursement of funds caused frequent problems. When funds were needed (because harvests were about to commence), they were not disbursed, so REVIs were not able to optimally purchase unhusked paddy from farmers. Similarly, in many cases REVIs had not completely sold their stocks of unhusked paddy by the time repayment was due, and this led to many REVIs being in arrears.

In the near term, the CSF-REVI programme should be continued, especially in areas having a main harvest time. Disbursement of funds to purchase dried unhusked paddy has to be in agreement with the time of main harvest, which differs from region to region.

In the future, CSF-REVI development activities are expected to use: (a) funding mechanisms with the involvement of co-operatives, banking institutions, and guarantee patterns; or (b) regional matching grants; or (c) food security credits; or (d) counterpart funds or credits from co-operation programmes with banks.

5.2 Village Food Independence Programme

5.2.1 Programme performance

The Village Food Independence Programme is a community-based action programme to improve food security and further improve the community food security empowerment strategy (Hermanto, 2005). The programme is an integration and consolidation of food security development models (it involves models such as food barns, sales deferrals, local food development, diversification of food consumption, and handling of food insecurity) that is implemented on a village by village basis. Furthermore, the programme involves village community participation. It does this by building the capacity of the village government to accommodate and facilitate community participation in a variety of strategies including: (a) increasing food availability by sustainably maximizing resources owned by households; (b) enhancing community food distribution and access; (c) raising food quality and security in villages; (d) raising the quality of community food consumed; and (e) raising the quality of handling food problems (Nainggolan, 2006). Through these means, sustainable and environmentally friendly community food security may be realized.

Food security at the rural level is very strategic, mainly to stabilize community foodstuff provisions, raise the quality of human resources in rural areas, overcome food insecurity, and alleviate poverty. The targets of the Village Food Independence Programme are villages facing food insecurity which lowers the quality of human resources. The programme beneficiaries are poor households. Moreover, the aim of the programme is to achieve food and nutrition security at the village level, indicated by a reduction in the level of food and nutrition scarcity. The development of models of food independent villages must consider the following: (a) the capability of communities to manage food security at the village level; (b) the capability of communities to use their own resources to help meet their food needs; (c) the capability of communities to manage problems related to surplus or scarcity of food, and to manage the community's inability to access food; and (d) participative and sustainable approaches to food security empowerment.

A food independent village is defined as a village where the community has the capability to achieve food and nutrition security, leading to a sustainable, healthy and productive life of the community from day to day, through optimal use of local resources to produce foodstuffs and raise purchasing power, and by continuously maintaining the environment in conformity with social and religious values (Hermanto, 2005).

Programme planning is carried out in stages, starting at the community group level and at the village level. The planning process at these levels is based on baseline data.

Moreover, the programme involves cross-sectoral activities, which require organizing at the central, provincial and district/municipal level under the co-ordination of the Food Security Council (FSC). Finally, the development of village programmes under the Village Food Independence Programme is formulated by working groups functioning as co-ordination modules to facilitate programme implementation at the village, district/municipal, provincial and central levels.

Implementation of the Village Food Independence Programme includes four phases: preparatory, growing, development and autonomous. The preparatory phase (first year) includes location selection, public education about the programme, provision of assistance, basic data composition, training and empowerment of affinity groups, and composing village development plans. The growing phase (second year) stresses strengthening government, community and public service institutions.

The government's role in facilitating the programme includes: (a) training (participants are affinity groups of established institutes in village communities); (b) assistance (to strengthen community institutes and affinity groups); (c) improvement of means and infrastructure; (d) strengthening of working capital; and (e) harmonizing food security systems. The principle of enhancing working capital led to the formation of a revolving fund that will be developed in various locations of the Village Food Independency Programme. Fund management is implemented by the Village Capitalization Institute. The fund is developed with community's participation. The community is accountable for use of funds.

The development phase (third year) is implemented through capacity building of each institution in accordance with existing dynamics and opportunities. It includes: (a) infrastructure development and maintenance; (b) development and application of technology to improve production; (c) development of ventures to a scale that provides economically reasonable incomes; and (d) diversification of ventures to increase incomes.

Development of public service institutions includes: (a) development of an organizational culture that aims for diversified, nutritious, balanced and safe food consumption; and (b) development of a system to monitor and detect insecurity, and which is able to respond early to insecurity.

In the autonomy phase, it is expected that the following will have been reached: (a) an increased role of the community in the availability and distribution of food; (b) established ventures are developing; (c) existing organizations/institutions are stable; (d) a venture/ partnership network has been formed; and (e) provision of assistance has a reduced role.

Sources of funds to make the Village Food Independence Programme operational are: (a) the Central Government (National Budget); (b) provincial governments (National Budget deconcentration funds and provincial budget); and (c) district/municipal governments (National Budget assistance provision funds).

Deconcentration funds are used for training. Assistance provision funds are allocated to implementer villages, with the following breakdown of uses: 60 per cent comprises grants to village communities; and 40 per cent is used to put villages and districts/municipals in operation.

At the initial phase, funding sources to finance productive economic ventures originate from funds of the National Budget that are allocated to each target village in areas of food insecurity. Each target village receives Rp 80 million which is considered to be a stimulus fund to support capitalization in the village, and may be used to develop productive economic ventures of affinity groups.

5.2.2 Problems and prospects

Problems faced by the Village Food Independence Programme were (Supriyati and Purwantini, 2006): (a) programme assistants were recruited locally and selection criteria were based on education only, not on experience, and this resulted in programme assistants being less effective facilitators, communicators and dynamists; (b) there was no synchronization of funding by the Central Government and by regional governments; and (c) not all food security programmes have been introduced in villages of the Village Food Independence Programme.

In the near term, the Village Food Independence Programme, which is an integration and consolidation of food security development models and up to now has been implemented on a village by village basis with the participation of the village community, has to be extended in accordance with the phasing of activities and with the full support of the Central and Regional Government. It is expected that through this programme a lowering of food and nutrition scarcity will occur in rural areas by: (a) raising the ability of village communities to manage food availability and distribution; (b) raising household access to food; (c) managing consumption of food that is safe and nutritionally balanced; (d) improving the capability of solving food problems; and (e) improving the capability to form alliances to raise community participation in opposing hunger and poverty (Supriyati and Purwantini, 2006).

5.3 Acceleration of Food Diversification Programme

5.3.1 Programme performance

Food diversification was pioneered in 1969 with the Programme on Family Nutrition Improvement. Since then the programme has developed in accordance with societal conditions, however, the programme has not generated the results that were expected. Public awareness about food diversification has remained low. Consequently, the Department of Agriculture launched several initiatives to accelerate food diversification in order to overcome emerging food and nutrition problems (Badan Bimas Ketahanan Pangan, 2003).

Since 2001 various programmed, integrated and focused food diversification programmes have been initiated, such as: (a) advocacy, public education and promotion of food diversification through activities such as analysing consumption patterns, organizing public education exhibitions about food diversification, dissemination of information through printed and electronic media, and studying the effects of boiled egg consumption by primary school students; (b) raising food supply and forming clusters of industries for the agricultural sector; (c) improving human resources with training appreciation activities on consumption needs; (d) community empowerment in developing food diversification; (e) raising access to food; and (f) developing a food and nutrition alertness system as well as monitoring food diversification activities within a framework of food security. All these activities led to at least two groups of actions, namely actions to build a food diversification system, and actions to raise the quality of food diversification for low income people.

Linked to regional autonomy, government regulations concerning food security also extend broad authority to provincial and district governments to develop food diversification. Objectives of the programme include three aspects: (a) to raise food diversification by raising awareness and public knowledge; (b) to stabilize food diversification based on local resources, institutions and culture; and (c) to increase participation and co-operation of all stakeholders in food diversification. Target groups of government regulations are: community groups facing food insecurity, or groups of poor people with less than 80 per cent energy sufficiency rate; and communities or groups with less-diversified food patterns including lower-middle income groups with a calorie consumption equal to 80-100 per cent of their energy sufficiency needs.

5.3.2 Problems and prospects

The food development policy focused on rice has downgraded the potential of generating and utilizing other carbohydrate sources. Moreover**,** the policy also slowed the availability of food as a source of protein (meats, eggs and milk) and micro-nutrient sources (vegetables and fruits), and the development of potential of local food found in various regions.

Public food patterns are still not diverse because they are influenced by various social, cultural and economic factors. One of the principal problems faced with food diversity is that people perceive that local sources of carbohydrate, such as cassava, corn and sago, are inferior to rice (Suryana, 2004). In general, consumption of animal protein by society is still low. Consumption in urban areas is higher than the average level of consumption in rural areas (Saliem *et al*., 2001; BKP, 2003). Overall consumption is affected by income levels. However, communities in certain regions still experience chronic food insecurity. Moreover, the application of local food production and processing technology in communities was unable to balance imports of processed foods.

Although food diversification faces many problems and challenges, there are still opportunities throughout Indonesia to develop natural resources as stepping stones to food diversity. These opportunities are (BKP, 2003): (a) the potential to increase productivity of various land ecosystems; (b) the potential for food from sufficiently diverse plant and animal sources; (c) the various local and traditional foods; (d) the increasing participation of food processing industries in the production of food that is ready to be served and consumed, leading to diversification of public food consumption; and (e) regional autonomy gives full authority to autonomous regions to regulate levels of production, distribution and consumption of food in a more specific and flexible way.

5.4 Participatory Integrated Development in Rainfed Areas Programme

5.4.1 Performance

The Participatory Integrated Development in Rainfed Areas Programme (PIDRA) is a co-operative programme between the Department of Agriculture through the Food Security Programme and the International Fund for Agriculture Development (IFAD), as stated in Loan Agreement No. 539-ID. The programme aims to increase the income of farmers and their families and to raise conservation and preservation of natural resources and the environment in order to create sustainable agricultural systems, establish farmers' groups

as the developers of farm operations, increase participation by women, and achieve food security in rural areas.

PIDRA is a continuation of the Participatory Integrated Development of Rainfed Areas Project in East Java. PIDRA activities are more focused on the empowerment of economic ventures of the poor with a gender perspective. It aims to create an environment conducive to raising the standard of living of the poor living in dry land areas.

The PIDRA Programme was implemented in two phases; the first phase during 2001-2004, and the second phase during 2004-2008 (BKP, 2006d). Components implemented in the first phase were: (a) community and gender development; (b) development of agriculture and animal husbandry; (c) development of rural infrastructure and means; and (d) institutional and managerial support.

Activities in the second phase include: (a) community empowerment and establishing gender equality by developing autonomous groups (AGs) and federations, establishing and developing co-operatives, developing village development institutes, and raising gender equality; (b) development of rural micro-ventures with the objective of developing on-farm, off-farm and non-farm-based activities to raise household income, and thus enable households to possess sufficient income to obtain food security, but also to invest to acquire sustainable raised income; and (c) community-based resource management with the objective of increasing the use of the potential of natural resources needed to raise the productivity of agriculture in dry land areas (consistent with improving long-term food security of poor households). Empowerment is generated through intensive assistance in partnership with non-governmental organizations (NGOs).

PIDRA is expected to encourage initiatives to enable poor communities living in dry land or rainfed areas to improve their standard of living. It is expected that 6-9 months of development will enable autonomous groups to grow, organize themselves, carry out capital strengthening and accumulation on their own, and combine individual and group business in a planned and sustainable way.

The vision of PIDRA is to bring into reality a sustainable rise in the standard of living of rural communities in the dry land areas of uplands. The mission of the programme is to generate conditions that support the improvement of the standard of living of poor families in dry land areas, and to improve their ability to undertake activities that upgrade income and ensure the sustainability of the natural resources.

The programme has been implemented in six districts of East Java; three districts of West Nusa Tenggara; and five districts of East Nusa Tenggara. Initially in 2001, the

programme involved 40 villages and grew to 237 villages (in the same provinces) in 2006. Priority for membership of autonomous groups, was given to marginalized poor families, mainly landless poor families living in dry land areas of the upland. Table 5.3 shows the development in the number of villages, AGs, and members of AGs.

Table 5.3 Cumulative number of autonomous groups and number of members of autonomous groups in accordance with site provinces of PIDRA, 2001-2003

Pro-vince	No. of Sub-dist[a]	No. of villages			Number of male, female and mixed autonomous groups and number of group members						Total AGs	Total Mbr
		2001	2002	2003	Fem AGs	Fem AG Mbr[b]	Male AGs	Male AG Mbr	Mixed AGs	Mixed AG Mbr		
EJ[c]	31	13	42	39	501	9 395	470	8 250	19	368	990	18 013
WNT[d]	20	6	11	27	227	4 616	134	3 915	16	307	437	8 838
ENT[e]	23	15	32	46	344	6 155	409	7 343	141	2 712	894	16 210
Total	74	40	85	112	1 072	20 166	1 073	19 508	176	3 387	2 321	43 061

Source: BKP (2006d).
[a] Sub-dist = sub-district.
[b] Mbr = members.
[c] EJ = East Java.
[d] WNT = West Nusa Tenggara.
[e] ENT = East Nusa Tenggara.

As shown by Table 5.3, up to and including December 2003, 43,061 family heads were members of AGs, and 2,321 AGs had been established. Of the 2,321 AGs, 990 were located in East Java, 437 in West Nusa Tenggara and 894 in East Nusa Tenggara. Until the termination of the second phase, 100,000 family heads received benefits from PIDRA (BKP, 2006). Thus, around 60,000 family heads who were not members of autonomous groups received benefits from PIDRA.

5.4.2 Problems and prospects

Evaluation by a NGO indicated that PIDRA was able to raise the income of target farmers. This rise in income and purchasing power of households led to increased access to food and better nutrition. There were no problems faced in implementing the evaluation.

Through their co-operation with IFAD, the government and beneficiary communities learned lessons such as: (a) the importance of acknowledging and believing in the capability of local communities to manage their resources; and (b) the importance of co-operating with institutions growing in communities, such as NGOs in target regions that are competent in empowering communities and are deeply concerned about community empowerment.

By paying close attention to evaluation results and the aforementioned lessons learned from the PIDRA programme, similar programmes may be replicated in dry land

villages in other regions, with supporting funds from IFAD, the Government's National Budget or other sources of funds (Supriyati and Purwantini, 2006).

5.5 Special Programme for Food Security

5.5.1 Performance

The Special Programme for Food Security (SPFS) is an FAO programme implemented in less-advanced countries or in countries facing food insecurity. In Indonesia, SPFS is a collaboration between the Department of Agriculture and the Government of Japan, managed as a trust fund by FAO. The objective of the programme is to raise food security at the national and household level by increasing agricultural production every year, and to raise the income of the population and labour force, all of which affect access to food. Activities are directed to: (a) motivate communities to participate in raising production and productivity, thereby strengthening regional food security; (b) raise the capability of communities to plan, implement and monitor food security development activities; and (c) strengthen community institutions.

In the five years since 2002, grants amounting to US$ 2.5 million were allocated, and in-kind counter funding by the Government of Indonesia amounted to US$ 800,000. Activities focused on community empowerment, especially those in areas of food insecurity. They encouraged communities to understand problems faced in meeting needs for food, and requirements for overcoming the problems. The role of SPFS was to facilitate problem solving.

Pilot projects were developed specifically for participants farming various types of land in five provinces: dry land in upland West Nusa Tenggara; long-standing irrigated land in West Java; tidal land in South Kalimantan; coastal land in South Sulawesi; and**,** not yet utilized recently irrigated land in Riau.

In general, SFPS activities revitalized existing food production programmes and improved production sustainability (BKP, 2006e). Activities were structured around: (a) the control of water sources on a micro-scale, to protect the population from climate-related effects such as excess or shortage of water supply; (b) accelerated production of crops, cattle and fish by small farmers; (c) identification of socio-economic obstructions to the production, marketing and processing of agricultural commodities; (d) the development of production systems that are economically acceptable in each region; and (e) the formation of a national agriculture and investment programme that assures food security and balanced nutrition for all the population.

Since the implementation of activities in 2002 for 36 farmers' groups and the development agency, the following have been carried out: (a) assisting groups through participatory approaches to planning at the grass-root's level, including mainstreaming the groups' ideas and assisting with the formulation of the Farmers Group Development Plan (FGDP); (b) training of group members and government agencies; (c) channelling the funds/aid to farmers to improve irrigation infrastructure and procure cattle, plant seeds, outboard engines, hand tractors, and other various means of production; (d) organizing FGDP workshops and co-ordinating SPFS in each implementing district; and (e) co-operation with local universities in the creation of FGDPs.

The implementation of SPFS in co-operation with FAO used the following approaches: (a) solution of problems by locally specific approaches, local wisdom and indigenous knowledge, which considerably differs in different land types, cultures, and in the different farming operations in development; and (b) the role of external intervention, including by the government was basically towards enrichment of the groups.

5.5.2 Problems and prospects

SPFS programmes raise food production and productivity. It should be noted that programme activities vary with respect to regional potential and target communities. For example, In Jeneponto District (South Sulawesi), where the *Mawar Berkembang* Fishermen's Group needed to acquire the means to catch fish (such as the procurement of boats, fishing equipment, and the construction of *rumpons,* fish attracting devices, etc.), while the *Bantulu Jaya* Farmers' Group showed greater variety in its activity proposal, by requesting procurement of means for agricultural production and hand tractors, in addition to the procurement of fish catching means. Since the funds provided by SPFS are revolving funds, it is expected that use of the funds will be carefully monitored, as will activity reports (Supriyati and Purwantini, 2006).

According to the results of evaluation by BKP (2006b), the mechanism for development reporting is still ineffectual, therefore monitoring of activity development needs to be strengthened to ensure programmes are more effective. However, SPFS implementation raised the capability of groups to overcome food problems. Additionally, the existence of new activities has resulted in the creation of new fields of business and increasing community development. Therefore, SPFS should be developed in other regions, and, of course, funding should be continued and expanded.

6. Food Security in the Context of Decentralization

6.1 Structure and indicators of food security

As a consequence of Law No. 7/1990 (concerning food) and Government Regulation No. 68/2002, the Government formed an institute to handle food security. In the era of decentralization the name given was changed, and the institute is now known as the Food Security Board (FSB). The duty of FSB is to implement, study, develop and co-ordinate stabilization of food security. Aside from that, based on Presidential Decree No. 132/2001, a Food Security Council (FSC) was formed with the President of the Republic of Indonesia as Chairperson and the Minister of Agriculture as Executive Chairperson.

The duty of the FSC is to: (a) formulate policies for the stabilization of national food security, addressing aspects such as availability, distribution, consumption, food quality and nutrition; and (b) evaluate and control the stabilization of national food security.

The FSC functions as co-ordinator to create synergies between policies and food security programmes on a cross-sectoral, cross-economic actor, cross-regional and community basis. The increasingly complex development of food security which involves many actors and regions and inter-temporal change, forms the background of the formation of the FSC. The FSC has an ex-official secretariat which is co-ordinated by the FSB.

In the execution of its duty, the FSC formed: several sets of supporting organizations; technical working groups; specialist working groups; rice prices monitoring and controlling teams; special groups to study fertilizers; food availability and distribution monitoring teams; working groups on a Food Security Information System (FSIS); food security stabilization assistance teams; teams to create food insecurity maps; and food and nutrition working groups.

In the period between 2002 and 2005, based on regional autonomy, the FSB together with related agencies at the central and regional level executed activities related to advocacy, public education, study, preparation of policy material, co-ordination, and evaluation of food security. With regard to institutionalizing food security, the abovementioned activities resulted in the formation of: (a) food security agencies/services/offices/working units in 29 provinces, while four provinces (recently established provinces of Banten, Riau Archipelago, West Sulawesi and West Irian Jaya) have not yet formed food security institutes; (b) food security agencies/ services/ offices/

working units in 261 districts/municipalities, while 164 districts/municipalities have not yet formed food security institutes; (c) regional food security councils in 30 provinces, while three provinces; Riau Archipelago, West Sulawesi and West Irian Jaya have not yet formed food security councils; and (d) the formation of food security councils in 340 districts/municipalities, while there are still 85 districts/municipalities that have not yet formed food security councils, but which nonetheless, are committed to support stabilization of food security in their regions (BKP, 2006b).

The structure of food security working units established in provinces and districts/municipalities in the form of agencies, services, offices, secretariats, and technical implementation units at the third or fourth echelon[1] level, varies greatly. These working units are independent or are included in other working units or are working under units of technical services. The principal task of food security working units in provinces and districts/municipalities is to assist governors and heads of districts/municipalities in the implementation of their duties in the field of food security.

In line with regional autonomy pursuant to Law No. 32/2004 in conjunction with Law No. 22/1999, the FSC developed functional co-ordination between the Central Government and regional governments to co-operatively develop, activate and generate food security. Functional co-ordination takes the form of annual FSC conferences attended by chairpersons of provincial food security councils and annual regional council meetings attended by chairpersons of district/municipal food security councils. The purpose of a regional council meeting is to co-ordinate the implementation of agreed decisions made by Governors at the FSC conference. The agreement reached at the 2002-2003 Regional Council Meeting included the decision to stabilize the development of food security particularly aspects of food availability, distribution and access, plus the need to secure funding support from the Government's National Budget, regional/provincial budgets, district/municipal budgets, and other funding sources, to bring into reality food security (BKP, 2003).

In 2005 regional food security meetings were conducted in three regions; (a) the eastern region of Indonesia encompassing East Kalimantan Province and provinces in Sulawesi, Papua, Nusa Tenggara, Bali and the Moluccas; (b) the middle region of Indonesia encompassing provinces in Java and a part of Sulawesi; and (c) the western region of Indonesia encompassing all provinces in Sumatera. The results of the regional meetings include bringing into reality district/municipal food security by raising fund allocations from

[1] Echelon refers to hierarchical administrative levels within the Government. Level 1 is the highest.

the Government's National Budget, regional/provincial budgets, district/municipal budgets and other funding sources, and broadening the role of regional governments in the development of food economics in district/municipal regions (DKP, 2006b).

The structure and indicators of food security in the decentralization period indicated that food production at the national level has been better than in previous periods. In this period food production increased, except for the production of corn and soybean. In the case of soybean, the decline in production in this period was larger compared to the decline in the previous period (2.2 versus 9.3 per cent per year). The performance of food imports in this period was better than the previous period (Supriyati and Purwantini, 2006).

Results of the analysis by Supriyati and Purwantini (2006) indicate that the performance of national food supply in the decentralization period was considerably better than the previous period. This is evident in the positive growth of national food supply, except in the case of soybean, sugar and beef. The growth of rice supply was relatively small (0.42 per cent per year). This was caused by a decrease in rice imports with a rate of decrease of 10.5 per cent per year, while in the previous period the growth in rice imports reached a rate of 30.5 per cent per year. The rate of growth of the supply of corn, cassava, sweet potatoes, meats and eggs was higher in the decentralization period than in the previous period. The decline in milk imports in the decentralization period caused a decline in milk supply. This decline provides an opportunity to raise domestic milk production. Soybean supply declined as a result of a decline in soybean production and imports. Rising sugar production in the decentralization era followed by a decline in sugar imports caused domestic sugar supply to decline. Beef supply declined, however, meats supplies on aggregate increased.

Indonesia's dependence on food imports in the decentralization period was higher than in the previous period. This was made clear by the increase in the ratio of dependency on food imports, except for rice which showed a declining ratio. A relatively high increase in the ratio of dependency on imported food occurred in milk, soybean and sugar. The decline in the ratio of dependency on rice imports indicates the effectiveness of the national rice policy instruments, especially those related to the protection of domestic farmers from the negative impacts of free trade of rice in international markets. The government imposed a rice import tax amounting to Rp 430/kg from 2000 to 2004 (DKP, 2006a).

In the decentralization period, food prices at the consumer, producer and wholesale trade level were more stable than in the previous period. In this period there was no Rupiah devaluation and no high inflation. Moreover, the policy to stabilize rice prices initiated in

2001 was considered successful in controlling rice prices. This conclusion is based on the observation that rice prices had the smallest coefficient of variation compared to other food commodities during the decentralization period. Although food prices were relatively stable, the system of regional government autonomy encouraged regional governments to raise local regional earnings by establishing more tax collection (or retribution collection) posts along food distribution and marketing traffic lanes, both legal and illegal. Ultimately, this caused hikes in food prices at the consumer level (Supriyati and Purwantini, 2006).

On aggregate, the level of household food access in the decentralization era was better than in the previous period, particularly in households in Java. However, the level of food access for households outside Java in the decentralization era was worse than the previous period. Lack of access to food outside Java occurs mainly in communities in isolated areas, archipelagoes and border areas. This is caused by a lack of transport means and transport infrastructure, such as roads, river and air transportation means and infrastructure. Several provinces where villages still have poor overland road access are Aceh, North Sumatera, West Sumatera, East Nusa Tenggara, West Kalimantan, West Sulawesi and Papua (DKP, 2006a).

The per capita supply of rice, soybean and sugar declined, while per capita supply of other food commodities rose. This was caused by the smaller growth rate in rice, soybean and sugar supply compared to the population growth rate. In the period between 1999 and 2002 consumption of corn, soybean, sugar, meats and eggs increased, while the average consumption of rice and tubers declined. Although levels of food consumption have risen, when compared to the standard of balanced consumption based on the Desirable Dietary Pattern, up to and including 2005, food supply in Indonesia has not yet reached the expected score. However, in the decentralization era the Desirable Dietary Pattern (DDP) score rose from 72.6 in 2002 to 79.1 in 2005.

6.2 Food security programmes

Food security programmes such as the CSF-REVI Programme, Village Food Independence Programme, Food Diversification Acceleration Programme, PIDRA, and SPSF were implemented in the decentralization era. Allocation of funds from the Government's National Budget was still relatively small. On a micro scale, evaluation results indicate that the CSF-REVI Programme was able to: (a) reduce the number of middlemen; (b) raise the bargaining power of farmers; (c) contribute to the rise in prices of paddy/rice; (d) upgrade the quality of paddy/rice produced by farmers; and (e) encourage regional

governments to allocate additional funds as strategic funds of the region and as seed funding to develop economic ventures in rural areas. In the future, with the introduction of regional autonomy, alternative funding may use the regional-matching grants and funds from district/municipal budgets to develop procurement of rice and to expand the procurement of food commodities other than rice.

To diversify food, since the First Five Year Development Plan, the Programme to Improve Family Nutrition was introduced. However, up until 2000 the programme did not produce the expected results. Public awareness of food diversification was still low, as could be concluded from the dominant consumption of rice by a significant portion of the population of Indonesia. In light of this, the Department of Agriculture launched activities to accelerate food diversification to face challenges of food and nutrition problems and overcome these increasingly growing problems (Badan Bimas Ketahanan Pangan, 2003). In conformity with the spirit of regional autonomy, the food diversification acceleration programme was supported by the programme to develop local food which varies in conformity with the diversity of food potential in each district/municipality and the yard utilization programme.

The programme to develop local foods was directed to develop location-specific food commodities to meet alternative food needs and to develop agribusiness. It had following objectives: (a) to realize food security at the household level through raised local food consumption and availability; (b) to develop agribusiness in local food to raise the income of farmers; (c) to improve the quality and image of local food; and (d) to raise the skill of farmers.

The PIDRA Programme raised the income of targeted communities – poor communities living on marginal land. The rise in income caused increasing household purchasing power to access food, including more nutritious food. This was caused by supporting funds, transparent programme activities, and medium-term assistance. Regional governments are expected to be able to replicate a similar programme in upland villages in other areas, with the support of funds from regional/provincial budgets in co-operation with other sources of funds.

SPFS has a broader scope than PIDRA. From the activities of SPFS in various land types, several community empowerment instruments were acquired, as follows: (a) community strengthening systems; (b) holistic planning of group ventures by taking into consideration technical and economical factors, and resource carrying capacity; (c)

revolving analysis schemes for various types of farm operations; and (d) management of funds of group ventures.

As is the case in PIDRA, it is expected that regional governments learn lessons from SPFS. With regard to the lessons learned by regional governments, in 2005 an SPSF Dissemination Workshop was organized, attended by the FSB, Heads of SPSF implementing provinces and districts, three districts outside the SPSF provinces, the National Planning Board, Office of the Co-ordinating Minister of People's Welfare, FSB and FAO. The attendance of the latter four parties relies on supporting budgets and is necessary if SPFS is to be replicated in other regions. In the future, it is better that such dissemination be attended by a broader audience, especially regional governments outside SPFS regions, in order that the lessons learned disseminate faster.

7. Conclusions and Policy Implications

7.1 Conclusions

Food security concepts

1. The concept of food security evolves in response to major social, economic, political and environmental changes, both domestic and international. In the New Order era, food security was only considered with regard to global availability. With the introduction of the Food Law, the concept of food security now includes aspects of food supply, distribution and availability (both physically as well as economically). In the decentralization era, the concept of food security retains these three aspects but also includes an aspect of management. This entails the distribution of management tasks between the Central Government and regional governments, whereby the government functions as a provider of services, a supporter, a facilitator and an advocator, and the communities are the main actors of food security development. Stabilization of food security is achieved through various community empowerment programmes. In the near term, community empowerment programmes should be intensified to enable communities to overcome food problems autonomously and achieve sustainable household food security.

Food security performance

2. Food production in the decentralization period in Indonesia and specifically in East Java, West Kalimantan and West Nusa Tenggara has been better than the previous period. However, increasing production of food commodities in the near term faces several constraints. Continuing land conversion, greater scarcity of water resources for agriculture, and indeterminate climatic phenomena all pose great challenges.
3. National food supply in the decentralization period showed rather lackluster development. To meet food demands, the government implemented a policy of importing food commodities that could not be supplied domestically. Relatively high dependence on imports of milk, soybean and sugar increased, while dependence on rice imports decreased. Dependence on food imports in Indonesia in the decentralization period was higher than in the previous period.
4. Food commodity prices at the consumer, producer and wholesale trade level rose with a relatively high coefficient of variability. Compared to the period between 1990

and 1999, food commodity prices in the decentralization era were more stable. These stable prices resulted from some successful government policies.

5. Compared to farmers in Java, farmers outside Java have less access to food. In the period before decentralization, the farmers' terms of trade declined, caused by a weakening of the public's purchasing power, which was a direct effect of the economic crisis. In the decentralization era the farmers' terms of trade rose.
6. In the period between 1996 and 1999, average food consumption in Indonesia declined in rural as well as urban areas and in Java as well as outside Java. In the period between 1999 and 2002, a rise in the consumption of corn, soybean, sugar, meats and eggs occurred, while average consumption of rice and tubers declined. Even though consumption levels rose, up until 2005 on average they did not meet the desirable dietary pattern (DDP). The DDP score in Indonesia in the decentralization era did, however rise slightly.
7. Occurrences of food insecurity were caused by natural and social economic factors (extraordinary incidence), such as fluctuations in food prices, unstable economic conditions and social conflicts. Among ASEAN countries, Indonesia is the third worst country in the incidence of food insecurity. Moreover, symptoms of transient food scarcity in Indonesia caused by social conflicts are rising. Food insecurity can be overcome with support of a sufficient national food reserve and appropriate distribution means and infrastructure. In the decentralization era, it is expected that regions will develop their own food reserves, both government as well as community food reserves, to deal with regional food insecurity.

Food security structure

8. Food security has not yet been fully achieved and is not evenly spread throughout all regions and communities. Food supply problems faced are: (a) the rate in increase in demand for food is higher than the rate in increase in food production; (b) stagnant productivity of several food commodities; and (c) limited food production capacity.
9. Problems and challenges faced in relation to food distribution are: (a) inter-regional and inter-seasonal diversity in food production capacity; (b) limited communication infrastructure and means to reach all regions, especially in isolated areas; (c) limited market means and institutions; (d) the considerably large collection of taxes, both legal and illegal; (e) the high cost of transportation compared to other countries; and (f) security, regulatory and policy disturbances.

10. Problems faced in food consumption/diversification are: (a) the great number of poor and unemployed; (b) insufficient knowledge and awareness regarding diversification of food and nutrition; (c) the dominant consumption of rice as a source of energy from carbohydrates; (d) the low awareness and application of household sanitation and hygiene; and (e) the low awareness of communities concerning food safety.
11. The main problem faced in stabilizing household food security is the large proportion of the population that has low purchasing power or does not have access to food because of limited household income and resources.

Food security programmes

12. Food security programmes that have been implemented in the decentralization era, such as the CSF-REVI Programme, Village Food Independence Programme, Acceleration of Food Diversification Programme, PIDRA, and SPSF, have not yet significantly raised food security at national and regional levels. This is due to limited programme participation, and programmes not yet having fully reached stated targets. From PIDRA and SPFS much has been learned to empower communities in accordance with local resources.

7.2 Policy implications

1. Viewed from the perspective of food supply, stabilization of food security needs the following: (a) mitigation of productivity stagnation by increasing production through the application of location-specific technologies, raising farmers' institutional capacity and improving extension quality; (b) increased production capacity (by creating incentives to invest in agriculture, encouraging farmers' institutions and partnerships, and applying progressive taxation to actors converting land for agricultural use); and (c) developing food reserves at the household/community level.
2. To overcome problems faced in food distribution, an efficient distribution system should be implemented by: (a) development and rehabilitation of the distribution infrastructure and means; (b) elimination of retributions on fishery and agricultural products; (c) provision of transportation subsidies to troubled and isolated areas; and (d) surveillance of unhealthy trade systems.
3. Stabilization of household food security may be achieved by: (a) maintaining stability of food prices; (b) broadening work opportunities and upgrading income; (c) empowerment of the poor and people facing food insecurity; (d) increasing the

effectiveness of the Rice for the Poor Programme; and (e) strengthening food management institutions in rural areas.

4. To cope with food insecurity, management of national food reserves has to be intensified, at both government and community levels. In the era of decentralization, regional governments are expected to participate significantly in the establishment of food reserves.
5. A rural community empowerment-based programme to accelerate food security should be established, in order to achieve sustainable food security for all parts of society. Dissemination of the results of PIDRA and SPFS should be encouraged and replicated in other areas. In the era of decentralization, regional governments are expected to have the capability to allocate funds from regional/provincial budgets, in order to achieve sustainable food security for all their communities. Simultaneously, action is required to control population growth, by the reactivation of the family planning programme.

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Part II

Poverty in the Era of Decentralization in Indonesia

by

Dewa K.S. Swastika, Gatoet S. Hardono, Yana Supriyatna and Tri B. Purwantini

Summary

For more than three decades, a number of efforts to alleviate poverty have been executed. Those efforts successfully reduced the number of people under the poverty line from about 60 per cent in the 1970s to about 15 per cent in 1990 and 11 per cent in 1996. However, the economic crisis starting in mid-1997 hampered almost all economic sectors, and subsequently increased the percentage of people under the poverty line from about 11 per cent in 1996 to almost 25 per cent in 1998, decreasing to 16 per cent in 2005. An increase in the cost of living in 2006 caused by significant hikes in fuel prices resulted in an increase in the proportion of people living under the poverty line to almost 18 per cent of the population. Most of the poor are living on marginal land with low productivity, low quality of human resources, and poor infrastructure. However, they strongly depend on the agricultural sector. Hence, the agricultural sector should be developed in terms of integrated rural development. The strategy of poverty alleviation by the provision of granted cash, food aid, or revolving funds to the poor, is not an effective way to alleviate poverty. Instead, providing them with soft and simple credit procedure along with the development of infrastructure is more effective. At the same time, the Central and local governments should encourage investors to venture into agro-industry in rural areas. Also, a fair partnership could be developed between farmers and companies. With these strategies, poor families could help themselves to improve their welfare through the adoption of appropriate technology, marketing their products, as well as working in the agro-industrial sector. So far, most poverty alleviation programmes have been initiated by the central government. In the era of regional autonomy, the role of regional governments to design appropriate programmes to alleviate poverty is highly important because regional governments have a better knowledge about the characteristics of the people in their region and the factors that determine poverty. Thus, poverty alleviation will be more effective and efficient.

1. Introduction

1.1 Background

Poverty is a problem faced by almost all countries and by definition especially by developing and underdeveloped countries. The seriousness of poverty has led to the incorporation of the alleviation of poverty and hunger as a principal goal of the Millennium Development Goals (MDGs) which were signed by 189 countries. The MDG agreement states that each and every country should endeavour to halve, by the year 2015, their 1990 figure for the number of poor people in their population.

Presently, a number of concepts or definitions concerning poverty are in use. Poverty may be caused by income or non-income factors, and this led to the introduction of the terms 'income poverty' and 'non-income poverty'. The Central Agency of Statistics of Indonesia (*Badan Pusat Statistik)* defined poverty as an inability to meet basic needs*.* In other words, poverty is considered from an economic point of view as an inability to meet basic needs for food and non-food such as clothing and housing. People are considered to be poor, if they live below the poverty line, defined as the limit of minimum expenditure to meet basic needs for food and non-food (Central Agency of Statistics, 2003 and 2004). The World Bank considers poverty identical with conditions of hunger, not having proper shelter, inability to access medical care and proper education, illiteracy, not having permanent jobs, fear of the future, powerlessness, not being represented, and having no interdependency in society (World Bank, 2006).

In line with the World Bank, Roesmidiningsih (2005) stated that poverty is a daily faced problem of life and which is manifested as hunger, diseases, mortality at young age, the need for jobs and housing, and a feeling of loss of values which give meaning to life. Similarly, Pakpahan *et al*. (1995) stated that poverty usually is often demonstrated by one or a combination of manifestations such as level of income, high mortality of children under five years of age, consumption of food of low nutritive value, appalling quality of housing, low level of education, bad health, etc. As defined by Santoso (2005), poverty is a condition where the majority of members or all members of a society live in low standards of living. Here, a low standard of living is defined as income levels below the line of poverty.

In Indonesia, Law No. 25/2000, concerning the National Development Programme for 2000-2004 defined the direction of policy for national economic development. Among other things its purpose is "to implement various integrated efforts to accelerate the process

of poverty alleviation and reduce unemployment which is an impact generated by the economic crisis*".* Furthermore, the law states, "poverty is a principal national problem needing urgent tackling that has to be considered a priority in national development*."*

In Indonesia, determining poverty alleviation as a development priority is highly urgent, because the protracted economic crisis has led to a sharp increase in the number of poor people from 22.5 million people or 11.34 per cent of the population in 1996 to 49.5 million people or 24.7 per cent of the population in 1998. The number of poor people decreased to 35 million in 2005, however, the hike of more than 100 per cent in fuel prices at the end of 2005 and early 2006 caused an increase in the number of poor people to 39 million in 2006. Development is aimed at raising the welfare of all people; one of the main indicators is the ability to meet essential needs to live properly, healthily and productively or to live free from economic poverty. Failure to significantly reduce the number of people living in poverty is identical with failure in developing the country. The urgency of the problem in Indonesia as borne out by an editorial in *Media Indonesia* (2006) even stated that the failure is not just something ordinary, but a crime.

1.2 Objectives

The objective of this study is to examine the profile of poverty, including the growth in the number of the poor, its characteristics, and the performance and prospects of poverty alleviation programmes in Indonesia. The focus of analysis is linked to the implementation of decentralization. Another objective is the formulation of alternative policies concerning the alleviation of poverty.

This study combines a review of literature, the results of previous studies, and the use of secondary data from various sources. The study also uses results of field studies in three provinces, East Java, West Nusa Tenggara, and West Kalimantan. The studies were implemented by UNESCAP-CAPSA in co-operation with the Bureau of Planning, Ministry of Agriculture of Indonesia, in 2006.

2. Role of the Agricultural Sector

According to the World Bank (2005a), the poor of the world directly or indirectly depend on the agricultural sector. The poor benefited substantially from investments in the development of agriculture in the 1970s and 1980s. Investments in agriculture not only generated breakthroughs in farming, but also enabled countries to strengthen resilience of food security and raise rural household incomes. Investments in the development of agriculture also became a source of economic growth as a whole.

The agricultural sector in Indonesia still has an important role in national economics. Aside from being a source of food provision, agriculture holds a significant role in the absorption of labour and is an important contributor to the gross domestic product (GDP) of the country. During the economic crisis, agriculture even became the 'saviour' of the national economy by absorbing redundant labourers and providing increased income for the country from exports of agricultural commodities.

2.1 Role in the absorption of labour force

Although decreasing as a percentage, in absolute terms labour absorption by the agricultural sector continuously increased and still forms the sector with the greatest capacity to absorb labour. As shown by Table 2.1, labour force absorption in the agricultural sector increased from 31.59 million in 1981 to 40.61 million in 2004, and subsequently to 42.32 million in 2006. Labour force absorption declined from 54.66 per cent in 1981 to 43.33 per cent in 2004, but in 2006 rose slightly to 44.47 per cent. The rise in labour force absorption by the agricultural sector was caused by the decline in labour absorption by the trade, construction and transportation sectors, presumably related to prevailing sluggish economic conditions, specifically due to the hikes in fuel prices.

On the other hand, the industrial sector only absorbed around 0.68 per cent of the labour force in 1981, increasing to 11.81 per cent in 2004 and to 12.16 per cent in 2006. The economic sector showing the sharpest increase in labour force absorption was the trade sector, i.e., from 0.11 per cent in 1981 to 20.4 per cent in 2004, but subsequently decreased to 19.5 per cent in 2006. A similar pattern was shown by the services sector, i.e., an increase from 3.11 per cent in 1981 to 11.22 per cent in 2004, and subsequently a decrease to 11.22 per cent in 2006. And, it seems that the construction sector has not yet recovered from the serious economic crisis in 1998 and the fuel price hikes in 2005. The

construction sector's ability to absorb labour was drastically decreased from 10.42 per cent in 1981 to 4.8 per cent in 2006.

Table 2.1 Absorption of labour force in various economic sectors, 1981-2006a

Sector	1981	1991	1997	2001	2004	2006
1. Agriculture	31 593	41 206	35 849	39 744	40 608	42 323
(%)	54.66	53.92	41.18	43.77	43.33	44.47
2. Industry	391	565	897	12 086	11 070	11 578
(%)	0.68	0.74	1.03	13.31	11.81	12.16
3. Construction	6 022	7 946	11 215	3 837	4 540	4 374
(%)	10.42	10.40	12.88	4.23	4.84	4.60
4. Trade	62	151	233	17 469	19 119	18 555
(%)	0.11	0.20	0.27	19.24	20.40	19.50
5. Transportation	2 146	2 437	4 200	4 448	5 490	5 467
(%)	3.71	3.19	4.83	4.90	5.86	5.74
6. Finance	8 554	11 431	17 221	1 128	1 125	1 153
(%)	14.80	14.96	19.78	1.24	1.20	1.21
7. Services	1 796	2 493	4 138	11 004	10 513	10 572
(%)	3.11	3.26	4.75	12.12	11.22	11.11
8. Others	7 239	10 195	13 297	1 091	1 266	1 154
(%)	12.52	13.34	15.28	1.20	1.35	1.21
TOTAL	57 803	76 423	87 050	90 808	93 722	95 177
(%)	100.00	100.00	100.00	100.00	100.00	100.00

Source: Central Agency of Statistics (1981-2006).
Note: [a] Labour force absorption figures in thousands of people.

2.2 Role as GDP contributor

The agricultural sector plays a significant role as a contributor to GDP. However, in line with the transformation of the national economy, the contribution of the agricultural sector to GDP is in decline. In the 1980s the agricultural sector was still the biggest contributor to GDP. However, starting in the 1990s rapid growth of the industrial sector enabled it to replace the position of the agricultural sector as the biggest contributor to GDP. In the agricultural sector, the food crops sub-sector is the biggest contributor to GDP, followed by the estate crops sub-sector.

In the last 15 years, the industrial sector was the biggest contributor to GDP. Nevertheless, contributions from industries using agricultural products as raw materials (agro-industry) are actually contributions from both the industrial sector and the agricultural sector. If this contribution was taken into consideration, the contribution of the agricultural

sector to GDP was probably still the biggest. Table 2.2 shows the contribution of various economic sectors in relative terms to GDP in the period between 1981 and 2004.

Table 2.2 Contribution of various economic sectors to GDP, 1981-2004[a]

Sector	1981	1991	1997	2000	2002	2004[b]
Agriculture:	21.58	19.26	15.00	16.64	16.04	15.38
- Food crops	*12.06*	*10.59*	*7.73*	*8.68*	*8.25*	*7.42*
- Estate crops	*2.56*	*2.86*	*2.52*	*2.69*	*2.36*	*2.49*
- Animal husbandry	*1.85*	*1.91*	*1.74*	*1.77*	*2.22*	*2.13*
- Forestry	*3.63*	*2.22*	*1.48*	*1.61*	*1.01*	*0.94*
- Fisheries	*1.48*	*1.69*	*1.53*	*1.89*	*2.20*	*2.40*
Industry	10.70	19.85	24.10	23.59	28.83	28.34
Mining	12.00	10.50	8.93	9.77	8.28	8.55
Construction	16.45	8.06	9.51	8.64	5.50	5.84
Electricity, gas, clean water	0.71	0.95	1.27	1.65	0.95	0.99
Trade, hotels & restaurants	19.34	16.64	17.11	15.95	16.55	16.19
Transportation	4.39	5.84	6.09	7.30	5.26	6.09
Finance	2.86	4.06	4.82	6.90	8.29	8.44
Services	11.97	14.84	13.17	9.56	8.89	10.18
TOTAL	100	100	100	100	100	100

Source: Central Agency of Statistics (1983-2005).
Notes: [a] Figures expressed as percentages.
[b] Preliminary figures.

If the structural change of GDP is linked to labour force absorption (Table 2.1), imbalances in the changes of the national economy are apparent. The relatively rapid decline in the contribution of the agricultural sector to GDP is not accompanied by a proportional decline in labour force absorption. The imbalance appears to be caused by the relatively rapid industrial development, apparently with a low level of labour force absorption. This may be due to the tendency for capital-intensive industrial development, while not giving priority to the processing of abundantly available resources (agriculture). Consequently, the agricultural sector has to absorb a labour force beyond its capacity, ultimately leading to exceedingly high disguised unemployment (Mardiyanto and Syafaat, 1998).

The significant role of the agricultural sector in labour force absorption and as a GDP contributor led to expectations that the sector should be able to lessen unemployment and poverty. However, exceeding the limit of labour force absorption caused agricultural productivity to decline and subsequently caused a decline in the welfare of people depending on this sector. Therefore, to create extensive opportunities for employment and

simultaneously alleviate poverty, integrated development of the agricultural sector in rural areas is imperative, including the development of farming technology, agro-industry and marketing, as well as the development of relevant infrastructure. The economies of rural areas, where the majority of the poor live, will grow robustly, leading to a lessening of people living below the poverty line.

3. Poverty Profile and Strategies to Alleviate Poverty

During the last three decades Indonesia has been unable to solve the problem of poverty. Economic crisis, natural disasters, incredible hikes in fuel prices, and rises in rice prices all contributed to the increase in the number of people living below the poverty line. Endeavours to alleviate poverty went through ups and downs in accordance with development growth, and conditions of the social, economic and political environment of the country. Nevertheless, efforts to alleviate poverty were ongoing through various programmes. This section discusses the development of the profile of poverty, its related characteristics and the performance of various programmes on poverty alleviation.

3.1 Development in numbers of the poor

The Government of Indonesia has implemented several programmes on poverty alleviation such as the Presidential Decree on Backward Villages, the Project on the Development of Infrastructure of Backward Villages, the Project to Raise Income of Farmers and Fishermen, and other programmes (Irawan and Romdiati, 2000; Yusdja *et al.,* 2003).

These efforts were able (according to the Food and Agriculture Organization of the United Nations – FAO) to significantly reduce the number of the poor in the population. Suhartini *et al.* (1995) reported that in the period from the 1970s to the 1980s the number of poor declined from 60 per cent to 20 per cent of the population. Furthermore, Hendayana and Darmawan (1995) and Irawan and Romdiati (2000) reported a decidedly significant decline in the number of the poor from 54.2 million or 40.1 per cent of the population in 1976 to 22.5 million or 11.3 per cent in 1996. The decisive factors in reducing the number of the poor are, among others, the intensive development of the industrial sector, both development of non-agriculture-based and agriculture-based industries, as well as development of the finance, construction and services sectors in the era from the 1970s to the 1990s. Although development depended substantially on foreign aid, it succeeded in creating opportunities for employment for the skilled and unskilled. Social, political and economic stability and the great potential of the domestic market attracted numerous domestic and foreign investors to Indonesia.

Nevertheless, the protracted economic crisis since 1997 generated serious negative impacts on the welfare of the people. Factors related to economic setbacks such as soaring

prices of basic human needs, contraction of the urban real sector, pressures on the labour market, declining demands for goods and services, decreased agricultural production and declining income in rural areas generated significant negative impacts on the welfare of the majority of the population of Indonesia, mainly the low income segment (Irawan and Romdiati, 2000).

The serious and negative impact of the economic crisis is demonstrated by the sharp increase in the number of the poor from 22.5 million or 11.3 per cent of the population in 1996 to 49.5 million or 24.7 per cent in 1998. In 1998 of the total of 49.5 million poor people, 31.9 million or 64.4 per cent lived in rural areas, while 35.6 per cent live in urban areas (Table 3.1).

Table 3.1 Distribution of the poor in Indonesia, 1976-2006

Year	Poverty Line [a]		Number of poor people (millions)			Percentage of poor people (%)		
	Urban	Rural	Urban	Rural	Urb+Rur	Urban	Rural	Urb+Rur
1976	4 522	2 849	10.0	44.2	54.20	38.79	40.37	40.08
1980	6 831	4 449	9.5	32.8	42.30	29.04	28.42	28.56
1984	13 731	7 706	9.3	25.7	35.0	23.14	21.18	21.64
1987	17 381	10 294	9.7	20.3	30.0	20.14	16.14	17.42
1990	20 614	13 294	9.4	17.8	27.2	16.75	14.33	15.08
1996	38 046	27 415	7.2	15.3	22.5	9.71	12.3	11.34
1998	96 959	72 780	17.6	31.9	49.5	21.90	25.7	24.7
2000	91 632	73 648	12.31	26.43	38.74	14.6	22.38	19.14
2001	100 011	80 382	8.6	29.3	37.1	9.76	24.95	18.41
2002	130 499	96 512	13.32	25.08	38.4	14.46	21.1	18.2
2003	138 803	105 828	12.26	25.08	37.34	13.57	20.23	17.42
2004	143 455	108 725	11.37	24.78	36.2	12.13	20.11	16.66
2005	150 799	117 259	12.4	22.7	35.1	11.37	19.51	15.97
2006	175 324	131 256	14.29	24.76	39.05	13.36	21.9	17.75

Source: Irawan and Romdiati, 2000; Santoso, 2005; Central Agency of Statistics, 2003, 2004 and 2006; and *Kompas* (2 September 2006).
Note: [a] Limit of poverty line expressed as Rupiah per capita per month.

In the post-crisis period the number of poor people decreased from 49.5 million in 1998 to 38.7 million or about 19 per cent of the population in 2000, then to 35.1 million or about 16 per cent of the population in 2005. However, in 2006 rising prices of staples triggered by the hike in fuel prices caused an increase in the number of the poor to 39.1 million or 17.75 per cent of the population of Indonesia.

Table 3.1 shows that the majority of the poor live in rural areas. On average almost twice as many poor live in rural regions as live in urban areas. Therefore, to alleviate poverty in rural areas, where economies are mainly agriculture-based, agriculture-oriented development is a strategic policy. In other words, development of agriculture supported by development of agro-industries and relevant infrastructures in rural areas should be given high priority.

With an increasingly larger proportion of the poor living in rural areas and because their activities are in the agricultural sector, the characteristics of poverty in rural areas are closely linked to agriculture. Poverty of agricultural households has driven them to diversify incomes. Income diversification tends to become a need and a strategy of agricultural households (Hardono and Saliem, 2006). A study on alleviating poverty by Saliem *et al.* (2006) shows that the greater the dependency on agriculture for income the less the chance for poor agricultural households to live above the poverty line. Therefore, increased development of non-agricultural sectors in rural areas forms a pressing need to create opportunities for employment and new sources of income for agricultural households.

Poverty data for the three sample provinces (East Java, West Nusa Tenggara, and West Kalimantan) for 2005 and 2006 have not yet been published by the Central Agency of Statistics. Therefore this analysis of the profile of poverty in the three provinces focuses on 2000 to 2004 data. Available data indicate that a post-crisis decline in poverty occured, which is a reflection of improved economic conditions at the regional level. In East Java the number of poor declined from 7.85 million or 22.77 per cent in 2000 to 7.31 million or 20.08 per cent in 2004. Similarly, in West Nusa Tenggara, the number of poor declined from 1.07 million or 28.13 per cent in 2000 to 1.03 million or 25.38 per cent in 2004. Most obvious was the decline of the number of poor in West Kalimantan, where a decline from 1.09 million or 29.42 per cent in 2000 to 0.56 million or 13.91 per cent in 2004 happened. It is estimated that a rise in poverty in the three provinces in 2006 was due to the soaring prices of staples triggered by hikes in fuel prices near the end of 2005.

The World Bank has a different view on the increase in the number of the poor in 2006. It stated that the increase of the number of the poor was not caused by the hike in fuel prices, because its impact has been compensated by the provision of cash aid to the poor. The 1.75 per cent rise in the number of the poor in 2006 is more an effect of the hike in rice prices caused by the ban on importing rice by the government. The question is whether implementation of the Direct Cash Transfer Programme indeed caused a decline in the number of the poor. According to Rumiati (2006), in East Java the implementation of

cash aid was only able to generate a downward pressure of 2.62 per cent from the 3.41 per cent rise in the number of the poor.

Data from the National Labour Power Survey show that the unemployment rate in the 2000-2005 period was 4.1 per cent per year. In 2005 the number of unemployed was 47.4 million, of which 10.8 million were the completely unemployed, while 36.6 million were semi-unemployed. The potential for further increases in the number of the unemployed has to be anticipated. Their situation is a time bomb that could trigger a poverty boom, as well as cause social, political and economic upheavals.

As is the case at the national level, the majority of the poor (69 per cent in East Java, 60 per cent in West Nusa Tenggara, and 80 per cent in West Kalimantan) live in rural areas. Interestingly, in two provinces (West Nusa Tenggara and West Kalimantan) an increase in the number of the poor in urban areas and a decline in this number in rural areas occurred during the 2000-2004 period. This conforms with findings of Simatupang *et al.* (2004), which revealed that poverty is shifting from rural to urban areas. In all probability, the shift is caused by the migration of numbers of poor unskilled people from rural to urban areas during the economic recovery period. Having no specific skills, the poor unskilled migrants could not find employment, and ultimately added to the number of unemployed and thus raised poverty in urban areas. Table 3.2 shows details on poverty in the three sample provinces.

Table 3.2 Composition of the poor in three sample provinces, 2000-2004

Province	Year	Number of the poor ('000)			Percentage of the poor		
		Urban	Rural	Urb+Rur	Urban	Rural	Urb+Rur
East Java	2000	2 271.51	5 573.89	7 845.40	16.29	27.17	22.77
	2001	1 829.71	5 678.59	7 508.30	12.56	28.20	21.64
	2002	2 859.00	4 842.15	7 701.15	18.90	24.18	21.91
	2003	2 474.60	5 103.80	7 578.40	16.84	23.74	20.93
	2004	2 230.60	5 081.90	7 312.50	14.62	24.02	20.08
West Nusa Tenggara	2000	340.40	730.10	1 070.50	26.01	29.24	28.13
	2001	312.19	863.32	1 175.51	21.94	35.38	30.43
	2002	537.38	608.43	1 145.81	34.10	23.84	27.76
	2003	486.00	568.80	1 054.80	34.64	21.86	26.34
	2004	492.50	539.10	1 031.60	32.66	21.09	25.38
West Kalimantan	2000	114.37	980.63	1 095.00	11.60	35.85	29.42
	2001	111.56	616.94	728.50	10.83	22.36	19.23
	2002	185.49	458.71	644.20	17.47	14.77	15.46
	2003	165.80	417.90	583.70	15.81	14.42	14.79
	2004	143.80	414.40	558.20	13.29	14.15	13.91

Source: Central Agency of Statistics, 2003-2004.

3.2 Characteristics and indicators of poverty

Several research results by the Agro-Ecosystem Group and Agricultural Social Economic Research Center reported that there are at least two main factors that cause poverty (Pakpahan *et al*., 1995). First, natural resources such as unfertile land, marginal areas, critical areas (including marine fisheries) and sub-optimal use of lands, cause low productivity, leading to low incomes. Second, low area accessibility, mainly caused by inferior transportation means/infrastructure, leads to insufficient access to labour markets, production inputs markets, and markets for products produced in the area, as well as insufficient access to public services. Vulnerability in one or two of the aforementioned factors causes inability of some of the people to meet basic needs. The main cause may differ in different areas. Therefore, inter-regional dimensions and characteristics of poverty are also diverse and dynamic.

Sudaryanto and Rusastra (2006) stated that inter-temporal dimensions of poverty change in accordance with their dynamics. There are nine dimensions of poverty that have to be considered: (i) inability to meet basic needs (food, clothing and housing); (ii) insufficient economic access to other basic needs (health, education, proper sanitation, clean water, and transportation); (iii) inadequate capital accumulation; (iv) vulnerability to shocks from external factors; (v) inferior quality human resources and control of natural resources; (vi) non-involvement in public social activities; (vii) limited access to permanent job opportunities; (viii) inadequate access to work due to physical or mental disabilities; and (ix) suffering social inadequacy and misfortune.

Characteristics of the poor, among other thing are: (a) the majority of the poor live in rural areas; (b) the number of family members in poor families is greater than the number of family members in middle class and wealthy households; (c) the agricultural sector forms the main source of income; (d) minimal or no ownership of assets; (e) low quality of human resources and generally living in areas with marginal characteristics, limited infrastructural support and low level ability to adopt technology; (f) low earnings; (g) the majority (>60 per cent) of earnings is used to meet needs for staple foods; and (h) a tendency for insufficient food intake, due to food consumption of less than 2.1 kcal/day or undernourishment due to the consumption of less than 80 per cent energy-generating food (Roesminingsih, 2005; Sudaryanto and Rusastra, 2006). The spreading of poverty in rural areas demonstrates that overcoming the low-level livelihoods of rural communities needs greater attention and commitment.

Furthermore, Taryoto (1995) stated that poverty is frequently found in dry land, rainfed and swampy areas. Here, manifestations of poverty are, among other things, caused by: (a) insufficient natural carrying capacity of the area; (b) social infrastructure not yet evenly distributed; (c) social economic institutions not reaching local communities; and (d) relatively inferior quality human resources.

Moreover, Simatupang *et al.* (2004) revealed that marginal dry land conditions with low rainfall leads to low productivity. In such dry land conditions, inferior quality of available human resources along with low capability of capital accumulation caused difficulties for farmers in reaching available economic opportunities in agricultural operations as well as non-agricultural operations. In addition, appalling transportation conditions reduced farmers' access to markets of agricultural production inputs and agricultural products. Accumulation of the aforementioned constraints in all probability caused farmers to be trapped in poverty. Farmers depend on agriculture for their livelihood. Therefore, integrated agricultural development has to be implemented with the application of appropriate technology, along with simple access to available sources of capital, development of agriculture-based industries, and development of infrastructures to stimulate area economies.

3.2.1 Poverty according to economic sector

According to the World Bank, an estimated 70 per cent of the poor live in rural areas. A greater part of them directly depend on the agricultural sector. Therefore, it is not surprising that in many countries, specifically in Africa, the agricultural sector is the dominant sector functioning as the main source of economic growth (World Bank, 2005a).

In Indonesia, the tendency of dependency of the poor – of which the majority lives in rural areas – on the agricultural sector is also apparent. Indeed, this is frequently used as one of the indicators of poverty. Statistical data demonstrate that the poor employed in the agricultural sector amounted to about 52 per cent of the population in 2000 and increased to about 59 per cent in 2004. Table 3.3 presents details on employment of the poor in various economic sectors in Indonesia.

The poor employed in the industrial sector in fact decreased from around 14 per cent in 2000 to about 6 per cent in 2004. In absolute terms, the number of the poor employed in the industrial sector decreased drastically from 5.4 million in 2000 to 2.0 million in 2004. This decrease may have been caused by the following factors. First, the industrial sector suffered paralysis leading to severe inability to absorb labourers (especially unskilled labourers). Secondly, there was an increased decline in the quality of human resources, due to the inability of the poor to obtain the level of education and skills required by the industrial

sector. Consequently, the poor could not obtain employment in the industrial sector needing labourers of higher quality than labourers in the agricultural sector. Thirdly, part of industrial development is already directed towards capital-intensive development.

The percentage of the poor employed in the services sector increased somewhat, from 25 per cent in 2000 to 27 per cent in 2004.

Table 3.3 Number of the poor in relative terms employed in various economic sectors in Indonesia, 2000-2004

Economic sector	Number of the poor (%)				
	2000	2001	2002	2003	2004
Unemployed	9.26	6.33	8.61	8.20	8.49
Agriculture	51.73	62.99	57.75	59.59	58.83
Industry	13.84	11.86	12.53	5.75	5.60
Services	25.17	18.82	21.22	26.45	27.08
Total	100.00	100.00	100.00	100.00	100.00
People ('000)	(38 873)	(37 108)	(35 681)	(37 339)	(36 141)

Source: Central Agency of Statistics, 2003 and 2004.

Table 3.3 also shows a transformation of opportunities for employment of the poor, namely, a decrease in the industrial sector and an increase in the agricultural sector. It seems that continuing layoffs in the industrial sector were pushed off to the agricultural sector. In other words, again the agricultural sector acted as a saviour by absorbing discharged labourers from the industrial sector. Such a conclusion led to the strengthening of beliefs that development of the agricultural sector along with development of its supporting infrastructure should be given higher priority. Extending such priority is important to prevent a drastic decline in productivity of the agricultural sector and to preserve the welfare of the people whose lives depend on this sector. And if possible even improve present welfare levels.

Consistent with national employment averages, in the three sample provinces the majority of the poor were employed in the agricultural sector. In the period between 2000 and 2004, on average the poor employed in the agricultural sector amounted to 58 per cent in East Java, 60 per cent in West Nusa Tenggara and 71 per cent in West Kalimantan. As shown by Table 3.4 below, the services sector forms the second biggest sector in employing the poor, followed by the industrial sector.

Table 3.4 Distribution of the poor over various economic sectors in three sample provinces, 2000-2004

Province	Year	Number of poor employed according to economic sector ('000s)							
		Un-employed	(%)	Agriculture	(%)	Industry	(%)	Services	(%)
East Java	2000	922	11.75	4 065	51.82	978	12.47	1 880	23.96
	2001	566	7.54	4 724	62.92	825	10.99	1 393	18.55
	2002	794	10.31	4 467	58.00	789	10.25	1 652	21.46
	2003	765	10.09	4 433	58.50	424	5.60	1 956	25.81
	2004	811	11.10	4 306	58.89	359	4.91	1 836	25.11
West Nusa Tenggara	2000	104	9.76	587	54.88	153	14.26	226	21.09
	2001	87	7.42	806	68.54	96	8.14	187	15.90
	2002	100	8.73	717	62.55	148	12.90	182	15.92
	2003	94	7.97	688	65.21	45	4.24	238	22.58
	2004	109	10.60	507	49.16	99	9.64	316	30.60
West Kalimantan	2000	54	4.96	798	72.84	105	9.58	138	12.62
	2001	28	3.88	566	77.66	60	8.27	74	10.19
	2002	53	8.28	448	69.50	63	9.78	82	12.74
	2003	46	7.84	385	65.94	24	4.21	128	22.02
	2004	25	4.39	390	69.80	19	3.39	125	22.43

Source: Central Agency of Statistics, 2003 and 2004.

3.2.2 Poverty according to level of education

Several experts stated that one characteristic of the poor is its low quality of human resources. This characteristic can be confirmed by observing the structure of the poor based on the level of education. As shown by Table 3.5, the majority of the poor in Indonesia did not finish primary school education. In 2004 around 42 per cent of the poor did not finish primary school, 38 per cent graduated from primary school, 11 per cent from junior secondary school, 8 per cent from senior secondary school, and 1 per cent from educational levels higher than secondary level of education. In other words, 80 per cent of the poor obtained only primary school level education or lower. The inferior quality of human resources of the poor is directly related to their inability to obtain higher than primary level education. Low education levels render the poor powerless to compete in reaching better economic opportunities and thus escape entrapment in poverty.

Table 3.5 Percentage of the poor in the population according to level of education in Indonesia, 2000-2004

Level of education	Percentage of the poor				
	2000	2001	2002	2003	2004
PS [a] dropout	47.38	48.98	44.56	56.23	41.67
PS [a] graduate	35.78	36.83	38.84	28.46	38.36
JSC [b] graduate	9.12	7.96	9.76	9.88	11.50
SSC [c] graduate	7.12	5.49	6.24	5.13	7.72
More than SSC [c]	0.59	0.74	0.60	0.31	0.74
Total	100.00	100.00	100.00	100.00	100.00
People ('000s)	(38 873)	(37 108)	(35 681)	(37 339)	(36 147)

Source: Central Agency of Statistics, 2003 and 2004.
Notes: [a] Primary school.
[b] Junior secondary school.
[c] Senior secondary school.

The poor are aware of the need to be better educated, but constraints such as low household income and inability to access available educational support or infrastructure, prevent them from getting it. Therefore, to liberate the poor from entrapment in poverty, efforts to empower the poor through integrated rural educational development are needed. This is important for the creation of opportunities for employment and for bigger business that could absorb labour from the poor segment of rural communities. The implementation and realization of the nine years compulsory education programme introduced by the government has to be enlarged, to catch up on the development of human resources for a better quality of life in the future. As shown by Table 3.5, in the 2000-2004 period, on average only 9.6 per cent or less of the poor graduated from junior secondary school education.

The low level of education received by the poor is also noticeable in the three sample provinces (Table 3.6). In East Java during the period between 2000 and 2004 almost 87 per cent of the poor had only primary school level education, the majority being dropouts. Less than 8 per cent of the poor finished junior secondary-level education and less than 6 per cent reached senior secondary level or higher. Similarly, in West Nusa Tenggara and West Kalimantan respectively around 85 per cent and 81 per cent of the poor were educated at the primary level and lower, 8 per cent and 12 per cent at the junior secondary level, and 8 per cent and 7 per cent at the senior secondary level and higher. Table 3.6 shows details on the composition of the poor according to level of education in three sample provinces.

Table 3.6 Composition of the poor according to level of education in three sample provinces, 2000-2004

Province	Level of education	Number of the poor ('000s)		
		2000	2002	2004
East Java	≤ primary school	6 748.61	6 775.43	6 299.10
	(%)	86.02	87.98	86.14
	junior secondary school	605.66	554.19	590.60
	(%)	7.72	7.20	8.08
	≥ senior secondary school	491.12	371.58	422.80
	(%)	6.26	4.82	5.78
West Nusa Tenggara	≤ primary school	918.91	965.59	860.30
	(%)	85.84	84.27	83.39
	junior secondary school	72.15	93.40	83.40
	(%)	6.74	8.15	8.08
	≥ senior secondary school	79.43	86.81	87.90
	(%)	7.42	7.58	8.52
West Kalimantan	≤ primary school	920.89	504.56	454.20
	(%)	84.10	78.32	81.37
	junior secondary school	100.85	79.96	73.00
	(%)	9.21	12.41	13.08
	≥ senior secondary school	73.25	59.66	31.00
	(%)	6.69	9.26	5.55

Source: Central Agency of Statistics, 2003 and 2004 (processed).

3.2.3 Poverty according to profundity and seriousness

The Poverty Gap Index (P_1) or the index of profundity of poverty is a measure of the gap between expenditures of the poor and the limit of the poverty line: the greater the Poverty Gap Index, the greater the gap between expenditures of the poor and the poverty line. In other words, a large Poverty Gap Index is an indicator of profound poverty. The Distribution Sensitive Index (P_2) or the index of the degree of seriousness of poverty, to a certain extent gives an illustration of the distribution of expenditures among the poor and may be used to determine the intensity of poverty (Central Agency of Statistics, 2003 and 2004).

During the last five years (2000-2004), the Poverty Gap Index in Indonesia on average was 3.19 per cent below the poverty line. In other words, the poor were only able to meet around 97 per cent of their minimum basic needs. Nevertheless, there were indications of improvement of per capita income, as reflected by a decline in the Poverty Gap Index from 3.51 per cent in 2000 to 2.89 per cent in 2004 (Table 3.7), or an average decline of 4.74 per cent per year. Similarly, the Distribution Sensitive Index indicated improvement in income distribution as reflected by the declining Distribution Sensitive Index

from 1.02 per cent in 2000 to 0.78 per cent in 2004 (Table 3.7). This is also a reflection of decreasing variation in income of the poor.

Table 3.7 Poverty Gap Index and Distribution Sensitive Index in Indonesia, 2000-2004

Year	Poverty indicators (%)	
	Poverty Gap Index (P_1)	Distribution Sensitive Index (P_2)
2000	3.51	1.02
2001	3.42	0.97
2002	3.01	0.79
2003	3.13	0.85
2004	2.89	0.78
Average	3.19	0.88
Trend	- 4.74	- 6.49

Source: Central Agency of Statistics, 2003 and 2004 (processed).

In the three sample provinces an average Poverty Gap Index of 3.85 per cent, 4.96 per cent and 3.54 per cent was determined respectively for East Java, West Nusa Tenggara and West Kalimantan during the 2000-2004 period. This means that the poor in the three sample provinces were only able to meet about 95-96 per cent of their minimum basic needs. In other words, expenditures by the poor in the three provinces were around 4–5 per cent below the poverty line. In the context of welfare, the level of household expenditure is considered, as an alternative, to be a reflection of household income.

There were indications of economic improvement for the poor in the three sample provinces during the economic recovery period between 2000 and 2004. This is reflected by the decline in the average Poverty Gap Index amounting to 5.29 per cent per year in East Java, 5.74 per cent per year in West Nusa Tenggara, and 21.35 per cent per year in West Kalimantan (Table 3.8). The small population of West Kalimantan causes a more rapid rate in the decline of the Poverty Gap Index in this province, so that handling the poor is not as difficult as in the other two sample provinces.

Concerning the three sample provinces, during the period between 2000 and 2004, the average Distribution Sensitivity Index amounted to 1.06 per cent in East Java, 1.34 per cent in West Nusa Tenggara, and 0.98 per cent in West Kalimantan. The figures show that in the period between 2000 and 2004 income distribution of the poor in West Kalimantan was better than in East Java, and in East Java was better than in West Nusa Tenggara. Interestingly, during the period mentioned before an improvement occurred in the income distribution of the poor in the three provinces. This is reflected by the decline of the Distribution Sensitivity Index during the aforementioned period, i.e., on average a decline of

7.19 per cent per year in East Java, 7.29 per cent in West Nusa Tenggara, and 23.48 per cent per year in West Kalimantan (Table 3.8).

Table 3.8 Poverty Gap Index (P_1) and Distribution Sensitive Index (P_2) in three sample provinces, 2000-2004

Year	Poverty indicator (%)					
	East Java		West Nusa Tenggara		West Kalimantan	
	P_1	P_2	P_1	P_2	P_1	P_2
2000	4.25	1.24	5.51	1.57	5.96	1.75
2002	3.88	1.03	5.01	1.28	2.39	0.60
2004	3.42	0.92	4.35	1.16	2.28	0.60
Average	3.85	1.06	4.96	1.34	3.54	0.98
Trend	-5.29	-7.19	-5.74	-7.29	-21.35	-23.48

Source: Central Agency of Statistics, 2003 and 2004 (computed).

3.2.4 Poverty according to the human development index and the human poverty index

The human development index (HDI) also forms one of the indicators to measure poverty that illustrates accomplishment of human development. It is expressed in three dimensions: (i) life span estimated from the life expectancy figure at birth; (ii) education measured by the average duration of education received and literacy; and (iii) standard of living measured by per capita consumption expenditures per month (Central Agency of Statistics, 2003). Differing from the HDI, the human poverty index measures backwardness in the same dimensions as the HDI.

The Central Agency of Statistics (2003) determined the HDI at the national and provincial level as follows. At the national level, life expectancy in 1999 and 2002 remained stable at 66.2 years. However, the National Medium Term Development Plan targeted a life expectancy of 70.6 years in 2009 (Menteri Kesehatan [Minister of Health], 2006). The literacy figure was quite high, i.e., 88.40 per cent in 1999 and 89.55 per cent in 2002, or an average increase of 0.43 per cent per year. Duration of education received amounted to 6.70 years in 1969 and 7.10 years in 2002, or an average increase of 1.95 per cent per year.

The increase in duration of education received is considered to be progress. But, this exceedingly small increase is not enough to raise the standard of human resources at the national level. Such an increase means that the national average of education is only to first grade level of junior high school (Table 3.9). Such an education level is still insufficient to meet the requirements to work outside the agricultural sector.

Table 3.9 Human development index in Indonesia, 1999-2002

Poverty indicator	1999	2002	Trend
Life expectancy (years)	66.20	66.20	0
Literacy (percentage)	88.40	89.55	0.43
Average duration of education (years)	6.70	7.10	1.95
Consumption/capita (Rp '000s/year)	578.80	591.20	0.71
Human development index	**64.30**	**65.83**	**0.79**

Source: Central Agency of Statistics, 2003.

Consumption, the per capita average expenditure per year is still low. In 1999 with the poverty line set at Rp 74,272 per capita per month or Rp 891,260 per capita per year, consumption expenditure of Rp 578,800 per capita per year remained at 65 per cent of the poverty line as determined by government. In 2002, consumption expenditure was again below the poverty line.

The magnitude of indicators stated in Table 3.9 caused upward pressure on the HDI leading to it increasing from 64.30 in 1999 to 65.83 in 2002, or growing at an average rate of 0.79 per cent per year. Based on the 2003 Human Development Report of the United Nations Development Programme (UNDP), Indonesia's ranked 112th of the 175 countries listed in the report, which means that Indonesia's ranking dropped from its position as the 105th ranked in the 1999 Report (Irawan, 2004). However, in 2005 UNDP reported an improvement in the ranking of Indonesia's human development being ranked 110th out of 177 countries (Menteri Kesehatan, 2006).

Table 3.10 shows the results of an analysis of human poverty in Indonesia in 1998-2002. It shows that deaths of under 40 year olds declined a little from 15.20 per cent in 1996 to 15.00 per cent in 2002. This indicates some improvement, especially in the maintenance of health. Also, a decline occurred in illiteracy with an average rate of decline of 2.46 per cent per year in 1998-2002. This is considered to be an indication of improvement in education.

Table 3.10 Human poverty index in Indonesia, 1998-2002

Poverty indicator (%)	1998	2002	Trend
Deaths at less than 40 years of age	15.20	15.00	-0.33
Illiteracy	11.60	10.50	-2.46
No access to clean water	51.90	44.80	-3.61
Distance to nearest medical facility >5 km	21.60	23.10	1.69
Malnutrition of children less than 5 years of age	30.00	25.80	-3.70
Human poverty index	**25.20**	**22.70**	**-2.58**

Source: Central Agency of Statistics, 2003.

The percentage of the population without access to clean water declined, on average 3.61 per cent per year from 1998 to 2002. This is a reflection of improvements in clean water supply, from clean water providing companies and construction of simple water piping systems from wells/springs to rural communities. The number of people living more than 5 kilometres from a medical facility (public health centre or hospital) increased with an average rate of 1.69 per cent per year during 1998-2002. This was caused by an increase in population density in rural areas. A decrease was recorded in the percentage of children less than five years of age suffering from malnutrition from 30 per cent in 1998 to 25.8 per cent, an average rate of decrease of 3.7 per cent per year during 1998-2002. This may be attributed to increased understanding and awareness of parents to provide nutritious food to children less than five years of age and improved ability of parents to provide nutritious food.

Overall, the human poverty index of Indonesia decreased from 25.20 in 1998 to 22.70 in 2002, with an average rate of decline of 2.58 per cent per year. This indicates an improvement in the welfare of the people between 1998 and 2002.

The three sample provinces also showed improvements in the conditions of the poor. All indicators of human development in the period between 1999 and 2002 showed improvement. In 1999, life expectancy was 65.50 years in East Java, 57.80 years in West Nusa Tenggara, and 64.1 years in West Kalimantan, respectively. Three years later, in 2002, life expectancy had increased to 66.0 years in East Java, to 59.3 years in West Nusa Tenggara, and to 64.4 years in West Kalimantan (Table 3.11).

Table 3.11 Human development index in three sample provinces, 1999-2002

Poverty indicator	1999			2002		
	East Java	West N. Tgr	West Klmtn	East Java	West N. Tgr	West Klmtn
Life expectancy (years)	65.50	57.80	64.10	66.00	59.30	64.40
Literacy (%)	81.32	72.82	83.19	83.19	77.80	86.93
Average duration of education (years)	5.94	5.23	5.59	6.50	5.80	6.30
Consumption/capita (Rp '000/year)	579.0	565.9	571.2	593.8	583.1	580.4
Human development index	**61.8**	**54.26**	**60.6**	**64.1**	**57.82**	**62.87**

Source: Central Agency of Statistics, 2003.

Other development indices, such as literacy, average duration of education, and average per capita consumption per year, all show increases from 1999 up to and including 2002. On the whole, increased performance of each human development indicator caused an increase in the overall HDI of the three sample provinces during the 1999-2002 period. As shown by Table 3.11, the HDI in East Java, West Nusa Tenggara and West Kalimantan

increased from 61.80, 54.26 and 60.60 respectively in 1999 to 64.10, 57.82 and 62.87 in 2002. The increase of the HDI is a result of the better performance of human development in the three sample provinces during the 1999-2002 period.

The human poverty index indicates improving performance. In 1998 the death rate (in relative terms) in the population under 40 years of age was 16.20 per cent in East Java, 31.50 per cent in West Nusa Tenggara and 18.60 per cent in West Kalimantan. In 2002 these figures decreased to 15.30 per cent in East Java, to 27.30 per cent in West Nusa Tenggara, and to 18.10 per cent in West Kalimantan. In general, other poverty indicators such as illiteracy, no access to clean water, and malnutrition of children less than five years of age decreased during the 1998-2002 period. Only the percentage of the population living more than 5 kilometres from the nearest medical facility increased, as shown in Table 3.12.

Table 3.12 Human poverty index in three sample provinces, 1998-2002

Poverty indicator (%)	1998			2002		
	East Java	West N. Tgr	West Klmtn	East Java	West N. Tgr	West Klmtn
Deaths at less than 40 years of age	16.20	31.50	18.60	15.30	27.30	18.10
Illiteracy	18.70	27.20	16.80	16.80	22.20	13.10
No access to clean water	43.00	62.50	78.40	36.70	52.30	78.50
Distance to nearest medical facility greater than 5 km	17.10	17.50	43.30	22.20	21.60	50.10
Malnutrition of children less than 5 years of age	30.70	39.70	42.00	25.50	37.80	33.20
Human poverty index	**23.40**	**33.70**	**38.70**	**21.70**	**30.20**	**38.00**

Source: Central Agency of Statistics, 2003.

Overall, the human poverty index in the three sample provinces improved. In 1998 the human poverty index was 23.4 in East Java, 33.7 in West Nusa Tenggara, and 38.7 in West Kalimantan, while in 2002, it was 21.7 in East Java, 30.2 in West Nusa Tenggara, and 38.0 in West Kalimantan. Similar to the HDI, figures of the human poverty index in the three sample provinces for the period from 1998 up to and including 2002 indicate improvement of economic conditions of the poor in the three sample provinces.

3.2.5 Poverty related to access to infrastructure and condition of housing

Another indicator of poverty is access to available infrastructure. Between 2001 and 2003 the percentage of the population with access to clean water increased from 74.44 per cent to 77.23 per cent. However, in 2004 the percentage of the population with access to clean water decreased to 57.05. This was caused by reduced discharges from water resources due to environmental damage leading to less and less of the population receiving

clean water services. On the other hand, electricity services to the population increased from 86.26 per cent of the population in 2001 to 89.02 per cent in 2004, an average rate of increase of 1.06 per cent per year (Table 3.13). This is a reflection of the success of the government's electrical power programme that included distributing electricity from the main grid to rural areas. The government has implemented its electricity to the village programmes since the 1980s.

Table 3.13 Percentage of the population of Indonesia according to accessibility to infrastructure and condition of housing, 2001-2004

Available home facilities	2001	2002	2003	2004	Trend
Clean water (%)	74.44	76.01	77.23	57.05	-8.49
Electricity (%)	86.26	87.58	87.94	89.02	1.06
Private/collective toilet (%)	-	-	-	72.67	-
Predominantly dirt floor (%)	17.55	16.75	16.86	15.10	-4.89

Source: Central Agency of Statistics, 2003.

Around 72.67 per cent of the population in 2004 used private or collective toilet facilities. This reflects better awareness of household sanitation and family health. People who could afford it built private household toilets. If they could not afford it, then several families together built a toilet for collective use. There is still 27.33 per cent of the population that due to unavailability of toilets defecate in rivers, gardens, or in bushes by digging simple holes and covering them with wooden or bamboo boards.

Figures in Table 3.13 shows that in 2001, 17.55 per cent of the population lives in houses with dirt floors, while in 2004 this had declined to 15.10 per cent, an average rate of decline of 4.89 per cent per year. In 2004 already around 85 per cent of the Indonesian population lived in houses with predominantly cement floors, or floors covered by cement or ceramic floor tiles. This is also a reflection of improvement in the people's welfare.

In the three sample provinces access to public facilities varies. As shown by Table 3.14, similar to conditions at the national level, during 2001-2004, the percentage of the poor with access to clean water decreased at an average rate of 7.83 per cent per year in East Java, 19.82 per cent per year in West Nusa Tenggara, and 2.76 per cent per year in West Kalimantan. This was caused by damage to the environment in the three provinces. Access to electricity provided by the State Electricity Company, increased in East Java and West Kalimantan, but decreased in West Nusa Tenggara (Table 3.14).

A decrease occurred in the percentage of the poor in East Java and West Nusa Tenggara living in houses with predominantly dirt floors (Table 3.14). Where houses previously had dirt floors they were renovated with floors covered by cement or ceramic floor tiles. Different from East Java and West Nusa Tenggara, in West Kalimantan most of

the people live in tidal areas in houses built on stilts with simple planks as floors. This means the proportion of people living in houses with dirt floors is relatively low. The use of dirt floors usually means an improvement over plank floors. A dirt floor is needed if a house owner plans to build a conventional house with cement or ceramic floor tiles. Therefore, in West Kalimantan dirt floors are an unreliable indicator of poverty.

In East Java almost 70 per cent of the poor use toilets, while in West Kalimantan and West Nusa Tenggara 66 per cent and 43 per cent of the poor respectively use toilets, as shown by Table 3.14. The high percentage of the poor using toilets in East Java and West Kalimantan is an indication of their awareness of environmental sanitation.

Table 3.14 Percentage of the poor having certain home facilities in three sample provinces, 2001-2004

Province	Available home facility (%)	2001	2004	Trend
East Java	Provision of clean water	82.89	64.90	-7.83
	Provision of electricity	94.83	96.86	0.71
	Private/collective toilet	-	69.67	
	Dirt floor	28.05	22.64	-6.89
West Nusa Tenggara	Provision of clean water	84.52	43.56	-19.82
	Provision of electricity	96.10	81.28	-5.43
	Private/collective toilet	-	43.28	
	Dirt floor	19.75	16.31	-6.18
West Kalimantan	Provision of clean water	18.14	16.68	-2.76
	Provision of electricity	36.16	71.47	25.50
	Private/collective toilet	-	66.08	
	Dirt floor	2.47	3.36	10.80

Source: Central Agency of Statistics, 2003 and 2004 (computed).

3.3 Strategies and approaches in policies to poverty alleviation

The majority of poverty alleviation programmes are sectoral. They are not co-ordinated and frequently there is much overlap between the various programmes. Many programmes are discontinued before reaching their objectives. In order to alleviate poverty, programmes must be implemented efficiently and effectively so that objectives are reached. Appropriate strategies and approaches are needed. Adiyoga and Hermiati (2003, *in* Rusastra *et al*., 2006) suggested implementing strategic actions through community-based empowerment. The empowerment actions are based on reorientation of focuses and approaches as follows: (a) empowerment of poor families focused on the need for food, education and health services; (b) policies focused on structural transformation of the agricultural sector to non-agricultural sectors; (c) development of self-support in poverty alleviation through empowerment of communities of the poor; and (d) carry out repositions

of the role of parties outside the village (including the central government) as development agents to become development facilitators.

A study by the World Bank titled “Revitalizing the Rural Economy: an Assessment of the Rural Investment Climate in Indonesia” (*In* Rusastra *et al*., 2006) stated that there are two main pathways out of poverty and two periods of transition to enable communities to move out of poverty. The two main pathways out of poverty are:

1. Transformation of subsistence agriculture into modern agriculture more commercial in nature (Figure 3.1). Such a transformation of agriculture enables an increase in the productivity of agricultural resources through an increase in the quality of agricultural intensification and diversification, and through a rising of wages in the agricultural sector. The transformation is expected to increase income of households from the agricultural sector, enabling them to move out of poverty in stages.
2. Transformation of subsistence or non-formal agriculture (in rural and urban areas) to more productive and profitable formal ventures (Figure 3.1). This sectoral transformation enables subsistence farmers to gain formal status and increased level of wages and income of households.

The two patterns of the transition period to move out of poverty are:

1. Transformation from subsistence agriculture to informal non-agricultural ventures in rural areas, where probably in a short term in the transformation period rises in income may be insignificant (Figure 3.1); and
2. Migration or rural-urban integration, where members of subsistence farm operation households and households of informal non-agricultural ventures in rural areas are looking for part-time or permanent jobs or business opportunities in urban areas (Figure 3.1).

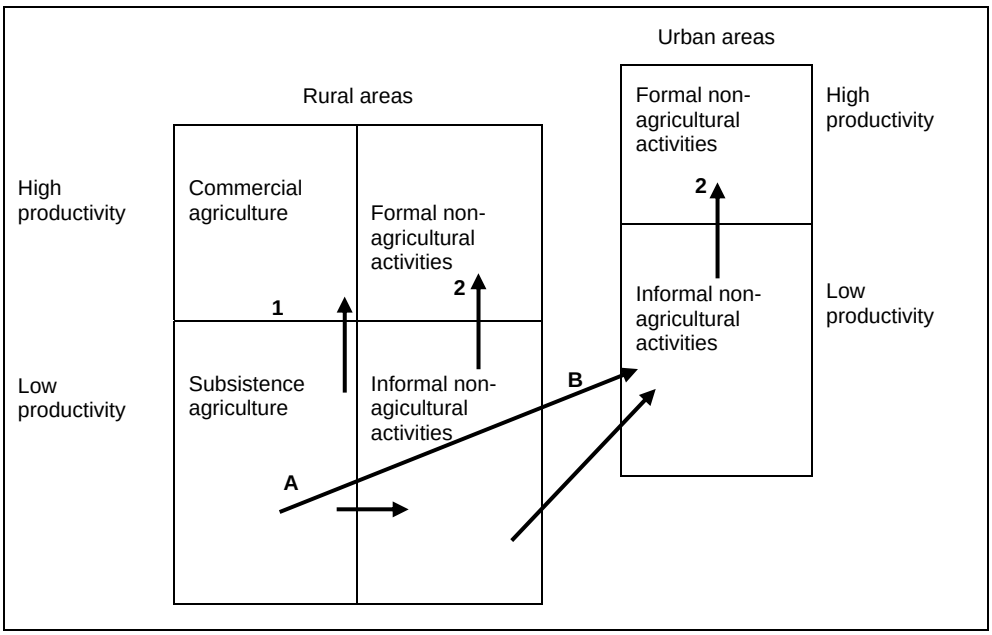
The two transition periods mentioned above need facilitation by the government to stabilize them with the aim to raise and stabilize incomes, as well as minimize temporary negative impacts of pre-integration of rural-urban economics. Pathways and transitions that may be considered as strategies to move out of poverty are presented in Figure 3.1.

According to Rusastra *et al*. (2006), Figure 3.1 shows that the approaches and strategies that may be considered to move out of poverty in rural areas are: (a) a strategy to move out of poverty using a multi-sectoral approach, where contextually the agricultural sector still holds a dominant role; (b) in stagnant conditions of investment and real sector development outside the agricultural sector, transition periods and strategies in the short

term are safeguarding measures that need facilitation; (c) development of modern or commercial agriculture and the formal non-agricultural sector in rural and urban areas is a long-term strategy to move out of poverty; and (d) due to the use of a multi-sectoral approach, there is a need to institutionalize co-ordination of institutions that possess structurally co-ordinative authority at the central government level as well as at the regional government level.

To make multi-sectoral efforts to alleviate poverty effective, the Department of the Interior at the central government level and governors and regents (*bupati)* should become the relevant lead institutions to co-ordinate all programmes on poverty alleviation. Especially, since in the framework of regional autonomy, the Regent at the district-level (*kabupaten*) has full authority in development implementation in his/her administrative region. Obviously, all regional sectoral development programmes should be under single control, i.e., by the head of the region, leading to integrated implementation of poverty alleviation programmes, to avoid programme overlap and ineffectiveness in reaching objectives.

Figure 3.1 Main pathways and transitions to move out of poverty



Source: World Bank (2006) *in* Rusastra *et al*. (2006).

4. Performance and Prospects of Poverty Alleviation Programmes

Efforts to alleviate poverty in Indonesia have been undertaken since the early 1970s. Many parties acknowledged that these efforts indeed did decrease poverty in Indonesia. From 1976 to 1987 the number of the poor decreased from 40.1 per cent to 17.4 per cent of the population of Indonesia. However, since 1987 when the government liberalized the economy, its ability to alleviate poverty has declined. From 1987 to 1996 the number of the poor in Indonesia only decreased by 11.3 per cent (Chandrasekhar, 2005), which is small compared to decreases in the number of the poor between 1976 and 1987. Poverty increased sharply again with the economic crisis in mid-1997, but showed a tendency to decrease during a period of economic recovery. However, soaring prices of staples triggered by considerable hikes in fuel prices in 2005 again caused an increase in the number of people living below the poverty line in Indonesia.

During the last 25 years, the government has exerted considerable effort to alleviate poverty. Some of its programmes are described below.

4.1 Rice for the Poor Programme

The Rice for the Poor Programme was implemented in 1998 to alleviate poverty caused by the economic crisis. The objective of the programme was to assist poor households with contributions of rice, thus reducing basic staples expenditures. The Rice for the Poor Programme differed somewhat from the so-called Specific Market Operations implemented at times of famine. The Rice for the Poor Programme is a strategic programme to assist the poor with basic food stuffs (especially rice), while Specific Market Operations (of rice) are programmes implemented as a reaction to food scarcity (especially rice) usually emerging at times of famines and/or natural disasters (Pasaribu, 2006).

Initially, the government provided subsidies of 10 kg per month of medium quality rice to poor households at a price of Rp 1,000 per kg. Subsequently, the volume of subsidized rice was increased to 20 kg per household per month. It was estimated that the rice allocation ceiling amounted to 40 per cent of the need of poor families. In 2003 the government provided Rp 4,300 million from the National Budget, equivalent to 2.3 million tons of rice for 9.8 million households facing food scarcity.

Tabor and Sawit (2005) estimated that between 2002 and 2004 the Rice for the Poor Programme distributed 6.3 million tons of subsidized rice. On average 2.1 million tons per year, through 46,000 distribution points was distributed, with 55 per cent being distributed in Java. The cost to implement the Rice for the Poor Programme between 2002 and 2005 amounted to Rp 5,290,000 million per year, including the costs incurred by regional governments to transport rice to distribution points.

Some limitations and weaknesses emerged during the implementation of the programme, so that programme output was not maximized. These weaknesses included:

- Some of the households entitled to an allocation of subsidized rice were unable to redeem the packet of 20 kg of rice by paying the required Rp 1,000 per kg. This led to trading in entitlement coupons, with the holders of coupons cashing them in for Rp 20,000. In other words, a number of coupons were sold and used by entities not within the poor household target group.
- Households not classified as Pre-Welfare and Welfare-I Households (according to a classification of welfare levels of households by the National Family Planning Co-ordinator Agency) also wanted to be recipients of the Rice for the Poor Programme. They argued that since they are also poor citizens of Indonesia just as the poor included in the Rice for the Poor Programme, they also have the right to acquire allocations from the programme. Ultimately the allocation of rice in the Rice for the Poor Programme for certain regions was distributed not only to poor households according to the Rice for the Poor Programme but also to all household's outside the original guidelines. Consequently, the volume of rice received by poor households (according to criteria of the Rice for the Poor Programme) was far below the volume stipulated by the programme (20 kg per household per month), and varied from region to region.
- Lack of a budget to meet distribution costs of rice in the Rice for the Poor Programme to villages, caused civil servants in charge of distribution in villages reduce the allocation for each poor household (20 kg) by one or two kg per month.
- Lack of stipulation for the Rice for the Poor Programme concerning duration of the programme implementation. No guidelines were set determining when the Rice for the Poor Programme would no longer be implemented.

Weaknesses in the Rice for the Poor Programme were also caused by weaknesses in determining poverty indicators. To determine programme target groups, the National Agency of Logistics used the much-criticized criteria of poor households formulated by the

National Family Planning Co-ordinator Agency. Although the decision to determine who would be the recipients of the Rice for the Poor Programme had to be validated by the Village Head, this did not mean that indicator weaknesses were not exposed. Another factor affecting the success of programme was the level of public awareness and understanding of the purposes and objectives of the Rice for the Poor Programme. Public awareness about poverty has to be raised to prevent or deactivate social envies that caused programme distortions.

The absence of a specific time span of the Rice for the Poor Programme was probably due to the fact that the programme formed the backbone that supports the existence of the National Agency of Logistics as an institution. If the number of poor continuously decreases, the programme could be terminated. This could well lead to the National Agency of Logistics losing a reliable and considerable budget source.

Despite its limitations the government believed the Rice for the Poor Programme provided considerable assistance to poor households. Therefore, based on Presidential Decree No. 9/2001 concerning Policy on Rice Regulation, the Rice for the Poor Programme was formally established as one of the supporting systems of the economics of rice in Indonesia. Subsequently, in 2002, Presidential Decree No.9/2002 was issued which guarantees a stock of rice and distribution of rice to the poor and people facing food scarcity (Pasaribu, 2006). To strengthen co-ordination in the implementation of the Rice for the Poor Programme, Joint Decision No. 25/2003 between the Minister of the Interior and Director of the National Agency of Logistics on the implementation of the Rice for the Poor Programme was issued. Subsequently, the Rice for the Poor Programme continued in 2005 based on Presidential Decree No. 2/2005.

Along with the Rice for the Poor Programme, the government also introduced a Compensation Food Programme for Reduced Fuel Subsidies targeting recipient households of the Rice for the Poor Programme. The objectives of the Rice for the Poor Programme and the Compensation Food Programme for Reduced Fuel Subsidies were to provide protection to poor households through aid in the form of subsidized rice to meet nutritional needs and concurrently reduce household expenditures. The aim of the two programmes was to provide 8.5 million poor households with basic nutritional needs and upgrade social welfare through donations of rice (Hardono and Kariyasa, 2006).

4.2 Direct Cash Transfer Programme

Cash transfers were provided to poor families (excluding families of civil servants, members of the Armed Forces and Police Force, retired civil servants, and retired members of the Armed Forces and Police Force) as compensation for the reduced subsidies on fuel in 2005, and were distributed based on guidelines provided in Presidential Decree No. 12/ 2005. Around 15.5 million poor families received cash aid. Cash transfers were distributed by the National Postal Service once every three months at Rp 100,000 per family per month. Initially, the Direct Cash Transfer Programme (Bantuan Langsung Tunai = BLT) faced several problems, especially related to the formulation of criteria to determine which poor families were entitled to receive cash aid, and distribution problems. In the second distribution phase, some corrections were implemented, to assure the cash transfer recipients were indeed entitled families. In 2006, the BLT programme was transformed into a productive economic programme for empowerment of the poor (Pasaribu, 2006).

Conceptually, the BLT programme may be considered beneficial because it assisted the poor to overcome their inability to meet basic needs, especially after the more than 100 per cent hike in fuel prices in 2005. However, the success of the programme depended heavily on programme management in the field and public awareness and understanding of the programme's objectives; clear guidelines on who was eligible to receive cash aid and who was not needed to be communicated to the public.

It has to be admitted that there were many flaws in the implementation of the programme in the field. Lack of public information and inaccurate identification caused misunderstandings and even protests from some people who did not receive cash aid. In East Java perceived injustices led to protests. Some people in East Java considered the BLT programme unfair, because recipients of rice from the Rice for the Poor Programme also receive cash aid, while other groups who were probably just as poor did not receive any aid at all (Hardono and Kariyasa, 2006). An identical case emerged in West Nusa Tenggara where groups receiving aid from various programmes also received cash aid (Saliem and Supriyati, 2006). A case study in West Kalimantan reported that the implementation of the BLT programme faced the following problems: (a) people who were not poor, through force and intimidation insisted on becoming recipients of cash aid; (b) small disruptions/protests by people who did not pass verification; (c) existence of ineligible recipients, leading to social envy and even social unrest; and (d) delays in payments, due to the many isolated locations of postal clearing sites (Ariani and Lokollo, 2006).

Together with the programme's poor implementation, the BLT programme was considered to be counter-productive and uneducational because recipients of the programme could become lazy and start depending too much on government aid. Several recipients of the BLT programme confessed that they did not have to work hard because the government was able to provide them with rice and money, without them having to work. They even hoped that the government would increase the amount of aid, as well as the frequency of aid distributions (Hardono and Kariyasa, 2006). Such a simple view of the BLT programme was understandable, as it was the result of a method of overcoming poverty that was not sustainable or educational. The hopes of people for both an increase in the amount of money provided and in the frequency of money distributions were, of course, impossible for the government to fulfil, due to national budget restraints.

4.3 Intensive Labour Programme

In the fiscal year 1998-1999, the government introduced an intensive labour programme for infrastructure development. This programme was one of the government's programmes to create employment opportunities during the economic crisis. The programme was implemented through the Productive Labour Intensive Programme for Public Works and the Programme for Handling Slums and Fishermen Settlements. In the fiscal year 1999-2000, the government prepared the Productive Labour Intensive Programme for Public Works and an intensive labour programme specifically directed to unemployed women called the Special Initiative for Women's Unemployment.

The economic crisis caused a slow-down in most economic sectors with increasing redundancies and a greatly reduced national ability to absorb labour (Info URDI, 1999). The Central Agency of Statistics estimated that in 1999 the number of people in full unemployment was around 6.2 million, while those in semi-unemployment or people working less than 35 hours a week was around 35 million (*Kompas*, 20 April 1999, *in* Info URDI, 1999). Unemployment caused by the crisis was more apparent in urban areas than in rural areas. At that time the informal sector became a saviour able to absorb labour. However, the resilience of the informal sector depended on the development of the formal sector. Rising numbers of unemployed, due to frequent lay-offs in the formal sector, together with an influx of new job seekers created conditions for social unrest.

The objective of the Productive Labour Intensive Programme for Public Works and the Programme for Handling of Slums and Fishermen Settlements was to create job opportunities through infrastructure development. However, the focus of the two

programmes differed. The Productive Labour Intensive Programme of Public Works emphasized developing infrastructure in municipalities and villages that were considered to be growth centres. On the other hand, the Programme on Handling of Slums and Fishermen Settlements was directed toward *kampung* (residential areas in rural regions) improvement in slums and fishermen settlement sites in metropolitan cities and big municipalities. In the Productive Labour Intensive Programme of Public Works, the target group was the local labour force affected by the economic crisis and construction enterprises classified as C2-GEL (economically vulnerable) enterprises. The Programme on Handling of Slums and Fishermen Settlements did not take into consideration the qualifications of contractors involved and the local labour force did not have priority in recruitment. In other words, recruitment of labour was not restricted to local people but was more open in nature.

In the Productive Labour Intensive Programme of Public Works, programme preparation and implementation was a top-down process, practically without public involvement. Meanwhile, the Programme on Handling of Slums and Fishermen Settlements stressed public involvement in the preparatory, implementation and post-implementation stages of projects of the programme. Public involvement was in the form of involvement of non-governmental organizations, non-governmental public service institutes, and local universities. Based on experiences gained by the two programmes, there are three characteristics that have to be taken into consideration and are important characteristics for infrastructure developments: (i) availability of a labour force skilled in construction work; (ii) demonstrable needs for the infrastructure; and (iii) compatibility with existing infrastructures. These three characteristics should not be ignored when intensive labour programmes to develop infrastructure are being implemented.

Based on experience gained from previous programmes and considering their characteristics, the Productive Labour Intensive Programme of Public Works possessed several specific superior characteristics as follows:

- Infrastructure and related means are supporters, and at the same time, stimulators of the development of socio-economic activity systems, so the infrastructure developed has to be integrated in the activity systems it is supporting. For instance, construction of secondary artery roads to provide service to secondary activity centres.
- Infrastructure and related means form hierarchical systems. For example, a secondary drainage system is a part of a primary drainage system, a main terminal system with other sub-terminals as branches, and so on.

- Development of infrastructure and related means needs certain technical skills, for instance, technical skills concerning declivity, bridge construction, etc.

Taking into consideration the specific superior characteristics mentioned before, determining labour-intensive projects in the field of infrastructure development should be based on the following:

- Selecting and determining the location of an intensive labour project should be based on the need of the location for the basic infrastructure and related means, by taking into consideration linkages to the macro-infrastructural system in the location as a whole. It is better that the selection of project location should not be focused on locations and areas known as pockets of discharged people, since it is not known whether the location needs infrastructure and related means linked to the existing macro-infrastructural system.
- In conformity with the nature of intensive labour and the need for certain technical skills, work implementation units consist of construction contractors of the C2-GEL class in related municipalities/districts, by taking into consideration equity between contractors. Recruitment of labourers should not be emphasized on the use of local labourers because, in general, they do not possess relevant technical skills. It has to be noted that contractors having C2-GEL qualifications but possessing experienced and technically skilled personnel are assets of the municipalities/districts where they reside, and have to be assisted in times of crisis.
- Inter-location and inter-contractor integration, as well as integration with the Social Security Net programmes and other programmes are needed. This needs co-ordination at the local level, i.e., at the related municipal/district level, for instance, co-ordination by the Municipal or District Agency of Development Planning in question.

It has to be noted that creating job opportunities through infrastructure development is not a novelty. During the world recession in the 1930s America and the Netherlands used infrastructure development to deal with and recover from recession. Examples are the Tennessee Valley Authority development project and the construction of sea dikes in the Netherlands (Info URDI vol. 3, January-March 1998 *in* Info URDI, 1999).

Infrastructure development itself should conform to the needs of each region. For instance, for regions outside Java, where superior natural resources are apparent, probably there is no need for a Social Security Net Programme, but what is needed is infrastructure

development in support of the rapid development of regional economy during the period of economic recession (Info URDI vol. 4, April-June 1996 *in* Info URDI, 1998). In West Nusa Tenggara intensive labour was implemented in the rehabilitation of irrigation and overland transportation networks. Here, the system used in the programme was empowerment of labour force locally available at the programme site and extending wages equivalent to the local rate of wages (Saliem and Supriyati, 2006).

Based on the considerations mentioned above, obviously dealing with the economic crises should not be too fixed to the Social Security Net Programme, which focuses on the rescue stage. These programmes should be accompanied and used for the recovery stage and even for the development stage as well. Thus, within a time span of three to five years not only is the economic crisis dealt with, but also municipal and regional economies are supported by the infrastructure developed, leading to better preparedness to compete globally.

Learning from experiences gained by other countries, since the private sector is still in a condition of 'suspended animation', the government is expected to show leadership to study or even pioneer infrastructure development as one of the principal alternatives in economic recovery. Even at the start of the initial stage of development, involvement of economic actors should not be limited to C2-GEL contractors only, but to all classes of contractors according to skills and capabilities needed in infrastructure development (Info URDI, 1999).

4.4 Programme to Empower Small and Medium Enterprises

The considerable numbers of small and medium enterprises form a business sector having the capability to absorb a considerable work force, leading to expectations that this sector would be able to overcome unemployment and poverty. In 2004 the Ministry of Small and Medium Enterprises and Co-operatives revealed that the government had formulated a number of policies to empower small and medium enterprises, mainly through the provision of subsidized credits and technical assistance. The empowerment programme started in 1974 with the Programme for Small Investment Credits and Permanent Working Capital Credits, which provided investment credits and permanent working capital credits that had to be repaid within a time frame of up to ten years with subsidized interest rates.

After the deregulation of the banking industry in 1988, subsidized interest rates were gradually terminated and replaced by commercial banking interest rates. Subsequently, the so-called Small Business Credits was introduced, where the government stipulated that

banks had to allocate 20 per cent of their credit provisions to small businesses, with a ceiling of Rp 250 million (at that time equivalent to US$ 130,000). However, it was acknowledged that empowerment through subsidized credit was relatively ineffective. Therefore, other strategies were needed to integrate sustainable development of small and medium enterprises into the national economy. Also, up until the present, economic policies (especially in the development of the business world) have not resulted in the creation of strong linkages between big business and small and medium businesses.

Economic policies that have to be reconsidered, among others, include regulations that impede the development of small and medium enterprises. For example, regulations obstructing competition, complex licensing systems, and taxation procedures and regulations leading to a high-cost economy. By restructuring economic policies, various regulations become business friendly, thus enabling the creation of a business atmosphere conducive to the development of small and medium enterprises. Thus, efforts to internally put in order small and medium enterprises can proceed effectively. Internally, at least two targets have to be reached: (i) raise productivity of small and medium enterprises in order to possess high competitive ability; and (ii) increase accessibility of small and medium enterprises to financial service institutions. Increasing the productivity of small and medium enterprises (especially the small ones) is important, because if not done, imbalances between small and medium enterprises and big enterprises will be increased.

Improving the productivity of small and medium enterprises is urgently needed, along with the implementation of free trade. In 2003 small and medium enterprises contributed 19.9 per cent of Indonesia's exports, excluding oil and gas. This represented a slight increase compared to the 19.3 per cent of exports (excluding oil and gas exports) in 2000. This indicates that Indonesia's small and medium enterprises were still not able to use global markets and were still oriented towards domestic markets. Whereas, even up till now, domestic markets are threatened by heavy inflows of inexpensive imported products and smuggled goods.

When considering the potential of global markets, Indonesia could learn much from Japan, Republic of Korea and Taiwan Province of China, where small and medium enterprises contribute significantly to exports. In Republic of Korea between 1970 and 1986, exports by small and medium enterprises consistently amounted to more than 30 per cent of total national exports. Meanwhile, in Japan and Taiwan Province of China, this amounted to respectively 50 per cent and 65 per cent. The success of small and medium enterprises in

international markets is an indication that domestic competitive ability of small and medium enterprises is based on comparative and competitive superiority.

Up until now, small and medium enterprises have been inhibited in upgrading their business capacity due to minimal availability of capital. Policies of previous governments in the development of small and medium enterprises were focused on a strategy of financing with subsidized interest, which proved to be highly ineffective. This was confirmed by a study by the World Bank in countries where the strategy of financing with subsidized interests to small and medium enterprises in fact generated moral hazards, among others being the great number of credits that were not repaid. Now, financing sources of almost 80 per cent of micro and small enterprises are their own capital or non-formal sources, such as middlemen and usurers charging excessive interests. Therefore, the government should intensively implement efforts to upgrade accessibility of small and medium enterprises to financial service institutions such as banks as well as micro-financial service institutions (venture capital, co-operatives and other micro-financial institutions). Furthermore, simplification in the procedure to request credits is needed.

Several steps need to be taken by the government to raise the competitiveness of small and medium enterprises. The first is to create a priority scale determining the kinds of small and medium enterprises that have the potential to be developed in each region. For instance, enterprises engaged in handicrafts, horticulture, ornamental fish culture, furniture production, etc. The second step is to map the markets of each of the commodities to be developed. Mapping has to be comprehensive, meaning the inclusion of prices and volumes, starting at local markets, and continuing through regional and national markets to international markets. Third, the central/regional government, financial institutions, business associations, and other business groups concerned with the development of small and medium enterprises, have to co-operate in developing the enterprises. Co-operation should include upgrading of human resources, technologies, capitalization, and marketing. Involvement of business associations is expected to bridge and strengthen co-operation between small and medium enterprises and big enterprises, leading to transfers of knowledge and technology. The fourth step is advocacy and promotion. Advocacy is very much needed to protect small and medium enterprises from the invasion of foreign commodities/products. However, advocacy has to conform to stipulations formulated by the World Trade Organization, while promotion is mainly conducted to penetrate global markets (Kementrian UKM-Kop, 2004).

4.5 Project to Upgrade Income of Small Farmers and Fishermen

In 1980 the Department of Agriculture implemented the Project to Upgrade Income of Small Farmers and Fishermen *(Proyek Peningkatan Pendapatan Petani dan Nelayan Kecil).* The objective of the project was to raise the ability of small farmers and fishermen to acquire access to available facilities to upgrade family income and welfare. The project was a special programme managed by the Department of Agriculture in co-operation with the People's Bank of Indonesia, and was directly oriented to deal with poverty and empowerment of the people's economy. Approaches used by the project were as follows: (a) development of human resources by empowerment of small farmers and fishermen; and (b) micro-financial services to support micro-ventures and small enterprises in rural areas. Credits to collective ventures were provided to groups of 8-12 small farmers and fishermen. Assisted by funds provided by FAO and the International Fund for Agricultural Development, the government extended subsidized credits to groups of small farmers and fishermen possessing work plans for collective ventures (Pakpahan *et al*., 1995). The Project to Upgrade Income of Small Farmers and Fishermen was a long-running project and was considered to be successful. Up until to 2004 the project still existed under the management of the Agency of Human Resources Development of the Ministry of Agriculture. Up to and including April 2004, the project developed 64,247 small farmers and fishermen and created 132,682 collective venture plans. Moreover, the project acquired credits from the People's Bank of Indonesia amounting to Rp 902,500 million, of which Rp 690,500 million has been repaid and presently Rp 211,900 million is still in the process of repayment. The size of arrears is small, i.e., around 4.8 per cent. Furthermore, 53,333 small farmers and fishermen have savings in the People's Bank of Indonesia amounting to Rp 23,800 million and group collective savings of Rp 5,900 million. The project accessed 9,646 villages in 1,258 sub-districts (*kecamatan*), 134 districts (*kabupaten*), and 18 provinces (Sinar Tani, 2004).

The results of impact studies carried out by the Central Agency of Statistics and local universities in 2002 indicated that the Project to Upgrade Income of Small Farmers and Fishermen generated changes in behaviour of small farmers and fishermen. Furthermore, the programme generated increases in school children's participation, health, asset ownership, and income. Results of the studies also indicated that if the poverty line was set at 320 kg rice per capita per year, then by using the income approach, only 9 per cent of the families of small farmers and fishermen live below the poverty line, while by using the expenditure approach 8 per cent live below the poverty line. Hence, up to 2002, around 91-92 per cent of the households of small farmers and fishermen involved in the Project to

Upgrade Income of Small Farmers and Fishermen live above the poverty line (Sinar Tani, 2004). However, due to its sectoral nature, the project was not free from weaknesses. Its sectoral nature led to a project dominated by sectoral interests and frequent overlapping with programmes targeted at groups that were also targeted by other projects.

4.6 Other programmes

As mentioned above for more than three decades, aside from the Rice for the Poor Programme and Direct Cash Transfer Programme (BLT), the government has implemented a number of programmes to alleviate poverty. Some of these are listed below:

1. Programme to Raise Income of Prosperous Families

   In 1991-1992 the Programme to Raise Income of Prosperous Families *(Program Usaha Peningkatan Pendapatan Keluarga Sejahtera)* was launched by the government through the National Co-ordinator Agency of Family Planning. The programme was targeted at groups of family planning recipients. It provided aid to groups of family planning recipients in the form of revolving capital to be used collectively by group members in business ventures to increase incomes of recipient families. The programme was considered such a success, that in 1997-1998 it became the Programme to Develop Prosperous Families.

2. Presidential Decree on Special Programme for Backward Villages

   Efforts to alleviate poverty were conducted between 1993 and 1996 through the Special Programme for Backward Villages (*Program Khusus Inpres Desa Tertinggal*), which was an integrated cross-sectoral programme using regional and family approaches. Aid provided by the programme was in the form of working capital and infrastructure with university graduates as counterparts. Working capital amounting to Rp 20 million per village per year was provided as revolving capital to community groups to generate income. The programme was supported by a support programme called Development of Supporting Infrastructure of Backward Villages (*Pembangunan Prasarana Pendukung Desa Tertinggal*). The support programme was implemented by village communities through the Village Community Board (*Lembaga Ketahanan Masyarakat Desa*) in each of the villages participating in the programme. Also, the support programme facilitated development of business activities, including marketing in backward village areas. Infrastructure development by the support programme consisted of construction of roads, bridges, and clean water and sanitary facilities, or other facilities depending on the needs of backward

villages. Development implementation was managed by village communities themselves through operational co-operation.

The programme was widely considered a success, especially in Java and Bali. However, this was not the case in villages outside Java and Bali. Weaknesses in the programme were the lack of togetherness and solidarity in the various community groups formed in a backward village. Moreover, the community groups were proceeding on their own without mutual support, while the government apparatus and government field officials involved in the programme showed a lack of commitment due to a lack of comprehensive understanding of the programme. Ultimately, with the termination of the programme, the community groups fell apart.

3. Programme to Develop Prosperous Families

   The Programme to Develop Prosperous Families (*Program Pembangunan Keluarga Sejahtera*) was a continuation of the Programme to Raise Income of Prosperous Families, which was previously co-ordinated by the National Co-ordinator Agency of Family Planning. In 1997-1998, the Office of the State Minister of Population and Family Planning transformed the programme into a Programme to Develop Prosperous Families. The programme consists of two sub-programmes, i.e., the Family Prosperity Savings Programme and Prosperous Family Venture Credit Programme. Targets of the programme are wives in families classified as 'pre-prosperous' and 'prosperous-I' families. The principle of the programme was to train and direct pre-prosperous and prosperous-I families to engage in business in the field of agro-industry and trade through activities in so-called economically productive family groups, to enable them to help themselves. A weakness of the programme was the misuse of credit provided by the Prosperous Family Venture Credit Programme, by placing the credit in saving accounts in banks with higher interest than interest charged by the programme. Obviously, such acts are not in line with the objective of the programme. However, superiority of the programme was shown in the sector in which it is operating, namely, agricultural management based on the slogan, 'To harvest, process, sell and generate profits'.

4. Programme to Provide Supplementary Food to School Children

   The Programme to Provide Supplementary Food to School Children was a cross-sectoral programme implemented in 1997 by the Department of the Interior, National Development Planning Board, Department of National Education, Department of Health, and Department of Religious Affairs. The programme was targeted at

students of (general) primary schools and *Ibtidaiyah* Islamic primary schools in areas populated by the poor, with the objective to improve intake of nutritious food and general health of growing children. Supplementary food was obtained from local sources. However, it was difficult to conclude whether the programme generated positive impacts in the form of improved intake of nutritious food and improved general health of the school children provided with supplementary food. Weaknesses in the programme were caused by the lack of socialization at the school and village level and indistinct inter-sectoral co-ordination. Moreover, supplementary food provided to the students for the greater part was purchased outside the programme area, resulting in insignificant empowerment in the local area economy.

5. Social Security Net Programme

   The Social Security Net Programme was implemented to alleviate poverty caused by the economic crisis in 1997-1998. The programme was momentary in nature and implemented on a national scale under the management of the National Development Planning Board and several related sectors, with the objective to assist the poor newly generated by the economic crisis, to meet their needs for food, medical care, education and employment. Weaknesses of the programme were its impromptu, reactive and hasty nature. The indistinctness of target groups, programme implementation and monitoring, loaded with bureaucratic procedures, corruption and nepotism, were much criticized, although some successes were achieved.

   In developed countries the poor receive continuous social aid, even though they do not acquire employment. This differs from Indonesia, where impromptu and momentary aid is provided without continuation.

6. Poor Farmers Income Improvement through Innovation Project

   Presently, a poverty alleviation project called Poor Farmers Income Improvement through Innovation Project (PFI3P) is underway. PFI3P is implemented by the Department of Agriculture in co-operation with regional governments and is funded by a soft loan provided by the Asian Development Bank covering a five-year period from 2003 to 2008. Targets of the project are 1,000 villages in five *kabupaten* (districts) in four provinces, namely, Blora and Temanggung in Central Java, Donggala in Central Sulawesi, East Lombok in West Nusa Tenggara, and Ende in East Nusa Tenggara. The objective of the project is to empower farmers by raising

their ability to innovate, so that they can solve the problems they face. The five targeted project areas are areas of marginal dry land.

The project has introduced various innovations related to and in support of agricultural development. The innovations introduced have been based on specific problems identified in each location and have been directed toward infrastructure development, agricultural technology innovations and upgrading the quality of human resources. The government provides aid in the form of funds, but management of these funds for infrastructure development, technological innovations, and upgrading the quality of human resources is community based under supervision of local governments and non-governmental organizations. It is expected that by using this approach, the rural communities will execute their development independently in line with their needs and particular problems faced. The government only acts as a facilitator.

In this project, infrastructure developed has included village roads, bridges, dams and check dams, irrigation channels, wells, small reservoirs, village storage rooms, drying floors, etc. Technological innovations introduced include integrated farming systems (cattle and crops), demonstrations of agricultural technology and information technology using the Internet. Upgrading the quality of human resources has been carried out by organizing training to master skills in agricultural product procession, product marketing, the use of the Internet to obtain market information, and implementation management of development projects. All the aforementioned development has been aimed at enabling people to solve the specific problems they face. In most cases problems related to the transportation and marketing of agricultural products, scarcity of water during the dry season, and floods during the rainy season (Swastika, 2005).

4.7 Prospects of poverty alleviation programmes

Almost all poverty alleviation programmes launched by the government are momentary and curative in nature, and consider the poor as an object, not as a subject of empowerment. The form of aid provided, whether in the form of soft loans, revolving credits, cash aid, or food aid, has not solved the poverty problem. Revolving funds provided actually never revolved but just vanished completely in recipient groups. The same applies to the various forms of direct aid provided to the poor. Aid recipients are not aware that frequently aid provided is in the form of credits that have to be repaid to the government or revolved to

other community groups. They still perceive that funds provided by the government are free of charge, so that they do not have to be repaid or revolved.

In general, programmes that have been considered successful have been those that do not provide soft loans, revolving credits, or cash aid to the poor, but develop infrastructural facilities such as roads, bridges, irrigation channels, clean water, and so on. In the past such programmes have been implemented through the Presidential Decree for Special Programmes for Backward Villages (1993-1996), the Productive Labour Intensive Programme of Public Works (1998-2000), and PFI3P, which is still current (2003 to 2008). If PFI3P is implemented properly in line with its mission, then a project of this type may become a rural development model to alleviate poverty in the future. However, if institutional interests or the interests of government officials involved in the projects as developers and regional implementers is put above the interests of the proper execution of the noble mission of the project, or the bureaucracy involved in the project misuses project funds, then these projects will share the same fate as previous projects, namely, failure in reaching objectives, and the poor remaining poor.

In the near term, it is best to provide poor farmers with: easily access to soft credit, training on appropriate technology, and assistance not in the form of cash or food, but in the form of infrastructure development in rural areas. Assistance in the form of cash and food does not educate at all, and should only be provided in emergencies.

To accelerate economic growth in rural areas, the time has come for the government to stimulate investors to establish agro-industrial ventures in rural areas. Also, the Government should lessen bureaucracy that causes high costs to investors, and develop and improve means and infrastructure that support agribusiness systems in rural areas. Apart from that, sustained development of small and medium enterprises has to be increased to create more job opportunities leading to reductions in unemployment and poverty. Simultaneously, the government has to act as facilitator in developing fair and mutually beneficial partnerships between farmers (suppliers of industrial raw material) and agro-industrial enterprises, and between small and medium enterprises and big companies. Thus, farmers are assured of availability and accessibility of markets of agricultural products. Additionally, the establishment of agricultural products processing factories will create job opportunities for members of rural households. If this can be realized, rural economies will develop faster. Ultimately, PFI3P is expected to generate more opportunities for employment and improvements in welfare, leading to reductions in unemployment and poverty.

5. Poverty in the Context of Decentralization

5.1 Relevance of regional authority in poverty alleviation

Since 2001 regional autonomy has been implemented at the district *(kabupaten*) and municipal levels in Indonesia, as follow-up to the passing of Law No. 22 of 1999 and Law No. 25 of 1999. With the implementation of regional autonomy, a system of decentralized government came into effect, where district heads (*bupati*) and mayors have full authority to execute regional government. Although regional governments before and after the introduction of regional autonomy are structurally similar, the district head or mayor has the jurisdiction to decide on the form of all components (sectoral agencies) of the regional government. District heads and mayors of autonomic regions have full authority to form government components considered by them to be important, and abolish components considered to be not important. Therefore, also connected with the authority over autonomous regions is the authority and responsibility to directly and actively strive for poverty alleviation. One of the objectives of regional autonomy is to create a better, effective and efficient system of public services, which ultimately enable the creation of prosperity and independence of the people (Mawardi, 2002).

Actually, of all the regional government components (sectoral agencies) formed, it is not yet clear which components (agencies) have the responsibility in poverty alleviation. Up until now, poverty alleviation programmes have been centralistic in nature, i.e., programmes launched by the central government and channeled in similar patterns to regions, without taking into consideration regional-specific characteristics of the poor.

It is therefore proper that in the framework of regional autonomy poverty alleviation programmes are designed and implemented under the co-ordination of district heads and mayors and oriented towards specific characteristics of the poor in autonomous regions, with the use of regional budgets (APBD) and general allocated funds (DAU). With a better understanding of the characteristics of the poor in autonomous regions, the design of poverty alleviation programmes has to be more focused on empowerment of the poor to solve problems through active participation, so that programme objectives may be reached more efficiently and effectively. Regional autonomy enables regional government to act more responsively and be pro-active in managing poverty, without waiting for instructions from higher-level governments (Mawardi, 2002).

In line with the mission of decentralization, Rusastra *et al*. (2005) suggest that community-based operations to alleviate poverty should be based on the following principles. Communities should:

- determine their own approaches to alleviating poverty in accordance with local requirements, optimize the use of local resources, and overcome self-centred sectoral approaches that cause overlapping, ineffectiveness and inefficiency;
- tackle poverty by themselves with assistance (techniques, information, technology, etc.) from outside parties; and
- decide on and develop principles of transparency and accountability (public control) concerning poverty alleviation activities at the village community level.

5.2 Strategies and approaches to overcome poverty

According to Mubyarto (2002) the paradigm to overcome poverty in the era of regional autonomy is that policies or programmes to overcome poverty will be successful if "the poor become principal actors in the fight against poverty." To assist the poor to move out of poverty, commitment and proper organizational policies and programmes are required. The poor should not be treated as objects, but rather as subjects of poverty alleviation. In the era of regional autonomy, programmes to overcome poverty should rely more on initiatives of regional governments and the people of autonomous areas. The previously dominant influence of the central government has to be transformed into a role of facilitator and counterpart of programmes to overcome poverty. By doing so, results of programmes to overcome poverty are expected to be more effective.

However, up to now, poverty alleviation programmes remain dominated by central government programmes. To confirm its commitment to the Millennium Development Goals agreement, the government has an obligation to plan and implement programmes to overcome poverty. Therefore, it is not surprising that almost all technical departments have programmes to sectorally overcome poverty, which frequently overlap. Funds spend by the government for these programmes already amount to billions of Rupiah. Decentralization enables increased regional participation in dealing with poverty. In fact, autonomous regions will be more effective in reaching the objectives of poverty alleviation programmes, because they are spatially and temporally closer to the poor. Responsibility over these programmes is held by the district governments (*kabupaten*) and municipalities, as well as villages (Sulekale, 2003).

It is not yet clear what the role of regional autonomy in the alleviation of poverty is. Stagnation in the farmers' terms of trade *(nilai tukar petani)* at less than 100 in several provinces (Aceh, North Sumatera, West Sumatera, Lampung, and West Nusa Tenggara) during the 2001-2005 period (Rusastra *et al*., 2006), is a reflection that during the era of regional autonomy there was no improvement in the welfare of farmers.

Sulekale (2003) stated that the most strategic effort to alleviate poverty can be formulated in one sentence, namely, "give opportunities to the poor and their communities to overcome problems they face autonomously." This means that outside parties have to reposition their role as empowerment agents to become empowerment facilitators (Mubyarto, 2002). Efforts to create a certain uniform model for the alleviation of poverty will only lead to greater chances of failure to achieve targets. Therefore, control that stifles initiatives and participation of the poor has to be discarded. What is urgently needed is developing a development paradigm that sides with the poor and with the participation of the poor as development actors.

The Programme for Integrated Movement to Alleviate Poverty initiated by the government of East Java, and the Programme for Labour Intensive and Appropriate Technology Development by the government of West Nusa Tenggara are examples where regional governments have a major role. In the era of decentralization such programmes initiated by autonomous regional governments themselves should more frequently emerge, so that the success of such programmes could be disseminated to other regions to trigger development.

Ideally, regional governments should have a good comprehension regarding the characteristics of and problems faced by the people in their regions, so that they have better knowledge with which to formulate problem solving strategies for their region. If this can be realized, poverty alleviation programmes in autonomous regions may proceed efficiently and effectively in reaching programme objectives. In turn, the expected impact generated by this reorientation is a rise in the people's welfare and a reduction of poverty in regions.

5.3 Programmes to alleviate poverty at the regional government level

As mentioned before, in general, programmes to alleviate poverty implemented in autonomous regions are top-down programmes of the central government. However, some regions have taken the initiative to implement their own poverty alleviation programmes at the regional level. For instance, the government of Ngawi District (East Java Province)

being much concerned about poverty introduced a programme called Integrated Movement to Alleviate Poverty. The programme consists of six components: (i) improving and hardening of dirt roads to become hardened roads; (ii) irrigation canal repairs; (iii) people's housing repairs; (iv) construction of bridges; (v) formation of units of venture groups; and (vi) distribution of rice to the poor. Improvement of roads and construction of bridges facilitated smooth transportation of agricultural commodities to markets and this in turn increased the selling prices received by farmers. In other words, the programme was successful in stimulating growth of the people's economy in the region.

The success of this programme in overcoming poverty and empowering local people motivated the provincial government to introduce it in some districts and municipalities in East Java. The key to the success of the Integrated Movement to Alleviate Poverty is its bottom-up creation and its stress on people's (public) participation.

All programme components are based on proposals from the people, so that the programme is indeed a reflection of the needs of the people. Therefore, the programme actually meets the needs of the local people (Hardono and Kariyasa, 2006).

In West Nusa Tenggara, the provincial government formed a Co-ordinating Team for the Alleviation of Poverty under the direct leadership of the Governor and the Head of the Public Empowerment Agency as chief executor. The team has the authority to: (a) verify data on poor households in conformity with area conditions and perceptions; (b) co-ordinate and facilitate incisive utilization of general allocation funds (DAU), regional government budgets (APBD), and other sources of funds to overcome poverty; and (c) monitor and evaluate the implementation of poverty alleviation programmes at the district and municipal level in West Nusa Tenggara. Specifically, the provincial government allocates a part of the provincial budget to the Programme on Labour Intensive and Appropriate Technology Development. Although this programme is a national programme, the West Nusa Tenggara provincial government implemented it in a different form and scope of activities, by giving emphasis to the role and participation of the regional government and people. However, the work effectiveness of the Co-ordinating Team for the Alleviation of Poverty is considered not yet optimal. This is reflected by the lack of synchronized and co-ordinated operations of the various poverty alleviation programmes in the province (Saliem and Supriyati, 2006).

In the future, poverty alleviation policies will be oriented toward the realization of gender justness and equality, and regional development through accelerated development of rural and urban areas, and coastal and backward areas. Such a policy is stipulated in the West Nusa Tenggara Provincial Work Plan of 2007. The work plan has four priority

activities: (i) to meet the needs of the poor, (ii) to manage the problem of malnutrition, (iii) to revitalize family planning and safe motherhood services; and (iv) to improve the social assistance and insurance system (Saliem and Supriyati, 2006).

In West Kalimantan, the Governor appointed the Office of Social Affairs and Community Empowerment *(Dinas Sosial dan Pemberdayaan Masyarakat)* as the agency responsible for the facilitation of poverty alleviation programmes such as the Rice for the Poor Programme and the Direct Cash Transfer Programme. At the district and municipal level, the accountable official is the district head *(bupati*) and mayor, assisted by a co-ordinating team consisting of the district and municipal government, the Logistic Sub-Depot, and District/Municipal Office of the National Family Planning Co-ordinating Agency. Similar teams are formed at the sub-district (*kecamatan*) and village level (Ariani and Lokollo, 2006).

In the future, initiatives of regional governments to design programmes to overcome poverty will become more important because regional governments have greater authority, and better understanding of the factors or problems causing poverty in their region. Efforts to alleviate poverty will proceed more effectively and efficiently.

6. Conclusions and Policy Implications

6.1 Conclusions

Despite various weaknesses, Indonesia has successfully lifted large numbers out of poverty. However, the economic crisis in mid-1997 caused an increase in the number of the poor. In the period of economic recovery up to 2005, the number of the poor decreased again. But subsequently, increases in fuel prices at the end of 2005 and early 2006, again caused the number of the poor to increase.

The majority of the poor of Indonesia live in rural areas endowed with marginal land, low quality of human resources, limited availability of sources of capital, and inferior infrastructure, and their lives depend very much on the agricultural sector. Therefore, to alleviate poverty, it is strategic to develop the agricultural sector in the form of integrated development of rural areas.

During the last five years, increasing numbers of poor people shifted from rural to urban areas, i.e., the number of the poor in rural areas decreased, while those in urban areas increased. The migration was motivated by a search for employment. However, since the poor of rural areas are generally unskilled people, they are unable to compete for employment in cities, and thus remain poor. Ultimately, the number of the poor in urban areas increased.

Up until now, poverty alleviation programmes are generally curative and momentary in nature, such as the provision of aid in the form of cash, rice, and direct aid in the form of capital or revolving funds. Such aid programmes did not create independent people, but even had a tendency to pamper poor people, making it difficult for them to move out of the poverty trap. Aid programmes in the form of technology, easy accessible soft loans, creation of job opportunities through facilitated investments by small and medium ventures, along with infrastructure development and improvement in rural areas, would be more effective in dealing with poverty.

In an era of regional autonomy, it would be best to introduce decentralized designing and implementation of efforts to overcome poverty. This would lead to the creation of poverty alleviation programmes that are more in agreement with area-specific characteristics and problems of poverty. Inherent to the regional authority of *bupati* (district heads) and mayors is their greater responsibility regarding the alleviation of poverty in their region, because one of the objectives of regional autonomy is to create a better, more

effective and efficient system of public service, ultimately leading to the prosperity and independence of the people. Development of area-specific poverty alleviation programmes that require participation by the local people, such as the Integrated Movement to Alleviate Poverty Programme in Ngawi District (East Java), should be given greater attention and should be replicated in other regions of Indonesia.

6.2 Policy implications

Three strategic policies that may be implemented to alleviate poverty are:

1. The agricultural sector, the backbone of the majority of the poor has to be revitalized and developed, leading to higher agricultural productivity. Revitalization and development of the agricultural sector has to include empowerment of human resources, introduction of appropriate technology, provision of easily accessible sources of capital, and development of agro-industries, along with the development of supporting infrastructures.
2. To accelerate rural economic growth, a strategic policy option that could be taken is to urge investors to invest in rural agro-industries, along with the creation of an atmosphere of facilitated investment. A bureaucracy that causes high costs to investors has to be eliminated. The government has to act as facilitator in developing fair partnerships between farmers and agro-industrial ventures and between small and medium enterprises and sources of capital as well as large companies. The establishment of factories processing products of agriculture, aside from creating a market for agricultural products, also provides job opportunities for members of farmers' families. Thus, rural economic growth would accelerate, leading to increased prosperity of rural communities.
3. In the framework of decentralization, efforts to alleviate poverty have to be put in the hands of regional governments with public participation, as much as possible. Poor people should be the subjects of development, to enable them to gradually solve problems of poverty independently and in a sustained manner. With the authority they hold and with the support of funding from regional government budgets (APBD) and general allocated funds (DAU), regional governments have to be more creative and pro-active in efforts to overcome poverty. The expected impact generated by such a reorientation in development strategy is a more effective and efficient achievement of increased prosperity of the people. Thus, the number of people living below the poverty line would be reduced.

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Part III

Empowerment of Households Facing Food Insecurity in the Era of Decentralization in Indonesia

by

Mewa Ariani, Ening Ariningsih, I Ketut Kariyasa and M. Maulana

Summary

Various government programmes to empower households facing food insecurity have been implemented since 2002. This study set out to analyse Indonesia's household food insecurity situation and various government programmes to empower food insecure households. Secondary data used in the analysis were 1996, 1999 and 2002 National Social Economic Survey (*Susenas*) data, while primary data were compiled in three sample provinces; East Java, West Kalimantan and West Nusa Tenggara. Study results show that the economic recovery, which occurred simultaneously with decentralization, generated positive impacts by reducing the number of food insecure households, and improving prosperity and food consumption, despite the fact that the country had still not yet fully recovered from the economic crisis. Policies and programmes to empower food insecure households in the regions were initiated by the Central Government. Decentralization helped programme flexibility in determining programme locations and participating groups, and in determining allocation of funds to each group. Regional governments also allocated funds to increase the coverage of programme target groups and to support regional priorities. Although these empowerment programmes have been successful, they still have not yet completely reached their objectives. Therefore, it is essential to strengthen the commitment of regional governments, regional legislative assemblies, and other stakeholders, from the province to the rural level, to fight against food and nutrition insecurity by implementing various appropriately targeted policies or programmes. Policies and programmes should involve the community, the private sector and non-government organizations (NGOs) in the planning, implementation and monitoring process.

1. Introduction

1.1 Background

By global agreement – as stated in the Millennium Development Goals (MDGs), consisting of eight goals, 18 targets and 48 indicators – the international community aims to halve the 1990 worldwide poverty and starvation levels by 2015 (Statistics Division, 2005). Food and nutrition availability strongly influence the quality of human resources. Therefore, neglecting food and nutrition insecurity means neglecting the quality of human resources in Indonesia. The Development Index of Indonesia released by the United Nations Development Programme (UNDP) in 2006 shows that Indonesia falls under the category of 'medium human development', ranked 108th out of 177 countries, with an index of 0.77. Although the index is higher than it was in 2000 (0.68), Indonesia falls relatively far behind other countries in South-East Asia. Quality human resources are healthy humans that are independent, intelligent and productive. Good health can only be achieved when food needs, both in quality and quantity, are in accordance with body basal metabolism (Menteri Kesehatan, 2000).

Food insecurity means insufficient food to meet the standard physiological needs of a region, community or household to grow and be healthy. Food insecurity may be perpetual (chronic) or it may be caused by emergency conditions generated by natural as well as social disasters (Dewan Ketahanan Pangan (DKP), 2006).

In Indonesia, food and nutrition insecurity are not new issues. Cases of food and nutrition insecurity have occurred since the 1960s. Even during the Japanese occupation the food insecurity occurred, affecting human beings with a disorder known as 'hunger oedema' or 'starvation oedema'. Hunger oedema is caused by a lack of quality food and is generally triggered by poverty and natural disasters. Hunger oedema takes 2 to 6 months to develop (Martianto, 2005). When energy intake amounts to only 50-60 per cent of consumption needs the body's energy reserves are depleted, leading to a reduction in body weight. In turn, work capacity and productivity also decrease.

Although food insecurity and nutrition insecurity are commonly considered to be the same, actually, nutrition insecurity encompasses a broader scope of more complex problems. The lowest degree of under-nutrition or severe under-nutrition is frequently called malnutrition. Under-nutrition is not only caused by such factors as starvation and poverty, but it is also affected by other problems, such as parenting, sanitation, as well as social,

political and economic crises. Under-nutrition analyses are usually focused on children under five years of age, because they are more sensitive to under-nutrition than adults.

Sufficient food supply at national and regional levels does not guarantee food security at the household level. A study by Saliem *et al.* (2006) showed that although food security at the national and regional (provincial) levels was guaranteed, a relatively high proportion of households in certain provinces experienced low food security. Food insecurity and under-nutrition influences all ages: the elderly, adults as well as children, babies and pregnant women. Analyses by the Central Agency of Statistics (DKP and FAO, 2005) showed that in more than 50 per cent of the districts and municipalities of Indonesia, more than 25 per cent of children under the age of five experienced under-nutrition with 64 per cent of the population consuming less than 2,100 calories per capita per day.

In 2004, the incidence of malnutrition started to increase in the provinces of West and East Nusa Tenggara. Subsequently, cases of malnutrition appeared in other provinces. The appearance of malnutrition in West Nusa Tenggara, a 'rice-barn' province, showed that food security at regional level did not guarantee food security at the household level. In this province, 10 per cent of the children under the age of five suffered from malnutrition or even hunger oedema, approximately 48,000 children. Meanwhile, in East Nusa Tenggara, 12,846 children suffered from malnutrition**,** 419 from *marasmus*[1], seven from *kwashiorkor*[2], 16 from *marasmus-kwashiorkor*[3] and 34 children died (Badan Bimas Ketahanan Pangan Propinsi Nusa Tenggara Timur, 2005).

Based on data from the Department of Health, nationally around 27.5 per cent of children under the age of five (five million children) suffer from nutritional deficiencies, of which 1.5 million suffer from malnutrition. Thirty per cent of children under the age of five in 110 districts/municipalities suffer from under-nutrition (including malnutrition). According to the World Health Organization (WHO), malnutrition in Indonesia is high (Departemen Kesehatan, 2005). This condition is a cause of serious concern, because irreversible damage can be done to the brains of growing children, potentially leading to a lost generation, unable to contribute to the nation's future development.

Food insecurity and malnutrition have had a negative impact on political authorities in several countries. Food crises have even caused governments to topple. History demonstrates that food security is closely linked to social security, economic and political stability, as well as national security. When food insecurity arises, shockwaves are sent

[1] Long-term energy deficiency syndrome for children under 5 years.
[2] Long-term protein deficiency syndrome for children under 5 years.
[3] Long-term energy and protein deficiency syndrome for children under 5 years.

through the economic, political and social stability of the country (Suryana, 2001; Simatupang *et al.,* 2001). The government has executed various programmes through a variety of departments and institutes to prevent food insecurity. For example, since 2002 the Department of Agriculture, through the Food Security Board, has developed an empowerment programme to assist communities to overcome food insecurity and poverty.

Pursuant to regional autonomy as stipulated in Law No. 22/1999 and Government Regulation No. 25/2000, food security responsibility has been delegated to central and regional governments in accordance with the government authority framework. Article 13, paragraph 1 of Chapter VI of Government Regulation No. 68/2002 states that, "regional, district/municipal and/or rural governments are responsible for food security in their respective regions, in accordance with guidelines, norms, standards and criteria stipulated by the central government". To strengthen the role and responsibility of regional governments, collective agreements exist between Governors and Chairpersons of Food Security Councils that require them to develop various comprehensive food security programmes and activities within the framework of stabilizing national food security. The programmes and activities mentioned above are a priority of regional development programmes.

It is, therefore, important to analyse the problems faced by households suffering food insecurity and to analyse the various food insecurity empowerment programmes. Aside from analysing secondary data from the 1996, 1999 and 2002 *Susenas* (National Social Economic Survey), primary data were compiled in three provinces; East Java, West Nusa Tenggara and West Kalimantan. Based on a parameter analysis of food insecurity as drawn up in the Food Insecurity Atlas by the World Food Programme (WFP) and DKP (2005), East Java has eight food insecure districts, while all districts in West Kalimantan and West Nusa Tenggara face food insecurity. In each of these provinces, one district that fulfilled the criteria for empowerment of households facing food insecurity was selected. Results produced by the research are expected to assist policymakers, both at the national and regional level, to overcome household food insecurity.

1.2 Research objectives

The general objective of this research was to study the problem of food insecurity and the prospects of programmes to empower households facing food insecurity in the era of regional autonomy (decentralization). Specifically, the objectives of this research were to:

(i) describe the development and characteristics of food insecure households; (ii) analyse programmes to empower food insecure households; and (iii) formulate policies to assist households facing food insecurity through empowerment of farmers and rural communities.

2. Trends and Characteristics of Households Facing Food Insecurity

Data used in this research were from the National Social Economic Survey (*Susenas*), consisting of core and consumption module data. *Susenas* compiles data once every three years, and this research used 1996, 1999 and 2002 *Susenas* data. The 1996 *Susenas* data showed the food and nutrition situation in the so-called New Order (*Orde Baru*) era, an era of high economic growth, while 1999 *Susenas* data show the situation during the economic crisis in Indonesia. The 2002 *Susenas* data indicate the food and nutrition situation in the era of regional autonomy (decentralization), which coincided with the start of recovery from the economic crisis.

2.1 Trends in food-insecure households

Indicators used to determine the degree of food security were a combination of household expenditures (economic proxy) and food energy consumption (nutrition proxy); they are an adaptation of research by Maxwell *et al.* (2000) in Greater Accra, Ghana. Here a food-insecure household was defined as a household with an energy consumption (equivalent to adult consumption) of less than or equal to 80 per cent of the energy sufficiency rate (ESR) and a food expenditure of more than 60 per cent of the total household expenditure. The ESR used in this study was formulated at the 8th National Food and Nutrition Workshop in 2004 – a national average of 2,000 calories per capita per day (Hardinsyah and Tambunan, 2004).

Tables 2.1 and 2.2 show percentages of households facing food insecurity nationally and regionally in three provinces (East Java, West Nusa Tenggara and West Kalimantan) and income groups (low, medium and high) in the period between 1996 and 2002. Table 2.1 shows that the economic crisis caused a rise in the percentage of households facing food insecurity in Indonesia from around 5 per cent in 1996 to around 16 per cent in 1999, an increase of more than 200 per cent. The statistics for the three sample provinces indicate that the increase in the percentage of households facing food insecurity caused by the economic crisis was highest (260 per cent) in West Nusa Tenggara and the lowest (140 per cent) in East Java. This shows that the economic crisis seriously reduced the living standards of the people in Indonesia.

The economic crisis that hit in mid-1997 caused steep hikes in food and non-food prices. Rice prices increased 16 times faster during the economic crisis (August 1997 to August 1998) than in the period before the economic crisis, i.e. from 0.4 per cent per month rising to 6.7 per cent per month (Irawan *et al.,* 1999). Food prices are an important variable for the poor because they spend 50-80 per cent of their income on food. The economic crisis resulted in an increase in the percentage of household income spent on cereals and a decline in purchases of food originating from animals and plants (vegetables and fruits) (Ariani *et al*., 2000).

Various government policies implemented since the economic crisis have had a positive impact on Indonesia's economic growth. Gross domestic product (GDP) increased from minus 6.17 per cent per year in the 1998-1999 period to 3.92 per cent per year in the 2000-2003 period (Departemen Pertanian, 2004). Government policies to aid economic recovery together with the implementation of regional autonomy/decentralization helped reduce the number of households facing food insecurity, however the percentage of households facing food insecurity is still higher today than in the period before the economic crisis (Table 2.1).

Table 2.1 Percentage of food-insecure households in urban and rural areas at national and provincial level in Indonesia, 1996-2002

Region	Food-insecure households (% of total)		
	1996	1999	2002
Indonesia			
Urban area	4.6	13.7	6.8
Rural area	5.5	17.6	12.1
Urban and rural	5.2	16.0	9.8
East Java			
Urban area	7.4	17.0	10.1
Rural area	9.0	22.3	14.1
Urban and rural	8.4	20.3	12.4
West Kalimantan			
Urban area	7.1	9.6	10.2
Rural area	3.8	22.5	9.8
Urban and rural	6.3	19.1	9.9
West Nusa Tenggara			
Urban area	5.9	19.0	13.2
Rural area	4.5	17.6	12.9
Urban and rural	5.0	18.1	13.1

Source: BPS (Central Agency of Statistics), Susenas, 1996-2002 (processed).

The decline in the percentage of households facing food insecurity in 2002 indicates that economic recovery at the macro level positively affects people's prosperity to varying degrees at the micro level. However, poverty levels in 2002 were still much higher than in 1996. This indicates that still much has to be done by the government to raise food security and people's prosperity. To achieve increased food security and improve people's prosperity, the government implemented a twin-track strategy with the objectives to: (a) develop an agriculture and rural based economy to provide jobs and income opportunities; and (b) meet the food needs of the poor through direct aid and empowerment of the poor so that they have the capability to realize their own food security independently.

The percentage of households facing food insecurity is higher in rural areas than in urban areas nationally as well as in the three provinces mentioned (Table 2.1). This indicates an imbalance between development in urban and rural areas. Rural areas experience limited infrastructure development (physical and institutional), while development policies are biased toward development of urban areas, specifically to development of industry, trade and services sectors (Sayogyo, 2002). Consequently, urban areas grow faster, while rural areas in comparison are left behind.

Inter-regional imbalances in development are admitted by the provincial government of West Kalimantan and clearly apparent between coastal and interior regions. Pontianak Municipality and Pontianak District contribute almost 50 per cent of the gross domestic regional product of West Kalimantan while eight districts and municipalities in the province provide the remainder. This imbalance caused the still high percentage of households facing food insecurity in West Kalimantan (Dewan Ketahanan Pangan Propinsi Kalimantan Barat, 2005).

Rural areas fall behind due to: (a) low productivity and quality of farmers; (b) limited access of farmers to capital; and (c) the low-quality and quantity of agricultural and rural infrastructure. Consequently, prosperity of the rural population, which encompasses 60 per cent of the population of Indonesia, is very low. This is also reflected by the greater numbers of the unemployed and poor in rural areas compared to urban areas. Of the 36 million poor people in Indonesia in 2004 around 68 per cent lived in rural areas and generally were engaged in the agriculture sector or in agriculture-based sectors (DKP, 2006).

The percentage of households facing food insecurity declined with increasing levels of income. This is logical because the higher the level of household income, the greater the possibility for the household to meet its food and nutrition needs. Nevertheless, all groups in

society, the rich, middle class and the poor, were affected by the economic crisis to varying degrees.

The percentage increases in the numbers of households facing food insecurity caused by the economic crisis was greater in middle class households than in poor households. The number of poor households facing food insecurity rose 128 per cent while the number of middle class households facing food insecurity rose 300 per cent. All three provinces show a similar pattern as shown by Table 2.2. However, middle-class households with productive assets, education/knowledge and courage to capture opportunities, recovered more quickly from their downfall caused by the economic crisis. Consequently, during the economic recovery, the proportion of middle-class households facing food insecurity declined faster than low income and lower middle-class households.

Table 2.2 Percentage of food-insecure households by income group at national and provincial levels in Indonesia, 1996-2002

Region and income groups	Food-insecure households (% of total)		
	1996	1999	2002
Indonesia			
Low income	10.6	34.0	20.5
Medium income	2.3	5.3	3.3
High income	0.1	0.4	0.2
East Java			
Low income	16.7	41.1	25.3
Medium income	4.0	7.9	4.9
High income	0.6	3.3	1.8
West Kalimantan			
Low income	12.0	35.9	19.0
Medium income	3.1	11.1	4.8
High income	1.1	1.3	2.1
West Nusa Tenggara			
Low income	10.5	37.7	27.6
Medium income	1.8	7.0	4.7
High income	0.2	1.2	0.0

Source: BPS (Central Agency of Statistics), Susenas, 1996-2002 (processed).

2.2 Characteristics of food-insecure households

Data from *Susenas* enabled analysis of the characteristics of households facing food insecurity by providing: (a) age of family head (FH); (b) age of wife; (c) education of FH; (d) education of wife; and (e) number of household members (NHM). Details of the characteristics of households facing food insecurity regionally are presented in Tables 2.3 and 2.4.

These two tables show similar characteristics of households facing food insecurity nationally and regionally, i.e., in East Java, West Kalimantan and West Nusa Tenggara. These characteristics include: (a) FHs and wives are of a productive age, and wives tend to be younger than FHs; (b) on average the level of education of FHs and wives is low, i.e., between three and six years of primary education, while wives are less educated than FHs; and (c) on average each household facing food insecurity consists of five household members, which leads to the conclusion that on average each of these households have three children.

Table 2.3 Characteristics of food-insecure households in urban and rural areas at national and provincial levels in Indonesia, 1996-2002

Description[a]	Urban area			Rural area			Urban and rural areas		
	1996	1999	2002	1996	1999	2002	1996	1999	2002
Indonesia									
Age of FH (yr)	49.2	45.6	45.2	49.7	46.2	45.7	49.5	46.0	45.6
Age of wife (yr)	44.0	39.7	39.4	43.6	39.7	39.7	43.8	39.7	39.6
Education of FH (yr)	4.9	6.0	5.4	2.6	3.7	3.9	3.4	4.5	4.4
Education of wife (yr)	3.0	4.5	4.2	1.8	2.8	3.2	2.2	3.4	3.5
NHM (people)	5.3	5.2	5.1	4.6	4.8	4.9	4.9	5.0	5.0
East Java									
Age of FH (yr)	48.9	46.4	45.8	50.7	48.8	48.2	50.1	48.0	47.4
Age of wife (yr)	43.0	40.8	40.4	43.7	41.5	41.6	43.5	41.3	41.2
Education of FH (yr)	4.2	5.3	5.0	1.9	2.8	2.8	2.6	3.6	3.6
Education of wife (yr)	2.5	3.5	3.8	1.2	2.1	2.3	1.6	2.5	2.8
NHM (people)	5.1	4.4	4.3	4.1	4.2	4.4	4.4	4.3	4.4
West Kalimantan									
Age of FH (yr)	51.1	44.9	44.5	48.6	42.7	43.5	48.6	42.7	43.5
Age of wife (yr)	46.4	41.6	39.3	43.5	37.8	38.4	43.5	37.8	38.4
Education of FH (yr)	4.4	7.3	4.2	3.4	4.2	3.9	3.4	4.2	3.9
Education of wife (yr)	1.8	4.6	2.5	1.4	2.8	2.6	1.4	2.8	2.6
NHM (people)	5.6	6.1	5.1	5.3	5.4	5.3	5.3	5.4	5.3
West Nusa Tenggara									
Age of FH (yr)	47.1	47.8	42.8	46.3	44.1	43.7	46.6	45.3	43.3
Age of wife (yr)	43.6	41.7	38.7	40.9	37.7	37.8	42.0	39.1	38.2
Education of FH (yr)	2.0	4.1	4.2	2.1	2.4	3.0	2.1	3.0	3.5
Education of wife (yr)	1.0	2.5	3.2	0.6	1.6	2.0	0.8	1.9	2.4
NHM (people)	5.0	4.4	5.3	4.1	4.6	4.9	4.5	4.5	5.0

Source: BPS (Central Agency of Statistics), Susenas, 1996-2002 (processed).
Note: [a] FH is family head, NHM is number of household members.

Family heads (FHs) and wives of households facing food insecurity in urban areas have higher levels of education than FHs and wives of households in rural areas. While based on income groups, no distinct differences existed between the age of FHs and wives. The education level reached by FHs and wives of the middle-class income group was junior secondary school level, while FHs and wives of low-income groups only received primary level education. Households of higher-income groups have smaller numbers of household members compared to households of low and medium-income groups (Table 2.4).

Table 2.4 Characteristics of food-insecure households by income groups at national and provincial levels in Indonesia, 1996-2002

Description[a]	Low income			Medium income			High income		
	1996	1999	2002	1996	1999	2002	1996	1999	2002
Indonesia									
Age of FH (yr)	50.0	46.4	45.9	47.3	43.7	43.4	38.7	40.0	39.5
Age of wife (yr)	44.1	40.0	40.0	42.5	38.0	37.4	35.1	33.8	35.8
Education of FH (yr)	2.9	4.0	4.0	5.8	7.1	6.6	10.3	9.1	9.5
Education of wife (yr)	1.9	3.1	3.2	3.7	5.2	5.1	6.6	6.0	6.3
NHM (people)	4.9	5.0	5.1	4.9	4.6	4.5	4.3	3.4	3.7
East Java									
Age of FH (yr)	51.1	48.8	47.9	47.2	46.8	46.6	39.2	33.7	36.9
Age of wife (yr)	44.2	41.5	41.3	41.5	40.1	40.8	29.7	36.3	34.3
Education of FH (yr)	2.2	3.2	3.1	4.0	4.9	5.0	5.7	8.4	8.9
Education of wife (yr)	1.3	2.5	2.7	2.8	3.2	3.7	3.0	0.7	2.5
NHM (people)	4.4	4.5	4.6	4.4	3.8	3.8	2.9	1.5	1.6
West Kalimantan									
Age of FH (yr)	48.2	42.6	43.7	51.0	42.9	42.8	44.8	43.8	44.3
Age of wife (yr)	42.8	37.3	38.9	45.3	39.1	37.6	48.0	47.0	33.4
Education of FH (yr)	3.6	3.5	3.5	2.6	6.5	4.8	6.0	4.8	6.8
Education of wife (yr)	1.5	2.3	2.4	1.2	4.4	2.9	0.0	0.0	3.8
NHM (people)	5.6	5.6	5.6	4.4	4.7	4.9	3.5	2.2	3.1
West Nusa Tenggara									
Age of FH (yr)	47.3	45.9	43.2	42.8	43.1	44.5	48.0	39.2	38.7
Age of wife (yr)	42.7	39.5	38.3	37.6	36.6	37.4	42.2	37.0	36.3
Education of FH (yr)	1.7	2.6	3.3	3.7	4.5	4.2	6.0	7.8	5.0
Education of wife (yr)	0.7	1.6	2.2	1.6	3.1	3.6	0.0	6.8	5.0
NHM (people)	4.7	4.7	5.2	3.3	3.6	4.0	3.0	2.6	3.7

Source: BPS (Central Agency of Statistics), Susenas, 1996-2002 (processed).
Note: [a] FH is family head, NHM is number of household members.

The low education level of households facing food insecurity is closely related to poverty. The poor, with limited income, struggle to meet their primary needs of food and shelter. Consequently, education is not a priority in family life. The government has introduced many education programmes, such as the programme for nine years compulsory primary education, however education remains an expensive commodity in Indonesia. If the

poor had better access to education, they could attain better levels of education, which would lead to better levels of prosperity.

The relatively high number of household members in households facing food insecurity impacts on the quality and nutrition of foods consumed. Household size is a determining factor of sufficient food and nutrition intake by household members. In general, the larger the number of household members, the greater the potential for food insecurity.

Research in several regions in Asia, Africa and Latin America indicated that children of households with a high number of household members face a greater risk of nutritional deficiency. This is because food intake by poor households with many household members tends to be a lower quantity than that of households with fewer household members with the same level of household income (Eckholm and Newland, 1984 cited in Khomsan *et al.*, 1997). A study by Latief *et al.* (2000) indicated that the distribution of food worsened with the number of household members. Such conditions appear because large poor households are not able to provide enough additional food for each and every addition mouth. Therefore, the Family Planning Programme of the government has to be available to the poor, with the hope that relatively smaller-sized households will increase food security.

Food insecurity is most often related to poverty. AusAID (2004) considers chronic food insecurity as a food insecurity poverty gap. According to UNDP China (2001) the cause of household food insecurity is very complex, such as the social political situation of agriculture and farmers, low productivity and fertility of land, climate anomalies, low modern agricultural techniques leading to low food production, and low household purchasing power caused by limited income from off-farm activities. The primary cause of frequent food insecurity is limited income.

3. Participation Rate and Food Consumption Patterns of Food-insecure Households

3.1 Consumption participation rate of food-insecure households

The sources of carbohydrates analysed are rice, corn, cassava, sago, taro and sugar, while protein sources analysed included soybean, poultry meat, ruminant meats, eggs, milk, fresh fish and preserved/processed fish. Tables 3.1 to 3.4 present food consumption regionally and by income groups nationally and provincially (East Java, West Kalimantan and West Nusa Tenggara).

Nationally, rice is consumed by 100 per cent of the population. A similar pattern is shown in the three provinces analysed. Meanwhile, other carbohydrate food sources in the provinces have been replaced by rice. This is shown by the relatively small consumption of food other than rice as a source of carbohydrate (Table 3.1). In the New Order era rice became a strategic political commodity with government playing an active role in the development of rice production and consumption. Furthermore, the government has introduced various policies that highly regulate rice, from upstream to downstream industries. These policies have been continuously implemented, including, the policy to provide rice to the poor, known as the Rice for the Poor Programme.

Government bias towards the consumption of rice has changed staple food consumption. From 1979 *Susenas* data in Eastern Indonesia show that only one province consumed rice as its only staple food, but by 1996 six provinces' primary source of carbohydrate was rice (PAE, 1979; Rachman, 2001 cited *in* Ariani, 2003). Martianto and Ariani (2004), by comparing 1993 *Susenas* data with 2002 *Susenas* data concluded that the role of local foods such as corn and tubers was not only being replaced by rice but also by various types of instant noodles. Almost in all provinces, except Papua and East Nusa Tenggara, rice forms the primary staple food, followed by noodles.

Table 3.1 Consumption participation rate of food as a source of carbohydrate in urban and rural areas for food income at national and provincial levels in Indonesia, 1996-2002

(percentage)

Description	Urban area			Rural area			Urban and rural areas		
	1996	1999	2002	1996	1999	2002	1996	1999	2002
Indonesia									
Rice	99.9	99.9	100.0	96.8	97.8	99.0	97.9	98.6	99.3
Corn	4.0	4.5	6.2	11.0	15.3	16.4	8.5	11.6	13.3
Cassava	22.4	30.7	28.7	32.7	40.0	35.0	29.0	36.8	33.0
Sweet potato	9.0	9.7	10.4	11.7	9.2	8.9	10.8	9.4	9.3
Sago	0.6	1.0	0.2	2.0	2.1	1.8	1.5	1.7	1.3
Taro	1.9	1.4	2.0	3.7	2.4	3.2	3.1	2.1	2.8
Sugar	95.9	93.6	94.0	87.1	86.7	89.9	90.2	89.1	91.2
East Java									
Rice	100.0	88.8	90.4	96.6	95.8	96.6	97.6	93.6	94.4
Corn	8.2	10.7	18.5	8.6	28.3	27.6	8.5	22.7	24.4
Cassava	16.9	25.2	28.3	26.3	33.6	34.3	23.4	30.9	32.2
Sweet potato	11.6	8.9	12.8	10.8	6.0	8.6	11.0	6.9	10.1
Sago	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Taro	0.5	0.0	0.5	1.5	0.6	1.4	1.2	0.4	1.1
Sugar	97.1	85.5	92.5	94.6	89.7	96.6	95.4	88.4	95.1
West Kalimantan									
Rice	100.0	87.5	93.9	100.0	99.7	97.8	100.0	98.0	96.8
Corn	0.0	2.1	0.0	2.4	0.3	5.2	1.7	0.6	3.8
Cassava	15.2	25.0	10.2	47.6	40.3	43.4	38.3	38.2	34.6
Sweet potato	3.0	2.1	4.1	4.9	5.5	4.4	4.4	5.1	4.3
Sago	0.0	0.0	0.0	1.2	0.3	0.0	0.9	0.3	0.0
Taro	0.0	4.2	2.0	8.5	1.0	9.6	6.1	1.4	7.6
Sugar	100.0	91.7	93.9	100.0	94.8	96.3	100.0	94.4	95.7
West Nusa Tenggara									
Rice	100.0	97.7	98.1	100.0	100.0	100.0	100.0	99.2	99.3
Corn	4.7	3.9	5.6	1.6	8.7	32.2	2.9	7.0	21.9
Cassava	14.0	17.8	33.6	31.2	19.5	25.7	24.0	18.9	28.8
Sweet potato	14.0	1.6	6.5	19.7	3.7	2.3	17.3	3.0	4.0
Sago	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Taro	0.0	3.9	5.6	1.6	1.7	4.7	1.0	2.4	5.0
Sugar	88.4	87.6	87.9	82.0	79.3	76.6	84.6	82.2	80.9

Source: BPS (Central Agency of Statistics), Susenas, 1996-2002 (processed).

Table 3.2 Consumption participation rate of food as a source of carbohydrate by income groups for food-insecure households at national and provincial levels in Indonesia, 1996-2002

(percentage)

Description	Low income			Medium income			High income		
	1996	1999	2002	1996	1999	2002	1996	1999	2002
Indonesia									
Rice	97.6	98.4	99.1	99.3	99.6	100.0	100.0	97.7	100.0
Corn	9.6	12.9	14.9	4.1	3.3	3.6	0.0	2.3	0.0
Cassava	31.5	38.6	35.4	18.4	25.6	19.0	0.0	18.6	8.7
Sweet potato	11.1	9.4	9.4	9.2	9.2	9.0	0.0	4.7	0.0
Sago	1.6	1.9	1.4	0.9	0.7	0.5	0.0	0.0	0.0
Taro	3.3	2.2	3.0	2.0	1.3	1.7	7.1	0.0	4.4
Sugar	88.7	88.1	90.7	96.9	95.7	94.3	100.0	88.4	91.3
East Java									
Rice	99.5	98.8	93.9	99.9	95.3	95.5	100.0	67.6	74.2
Corn	2.4	5.6	16.5	18.0	3.3	14.4	0.0	0.4	11.1
Cassava	27.5	26.8	34.1	40.1	20.4	22.2	12.0	27.9	29.9
Sweet potato	26.8	12.7	8.0	4.6	7.7	8.9	0.0	0.4	8.3
Sago	1.6	0.1	0.0	0.0	1.1	0.0	0.0	0.0	0.0
Taro	1.0	1.3	9.0	8.6	1.4	7.5	0.0	0.0	13.9
Sugar	97.0	86.3	82.5	72.6	93.3	93.5	96.0	75.9	79.1
West Kalimantan									
Rice	100.0	99.7	98.6	100.0	97.8	97.2	100.0	76.8	62.5
Corn	2.3	3.1	3.6	0.0	3.3	5.6	0.0	0.0	0.0
Cassava	37.5	38.5	40.4	39.1	28.7	16.7	50.0	22.6	12.5
Sweet potato	4.6	5.3	5.0	4.4	3.8	2.8	0.0	1.9	0.0
Sago	1.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Taro	3.4	5.2	8.5	17.4	6.0	5.6	0.0	0.0	0.0
Sugar	100.0	97.5	97.2	100.0	97.8	97.2	100.0	81.8	62.5
West Nusa Tenggara									
Rice	100.0	99.7	100.0	100.0	98.3	97.5	100.0	80.0	66.7
Corn	3.4	7.1	22.1	0.0	7.0	17.5	0.0	0.0	66.7
Cassava	25.0	19.5	30.6	20.0	17.5	20.0	0.0	0.0	0.0
Sweet potato	18.2	3.3	3.4	13.3	1.8	7.5	0.0	0.0	0.0
Sago	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0
Taro	1.1	2.6	5.1	0.0	1.8	5.0	0.0	0.0	0.0
Sugar	86.4	80.2	80.9	73.3	93.0	82.5	100.0	80.0	66.7

Source: BPS (Central Agency of Statistics), Susenas, 1996-2002 (processed).

When rice prices rose as a consequence of the economic crisis, households facing food insecurity replaced rice with corn and tubers as a staple food. Due to the economic crisis, rice consumption declined between 1996 and 1999. At the same time, consumption of corn and tubers rose significantly. Because corn and tubers function as substitutes for rice, rising household incomes will cause a rise in the rice consumption and a decline in corn and tubers consumption.

Sugar is consumed by almost 100 per cent of the population, especially dissolved in coffee, tea and milk. Sugar is also consumed in a wide variety of proceeded foods including cookies and sweet breads. High consumption levels of sugar are regretful because Indonesia has become a net importer of sugar with a rather high dependency ratio of 42 per cent (between 1990 and 2004).

Soybean and its processed products (tofu and *tempe*[1]) are widely sought and consumed by around 68 per cent of the population. The consumption of tofu and *tempe* by a very large number of households in Indonesia is beneficial because soybean is a source of plant protein and helps maintain health. In East Java soybean consumption is higher than the national average, while in West Kalimantan soybean consumption is relatively low. In 2002, soybean was consumed by 88.8 per cent of food-insecure households in East Java while in West Nusa Tenggara and West Kalimantan just 63.3 per cent and 36.8 per cent respectively consumed soybean products. The high soybean consumption in East Java is caused by the majority ethnic Javanese preference for soybean products.

Nationally, fresh fish and eggs are the most common sources of animal protein, followed by preserved fish. Fresh fish, eggs and preserved fish consumption is much higher nationally than consumption of poultry meat, ruminant meats and milk. Eggs are popular because they are cheaper than meat and milk and easy to prepare.

Animal protein consumption at the provincial level is similar to that of the national level. Interestingly preserved fish is more popular in poor households in East Java; while in West Kalimantan and West Nusa Tenggara more fresh fish is consumed. This is related to the availability of fresh and preserved fish. Outside Java availability of fresh fish is higher than in Java while the supply of preserved fish is just the opposite. Households facing food insecurity consumed significantly less protein due to the economic crisis. Many poor people stopped consuming proteins altogether as prices of poultry, ruminant meats and milk became too high and unaffordable. This drop in protein consumption was a nationwide phenomenon as shown in Table 3.3.

[1] *Tempe* is a popular Indonesian food made from fermented soybeans.

Table 3.3 Consumption participation rate of food as a source of protein in urban and rural areas for food-insecure households at national and provincial levels in Indonesia, 1996-2002

(percentage)

Description	Urban area			Rural area			Urban and rural areas		
	1996	1999	2002	1996	1999	2002	1996	1999	2002
Indonesia									
Soybean	77.5	78.0	83.2	62.3	60.7	61.9	67.7	66.7	68.5
Meat (poultry)	31.3	15.5	28.1	13.2	6.7	12.1	19.6	9.7	17.0
Meat (ruminants)	15.8	9.3	10.3	6.3	4.9	5.9	9.7	6.4	7.3
Eggs	75.7	61.5	78.7	55.1	46.4	57.8	62.4	51.6	64.2
Milk	17.0	14.3	18.4	5.1	5.9	8.6	9.3	8.9	11.6
Fresh fish	70.6	66.2	67.3	55.0	54.4	65.3	60.5	58.5	65.9
Preserved fish	47.4	49.4	47.7	53.8	51.9	49.6	51.6	51.0	49.0
East Java									
Soybean	97.6	85.5	82.1	91.0	87.8	92.4	93.0	87.0	88.8
Meat (poultry)	37.2	19.0	24.1	10.8	6.3	13.1	18.9	10.4	16.9
Meat (ruminants)	26.1	12.3	11.5	5.4	5.0	5.0	11.8	7.4	7.3
Eggs	75.4	53.3	71.7	58.2	43.7	60.3	63.5	46.8	64.3
Milk	10.6	10.0	17.9	1.7	3.2	7.2	4.5	5.3	10.9
Fresh fish	55.6	46.4	52.1	37.5	38.1	46.0	43.1	40.7	48.1
Preserved fish	43.0	43.7	42.5	59.1	57.1	58.6	54.1	52.8	53.0
West Kalimantan									
Soybean	57.6	47.9	57.1	29.3	22.4	29.4	37.4	25.8	36.8
Meat (poultry)	27.3	25.0	26.5	28.1	5.5	12.5	27.8	8.2	16.2
Meat (ruminants)	33.3	20.8	18.4	13.4	4.2	13.2	19.1	6.5	14.6
Eggs	78.8	68.8	75.5	62.2	52.3	65.4	67.0	54.5	68.1
Milk	27.3	35.4	12.2	12.2	10.1	20.6	16.5	13.5	18.4
Fresh fish	90.9	79.2	89.8	70.7	77.0	83.1	76.5	77.3	84.9
Preserved fish	78.8	62.5	61.2	70.7	54.9	48.5	73.0	55.9	51.9
West Nusa Tenggara									
Soybean	76.8	76.0	78.5	49.2	54.4	53.8	60.6	61.9	63.3
Meat (poultry)	20.9	7.8	15.9	11.5	5.4	4.7	15.4	6.2	9.0
Meat (ruminants)	34.9	24.0	23.4	14.8	9.1	11.7	23.1	14.3	16.2
Eggs	67.4	38.0	61.7	47.5	32.8	46.8	55.8	34.6	52.5
Milk	7.0	0.8	6.5	0.0	1.2	0.6	2.9	1.1	2.9
Fresh fish	74.4	61.2	72.9	63.9	65.6	81.9	68.3	64.1	78.4
Preserved fish	51.2	39.5	47.7	42.6	35.7	34.4	46.2	37.0	41.4

Source: BPS (Central Agency of Statistics), Susenas, 1996-2002 (processed).

Plant and animal protein consumption as well as that of sugar is higher in urban areas than in rural areas because of the differing wealth levels. This also holds true for households facing food insecurity in rural and urban areas. Although most foods are produced in rural areas and available there at lower prices, the low purchasing power of rural dwellers prevents them from purchasing food as a source of protein.

Table 3.4 Consumption participation rate of food as a source of protein by income groups for food-insecure households at national and provincial levels in Indonesia, 1996-2002

(percentage)

Description	Low income			Medium income			High income		
	1996	1999	2002	1996	1999	2002	1996	1999	2002
Indonesia									
Soybean	66.9	66.0	67.6	71.3	71.9	74.1	71.4	41.9	65.2
Meat (poultry)	15.0	7.6	14.3	40.5	22.8	33.6	35.7	30.2	34.8
Meat (ruminants)	6.8	4.8	6.2	22.1	15.7	13.4	50.0	27.9	30.4
Eggs	57.7	47.9	61.8	84.0	74.5	79.0	78.6	76.7	78.3
Milk	5.8	6.7	9.5	25.1	22.1	24.4	42.9	30.2	30.4
Fresh fish	55.2	55.2	63.4	84.7	79.2	81.6	78.6	76.7	65.2
Preserved fish	52.6	51.7	49.4	46.8	46.8	47.6	50.0	44.2	26.1
East Java									
Soybean	60.3	55.6	70.2	66.8	61.2	63.3	63.0	42.7	52.7
Meat (poultry)	19.3	5.9	9.5	22.5	10.1	25.3	51.0	10.4	28.7
Meat (ruminants)	11.1	4.5	5.8	17.2	14.7	14.3	13.0	10.8	35.3
Eggs	64.1	40.7	63.4	57.9	61.4	64.5	74.0	49.6	69.7
Milk	3.2	2.6	4.2	13.0	8.3	14.9	7.0	10.4	12.0
Fresh fish	53.5	47.4	53.6	64.6	59.9	76.0	87.0	66.2	59.8
Preserved fish	54.7	44.6	46.4	60.3	47.7	49.5	29.0	21.3	36.8
West Kalimantan									
Soybean	38.6	31.0	32.6	26.1	38.2	50.0	75.0	47.8	50.0
Meat (poultry)	23.9	17.9	13.5	34.8	21.8	27.8	75.0	29.6	12.5
Meat (ruminants)	19.3	9.5	8.5	17.4	18.2	36.1	25.0	18.3	25.0
Eggs	65.9	62.5	68.1	65.2	67.1	69.4	100.0	74.9	62.5
Milk	14.8	14.6	14.2	21.7	26.3	36.1	25.0	20.9	12.5
Fresh fish	73.9	78.1	87.2	87.0	87.1	80.6	75.0	68.6	62.5
Preserved fish	75.0	64.5	55.3	73.9	61.8	41.7	25.0	42.9	37.5
West Nusa Tenggara									
Soybean	63.6	61.0	63.4	46.7	68.4	67.5	0.0	40.0	0.0
Meat (poultry)	13.6	4.9	8.9	26.7	12.3	10.0	0.0	20.0	0.0
Meat (ruminants)	22.7	10.7	15.3	26.7	33.3	20.0	0.0	20.0	33.3
Eggs	53.4	31.5	51.1	73.3	50.9	60.0	0.0	40.0	66.7
Milk	1.1	0.3	2.1	13.3	3.5	7.5	0.0	20.0	0.0
Fresh fish	67.1	61.7	77.0	73.3	75.4	87.5	100.0	80.0	66.7
Preserved fish	47.7	38.3	43.0	40.0	31.6	35.0	0.0	20.0	0.0

Source: BPS (Central Agency of Statistics), Susenas, 1996-2002 (processed).

In general, as income rises rice consumption in food insecurity households rises. However, in the three sample provinces rising incomes resulted in declining rice consumption. Nationally consumption of other staple food declines with rising incomes and protein consumption picks up in line with rising incomes. This means that increased household income is used to meet protein needs both quantitatively as well as qualitatively.

3.2 Food and nutrition consumption by food-insecure households

Tables 3.5 to 3.8 show carbohydrate and animal protein consumption. On average in 2002 food insecurity households consumed 75 kilograms per capita per year of rice. This figure was lower than in both 1996 and 1999. Food-insecure households in Central Java consumed less rice than the national average while in West Kalimantan and West Nusa Tenggara they consumed more than the national average. This is because rice has long been the single source of carbohydrates in West Kalimantan and West Nusa Tenggara while in East Java various sources of carbohydrate exist, such as rice, corn and dried cassava. Between 1996 and 2002 in the three sample provinces rice consumption declined overall.

The economic crisis resulted in a drop in rice consumption in 1999. A number of micro studies showed that households reduced rice consumption or shifted to consuming low-quality rice (Ariani *et al*., 2000). The sustained drop in rice consumption in 2002 is puzzling, because food consumption increased in 2002 as the economy recovered. The drop in rice consumption was also not caused by substituting rice with local carbohydrate sources, because in 2002 consumption of local food also dropped. This drop in rice consumption was caused by more diverse food consumption by food insecurity households.

Carbohydrate consumption by households facing food insecurity based on region and income during the period between 1996 and 2002 produced the following information: (a) rural households consumed more carbohydrates than urban households – as rural income rise, a lower percentage of household income is spent on carbohydrates; (b) rice consumption in East Java is lower than in the other two sample provinces; (c) more cassava is consumed than corn and/or other tubers; (d) carbohydrate consumption, except rice, was much higher during the economic crisis than before the economic crisis; and (e) this rise in carbohydrate consumption occurred not only in food-insecure households in urban and rural areas, but also in middle-class income and low-income households.

Table 3.5 Sources of carbohydrates in urban and rural areas for food-insecure households at national and provincial levels in Indonesia, 1996-2002 (kg/capita/year)

Description	Urban area			Rural area			Urban and rural areas		
	1996	1999	2002	1996	1999	2002	1996	1999	2002
Indonesia									
Rice	89.0	80.5	71.8	86.7	80.8	77.6	87.5	80.7	75.8
Corn	0.5	0.8	0.8	4.4	6.0	5.2	3.0	4.2	3.8
Cassava	4.7	5.6	5.0	13.7	14.0	11.2	10.5	11.1	9.3
Sweet potato	1.3	1.4	1.4	3.7	2.0	1.5	2.9	1.8	1.5
Sago	0.1	0.2	0.0	0.8	0.9	0.3	0.6	0.7	0.2
Taro	0.2	0.2	0.2	1.0	0.6	0.5	0.7	0.5	0.4
Sugar	8.3	6.9	7.2	7.2	6.4	7.1	7.6	6.6	7.1
East Java									
Rice	87.7	71.8	64.2	82.5	74.1	73.2	84.1	73.4	70.0
Corn	0.8	1.8	2.6	4.0	12.3	8.1	3.0	8.9	6.2
Cassava	2.9	4.2	5.9	14.1	15.2	15.9	10.7	11.7	12.4
Sweet potato	1.3	1.2	1.9	1.5	1.2	1.7	1.4	1.2	1.8
Sago	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Taro	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.2
Sugar	8.5	6.8	7.9	7.4	6.6	7.4	7.7	6.7	7.6
West Kalimantan									
Rice	95.9	71.6	71.4	89.3	93.7	85.6	91.2	90.8	81.9
Corn	0.0	0.1	0.0	0.1	0.1	0.5	0.1	0.1	0.4
Cassava	2.0	3.5	1.5	12.5	13.0	11.3	9.5	11.7	8.7
Sweet potato	0.3	0.2	0.5	0.6	1.0	0.6	0.5	0.9	0.5
Sago	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Taro	0.0	0.3	0.3	1.2	0.1	1.1	0.9	0.1	0.8
Sugar	10.9	8.2	10.6	12.8	8.9	10.8	12.3	8.8	10.8
West Nusa Tenggara									
Rice	105.7	89.7	83.4	106.8	103.3	96.3	106.3	98.6	91.3
Corn	0.4	0.2	0.3	0.0	0.7	3.9	0.2	0.6	2.5
Cassava	1.6	2.8	4.1	5.3	3.4	5.7	3.8	3.2	5.1
Sweet potato	1.0	0.4	1.0	5.5	0.6	0.4	3.7	0.5	0.7
Sago	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Taro	0.0	0.2	0.4	0.1	0.1	1.0	0.1	0.1	0.8
Sugar	5.3	4.4	4.0	5.4	4.1	4.5	5.3	4.2	4.3

Source: BPS (Central Agency of Statistics), Susenas, 1996-2002 (processed).

Tables 3.7 and 3.8 show that fresh fish was the most common source of animal protein at 11.3 kilograms per capita per year. Fresh fish is not only widely consumed but also consumed in relatively large quantities. West Kalimantan showed the highest level of fresh fish consumption at 14.7 kilograms per capita per year, while East Java recorded the lowest at 6.3 kilograms per capita per year.

Table 3.6 Sources of carbohydrate by income groups in food-insecure households at national and provincial levels in Indonesia, 1996-2002 (kg/capita/year)

Description	Low income			Medium income			High income		
	1996	1999	2002	1996	1999	2002	1996	1999	2002
Indonesia									
Rice	88.7	81.7	77.0	82.5	75.3	69.3	61.6	61.1	46.8
Corn	3.6	4.8	4.4	0.4	0.6	0.4	0.0	0.2	0.0
Cassava	12.0	12.1	10.3	3.8	4.7	3.3	0.0	6.5	1.5
Sweet potato	3.1	1.8	1.5	1.7	1.3	1.2	0.0	0.3	0.0
Sago	0.7	0.8	0.3	0.1	0.1	0.1	0.0	0.0	0.0
Taro	0.8	0.5	0.5	0.4	0.2	0.2	0.9	0.0	0.5
Sugar	7.1	6.2	6.9	9.8	8.9	8.7	8.8	9.8	8.8
East Java									
Rice	84.0	76.9	73.4	84.5	69.1	64.0	82.4	5.6	6.4
Corn	3.4	10.4	6.8	1.5	2.8	4.0	0.0	0.2	0.0
Cassava	12.2	13.3	14.3	4.8	5.5	4.9	3.4	1.3	0.0
Sweet potato	1.5	1.3	1.9	1.1	0.8	1.6	0.0	0.5	0.0
Sago	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Taro	0.1	0.1	0.2	0.1	0.0	0.2	0.0	0.0	0.0
Sugar	7.4	6.7	7.4	9.3	7.6	8.2	7.4	2.7	7.7
West Kalimantan									
Rice	96.0	92.8	86.6	81.6	86.5	72.7	40.3	51.4	38.6
Corn	0.1	0.1	0.3	0.0	0.0	0.7	0.0	0.0	0.0
Cassava	9.1	13.5	10.4	10.0	6.5	3.7	14.8	5.1	0.9
Sweet potato	0.6	1.1	0.7	0.4	0.5	0.2	0.0	0.0	0.0
Sago	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Taro	0.5	0.2	1.0	2.6	0.0	0.4	0.0	0.0	0.0
Sugar	11.5	8.2	10.0	13.8	10.6	13.8	19.9	10.3	10.2
West Nusa Tenggara									
Rice	108.1	101.1	93.5	95.7	89.3	81.7	106.3	49.6	51.4
Corn	0.2	0.6	2.5	0.0	0.5	2.3	0.0	0.0	8.4
Cassava	4.0	3.2	5.1	2.7	3.3	5.0	0.0	0.0	0.0
Sweet potato	4.1	0.5	0.6	1.5	0.5	1.0	0.0	0.0	0.0
Sago	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Taro	0.1	0.2	0.8	0.0	0.1	1.0	0.0	0.0	0.0
Sugar	5.2	3.8	4.0	5.9	6.0	6.2	4.3	5.1	5.5

Source: BPS (Central Agency of Statistics), Susenas, 1996-2002 (processed).

Fresh fish consumption in Java is low because, as Hardjana pointed out in 1964, peasants in Java, Bali and Lampung still follow their traditional diets and are not familiar with fish. Fresh fish supplies in Java are also low whereas in other provinces fresh fish supplies are abundant. According to Nikijuluw (1998), Java with 59.3 per cent of the population of Indonesia accounts for just 28.8 per cent of total fish production.

Table 3.7 Sources of protein in urban and rural areas for food-insecure households at national and provincial levels in Indonesia, 1996-2002 (kg/capita/year)

Description	Urban area			Rural area			Urban and rural areas		
	1996	1999	2002	1996	1999	2002	1996	1999	2002
Indonesia									
Soybean	4.7	4.7	6.0	3.5	3.4	3.9	4.0	3.8	4.5
Meat (poultry)	2.1	0.9	1.9	1.0	0.4	0.8	1.4	0.6	1.2
Meat (ruminants)	0.7	0.4	0.5	0.4	0.3	0.4	0.5	0.3	0.4
Eggs	4.8	2.9	4.6	2.7	1.8	2.7	3.4	2.2	3.3
Milk	0.5	0.5	0.6	0.1	0.2	0.2	0.2	0.3	0.4
Fresh fish	11.9	9.9	11.1	10.0	7.9	11.1	10.7	8.6	11.1
Preserved fish	1.4	1.2	1.4	2.0	1.5	1.8	1.8	1.4	1.7
East Java									
Soybean	6.7	7.4	8.6	5.6	6.1	7.3	6.0	6.5	7.7
Meat (poultry)	1.9	0.7	1.1	0.6	0.3	0.6	1.0	0.5	0.8
Meat (ruminants)	0.8	0.3	0.5	0.2	0.2	0.2	0.4	0.2	0.3
Eggs	3.8	2.0	3.5	2.6	1.6	2.8	2.9	1.7	3.1
Milk	0.3	0.3	0.7	0.0	0.1	0.2	0.1	0.2	0.4
Fresh fish	4.8	4.2	7.3	3.5	3.7	5.7	3.9	3.9	6.3
Preserved fish	1.1	0.9	1.5	2.1	1.5	2.1	1.8	1.3	1.9
West Kalimantan									
Soybean	2.2	1.2	2.3	1.1	0.9	1.3	1.4	0.9	1.6
Meat (poultry)	1.9	1.7	2.4	2.8	0.4	1.0	2.5	0.5	1.4
Meat (ruminants)	1.9	1.1	1.2	0.8	0.3	0.9	1.1	0.4	1.0
Eggs	6.6	3.2	5.3	3.9	2.3	3.7	4.6	2.4	4.2
Milk	0.8	0.8	0.5	0.3	0.3	0.6	0.4	0.4	0.6
Fresh fish	19.1	12.4	20.7	13.7	12.7	12.5	15.2	12.6	14.7
Preserved fish	2.7	1.5	1.3	2.9	1.7	1.7	2.8	1.7	1.6
West Nusa Tenggara									
Soybean	3.5	3.6	4.2	1.8	2.1	2.4	2.5	2.6	3.1
Meat (poultry)	1.0	0.4	1.0	1.1	0.3	0.3	1.1	0.3	0.5
Meat (ruminants)	1.3	1.0	0.9	0.8	0.3	0.6	1.0	0.5	0.7
Eggs	3.3	1.4	2.5	2.1	1.0	1.5	2.6	1.2	1.9
Milk	0.1	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.1
Fresh fish	6.5	7.4	8.3	6.6	6.3	13.1	6.5	6.7	11.2
Preserved fish	1.3	0.6	1.5	1.0	0.5	0.9	1.1	0.6	1.1

Source: BPS, Susenas, 1996-2002 (processed).

Due to the economic crisis animal protein consumption dropped in 1999. By 2002 consumption levels had risen again nationally and in the three sample provinces, but were still not at levels attained before the crisis. Soybean consumption in 2002 was the only protein source that rose from pre-crisis levels (1996). This indicates that soybean processed products (tofu and *tempe*) replaced animal protein foods which remained more expensive. Higher production of processed soybean is also linked to people's increased awareness that

they should consume food that is good for their health. Tofu and *tempe* help prevent certain degenerative disorders affecting the human heart.

Table 3.8 Sources of protein by income groups for food-insecure households at national and provincial level in Indonesia, 1996-2002 (kg/capita/year)

Description	Low income			Medium income			High income		
	1996	1999	2002	1996	1999	2002	1996	1999	2002
Indonesia									
Soybean	3.9	3.7	4.5	4.3	4.7	4.9	5.3	2.4	4.0
Meat (poultry)	1.0	0.4	0.9	3.3	1.5	2.8	6.5	3.0	3.4
Meat (ruminants)	0.3	0.2	0.3	1.2	0.8	1.1	5.8	2.6	1.4
Eggs	2.8	1.8	2.9	6.3	4.5	5.5	9.5	8.2	6.5
Milk	0.1	0.2	0.3	0.7	0.8	1.0	0.8	1.2	3.7
Fresh fish	9.4	7.6	10.2	16.2	14.8	17.0	28.7	20.5	14.0
Preserved fish	1.8	1.4	1.7	1.6	1.4	1.8	1.5	1.2	1.2
East Java									
Soybean	5.7	6.6	8.0	7.0	7.4	7.8	8.2	0.8	0.9
Meat (poultry)	0.6	0.4	0.7	1.9	0.9	1.5	5.5	0.5	0.9
Meat (ruminants)	0.2	0.2	0.2	1.0	0.5	0.7	2.0	0.4	0.1
Eggs	2.6	1.6	2.9	4.0	2.7	4.2	6.0	0.5	2.6
Milk	0.1	0.1	0.3	0.3	0.4	0.9	0.3	0.1	0.9
Fresh fish	3.4	3.6	5.9	6.0	6.3	9.4	4.5	0.7	1.9
Preserved fish	1.8	1.3	1.9	1.7	1.4	2.2	3.6	0.1	0.0
West Kalimantan									
Soybean	1.4	0.7	1.3	1.2	1.6	2.1	3.1	0.5	3.1
Meat (poultry)	1.8	0.6	1.0	4.0	0.3	2.7	10.3	0.0	2.0
Meat (ruminants)	1.1	0.4	0.4	0.8	0.5	2.6	1.6	0.0	3.8
Eggs	4.4	2.1	3.5	4.5	3.5	5.1	9.5	3.2	10.7
Milk	0.3	0.3	0.5	0.8	0.9	1.1	0.5	0.0	0.6
Fresh fish	13.2	10.4	13.9	18.8	19.2	15.5	40.2	23.1	24.3
Preserved fish	2.8	1.6	1.6	3.2	2.0	1.6	1.0	1.3	1.3
West Nusa Tenggara									
Soybean	2.5	2.5	2.9	2.2	3.4	4.5	0.0	1.7	0.0
Meat (poultry)	0.8	0.3	0.5	2.8	0.6	0.5	0.0	1.3	0.0
Meat (ruminants)	1.0	0.3	0.6	0.8	1.6	1.7	0.0	1.3	1.1
Eggs	2.2	0.9	1.7	4.7	2.8	3.1	0.0	2.7	2.4
Milk	0.0	0.0	0.1	0.2	0.1	0.3	0.0	1.0	0.0
Fresh fish	5.6	5.6	10.8	10.3	10.8	14.2	30.0	23.2	9.0
Preserved fish	1.1	0.6	1.2	1.4	0.6	0.8	0.0	0.2	0.0

Source: BPS (Central Agency of Statistics), Susenas, 1996-2002 (processed).

An examination of protein consumption according to region and income groups between 1996 and 2002 resulted in the following conclusions: (a) animal protein consumption is higher in urban areas than in rural areas nationally and in the three sample provinces; (b) the higher the income of households, the more protein consumed; and (c) consumption of soybean and preserved fish showed a unique pattern. Middle-income households consume more soybean and preserved fish produce than lower-income groups;

however, the percentage of income spent on soybean and preserved fish is lower than that of lower-income groups. This indicates that higher income groups consider soybean and preserved fish inferior food. The role of soybean and preserved fish as side dishes are replaced by other protein sources as household income rises.

Energy and protein consumption

Energy and protein consumption indicates the nutritional condition of the population and the success of the government in developing food, agriculture, health and socio-economics. Not only is the quantity of energy and protein intake important but it should also be diverse**.** According to Hardiansyah and Tambunan (2004), in general, a balanced diet is achieved when the proportion of energy from carbohydrates, protein and fats is 50-65 per cent, 10-20 per cent and 20-40 per cent respectively.

Table 3.9 shows that in 2002 energy consumption of food-insecure households nationally (urban and rural areas) only reached 70.4 per cent of sufficiency levels. Although this was an improvement over the sufficiency levels of 1999, it was still lower than the levels of 1996. This shows that the impact of the economic crisis has still not been fully overcome. The same holds true for the consumption of protein (Table 3.11), where protein sufficiency levels in food-insecure households only reached 73.1 per cent. These figures are similar nationally and in the three sample provinces.

Table 3.9 Energy consumption and sufficiency in urban and rural areas for food-insecure households at national and provincial levels in Indonesia, 1996-2002

Description	Consumption (calories/capita/day)			Level of sufficiency (%)[a]		
	1996	1999	2002	1996	1999	2002
Indonesia						
Urban area	1 550	1 399	1 405	77.5	69.9	70.3
Rural area	1 524	1 386	1 408	76.2	69.3	70.4
Urban and rural	1 533	1 390	1 407	76.7	69.5	70.4
East Java						
Urban area	1 538	1 409	1 425	76.9	70.5	71.2
Rural area	1 517	1 385	1 424	75.8	69.2	71.2
Urban and rural	1 523	1 393	1 424	76.2	69.6	71.2
West Kalimantan						
Urban area	1 596	1 448	1 430	79.8	72.4	71.5
Rural area	1 519	1 407	1 456	75.9	70,3	72,8
Urban and rural	1 541	1 412	1 449	77.0	70.6	72.4
West Nusa Tenggara						
Urban area	1 564	1 385	1 369	78.2	69.3	68.5
Rural area	1 504	1 393	1 414	75.2	69.7	70.7
Urban and rural	1 529	1 390	1 397	76.5	69.5	69.9

Source: BPS (Central Agency of Statistics), Susenas, 1996-2002 (processed).
Note: [a] Percentage of energy sufficiency set at 2,000 calories/capita/day.

Energy sufficiency consumption levels are lower in urban food-insecure households than in rural ones. However, protein consumption is the opposite. This is true nationally in the three sample provinces. Together with better income, urban communities are also better educated than rural communities and have greater awareness about healthy living. Urban communities have greater access to more diverse food.

Table 3.10 Energy consumption and sufficiency by income groups at national and provincial levels in Indonesia, 1996-2002

Description	Consumption (calories/capita/day)			Level of sufficiency (%)[a]		
	1996	1999	2002	1996	1999	2002
Indonesia						
Low-income group	1 518	1 374	1 394	75.9	68.7	69.7
Medium-income group	1 602	1 489	1 486	80.1	74.4	74.3
High-income group	1 690	1 597	1 522	84.5	79.8	76.1
East Java						
Low-income group	1 507	1 372	1 416	75.3	68.6	70.8
Medium-income group	1 576	1 484	1 473	78.8	74.2	73.7
High-income group	1 729	1 469	1 397	86.5	73.4	69.9
West Kalimantan						
Low-income group	1 525	1 381	1 437	76.3	69.1	71.8
Medium-income group	1 580	1 506	1 498	79.0	75.3	74.9
High-income group	1 661	1 516	1 441	83.0	75.8	72.0
West Nusa Tenggara						
Low-income group	1 520	1 369	1 379	76.0	68.5	69.0
Medium-income group	1 569	1 482	1 497	78.5	74.1	74.8
High-income group	1 717	1 601	1 409	85.9	80.1	70.5

Source: BPS (Central Sagency of Statistics), Susenas, 1996-2002 (processed).
Note: [a] Percentage of energy sufficiency set at 2,000 calories/capita/day.

Rising income leads to rising energy and protein consumption by food-insecure households. Nevertheless, energy and protein consumption by food-insecure households classified as high-income households often still does not meet the advised levels. Energy sufficiency levels of high-income groups remain around 70 per cent, while protein sufficiency stands at 90 per cent. To upgrade food and nutrition consumption in food insecurity households and for children under the age of five, in the long run the following measures, as suggested by the World Bank, should be implemented: (a) economic growth; (b) macro-economic policies; (c) upgrading education of women and gender equality; (d) women partake in income-generating work; (e) food production; (f) availability of water and sanitation; and (g) a family planning programme to limit the number of children in a family and the spacing of births (World Bank, 2006).

Table 3.11 Protein consumption and sufficiency in urban and rural areas for food-insecure households at national and provincial levels in Indonesia, 1996-2002

Description	Consumption (grams/capita/day)			Level of sufficiency (%)[a]		
	1996	1999	2002	1996	1999	2002
Indonesia						
Urban area	42.5	37.5	39.8	81.8	72.2	76.5
Rural area	39.6	35.2	37.2	76.2	67.6	71.6
Urban and rural	40.7	36.0	38.0	78.2	69.2	73.1
East Java						
Urban area	41.0	39.3	41.5	78.9	75.5	79.7
Rural area	38.9	36.0	38.5	74.8	69.3	74.0
Urban and rural	39.6	37.1	39.5	76.1	71.3	76.0
West Kalimantan						
Urban area	46.8	39.9	41.6	90.0	76.8	80.0
Rural area	39.9	35.6	36.4	76.7	68.4	70.1
Urban and rural	41,9	36,2	37,8	80,5	69,6	72,7
West Nusa Tenggara						
Urban area	43.3	37.7	38.3	83.3	72.6	73.6
Rural area	38.9	35.9	38.9	74.8	69.0	74.8
Urban and rural	40.7	36.5	38.7	78.3	70.3	74.3

Source: BPS (Central Agency of Statistics), Susenas, 1996-2002 (processed).
Note: [a] Percentage of protein sufficiency set at 52 grams/capita/day.

Table 3.12 Protein consumption and sufficiency by income groups for food-insecure households at national and provincial levels in Indonesia, 1996-2002

Description	Consumption (grams/capita/day)			Level of sufficiency (%)[a]		
	1996	1999	2002	1996	1999	2002
Indonesia						
Low-income group	39.5	35.0	37.1	75.9	67.3	71.3
Medium-income group	45.9	41.9	43.7	88.2	80.7	84.0
High-income group	57.3	49.6	47.0	110.2	95.3	90.5
East Java						
Low-income group	38.4	35.7	38.4	73.8	68.6	73.8
Medium-income group	43.3	41.9	44.0	83.3	80.5	84.7
High-income group	52.5	49.2	47.5	100.9	94.6	91.3
West Kalimantan						
Low-income group	40.4	34.3	36.6	77.6	65.9	70.4
Medium-income group	44.9	41.7	39.6	86.3	80.1	76.1
High-income group	57.8	47.7	51.1	111.1	91.8	98.2
West Nusa Tenggara						
Low-income group	40.0	35.5	37.9	77.0	68.2	73.0
Medium-income group	44.3	41.0	42.8	85.3	78.8	82.3
High-income group	47.2	51.2	39.3	90.8	98.5	75.6

Source: BPS, Susenas, 1996-2002 (processed).
Note: [a] Percentage of protein sufficiency set at 52 grams/capita/day.

3.3 Food expenditures of food-insecure households

Household needs may be grouped into two categories, food and non-food. The quantity of food needed by an individual will reach a saturation point, while the needs for non-food items has no limits. Therefore, expenditure for food by a household may be used as an indicator of prosperity. In general, the larger the food expenditure as a percentage of total income, the lower the prosperity of the household. Or expressed another way, the lower the percentage of income spent on food, the more prosperous the household.

Tables 3.13 and 3.14 show the food expenditures of food-insecure households nationally and in the three sample provinces. In general, food-insecure households spend more than 60 per cent of their income on food needs. More funds are allocated to food than non-food needs such as education, health, housing and recreation. This differs from conditions in advanced countries where the food expenditure makes up less than 50 per cent of total households expenses.

Table 3.13 Food expenditure share of household income in urban and rural areas for food-insecure households at national and provincial levels in Indonesia, 1996-2002 (percentage)

Description	Year		
	1996	1999	2002
Indonesia			
Urban area	68.8	70.7	67.7
Rural area	71.7	73.9	70.1
Urban and rural	70.7	72.8	69.4
East Java			
Urban area	68.2	70.4	68.2
Rural area	70.2	73.0	68.4
Urban and rural	69.6	72.2	68.3
West Kalimantan			
Urban area	72.5	73.4	68.7
Rural area	75.0	78.8	71.8
Urban and rural	74.3	78.1	71.0
West Nusa Tenggara			
Urban area	71.8	74.1	69.8
Rural area	74.7	75.6	70.4
Urban and rural	73.5	75.1	70.2

Source: BPS (Central Agency of Statistics), Susenas, 1996-2002 (processed).

The economic crisis in mid-1997 caused households to allocate a larger percentage of income to food needs. This resulted in declining living standards and less food security for middle-class and lower-income households. However, by 2002 the percentage of household income spent on food had again dropped, reflecting improved prosperity due to

various government programmes. Nationally in 2002 food expenditure in food-insecure households was around 69.4 per cent of total household budget, while in East Java, West Kalimantan and West Nusa Tenggara it was 68.3 per cent, 71.0 per cent and 70.2 per cent respectively.

Table 3.14 Food expenditure share of household income by income groups for food-insecure households at national and provincial levels in Indonesia, 1996-2002 (percentage)

Description	Year		
	1996	1999	2002
Indonesia			
Low-income group	71.2	73.4	69.7
Medium-income group	68.1	69.1	67.1
High-income group	64.1	66.6	67.8
East Java			
Low-income group	70.0	72.6	68.5
Medium-income group	68.0	70.1	67.4
High-income group	67.9	71.8	68.3
West Kalimantan			
Low-income group	74.1	73.4	71.3
Medium-income group	74.8	78.8	69.8
High-income group	75.1	78.1	71.0
West Nusa Tenggara			
Low-income group	74.1	75.8	70.1
Medium-income group	70.5	71.0	70.1
High-income group	64.5	77.6	73.9

Source: BPS (Central Agency of Statistics), Susenas, 1996-2002 (processed).

Although Indonesia's economy has recovered from the worst of the crisis, the government still has a lot to do to raise the prosperity of the people so that development is felt by all of society. The government has failed to raise prosperity significantly, as indicated by the fact that in 2002 in food-insecure households a larger percentage of household budgets was allocated to food expenditure than in 1996.

Urban households spend a smaller percentage of household budget on food than rural households, which indicates that prosperity levels of food insecurity households in urban areas are better than in rural areas. In 2002, nationally, average food expenditure in food-insecure households in urban areas amounted to 70.1 per cent of total household budget, while in rural areas it amounted to 67.7 per cent. A similar pattern was shown in the three sample provinces. This is a proof that rural populations, in general, working in the agricultural sector and falling under the category of low-income people have lower access to food than urban populations that, in general, work in the formal sector, such as the services and industrial sector (Bourgeois *et al.,* 2006).

Looking at food-insecure households according to income groups produced an interesting phenomenon, where food-insecure households belonging to higher-income groups did not always have the smallest food expenditure shares. For instance, food-insecure households belonging to higher-income groups in West Nusa Tenggara had even higher food expenditure shares than the medium and lower income groups. However, in general, the higher the income group the smaller the food expenditure as a percentage of household expenses (Ariani and Hardono. 2005).

3.4 Food sources of food-insecure households

Food consumed by food-insecure households can only be differentiated between foods produced by the households themselves and foods purchased or received via donation. Appendices 1 to 4 show that in general, households in Indonesia are net consumers of food. Most food is purchased and only a small proportion is self-produced. Households purchase food because they are not engaged in agriculture and do not produce any. Or they produce food, but not enough to meet all their needs. This is the standard situation for farmers owning small plots of agricultural land and by farm labourers.

In 2002, even though rice is the primary staple food in Indonesia, only about 15.9 per cent of rice consumed by food-insecure households was produced by the households themselves. To give a rice price subsidy to general consumers was no longer the right policy, therefore the balance between supporting farmers with floor price and consumer with affordable price was necessary. The government procurement price should benefit the farmer, and the food-insecure household or the poor people should have access to the Rice for the Poor programme. The proportion of acquisition sources from other self-produced staple food commodities, such as corn, cassava and taro, is relatively large.

In East Java and West Kalimantan, sago consumed by food-insecure households is 100 per cent self-produced. Between 1996 and 2002 at the national level, the percentage of self-grown food declined leading to the conclusion that more food was purchased. The three sample provinces show a variety of carbohydrate foods. Sugar, which is difficult to produce in the household because of the milling required, is usually purchased as granulated sugar. However palm sugar is produced by small-scale household industries. At the national level as well as in the three sample provinces, only eggs and ruminant meats are commonly self-produced. However, in West Nusa Tenggara, poultry meat is also much consumed. Here poultry is raised by households themselves.

Rural households produce more self-produced food than urban households, both nationally and in the three sample provinces. Low-income households tend to consume larger amounts of self-produced food. Faced with limited purchasing power the kind and quantity of foods consumed by poor households is often determined by what they can produce themselves.

4. Performance and Prospects of Empowerment Programmes for Food-insecure Households

To stabilize food security for food-insecure communities or poor families in various regions facing chronic and transient food insecurity since 2002, the Food Security Board of the Ministry of Agriculture has developed models to empower food-insecure households in all the provinces of Indonesia. The empowerment models/programmes developed are: (a) community food barns; (b) food and non-food social security net; (c) delayed selling systems; (d) development of local food; (e) utilization of yards; and (f) empowerment of food-insecure areas. In these models aid is distributed to groups as direct cash aid (DCA), or is in the form of Group Venture Capital Empowerment (GVCE), which is managed on a revolving basis. The DCA model is adjusted to people's potential and capacity. The main source of programme funds is the so-called de-concentration segment of the National Budget**,** however, each region also allocates funds from regional budgets for programme development.

The distribution of each programme to empower food-insecure households is presented in Table 4.1. The rest of this Chapter entails a detailed discussion of the performance and prospects of each of the programmes/models. Secondary data and information are derived from various sources such as a 2005 report on the performance of the Food Security Board (BKP, 2005), while primary data were compiled in the three sample provinces.

Table 4.1 Development of programmes to empower food-insecure households in Indonesia through direct cash aid, 2002-2004

Year/location	Food barn	Delayed selling system	Local food	Utilization of yards	Food insecurity area
2002					
Province	19	17	27	20	17
District/Municipality	100	55	111	82	63
Group	232	118	263	362	235
2003					
Province	22	18	21	22	*
District/Municipality	78	45	70	66	*
Group	338	193	333	250	*
2004					
Province	14	19	25	16	*
District/Municipality	68	40	60	38	*
Group	294	130	264	221	*

Source: BKP, 2005.
Note: * Activities are transformed to become aid in areas affected by natural disasters.

4.1 Community food barn

The objectives of this programme to empower the institutional community food barns are: (a) to enable people to stabilize food supply; (b) to raise the institutional capability of food barns to become one of the institutional movers of rural economies; (c) to develop income sources for farmers' families through food barn based ventures; and (d) to realize food security at the household level through increased access to sufficient food. A revitalized food barn is a property in a rural area that is established and managed by the rural community for the storage, distribution, processing and trade of foodstuffs.

This programme is based on a Community Direct Loan Aid pattern, i.e., in the form of direct provision of funds as loans by transferring them to the bank accounts of recipient farmer groups. The groups receiving the loans manage them in an organized way based on the principle of togetherness to implement productive ventures that maintain and grow the original capital. Each farmer group recieves a loan of approximately Rp 25 million. The loan is used to strengthen working capital, stimulate economic growth, and raise entrepreneurship. Recipient groups have the liberty to determine the kind of venture they undertake, based on a collective decision by all group members. Activities by the groups may be in the form of credit-saving activities, procurement of production means, or means of processing post-harvest handling. Target groups are assisted and directed to acquire the capability to access existing capital sources and financial institutions.

Management success of the programme depends on capital being directly distributed to farmers' groups pursuant to set criteria. Technical success of the programmes is measured by increases in farm productivity and production leading to better incomes for members of farmers' groups that have received loans. Successful behavioural change is accomplished when recipient farmers' groups move from individual farming, to working in groups, to develop advanced and autonomous farmers' groups. In the short term, the expectation is that the empowered institutional community food barn will upgrade management skills and thus generate benefits to the rural community. In the long term the expectation is that the community food barn will act as an activator of rural economies.

The programme to empower community food barns has been implemented in 25 of the 33 provinces of Indonesia and funds distributed between 2002 and 2005 amount to Rp 64.25 billion. From 2002 to 2004, East Java received Rp 3 billion more than was channelled to West Nusa Tenggara and West Kalimantan (Table 4.2). The National Budget is the main source of funding, and each regional government allocates a relatively small amount from their regional budgets to develop the programme. For example, the West Kalimantan

provincial government only provided 9.1 per cent of the total funds allocated to the community food barn programme in the province.

In East Java 17 districts received funds from the community food barn programme, while in West Kalimantan five districts and in West Nusa Tenggara six districts received funds. Districts selected to participate in the community food barn programme were centres of rice production, especially unhusked rice (unhulled paddy separated from the stalks). They were selected as an attempt to stabilize husked rice prices at the farmers' level and to expand the marketing network. Future programme site location at the sub-district and rural level may be based on the same criteria as mentioned above, or programme site selection at the sub-district and rural level may also be based on food availability during certain periods.

Table 4.2 Distribution of 'direct cash aid' funds in East Java, West Nusa Tenggara and West Kalimantan, Indonesia, 2002-2004

Description	2002	2003	2004
East Java			
Funds (million Rp)	651.9	1 275	1 000
Number of districts	7	15	9
West Nusa Tenggara			
Funds (million Rp)	1 050	689	100
Number of districts	5	6	4
West Kalimantan			
Funds (million Rp)	122.5	137.5	75
Number of districts	5	1	1

Source: BKP at provincial level (2005).

The amount of funds channelled to each group in a province varied depending on the number of members in the group and the performance of the group. Fund distribution is flexible and not limited to the programme guidelines (Rp 25 million per group). There is an expectation that the disbursed funds will be 100 per cent repaid, so that the number of groups receiving aid will increase through the recycling of repaid funds. In West Nusa Tenggara funds distributed to farmers groups varied between Rp 6.25 million and Rp 75 million, while in West Kalimantan it varied between Rp 13.75 million and Rp 25 million. In 2002 in East Java aid received by each group varied between Rp 22 million and Rp 44 million, but between 2003 and 2005 each group received Rp 25 million.

The fund repayment period was set between three to five years. Up to 2005, fund repayment in West Kalimantan only amounted to 5 per cent of the total funds distributed. However, in East Java repayments averaged 35.2 per cent of the total funds distributed and repayments in three districts (i.e. Nganjuk, Jombang and Ngawi) averaged 50 per cent,

while in other districts, such as Situbondo and Trenggalek, repayments averaged less than 5 per cent. Fund repayment was affected by the kind of venture managed by each group. Moreover, each group had its own type of management which was affected by the human resources in the group, administration of the group, discipline of group members, and the influence of field officials. Intensive development assistance had to be provided to development ventures at the group level in districts showing relatively slow repayments of funds.

The type of ventures developed by groups included: (a) procurement of husked rice from farmers; (b) savings credits of money, husked rice and production means; and (c) means of production in the form of fertilizers and medicines. Procurement of husked rice from farmers, which formed the principal activity in developing food barns, did not proceed optimally compared to other ventures. Procurement of husked rice from farmers does not generate sufficient profits to nurture capital growth within the groups. This was an effect of market mechanisms that determine the selling price of husked rice. Groups are only interested in buying husked rice below prevailing market prices because they are fearful of suffering losses when they sell it. Moreover, group members seldom sell their husked rice to the group. However, procurement of husked rice by farmers' groups had a psychological effect on traders in the form of a feeling of increased competition, so that traders could not arbitrarily determine the buying prices of husked rice. Capital circulation, interest charges from the provision of savings credits of money and means of production, generated sufficient profits for the groups. In East Java an interest of 1.5-2 per cent per month was charged for the provision of credits savings of money and means of production.

In West Kalimantan community food barns functioned as husked-rice storage facilities and as facilities to borrow husked rice. A member of a farmers' group could sell his husked rice to the group or he could borrow husked rice from the group whenever required. Repayment of the borrowed husked rice was done after harvest time with 10 per cent interest – a farmer borrowing 10 kg of husked rice would repay 11 kg. However, when a non-member borrowed rice from a farmers' group a higher interest was charged. Mutually agreed interest charges took into consideration the level of difficulties faced by the borrower.

In East Java participant group ventures were more diverse than in the other two sample provinces. For instance, in East Java groups participated in marketing activities in co-operation with other venture partners. During peak harvests community food barn farmers' groups bought husked rice from members and surrounding farmers, and sold the

husked rice on to local markets, and nearby logistic depots and rice milling units. Groups selling into markets and logistic depots frequently faced many obstacles. Because volume was relatively small it was difficult to generate profits. In order to expand market access for husked rice managed by community food barn farmers groups, in several locations husked rice was sold to husked rice purchasing institutes (e.g., rural unit co-operatives, farmers co-operatives and rice milling units) at mutually agreed prices.

Community food barns have been able to upgrade business management of food barns and acquire added value with delayed selling of husked rice. The respective programmes have also been able to increase community food reserves, including food reserves in food-insecure areas.

This programme has been highly beneficial to group members, farmers around the group, and group business partners. With additional capital farmers' groups will be able to expand activities and develop more diverse ventures. Additional profits from the programme improved farmers' prosperity and enabled members to partake in new farming technologies. Food barns also provided social development in communities by making rice available at the household level. Instances of food insecurity were reduced and starvation or malnutrition prevented.

Various problems are still faced by community food barns in their development through the provision of DCA. The problems include:

a. Delays in the disbursement of DCA funds that occured every year caused delays in the formulation of DCA fund guidelines in provinces. Consequently, use of DCA funds was not on time.
b. Development of food barns is focused more on the business of production means and on saving-credit activities to support farmers' needs for farm operation capital. Purchase, storage and disbursement of husked rice at some food barn farmers' groups (with the aim of meeting community needs for food during times of famine) is not proceeding satisfactorily.
c. Limited capital also means limited business volume**.** This makes trading of husked rice inefficient both to the open market and to logistic depots. The selling price of rice is reduced by lack of infrastructure and lack of proper drying floors and storage rooms, which maintain or raise the quality of rice.
d. Loan repayments by group members, both in the form of husked rice as well as money have not been paid on time. This depletes the group's working capital.

e. Development assistance is extremely insufficient and not sustained, resulting in poor business development of the groups. Above all, post-programme monitoring and development assistance was not well implemented because no budget was available for these activities. There is indifference at the provincial and district/municipal level regarding budget allocation for the post-programme activities mentioned above.

Steps to improve the community food barn programme and prevent the emergence of problems mentioned before include the following four points:

a. The Central Government should issue Programme Guidelines each year along with the National Budget to reduce delays in programme implementation.
b. There should be a greater focus on husked rice supply, storage and distribution aimed at meeting the needs of members and the community when food scarcity occurs. Nevertheless, production means and savings credits should be maintained.
c. To develop businesses co-operation between food barn groups, husked rice and/or food procurement institutes should be established. Marketing to traditional markets or logistic depots should be strengthened. Co-operation with logistic depots could be expanded to include drying of husked rice to improve quality because generally the groups do not possess sun-drying floors. Groups wishing to further develop their businesses could establish partnerships with banks or capital institutes to obtain soft loans.
d. Development assistance to all group members should be improved before and after the receipt of capital aid. Assistance could be educational, allowing groups to carry out comparative studies of successful groups in other districts. Post-programme development assistance has to be provided by district, municipal and provincial officials, while implementation may be linked to other assistance activities.

4.2 Food and Non-food Social Security Net Programme

To relieve suffering of the poor caused by the economic crisis and prevent the country from falling into greater social turmoil in 1998-1999 the government launched the Social Security Net (SSN) Programme. Programme recipients were the poor people in urban and rural areas.

The programme included four extensive initiatives: (a) provision and distribution of basic needs and food aid; (b) provision of basic health services, medical aid and education aid; (c) raising direct employment creation and business opportunities leading to a growth of

people's purchasing power; and (d) reinvigorating the economy to stimulate development and economic ventures.

The SSN Programme consisted of the following components: (a) Tackling Skilled Workers Programme (TSWP); (b) Programme to Tackle the Impacts of Droughts and Manpower Problems; (c) Forestry Intensive Labour Project Programme; (d) Operational Fund Assistance Programme; (e) Special Rice Marketing Operation (SRMO) Programme; and (f) the Scholarship Programme.

The TSWP fell under the category of Non-food Social Security Net and was aimed at the creation of employment, mainly for skilled unemployed persons discharged from their jobs. The government allocated Rp 399.18 billion to TSWP or 2.21 per cent of total SSN funds, which amounted to Rp 17,893 billion. The Central TSWP Team was allocated Rp 40.43 billion (10.12 per cent of total) to make the team operational, while Rp 358.74 billion (89.88 per cent) was allocated to Regional TSWP Teams (18 provinces). Nationally, TSWP participants numbered 65,000 persons distributed over 3,250 groups. Each group consisted of around 20 participants. TSWP activities started simultaneously in September 1998 and terminated on 31 March 1999.

The government (specifically the Department of Finance) needed to pay attention to programme financing problems. TSWP was entirely financed from the National Budget. The use of funds from the National Budget should have been efficient and effective. As TSWP was enacted without much lead-time it is reasonable to conclude that deviations occurred. TSWP programmes should be evaluated and monitored from the Central TSWP Management Team through to regional co-ordination teams, regional technical teams, implementation institutes, and programme target participants' groups.

The objective of the SRMO Programme was to assist the poor (specifically pre-prosperity families) with subsidized rice prices so that the poor were still able to meet their rice needs. All financing for the programme, i.e., subsidies and transportation costs, were covered from the National Budget. Under this programme the government sold rice to the poor at Rp 1,000 per kg. The Central Agency of Logistics set its selling price for the rice at Rp 1,924 per kg. The government also paid transportation costs at Rp 100 per kg. The entire government subsidy for SRMO amounted to Rp 1,024 per kg. SRMO subsidies literally ate up Rp 632 billion from the 1998-1999 National Budget. The programme is still being continued under the name *Raskin*, an acronym of '*beras miskin'*, literally meaning 'poor rice'. However, in the original SRMO Programme each poor family was allocated 20 kg of rice per month; but with *Raskin* each poor family receives 10 kg of rice per month.

The SRMO Programme is considered to have significantly suppressed the rate of inflation in Indonesia because the programme was able to reduce demand for rice in markets. This is proven by the declining inflation rate since the full introduction of the SRMO Programme (reaching 7.3 million heads of families) in July 1998. There are various parties opposing the SRMO Programme. Some worry the programme has a negative impact on the interests of rice producers. Others worry that in the medium and long term the programme is risky because it increases dependency on rice imports. Still other voices say the economy is recovering as indicated by the increased stability of the exchange rate of the Rupiah (Rp), and that the money could be better spent on more productive development.

4.3 Delayed selling system

The delayed selling system is a marketing strategy to improve quality through production processing and storage in order that: (a) the bargaining leverage of farmers is increased both through the ability to defer sales and self-organized marketing; (b) the quality of production and sales value of commodities is increased; and (c) food stocks meet groups' and families' needs and are available all times. It was expected that the delayed selling system would provide farmers with better product prices and added value if farmers were capable of applying post-harvest processing and or other post-harvest treatments.

In 2002 the delayed selling system was directed towards farmers living in rice production centres because during the main harvest season prices frequently drop below the Government Procurement Floor Price. Because activities to raise farmers' incomes were also handled by developing community food barns and the Capital Strengthening Fund of Rural Economic Venture Institutes since 2003, the delayed selling system has been directed at other commodities besides rice.

By 2004, nationally, 441 groups distributed throughout various provinces had developed delayed selling systems. As shown by Table 4.3 delayed selling systems were more common in East Java and West Nusa Tenggara than in West Kalimantan. Similar to other empowerment programmes, each group was collectively able to determine its delayed selling venture, taking into consideration the 'beacons' of the objectives of the system. Even though the goal of fund assistance is to provide farmers with profits from procuring husked rice and/or other agricultural commodities from group members that are sold at a later time when prices are higher, in the field it does not work like that.

Table 4.3 Delayed Selling System Programme at national and provincial level in Indonesia, 2002-2004

Description	2002	2003	2004
National	17 provinces 55 districts 118 groups	19 provinces 46 districts 193 groups	19 provinces 40 districts 130 groups
East Java	-	5 districts 20 groups Rp 500 million	5 districts 22 groups Rp 550 million
West Nusa Tenggara	4 districts/municipalities 7 groups Rp 75 million	6 districts 39 groups Rp 500 million	-
West Kalimantan	1 district 2 groups	1 district 3 groups	2 districts 4 groups

Source: BKP at national and provincial levels, 2005.

Ventures developed by farmers' group are varied. Some ventures do not even trade agricultural commodities, as shown in Table 4.4. Saving-credit ventures both monetary and for agricultural production means are always present in every group. This indicates that capital for farm operations is still limited. Members of farmers groups often say, "no matter what activities farmers' groups carry out, if there is no saving-credit activity, the atmosphere in the group is dull and not attractive".

Initially, the *Baru Bangun* Farmers' Groups in Selubung Rural, Batukliang Sub-district, Central Lombok District, West Nusa Tenggara Province, used the delayed selling system funds of Rp 15 million, to provide credit to its members at 2.5 per cent per month interest. Credit received by group members was used to meet the members' daily needs thus delaying the sale of members' unhusked rice until higher market prices prevailed. Therefore, the *Baru Bangun* Farmers Groups did not buy unhusked rice directly from its members.

The *Tanjung Sari* Women Farmers' Groups in Sepuk Tanjung Village, Sebawi Sub-district, Sambas District, West Kalimantan Province, used delayed selling system funds of Rp 25 million to establish a so-called multi-purpose shop selling daily needs and agricultural production means to members and non-members. The group was also engaged in the cultivation of vegetables and rice. Delayed selling activities were not implemented because funds from the programme reached the group after the rice harvest season was over. Funds from the programme reached the group in June 2006, whereas grand rice harvest only happened once a year in January-February, because farmers only cultivate a local variety of rice that is only harvested once a year.

Table 4.4 Performance of the Delayed Selling System Programme in East Java, West Nusa Tenggara and West Kalimantan, 2006

Province	Programme performance
East Java	• Location: Nganjuk, Pamekasan, Bangkalan, Tulungagung, Sampang, Ponorogo, Sumenep, and Tuban districts • Fund development : 22.3% (from Rp 1.25 billion to Rp 1.529 billion) • Type of venture: procuring and selling agricultural products (unhusked rice, corn, soybean, cassava, red onion); saving-credit ventures • Amount of funding aid: Rp 25 million/group
West Nusa Tenggara	• Location: Mataram Municipality, West Lombok, Central Lombok, East Lombok, Sumbawa, Dompu and Bima districts • Type of venture: procuring and selling unhusked rice; saving-credit ventures; agricultural product processing; plaited mats home industry • Amount of funding aid: Rp 10 million - Rp 15 million/group
West Kalimantan	• Location: Bengkayang and Sambas District • Type of venture: procuring and selling of unhusked rice; selling principal daily needs and agricultural production means; rice farming and cultivation of vegetables on collective land and saving-credit of money and production means • Amount of funding aid: Rp 15 million/group

Source: BKP at national level, 2005.

The lack of facilities such as sun-drying floors and storerooms for unhusked rice meant farmers were unable to store rice for a long time. Storing unhusked rice without proper sun-drying and storage in a proper storage facility causes the quality of the rice to decline rapidly. To prevent rapid declines in rice quality farmers were forced to sell as soon after harvest as possible leading to low sale prices. To prevent deviations from the objectives of the programme regular development assistance and monitoring by development assistants at the district and/or municipal level is required.

4.4 Development of Local Food Programme

The objective of the Development of Local Food Programme was to accelerate food diversification using diversity potential of local foods in various regions throughout Indonesia. This model was expected to lead to: (a) realizing food security at the household level by raising consumption and availability of local food; (b) development of local food agribusinesses to raise farmers' incomes; (c) raising the quality and image of local food; and (d) upgrading farmers' skills. All these activities were integrated to diversify food consumption and develop traditional foods.

Development models included three components: training, direct aid to strengthen working capital of groups, and counter parting. Model implementation was carried out by venture groups whose activities were consistent with the collective needs and decisions of

group members. By 2005, 861 groups had been formed throughout various provinces of Indonesia (Table 4.5). The programme was supported by regional governments as shown by the allocation of Rp 300 million from the regional budget of East Java Province. This amounted to 46.2 per cent of total programme aid funds in 2005.

Table 4.5 Development of the Local Food Programme at the national and provincial level in Indonesia, 2002-2006

Province	Programme performance
National	• 2003: 333 groups, 70 districts in 21 provinces • 2004: 264 groups, 60 districts in 25 provinces • 2005: 264 groups, 60 districts in 27 provinces
East Java	• 2005: 24 groups funded by National Budget and 14 groups by Regional Budget • Aid from National Budget: Rp 25 million/group; from Regional Budget: Rp 10 million to Rp 15 million/group • Located in 19 districts
West Nusa Tenggara	• Located in eight districts/municipalities • 148 groups aided with a total funds of Rp 1.16 billion
West Kalimantan	• Located six districts having 20 groups and 239 group members • Total fund aid Rp 340 million

Source: BKP at national and provincial levels, 2005.

In West Kalimantan, as well as strengthening groups' capital needs, a public education campaign to raise awareness about diversifying food consumption, improving food security and developing local foods was launched. Community message services, news, dialogues and interviews were aired on television and radio through state-owned channels, TVRI[1] and RRI[2]. Leaflets and booklets were also published. Meetings, public education stalls at schools, exhibitions on the creation of traditional food menus based on local foods, and sub-district head's local food appreciation events were all organized to promote food diversification. The Food Security Office worked with Family Prosperity Education, the Office of Education, regional government, Food and Drug Monitoring Board, Office of Health Affairs, etc.

The programme played an important role in raising food consumption diversification and reducing dependency on rice. The programme's success needs regular monitoring by programme-related government offices. Post-programme development assistance is also needed. Studies concerning changes in the behaviour of people's food consumption, including aspects of quantity, quality and food security also need to be carried out.

[1] TVRI: *Televisi Republik Indonesia* is the national television broadcaster.
[2] RRI: *Radio Republik Indonesia* is the national radio broadcaster.

4.5 Yard Utilization Programme

The Yard Utilization Programme is directed to optimize yards as sources of nutritious food. The programme aims to: (a) meet family micro-nutrition needs on a sustainable basis; (b) quickly raise farmers' and fishermen's families' skills in cultivation, animal husbandry and fish farming; and (c) raise the incomes of farmers' and fishermen's families.

The programme involves groups of women improving their capability to meet family nutritional needs through use of yards. Activities include development assistance and strengthening of groups' working capital. Between 2002 and 2006, 692 groups were established nationally. In East Java in 2005 eight Yard Utilization Programme groups were established, each receiving Rp 10 million from the regional budget (Table 4.6).

Table 4.6 Yard Utilization Programme at the national level and in three sample provinces in Indonesia, 2002-2005

Province	Programme performance
National	• 2003: 250 groups, 66 districts in 22 provinces • 2004: 221 groups, 38 districts in 16 provinces • 2005: 221 groups, 38 districts in 17 provinces
East Java	• In 2005: eight groups and funds from the regional budget • Amount of aid: Rp 10 million per group • Located in eight districts
West Kalimantan	• Located in seven districts, number of groups: 41 with 682 members

Source: BKP at national and provincial levels, 2005.

In Sambas District, West Kalimantan, each group received Rp 5 million and each decided collectively how the funds were to be used. Commodity selection conformed with community customs and environmental conditions. Groups grew crops and some even raised cattle in their yards. The most popular use of funds was as saving-credit while improving yard food production was a distant second as shown by Table 4.7. Development assistance has to be ongoing to motivate groups to use their yards in order to improve food availability and consumption.

Table 4.7 The Yard Utilization Programme in Sambas District, West Kalimantan, Indonesia, 2002-2006

Description	*Sinar Pagi* Group	*Nungun Sidi* Group	*Al Baroqah* Group
Number of members	25	25	25
Commodity	Vegetables	Cattle	Vegetables
Amount of funds (Rp)	5 000 000	5 000 000	5 000 000
Development of funds (Rp)	7 000 000	6 000 000	7 500 000
Activity components (%)			
- Credits	71.5	83.3	66.7
- Production means	28.5	16.7	23.3

Source: BKP West Kalimantan, 2005.

The Yard Utilization Programme improved participant families' nutrition and income. However programme activities were not ongoing, especially vegetable cultivation. Because these were women's groups, membership problems also emerged; for example, having to abide by the husbands' wishes when they married and, following their husbands to different locations. In the *Sinar Pagi* Group, from an initial membership of 25 women, only 15 remained. A lack of development assistance by related government offices led to a neglect in yard use. So the part of the programme in existence was the saving-credit component. The Chairperson of the *Sinar Pagi* Group reported that the group actively engaged in the following (pers. comm., 2006):

> Programme activities initiated in 2002 were: (1) provision of vegetable seeds, pole beans, *kangkung* (water spinach), cucumber and corn seeds to all group members; (2) provision of urea, tri-sodium phosphate, potassium chloride and chemicals; (3) rice cultivation by the group on 0.33 hectares of government land; and (4) saving-credit activities to group members. The objective of distributing vegetable seeds to group members was to enable cultivation of vegetables for household consumption or to sell them to obtain additional household income. However, not all group members benefited maximally. Many were not well disciplined so that harvest failures occurred.
>
> Types of rice cultivated were upland land varieties, i.e., the *Kumai* and *Siam* varieties. At harvest each member received a share of the harvest, while a part of the harvest was sold to obtain funds to be added to the saving-credit fund of the group. Only members who actively participated in rice cultivation received a share of the harvest (Rp 40,000 per member). The cultivation of rice was carried out on Mondays between 6 a.m. and 9 a.m. when planting, weeding and harvesting was carried out. This opportunity was also used by the members as a meeting forum to discuss group problems and to find solutions.
>
> So far 56 credit transactions involving members and non-members have been implemented. Credit provided may not exceed Rp 500,000 per person and is loaned for a maximum of two months. As of September 2006, Rp 3,000,000 remained of the saving-credit fund of the group.

> However, the project of growing vegetables in their yards has been terminated. In the latest meeting of group members in 2007, it was decided that the group would be dissolved because activities of the group had been carried out for five years and the number of members had declined. A decision about the saving/credit fund will be made at the next meeting. Pursuant to the initial programme agreement, funds provided by the programme have to be repaid or revolved to other groups. Interviews revealed that the success of the Yard Utilization Programme was largely determined by active and firm group leadership and continuous oversight by local field agriculture extension officials and the local Office of Agriculture.

4.6 Empowerment of Food-insecure Areas

The Programme to Empower Food-insecure Areas (EFIA) was a government initiative to provide infrastructure, facility means and food aid to groups experiencing transient or chronic food insecurity. The objectives of the EFIA programme were to: (a) overcome the incidence of both transient and chronic food insecurity; (b) improve community nutrition in food-insecure areas; and (3) empower communities to develop productive ventures.

Priority EFIA activities included: (a) strengthening the food and nutrition vigilance system; (b) establishing government food reserves and providing development assistance to establish community food reserves; (c) maximizing the role of the Food Security Council as well as the Food and Nutrition Working Group; (d) developing food independent villages; and (e) establishing community participation in dealing with food insecurity on a firm footing (Nainggolan, 2006).

Initially, the EFIA programme was directed towards households or groups living in food-insecure areas, however, high incidence of natural disasters such as floods, droughts and fires, caused programme funds to be used to aid households suffering from these disasters. The programme was directed towards families of farmers living in poverty areas and communities suffering from natural disasters. In 2002 direct cash aid (DCA) funds were managed in a revolving manner through the procurement of production means needed in the development of farm operations. However, based on the consideration that, in general, families provided with aid were poor families, from 2003 the EFIA programme was no longer developed as DCA that had a revolving nature, but rather as genuine aid funds from the government in the form of agricultural production means and food.

Between 2001 and 2003 in West Nusa Tenggara 22 farmer groups spread over seven districts/municipalities received aid for food security. In Bonder Village, West Praya Sub-district, Central Lombok District 12 farmer groups received aid amounting to Rp 3.75

million per group. Actually, the funds received were relatively small compared to the needs of the groups to cover the costs of rice and soybean cultivation. The funds provided to the groups were loans with monthly interest set at 2.5 per cent and the loans had to be repaid within four months.

Bonder village was a food-insecure rural region that was expected to meet its food needs through the Food Independent Village programme. Implementation of this programme was overseen by the rural level Food Team. Problems faced by the Food Team were: (a) the Food Independent Village programme was already at the growing phase but supporting funds were still not available; (b) group training as outlined in the submitted proposal of the Food Independent Village programme was not carried out; (c) capital expenditures and aid in the form of tractors and water pumps were not provided; and (d) the overseer provided was not a field agricultural extension worker and was relatively young and his function as facilitator was not optimal.

In 2005, East Java had ten food-insecure districts: Tulungagung, Pacitan, Bojonegoro, Bondowoso, Sumenep, Sampang, Jember, Bangkalan, Probolinggo and Pamekasan. To aid food-insecure areas 'food for work' activities to improve regional physical development were set up. Between 6-8 kg of rice was distributed to 10,357 family heads totalling 91,357 tons of rice. Aid was also provided in the form of mango seedlings and vegetable seeds (chili, cucumber, eggplant, squash, tomato, mustard greens, terrestrial *kangkung*, pole beans and spinach). Additional rice aid was extended to food-insecure households with children under the age of five years. In 2005, 300 mango seedlings and 5,215 packets of seeds were distributed.

Chronic and transient food insecurity in West Kalimantan are frequently caused by natural disasters such as floods, droughts and devastating attacks by *kembara* grasshoppers. To assist farmers in food-insecure areas the government intervenes with 'food for work' programmes to assist agriculture production means and staple food supply. Since 2003 funds from the National Budget (de-concentration funds) were used to carry out these activities. Related government offices involved in the programmes were funded from the West Kalimantan provincial government.

In 2005 EFIA programmes were enacted in Sambas District after serious flooding, and in Melawai and Kapuas Hulu districts after devastating attacks on agricultural crops by grasshoppers. The local people decided what form the aid and 'food for work' activities were to be, as shown in Table 4.8.

Table 4.8 Empowerment of food-insecure areas (EFIA) programmes in West Kalimantan, Indonesia, 2003-2005

Description	2003	2004	2005
Provision of funds (Rp)	50 million	50 million	195 million
Form of aid	Fertilizers: urea and KCl	Fertilizers: urea and SP 36	Direct transfer of funds to bank account of group
Location of aid (district)	Pontianak	Sanggau	Kapuas Hulu, Sambas, Melawi
Number of groups	3	3	17

Source: BKP West Kalimantan (2005).

As shown by the description in Table 4.8, in the three provinces activities implemented to empower food-insecure areas and help them recover from natural disasters were very flexible. In the decentralization era, district and/or municipal governments have the authority to adjust programmes determined by the central government in accordance with regional requirements and conditions. In turn, as part of the democratic process, programme recipients may also adjust and change activities in accordance with community agreements. However, activities selected should always be within the guideline objectives of the programme so that optimal success is achieved.

In the short term, various aid programmes to assist food-insecure households will still be provided as household empowerment. Close co-ordination in the handling of extraordinary cases using appropriate mechanisms is required so that food aid to food insecure-households or individuals suffering from malnutrition is not lost or overlapping. In the long term, preventive measures such as the introduction of an Integrated Perspective Disaster Risk Management Team for development should be formed, specifically for the development of food security.

5. Food Insecurity in the Context of Decentralization

The decision of the People's Consultative Council No. XV/MPR/1998 concerning Organization of Regional Autonomy, subsequently followed by Law No. 22/1999 and Law No. 25/1999, which were revised into Law No. 32/2004 and Law No. 33/2004, formed the basis of regional autonomy implementation that was determined on 1 January 1999. The authority relationship reorganized by the two laws is decentralization, the transfer of authority from the central government to regional governments at the district and municipal level, where district heads and mayors have full authority to manage regional government. It is expected that decentralization will bring people closer to decision makers politically and geographically, so that policies adopted will be more in accordance with the wishes of the people.

Based on national interests, the objectives of decentralization are: (a) to secure and strengthen integration of the nation; (b) to train aspiring national leadership; and (c) to accelerate people's prosperity and welfare. From the point of view of regional interests, the objectives of decentralization are: (a) to bring into reality democratization at the local level, leading to political equality, local accountability and local responsiveness; (b) to improve public services; and (c) to create efficient and effective government implementation and regional development.

Food insecurity both at the regional and household levels are regulated in Government Regulation No. 68/2002 concerning Food Security and by a Governor/ Chairperson of the Provincial Food Security Council by mutual agreement. In principle, in the decentralization era, regional governments are allowed to develop various sustainable comprehensive food security programmes and activities to stabilize national food security. With separate financial responsibilities divided between the central government and regional governments, it is hoped regional governments will fund their regional programmes through provincial and district and/or municipal budgets.

5.1 Development and indicators of food-insecure households

Over time the number of food-insecure households has fluctuated, there are now fewer food-insecure households than in the period immediately following Indonesia's economic crisis. This decline could have been due to various programmes launched by the

government to aid recovery from the economic crisis, and may also be an indication of the positive impact of decentralization. The level of participation, expenditures on food, energy and protein consumption of food-insecure households indicates improvement. The level of prosperity of food-insecure households as reflected by their food expenditures also improved over time.

However, development and performance of food-insecure household indicators has not yet been able to improve to the levels achieved pre-economic crisis or before decentralization. Moreover, decentralization and regional autonomy is not proceeding optimally due to the following five reasons: (i) the availability of highly qualified and professional human resources is still limited, and regional governments are not fully able to carry out their duties and responsibilities, especially those related to raising the prosperity of the people (regional autonomy has led to an opinion that regional government officials have to be indigenous persons without taking into consideration competence and capacity); (ii) institutional structures and responsibilities are not yet fully functional; (iii) the organization of separate systems, and regulations are not yet clear; (iv) inter-regional co-operation of public services is still not co-ordinated well; and (v) local desires to establish new autonomous regions have not conformed with the objectives of the central government.

There is a distinct lack of a grand design to the implementation of regional autonomy, which would ensure regional expansion. Moreover, basic elements that form the principal capital of effective regional government development are neglected ("*Kompas*", 10 March 2007). Regional governments have an important role to play in the reduction of the number of food-insecure households and malnutrition, and also in developing the quality of human resources. Each region has different proportions of and potential for food-insecure households and malnutrition, therefore, in the era of decentralization, efforts to deal with food insecurity have to start at the regional level. This means that the establishment of national food security has to be initiated by strengthening regional food security (Ariani, 2005).

5.2 Programme to Empower Food-insecure Households

The monetary crisis of mid-1997 became an economic crisis that caused a serious shrinking of the Indonesian economy. Unemployment exploded, as did the number of the poor in both rural and urban areas. Purchasing power for food was sharply reduced leading to the incidence of household food insecurity that especially affected children under the age

of five. To alleviate the heavy burden of the economic crisis the government launched various programmes, including programmes to empower food-insecure communities.

Community empowerment programmes launched in 1997-1998 by the government included the Food Social Security Net Programme and the Non-Food Social Security Net Programme. Afterwards in 2002, the Department of Agriculture through the Food Security Board launched various programmes to empower food-insecure households through DCA and in the form of GVCE. Programmes were implemented in accordance with community potential and capability. Since the programmes were Central Government programmes, programme implementation at the regional level depended on the response or seriousness of regional governments in dealing with food insecurity problems.

As stated in Article 1 of Law No. 22/1999, "regional autonomy is the authority of regions to regulate and manage the interests of the local population in accordance with their own initiatives based on aspirations of the people…". Key words such as 'own initiatives' mean that regional government should have initiatives and creativity embodied in their policies or programmes to achieve prosperity for the people.

Regional governments have not yet done a lot to implement policies or programmes to empower food-insecure households. In general, programmes implemented in regions are still Central Government programmes. This is the case in West Nusa Tenggara where, up until now, a high incidence of food insecurity and malnutrition have occured. The roles of regional governments, both at the provincial and district levels are still as programme implementers of Central Government programmes sited in their region.

In East Java, there is a regional food insecurity empowerment programme determined by the provincial government to provide aid in the form of various plant and rice seeds to a number of food-insecure households whose members include children under the age of five. Probably it is this programme that inspired the Central Government to change the DCA to poor households into a conditional direct aid to households with children under the age of five and school age children.

Decentralization influences food insecurity programmes in the following ways: (a) when field implementation, determining locations, groups and fund allocations, are not implemented in accordance with the guidelines determined by the Central Government but are adjusted to regional conditions and group characteristics; and (b) when regional governments allocate funds from regional budgets or district budgets to expand the coverage of programme target groups and local oversight in accordance with regional financial capability and regional priorities. In East Java, the regional government in 2005

allocated Rp 300 million or 48.2 per cent of total funds to develop local food production programmes. In West Kalimantan in 2005, the provincial government provided just 5 per cent of the required funds from the regional budget for food barn development.

In the decentralized era the small number of programmes to empower food-insecure households determined by regional governments, both at the provincial and district level is caused by the following factors. Firstly, regional autonomy has brought with it a certain amount of political euphoria so that regional governments have not yet fully focused on dealing with food insecurity. Secondly, many regional expansions have led to conflicts. Thirdly, of the 143 regions evaluated, 69 regions have very low development potential and thus cannot feasibly be expanded (*Kompas*, 10 March 2007). Fourthly, food insecurity programmes need sustained inter-sector co-ordination. Institutions dealing with this matter minimally have to have a counterpart position to the technical office of its partner, whereas, not all institutions dealing with food security or food insecurity have the right personnel for the technical offices. Not having a counterpart in another office not only complicates programme co-ordination, but also the allocation of funds to programmes to empower food-insecure households is reduced, because funds available in an institution (office) are also used by other programmes. Also programmes become understaffed, which negatively impacts on programme implementation and sustainability.

For example, in West Kalimantan the institutional structure for food security at the provincial level is the Food Security Unit positioned at the Echelon[1] III level, whereas in some other provinces it is handled by the Food Security Board positioned at the Echelon II level (such as in East Java and West Nusa Tenggara). Furthermore, food security institutions at the district and/or municipal level also vary; some of them are at Echelon III and IV, while some are not even positioned at any Echelon level. For instance, Sambas District, West Kalimantan Province, has no specific food security institution, so that programmes to empower food-insecure household are executed by staff that are attached to an Echelon III unit in the Field of Agriculture of Food Crops.

Finally, comprehension by regional leaders, specifically district heads (*bupati*) and legislative assemblies at the provincial, district and municipal level, of the importance of food security and efforts to prevent the occurrences of food-insecure households needs to be heightened. Instances of starvation and malnutrition of children under the age of five years in the era of decentralization indicate that regional governments are not fully committed to handling these matters seriously.

[1] Echelon refers to the hierarchical, structural staff level. Level 1 is the highest.

6. Conclusions and Policy Implications

6.1 Conclusions

1. Nationally, food-insecure households are largely in rural areas and low-income groups. East Java, West Kalimantan and West Nusa Tenggara are no exceptions. During the economic crisis the number of food-insecure households rose. The middle class showed a larger increase in food insecurity than low-income groups.
2. In the three sample provinces, wives and heads of families of food-insecure households were in their productive ages. Average education was only primary school-level. Food-insecure households have an average of about five household members. Moreover, wives in food-insecure families are younger and less educated than the family head. The family head and wife in food-insecure families in urban areas have higher education levels than families in food-insecure households in rural areas. Furthermore, the higher the household income level, the higher the level of education of the wife and family head, and the lower the number of household members.
3. Nationally, as well as in the three sample provinces almost 100 per cent of food-insecure households consume rice, while consumption of other sources of carbohydrates such as corn and tubers is relatively low. During the economic crisis, substitution of rice with other staple foods occurred and rice consumption declined. Consumption of local foods, especially corn and cassava, increased.
4. Soybean and products derived from it, especially *tempe* and tofu are much appreciated as a source of plant protein by all parts of the society, especially in East Java, where *tempe* has been a primary food for many generations. Eggs are the most commonly consumed source of animal protein. Outside Java, fresh fish is the most consumed source of animal protein in food-insecure households, while in Java consumption of preserved/salty fish is the highest. Consumption of food originating from animals other than preserved fish is higher in urban areas than in rural areas. However, during the economic crisis, consumption of all kinds of food originating from animals declined while soybean consumption increased.
5. Both nationally and in the three sample provinces, rice is the most commonly consumed food but consumption per capita is in decline. Fresh fish is the most common source of animal protein. In general consumption of carbohydrates and

protein is lower in rural areas and in low-income groups in communities. However, during the economic crisis, sources of carbohydrate (except rice) increased, while protein consumption declined.

6. Energy and protein consumption in food-insecure households is still low and does not meet minimum sufficiency levels. This is true in both urban households and also in middle-class income households. The level of energy sufficiency is highest in urban areas. In rural areas food expenditure in food-insecure households consumes more than 60 per cent of the household budget. During the economic crisis the percentage of household income spent on food rose even higher.
7. Various government programmes implemented in 2002 to provide relief to the poor from the economic crisis reduced the number of food-insecure households. General prosperity was improved and food consumption of food-insecure households was strengthened. Nevertheless, achievements in these indicators had not yet fully recovered to the same levels as before the economic crisis. After the economic crisis decentralization was implemented. It seems reasonable to assume decentralization played a role in improving prosperity.
8. Policies and programmes to empower food-insecure households in provinces and districts/municipalities belong to and are organized by the central government but programmes have not yet been drawn up or still lack the regional government's active participation. Decentralization resulted in flexible programme implementation to empower food-insecure households, such as in determining programme site locations, groups and fund allocations to each group. These adjustments are not entirely in line with central government guidelines but are in accordance with local conditions and group characteristics. Fund allocations (from provincial and district/municipal budgets) are adjusted to increase the scope of programme target groups and programme implementation oversight in accordance with regional financial capacity and priorities.
9. It may be stated that programmes to empower food-insecure households implemented since 2002 have not yet performed entirely successfully in accordance with the objectives of each programme. Aid in the form of capital for groups was only provided once, little oversight of projects was provided, and the main activity was not the principal programme.

6.2 Policy implications

1. To reduce the number of food-insecure households and to improve consumption patterns, several strategic policies have been adopted: raising regional animal, vegetable and fruit production through increased use of home yards; improving physical infrastructure such as roads and means of transportation including aquatic transportation in all regions; and improving community prosperity levels to improve food and non-food purchasing power. Programmes to empower food-insecure households need to be directed towards productive ventures that raise incomes.
2. Guided and sustainable programmes to create awareness about the importance of population, food, nutrition and health problems have to be implemented through family planning, acceleration of food diversification, local food development and other programmes. Programme oversight from appropriate institutions should not be for one year but a minimum of three years so that development assistance can take root and bear on going, sustainable fruit. Concurrently, community education, training and extension, mainly directed towards food-insecure communities should be provided to raise food consumption quantity and quality.
3. The commitment of regional governments, regional legislative assemblies and other stakeholders (from the provincial until rural level upwards) to fighting against food and nutrition insecurity needs to be strengthened through the introduction of specifically located and precisely targeted programmes. These programmes should be conducted by empowered communities, the private sector and NGOs so that all are involved in the process of programme planning, implementation and monitoring. Funding support from provincial and district/municipal budgets has to be strengthened so that wider programme coverage may be achieved.
4. To better anticipate the emergence of food and nutrition insecurity regional governments should comprehensively revitalize the Food and Nutrition Surveillance System (FNSS). FNSS activities should not be limited to mapping aspects only but should also include monitoring to prevent the emergence of food insecurity cases, especially in children under the age of five. FNSS revitalization should be initiated at the provincial level and subsequently developed to sub-district and rural level so that the working mechanism of the system functions as an early detection system to deal with food and nutrition insecurity.
5. It is essential all food insecurity institutes in provinces, districts and municipalities are streamlined and highly efficient so that programme co-ordination and implementation

can be carried out effectively. Regional governments, specifically district heads and regional legislative assemblies have to be lobbied and educated about the importance of achieving consistent views about improving food security, including empowerment of food-insecure households.

6. Based on the spirit of decentralization various central government programmes to empower food-insecure households have to become regional programmes with participative planning mechanisms starting at the household level, and have sufficient funding support from regional governments. With greater regional government support and participation, programmes already initiated and running stand a better chance of sustainable success.

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Appendices

Appendices

Appendix 1. Sources of carbohydrate for food insecure households according to region in Indonesia, East Java, West Kalimantan and West Nusa Tenggara, 1996-2002 (%)

Description	Urban area						Rural area						Urban and rural areas					
	1996		1999		2002		1996		1999		2002		1996		1999		2002	
	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod
Indonesia																		
Rice	96.2	3.8	95.1	4.9	96.5	3.5	74.7	25.4	75.9	24.1	78.9	21.1	81.8	18.2	82.6	17.4	84,1	15.9
Corn	72.2	27.9	65.3	34.7	72.8	27.2	24.9	75.1	26.3	73.7	29.8	70.2	29.5	70.5	29.1	70.9	32.5	67.5
Cassava	66.9	33.1	77.0	23.0	77.4	22.6	26.2	73.8	29.8	70.2	30.1	69.9	33.0	67.0	40.2	59.8	39.0	61.0
Sweet Potato	84.6	15.4	91.9	8.1	87.5	12.5	38.3	61.7	43.8	56.2	48.6	51.4	48.1	52.0	56.7	43.3	60.3	39.7
Sago	70.2	29.8	100.0	0.0	100.0	0.0	25.2	74.8	29.2	70.8	81.3	18.8	28.5	71.5	37.7	62.3	81.8	18.2
Taro	64.3	35.7	78.0	22.0	70.1	29.9	7.9	92.1	13.1	86.9	36.6	63.4	13.5	86.5	24.4	75.6	40.8	59.2
Sugar	99.9	0.1	99.9	0.1	99.5	0.5	99.8	0.2	99.8	0.2	99.7	0.3	99.8	0.2	99.8	0.2	99.6	0.4
East Java																		
Rice	100.0	0.0	96.0	4.0	97.2	2.8	84.8	15.2	83.0	17.0	81.9	18.1	89.7	10.3	87.1	12.9	86.8	13.2
Corn	100.0	0.0	95.1	4.9	82.3	17.7	31.4	68.6	41.9	58.1	42.4	57.6	37.2	62.8	45.5	54.5	48.7	51.3
Cassava	91.7	8.3	85.7	14.3	84.6	15.4	32.2	67.8	31.4	68.6	27.9	72.1	37.2	62.8	41.4	58.6	40.1	59.9
Sweet Potato	96.3	3.7	89.0	11.0	87.5	12.5	67.5	32.5	75.7	24.3	56.2	43.8	75.6	24.4	80.1	19.9	68.0	32.0
Sago	.	.	.	.	.	.	.	.	.	.	0.0	100.0	.	.	.	.	0.0	100.0
Taro	100.0	0.0	.	.	100.0	0.0	43.4	56.6	13.7	86.3	42.8	57.2	50.4	49.6	13.7	86.3	54.0	46.0
Sugar	100.0	0.0	100.0	0.0	98.9	1.1	99.5	0.5	99.9	0.1	99.6	0.4	99.7	0.3	99.9	0.1	99.4	0.6

Continued …..

Appendix 1. Sources of carbohydrate for food insecure households according to region in Indonesia, East Java, West Kalimantan and West Nusa Tenggara, 1996-2002 (%)

Description	Urban area						Rural area						Urban and rural areas					
	1996		1999		2002		1996		1999		2002		1996		1999		2002	
	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod
West Kalimantan																		
Rice	100.0	0.0	97.4	2.6	92.1	7.9	75.8	24.2	73.7	26.3	65.5	34.5	100.0	0.0	97.4	2.6	92.1	7.9
Corn	.	.	100.0	0.0	.	.	0.0	100.0	100.0	0.0	100.0	0.0	0.0	100.0	100.0	0.0	100.0	0.0
Cassava	100.0	0.0	90.7	9.3	58.8	41.2	35.9	64.1	24..1	75.9	13.3	86.7	39.7	60.3	26.7	73.3	15.6	84.4
Sweet potato	100.0	0.0	100.0	0.0	44.4	55.6	63.6	36.4	49.0	51.0	63.2	36.8	70.1	29.9	50.3	49.7	58.8	41.2
Sago	100.0	0.0	.	.	.	.	0.0	100.0	0.0	100.0	100.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0
Taro	100.0	0.0	100.0	0.0	0.0	100.0	10.3	89.7	34.4	65.6	23.4	76.6	10.3	89.7	50.6	49.4	21.5	78.5
Sugar	100.0	0.0	100.0	0.0	97.0	3.0	100.0	0.0	99.6	0.4	100.0	0.0	100.0	0.0	99.6	0.4	99.2	0.8
West Nusa Tenggara																		
Source	94.1	5.9	97.0	3.0	98.6	1.4	91.0	9.0	82.5	17.5	77.4	22.6	92.3	7.8	87.1	12.9	84.8	15.2
Corn	100.0	0.0	86.1	13.9	36.2	63.8	100.0	0.0	34.6	65.4	44.9	55.1	100.0	0.0	45.0	55.0	44.5	55.5
Cassava	96.3	3.7	77.2	22.8	75.4	24.6	38.2	61.8	36.1	64.0	35.3	64.7	48.6	51.4	48.9	51.1	47.7	52.3
Sweet Potato	36.0	64.0	50.0	50.0	72.4	27.6	16.6	83.4	43.8	56.2	45.5	54.6	18.9	81.1	45.5	54.5	61.8	38.2
Sago	.	.	100.0	0.0	.	.	.	.	.	.	.	.	.	.	100.0	0.0	.	.
Taro	.	.	93.0	7.0	65.3	34.7	0.0	100.0	83.0	17.0	15.3	84.7	0.0	100.0	88.8	11.3	26.0	74.0
Sugar	99.5	0.5	100.0	0.0	100.0	0.0	95.7	4.3	98.6	1.4	97.7	2.3	97.3	2.7	99.1	0.9	98.5	1.5

Source: BPS, Susenas 1996-2002 (processed).

Appendix 2. Sources of protein for food insecure households according to region in Indonesia, East Java, West Kalimantan and West Nusa Tenggara, 1996-2002 (%)

Description	Urban area						Rural area						Urban and rural areas					
	1996		1999		2002		1996		1999		2002		1996		1999		2002	
	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod
Indonesia																		
Soybean	99.1	0.9	99.6	0.4	99.4	0.6	98.3	1.7	98.9	1.1	99.0	1.0	98.6	1.4	99.2	0.8	99.2	0.8
Poultry meat	92.6	7.4	88.0	12.0	92.6	7.4	62.6	37.4	58.3	41.7	68.9	31.1	77.6	22.4	73.9	26.1	80.7	19.3
Ruminant meat	97.1	2.9	91.6	8.4	73.7	26.3	72.3	27.7	71.8	28.2	66.2	33.8	83.3	16.7	80.5	19.5	69.3	30.7
Eggs	96.6	3.5	84.1	15.9	89.0	11.0	85.5	14.5	49.7	50.3	60.3	39.7	90.5	9.5	61.7	38.3	70.0	30.0
Milk	99.3	0.7	98.1	1.9	99.0	1.0	99.5	0.5	97.3	2.7	96.9	3.1	99.4	0.6	97.8	2.3	98.0	2.0
Fresh fish	90.0	10.0	89.8	10.2	91.7	8.3	74.7	25.3	77.2	22.8	81.2	18.8	80.6	19.4	82.2	17.8	84.4	15.6
Preserved fish	98.3	1.7	99.0	1.0	98.7	1.3	97.4	2.6	97.9	2.2	98.1	1.9	97.6	2.4	98.2	1.8	98.3	1.7
East Java																		
Soybean	98.5	1.5	99.9	0.1	99.4	0.6	98.8	1.2	99.3	0.7	99.0	1.0	98.7	1.3	99.5	0.5	99.2	0.8
Poultry meat	93.3	6.7	94.6	5.4	95.4	4.6	95.3	4.7	74.3	25.7	84.0	16.0	94.1	5.9	84.7	15.3	89.7	10.3
Ruminant meat	100.0	0.0	95.9	4.1	72.1	27.9	90.8	9.2	100.0	0.0	99.2	0.8	97.3	2.7	98.3	1.7	83.6	16.4
Eggs	93.2	6.8	76.9	23.1	83.0	17.0	82.5	17.5	39.1	60.9	47.9	52.1	86.7	13.3	49.4	50.6	61.2	38.8
Milk	100.0	0.0	99.5	0.5	100.0	0.0	100.0	0.0	88.4	11.6	100.0	0.0	100.0	0.0	94.6	5.4	100.0	0.0
Fresh fish	95.4	4.6	82.1	17.9	95.9	4.1	95.6	4.4	91.5	8.5	93.6	6.4	95.5	4.5	88.2	11.8	94.6	5.4
Preserved fish	100.0	0.0	99.9	0.1	97.9	2.1	100.0	0.0	99.9	0.1	99.9	0.1	100.0	0.0	99.9	0.1	99.4	0.6

Continued …..

Appendix 2. Sources of protein for food insecure households according to region in Indonesia, East Java, West Kalimantan and West Nusa Tenggara, 1996-2002 (%)

Description	Urban area						Rural area						Urban and rural areas					
	1996		1999		2002		1996		1999		2002		1996		1999		2002	
	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod	Acq	Prod
West Kalimantan																		
Soybean	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	90.9	9.1	100.0	0.0	100.0	0.0	94.3	5.7
Poultry meat	86.0	14.0	71.0	29.0	100.0	0.0	66.0	34.0	53.6	46.4	67.1	32.9	70.3	29.7	60.8	39.2	82.4	17.6
Ruminant meat	100.0	0.0	100.0	0.0	100.0	0.0	91.8	8.2	94.6	5.4	92.4	7.6	95.9	4.1	96.3	3.7	94.8	5.2
Eggs	94.5	5.5	58.9	41.1	77.1	22.9	86.7	13.3	44.2	55.8	65.3	34.7	89.9	10.1	47.3	52.7	67.3	32.7
Milk	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	84.8	15.2	100.0	0.0	100.0	0.0	87.0	13.0
Fresh fish	90.5	9.5	100.0	0.0	75.9	24.1	66.9	33.1	71.4	28.6	66.5	33.5	75.4	24.6	75.2	24.8	70.0	30.0
Preserved fish	100.0	0.0	100.0	0.0	93.1	6.9	91.2	8.8	91.0	9.0	96.2	3.8	93.6	6.4	92.1	7.9	95.5	4.5
West Nusa Tenggara																		
Soybean	96.4	3.7	97.4	2.6	93.7	6.3	90.8	9.3	95.0	5.0	94.5	5.5	94.0	6.0	96.1	3.9	94.0	6.0
Poultry meat	67.5	32.5	60.9	39.1	59.9	40.1	44.7	55.3	21.9	78.1	42.2	57.8	53.6	46.4	37.8	62.2	54.7	45.3
Ruminant meat	100.0	0.0	94.4	5.6	100.0	0.0	100.0	0.0	92.1	7.9	65.1	34.9	100.0	0.0	93.6	6.4	82.0	18.0
Eggs	98.7	1.3	94.0	6.0	93.3	6.7	91.1	8.9	47.1	52.9	52.9	47.1	95.1	4.9	62.6	37.4	74.5	25.5
Milk	55.9	44.1	100.0	0.0	100.0	0.0	.	.	100.0	0.0	0.0	100.0	55.9	44.1	100.0	0.0	89.2	10.8
Fresh fish	79.7	20.3	97.2	2.8	97.5	2.5	86.0	14.0	84.6	15.4	88.5	11.5	83.4	16.6	89.5	10.5	91.0	9.0
Preserved fish	93.7	6.3	100.0	0.0	100.0	0.0	100.0	0.0	95.1	4.9	97.6	2.4	97.0	3.0	97.0	3.0	98.8	1.2

Source: BPS, Susenas 1996-2002 (processed).

Appendix 3. Sources of carbohydrate for food insecure households according to income group in Indonesia, East Java, West Kalimantan and West Nusa Tenggara, 1996-2002 (%)

Description	Low-income group						Medium-income group						High-income group					
	1996		1999		2002		1996		1999		2002		1996		1999		2002	
	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod
Indonesia																		
Rice	79.7	20.3	81.2	18.8	82.8	17.2	92.6	7.4	92.2	7.8	93.0	7.0	100.0	0.0	100.0	0.0	91.6	8.4
Corn	28.9	71.1	28.3	71.7	31.9	68.1	55.5	44.5	58.6	41.4	58.9	41.1	.	.	100.0	0.0	.	.
Cassava	31.0	69.0	37.9	62.1	36.7	63.3	58.9	41.1	69.2	30.9	75.3	24.7	100.0	0.0	59.5	40.5	38.5	61.5
Sweet Potato	44.9	55.1	54.0	46.0	57.9	42.1	69.0	31.0	81.3	18.7	79.3	20.7	100.0	0.0	100.0	0.0	.	.
Sago	27.5	72.5	36.6	63.4	80.9	19.2	51.1	49.0	100.0	0.0	100.0	0.0	31.0	69.0	.	.	.	.
Taro	11.6	88.4	23.1	76.9	39.8	60.2	29.3	70.7	46.9	53.1	60.2	39.8	100.0	0.0	.	.	0.0	100.0
Sugar	99.8	0.2	99.8	0.2	99.6	0.4	99.9	0.1	99.9	0.1	99.6	0.4	100.0	0.0	99.8	0.2	100.0	0.0
East Java																		
Rice	90.9	9.1	87.6	12.4	87.5	12.5	85.3	14.7	83.6	16.4	82.1	17.9	83.4	16.6	87.7	12.3	100.0	0.0
Corn	39.3	60.7	44.7	55.3	49.4	50.6	17.2	82.8	62.3	37.7	43.7	56.3	.	.	0.0	100.0	.	.
Cassava	38.2	61.8	40.3	59.7	39.3	60.7	28.5	71.5	54.4	45.6	48.8	51.2	0.0	100.0	79.3	20.7	.	.
Sweet Potato	73.3	26.7	80.4	19.6	68.7	31.3	87.9	12.1	87.5	12.5	63.4	36.6	.	.	0.0	100.0	.	.
Sago	.	.	.	.	0.0	100.0	.	.	.	.	.	.	.	.	.	.	.	.
Taro	43.4	56.6	11.4	88.6	52.5	47.5	100.0	0.0	100.0	0.0	62.5	37.5	.	.	.	.	.	.
Sugar	99.6	0.4	99.9	0.1	99.4	0.6	100.0	0.0	100.0	0.0	99.1	0.9	100.0	0.0	100.0	0.0	100.0	0.0

Continued .....

Appendix 3. Sources of carbohydrate for food insecure households according to income group in Indonesia, East Java, West Kalimantan and West Nusa Tenggara, 1996-2002 (%)

Description	Low-income group						Medium-income group						High-income group					
	1996		1999		2002		1996		1999		2002		1996		1999		2002	
	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod
West Kalimantan																		
Rice	82.1	17.9	72.2	27.8	68.2	31.8	89.0	11.0	89.1	10.9	84.2	15.8	69.4	30.6	100.0	0.0	100.0	0.0
Corn	0.0	100.0	100.0	0.0	100.0	0.0	.	.	.	.	100.0	0.0	.	.	.	.	.	.
Cassava	36.2	63.8	24.1	75.9	13.1	86.9	36.3	63.7	46.0	54.0	35.8	64.2	.	.	.	.	.	.
Sweet Potato	82.5	17.5	43.1	56.9	55.9	44.1	0.0	100.0	100.0	0.0	100.0	0.0	.	.	.	.	.	.
Sago	0.0	100.0	0.0	100.0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Taro	25.5	74.5	46.7	53.3	14.5	85.5	0.0	100.0	100.0	0.0	100.0	0.0	.	.	.	.	.	.
Sugar	100.0	0.0	100.0	0.0	98.9	1.1	100.0	0.0	98.7	1.3	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0
West Nusa Tenggara																		
Rice	93.6	6.4	85.9	14.1	85.9	14.2	82.4	17.6	93.8	6.2	77.2	22.8	100.0	0.0	100.0	0.0	100.0	0.0
Corn	100.0	0.0	33.5	66.5	39.6	60.4	.	.	100.0	0.0	70.6	29.4	.	.	.	.	60.0	40.0
Cassava	46.3	53.7	40.5	59.5	51.1	48.9	68.8	31.3	93.1	6.9	27.5	72.5	.	.	.	.	.	.
Sweet Potato	19.4	80.6	36.9	63.1	62.9	37.1	11.1	88.9	100.0	0.0	57.9	42.1	.	.	.	.	.	.
Sago	.	.	.	.	.	.	.	.	100.0	0.0	.	.	.	.	.	.	.	.
Taro	0.0	100.0	87.0	13.0	31.7	68.3	.	.	100.0	0.0	0.0	100.0	.	.	.	.	.	.
Sugar	96.7	3.3	98.9	1.1	98.1	1.9	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0

Source: BPS, Susenas 1996-2002 (processed).

Appendix 4. Protein sources for food insecure households according to income group in Indonesia, East Java, West Kalimantan and West Nusa Tenggara, 1996-2002 (%)

Description	Low-income group						Medium-income group						High-income group					
	1996		1999		2002		1996		1999		2002		1996		1999		2002	
	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod
Indonesia																		
Soybean	98.4	1.6	99.1	0.9	99.3	0.7	99.5	0.5	99.6	0.4	98.8	1.2	100.0	0.0	100.0	0.0	100.0	0.0
Poultry meat	69.3	30.7	65.5	34.5	76.1	23.9	88.9	11.1	88.0	12.0	88.9	11.1	90.2	9.8	80.2	19.8	100.0	0.0
Ruminant meat	73.8	26.3	74.3	25.7	68.0	32.0	93.8	6.2	91.5	8.5	70.3	29.7	94.6	5.4	76.7	23.3	100.0	0.0
Eggs	87.7	12.3	55.9	44.1	66.3	33.7	96.4	3.6	83.6	16.4	84.2	15.8	100.0	0.0	74.0	26.0	100.0	0.0
Milk	98.8	1.2	97.2	2.8	97.5	2.5	99.8	0.2	98.5	1.5	98.8	1.2	100.0	0.0	100.0	0.0	100.0	0.0
Fresh fish	77.3	22.7	80.0	20.0	83.5	16.5	89.4	10.6	89.0	11.0	87.6	12.4	88.4	11.6	94.7	5.3	89.3	10.7
Preserved fish	97.6	2.4	98.1	1.9	98.5	1.5	97.7	2.3	98.9	1.1	97.0	3.0	100.0	0.0	100.0	0.0	100.0	0.0
East Java																		
Soybean	98.3	1.7	99.6	0.4	99.2	0.8	100.0	0.0	99.6	0.4	99.1	0.9	100.0	0.0	93,8	6.2	100.0	0.0
Poultry meat	89.2	10.8	81.6	18.4	87.5	12.5	99.4	0.6	100.0	0.0	93.3	6.7	100.0	0.0	14.3	85.7	100.0	0.0
Ruminant	93.5	6.5	97.0	3.0	71.1	28.9	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0
Eggs	84.3	15.7	45.6	54.4	59.2	40.8	91.6	8.4	62.7	37.3	68.9	31.1	100.0	0.0	40.7	59.3	62.1	37.9
Milk	100.0	0.0	92.5	7.5	100.0	0.0	100.0	0.0	97.4	2.6	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0
Fresh fish	94.9	5.1	87.3	12.7	94.9	5.1	96.7	3.3	90.7	9.3	93.2	6.8	100.0	0.0	100.0	0.0	100.0	0.0
Preserved fish	100.0	0.0	99.9	0.1	99.2	0.8	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	.	.

Continued .....

Appendix 4. Protein sources for food insecure households according to income group in Indonesia, East Java, West Kalimantan and West Nusa Tenggara, 1996-2002 (%)

Description	Low-income group						Medium-income group						High-income group					
	1996		1999		2002		1996		1999		2002		1996		1999		2002	
	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod	Buy	Prod
West Kalimantan																		
Soybean	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	98.7	1.3	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0
Poultry meat	78.0	22.0	55.1	44.9	79.5	20.5	100.0	0.0	100.0	0.0	78.4	21.6	62.5	37.5	.	.	100.0	0.0
Ruminant meat	94.9	5.1	95.0	5.0	84.4	15.6	60.7	39.3	100.0	0.0	83.6	16.4	100.0	0.0	.	.	100.0	0.0
Eggs	88.3	11.7	42.3	57.7	58.8	41.2	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0
Milk	100.0	0.0	100.0	0.0	77.0	23.0	92.1	7.9	67.2	32.8	84.4	15.6	100.0	0.0	.	.	100.0	0.0
Fresh fish	78.7	21.3	72.5	27.5	61.7	38.3	100.0	0.0	100.0	0.0	100.0	0.0	44.0	56.0	100.0	0.0	100.0	0.0
Preserved fish	94.2	5.8	91.1	8.9	94.8	5.2	78.1	21.9	78.2	21.8	88.9	11.1	100.0	0.0	100.0	0.0	100.0	0.0
West Nusa Tenggara																		
Soybean	93.2	6.9	95.1	4.9	93.8	6.2	100.0	0.0	100.0	0.0	95.0	5.0	.	.	100.0	0.0	.	.
Poultry meat	50.7	49.3	24.9	75.1	55.7	44.3	58.6	41.4	76.9	23.1	48.3	51.7	.	.	0.0	100.0	.	.
Ruminant meat	100.0	0.0	90.4	9.7	96.1	3.9	100.0	0.0	96.6	3.4	53.4	46.6	.	.	100.0	0.0	100.0	0.0
Eggs	93.4	6.6	60.7	39.4	75.8	24.2	100.0	0.0	70.6	29.4	70.1	29.9	.	.	10.1	89.9	100.0	0.0
Milk	0.0	100.0	100.0	0.0	85.6	14.4	100.0	0.0	100.0	0.0	100.0	0.0	.	.	100.0	0.0	.	.
Fresh fish	77.3	22.7	88.1	11.9	90.8	9.2	100.0	0.0	91.3	8.7	91.6	8.4	100.0	0.0	100.0	0.0	100.0	0.0
Preserved fish	96.4	3.6	96.4	3.6	98.7	1.3	100.0	0.0	100.0	0.0	100.0	0.0	.	.	100.0	0.0	.	.

Source: BPS, Susenas 1996-2002 (processed).