

Food Security and Markets in Indonesia

State-Private Sector Interaction in Rice Trade



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Management and Organizational Development for Empowerment




Southeast Asian Council for Food Security and Fair Trade

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1. Introduction

This is the final report of a research on food security and markets in Indonesia. The research is part of a wider study on food security and markets covering the Southeast Asian countries of Thailand, Vietnam, the Philippines, and Indonesia.

The primary objective of this NGO-based research is to examine the interaction between the state and the private sector in the process of rice trading in Indonesia. The research is aimed at generating policy proposals for promoting the development of sustainable and dynamic rice-producing sectors capable of improving food security and markets in the country.

Data for this report was drawn primarily from field investigation, in-depth interviews and desk analyses. Field investigation was conducted in four Indonesian provinces, namely, West Java, East Java, Lampung and DKI Jakarta, from May to June 1999. Collector traders, rice milling units, wholesalers, retailers and farmers in the four provinces were interviewed directly, using a traditional questionnaire. Likewise were policy-makers and government officers, researchers and university faculty members, on whom were used an open-ended questionnaire.

This report is organized in the following manner. Chapter 2 reviews the general concept and application of food security and markets, including price stabilization policies and rice trading structures. Chapter 3 examines recent developments in the Indonesian rice economy, covering trends in rice production and consumption, movements of domestic and border prices, import and buffer stock arguments, and regional disparities in rice security. Chapter 4 examines the role of the private sector in rice trading,

with emphasis on rice trading map and patterns of transaction. An analysis of marketing margins and economic and marketing efficiencies is used as a basis for arriving at new investment decisions.

Chapter 5 discusses the role of the state in rice trading, focusing on price stabilization policies, the state procurement system, special market operations and general food security issues. Regional cases of state intervention broaden the discussion of incentive systems, barriers to entry and policy implications on farmers' welfare. Chapter 6 is a synthesis of sound and market-friendly policies in rice trading. The discussion includes potential areas of policy intervention and the workability of a market mechanism, and the future policy reforms on food security and rice trading. Chapter 7 closes the report with an overall summary of the research results and proposals for promoting the development of sustainable and dynamic rice-producing sectors in post-crisis Indonesia.

2. Review of Food Security and Markets

This chapter reviews food security measures and rice markets in Indonesia, which is now confronting one of the most serious food security episodes in its post-independence history. In terms of food availability, the principal problem has been the long drought induced by the *El Niño* phenomenon and forest fires, which have adversely affected the country's production capacity. Compounding this was the Asian financial crisis, which has impacted on Indonesians in terms of high inflation, diminished purchasing power and increased poverty levels.

Indonesia has been plagued by several years of slow, below expectation growth in its food supply. The Government responded by sharply increasing food imports to fill gaps in domestic demand. But the current economic crisis has also sharply increased the number of those needing food security. Many families with income below the poverty line in 1996 could no longer keep up with the rapidly rising prices of essential commodities.

This chapter is focused on the evolution, particularly over the last three decades, of food security measures in Indonesia. A review of price stabilization policies not only covers the theoretical debates, but also incorporates the latest discussions concerning the government's intervention in the rice and food market since the economic crisis hit Indonesia. A general review of the rice trading structure also follows. This chapter concludes with the methodology and the chronological and systematic approach that the authors took in undertaking this study.

2.1 Evaluation of Food Security Measures

Food security has several dimensions, all of which face different threats. The Food and Agricultural Organization (FAO, 1997) defines food security as a situation in which all households have both physical and economic access to adequate food for all members, and where households are not at risk of losing such access. There are three dimensions implicit in this definition: availability, stability and access.

Adequate food availability means that, on average, available food supplies are sufficient to meet consumption needs. Stability refers to minimizing the possibility of food consumption falling below requirements during difficult years or seasons. Access draws attention to the fact that even with bountiful supplies, many people still go hungry because they do not have the resources to produce or purchase the food they need.

Food security can also be defined at different levels: for nations, regions or households. Ultimately, food security concerns the individual or family unit, and its principal determinant is purchasing power at the income adjusted for the cost of living. Similarly, purchasing power at the national level, i.e., the amount of foreign exchange available to pay for necessary food imports, is a key determinant of national food security. Therefore, food security is not only a question of poverty, but also a question of the proportion of income that households devote to food. The poorest people in the developing countries of the world spend 80 percent or more of their earnings on food.

During the last three decades, Indonesia has achieved a remarkable progress in improving food security. In the sixties, agricultural development efforts were directed very much towards promoting rice self-sufficiency. Several government programs, inspired by the spirit of Green Revolution, were initiated, particularly those associated with the improvement of production in rice paddy and other food crops. For example, a program of mass demonstration (DEMAs) was intended to provide recommendations on optimal combinations of high-yielding varieties, fertilizer, pesticide, irrigation, and plant density; providing extension support for such a purpose. The DEMAs program developed very rapidly and later became the well-known BIMAS (mass guidance)

program. The BIMAS involved intensification efforts at the national level, and its pilot projects were primarily located in Java on sites with good irrigation systems and rural infrastructure. More importantly, the BIMAS program involved a credit system, input provision and distribution. Farmers were encouraged to establish cooperative units and supporting institutions at the village level to help manage credit and new input distribution.

Other government programs with different names but similar aims have since evolved. To name a few, there is: INMAS (mass intensification), aimed at providing additional technical assistance in production technology; INSUS (special intensification), aimed at encouraging institutional innovation and technological change among farmers, and OPSUS (special operation), aimed at opening new rice fields in transmigration areas, etc.

Programs of rice-price stabilization, rural infrastructure and irrigation investment, human resource development, and the generation and dissemination of improved food crop technology have generally been undertaken to support the campaign to promote self-sufficiency in rice. In 1967, the government established the Food Logistic Agency, better known as BULOG (Badan Urusan Logistik). Its roles included stabilization of rice prices and provision of monthly rice rations to the military and members of the civil service. By the late 1980s, BULOG, while still playing its original role in rice markets, had assumed the additional responsibility of handling or monitoring sugar, wheat, corn, soybeans, soy meals, and a number of other lesser commodities.

As a result of such programs, food availability per capita increased from around 2000 calories per day in the 1960s to close to 2700 calories per day by the early 1990s (FAO, 1996). The proportion of the population under the poverty line fell from 44 percent in the 1970s to 11 percent in 1996. The combination of higher levels of food availability and a much smaller poor population significantly enhanced food security at both the national and household levels.

However, during the last two years, food security gains in Indonesia have been reversed, due to the unprecedented combination of adverse climatic conditions, economic crises and political chaos. Recent estimates of the impact of these problems on poverty show that the number of poor Indonesian people has in-

creased to 79.4 million or 39.1 percent of the country's total population (Central Agency of Statistics, 1998). A World Bank report (1999) also estimated that a 12 percent decline in Gross Domestic Product (GDP) could increase the poverty rate by almost 40 percent. Poverty in urban areas is expected to be higher in urban areas than in rural areas. A joint report of the International Labor Organization and the United Nations Development Programme (ILO/UNDP, 1998) has estimated the poor to now constitute 48 percent of Indonesia's population, given an inflation rate of 80 percent and a poverty line that has also increased by 80 percent.

Since January 1998, Indonesia has turned to the International Monetary Fund (IMF) and the World Bank to rescue and stabilize the economy. Donors have mobilized commitments for a total stabilization package amounting to US\$ 43 billion. In exchange for the extraordinary loans they have extended, donors are insisting that Indonesia reform its macroeconomic and structural policies to ensure that financial stability would be restored and that the economy would be managed in a more competitive and transparent manner. One major IMF conditionality is for BULOG's operations to be limited to rice and for subsidies on other food and essential goods to be scaled down sharply.

In December of 1998, the transitional government under President B.J. Habibie committed to improve transparency in the rice pricing policy and distribution system and to allow a contestable chance and fair opportunity for economic actors in rice trading. This immediate change adversely affected the flow of rice distribution, especially in remote areas of Indonesia. As a result, people have started to question BULOG's capacity to implement the system in a manner that would assure a more efficient use of resources and more affordable food and rice for low-income consumers.

2.2 Price Stabilization Policy

In the economic literature, there have been long lasting debates on whether the price stabilization policy is good or bad for the economy. Most mainstream economists believe that government intervention in price stabilization is not possible, especially for

extended periods of time. Some think that the social benefits arising from stabilized prices are small or even negative (Ravallion, 1987; Behrman, 1987). Political economists argue that institutional costs, including corruption, incurred in stabilizing prices are much higher than even potentially large benefits accruing from price stability (Knudsen and Nash, 1990; Schiff and Valdes, 1992). They also aver a strong tendency of stabilization policy to be captured by vested interests who favor higher or lower prices rather than stability per se.

On the other hand, there are economists who argue that countries where majority of consumers are still poor and rice is the dominant staple food have found much help in stabilization policy and have therefore given it considerable attention. Majority of Asian countries, in fact, have successfully managed to keep their domestic rice prices more stable than rice prices in the world market. In the last five decades, countries most successful at price stabilization have also been among the fastest growing economies in the world. Where food prices have not been stabilized successfully and food security remains questionable, political stability and economic growth have been threatened (Timmer, 1993; Pinckney, 1993).

Timmer (1996) suggests at least three reasons for the most significant relevance of rice price stabilization policy in the developing world. First, consumers have a preference for price stability because they do not like to incur the transaction costs of constantly changing their optimal basket of goods. Lower food prices relax the budget constraint and relieve, even if only temporarily, pressures to optimize budget allocations. Higher food prices increase it, in direct proportion to the sharpness of the price increase (and the more painfully, the larger the share of food in the budget). Second, farmers should be treated as investors rather than as static optimizers of input allocations in the face of uncertain weather and prices. Highly unstable prices reduce the reliability of price expectation to efficient resource allocation in signaling efficient directions for investment. Third, there is the potential contribution of stable rice prices to economic growth, especially in Asian countries. A connection exists between instability in rice prices and lower economic growth.

Price stabilization in Indonesia has provided exemplary opportunities for testing the effectiveness and workability of such a government intervention. Since the late 1960s, Indonesia has tried to maintain a price band on rice by applying dual policies on price stabilization. The first is floor price policy, which is aimed at keeping the farm-gate price of rice well above the production costs. BULOG serves as a stabilizing agent and buys any amount of rice production not absorbed by the market, especially during the harvest season. This rice procurement approach is generally used for the national buffer stocks and for rations to the military and civil service. The second is ceiling price policy, which is intended to keep rice affordable for lower-income consumers. The price of rice increases sharply during the planting seasons and during droughts. During such crises, BULOG performs market operations by selling very cheap rice to targeted consumers.

After more than 20 years of economic and political instability under President Soekarno, an entirely new approach of the economy was introduced by the New Order regime of President Soeharto. A key element of this approach was heavy investment in the rural economy to increase rice production coupled with sustained efforts to stabilize rice price. Empirical evidence suggests that these efforts were highly successful. Rice production rose from 4.6 percent per year in the 1969-1990 period, which was significantly faster than the 2.1 percent growth in population over the same period. Land productivity of rice agriculture increased significantly, about 2.7 percent per year, even though this was not evenly distributed among regions across the country. The considerable growth in land productivity was also achieved by a tremendous amount of government expenditures. These included irrigation operation and maintenance, subsidized credits for rice and secondary food crops, intensification programs, subsidized pesticides and fertilizers and rice and buffer stock programs (Arifin, 1997).

However, although the price stabilization policy has made domestic rice prices considerably more stable than prices in the world market, questions about it have arisen. The policy, for one, tends to raise the risks for farmers and taxpayers and to negatively impact on farm welfare, particularly if average prices are not increased through the buffer stock schemes operated by BULOG (Jones,

1995). Whenever domestic prices fail to follow border prices, there would always be short-run efficiency losses of the sort identified in the border price paradigm. Events in the 1990s, such as the rice surpluses experienced in 1992 and 1993 as a result of management through export subsidies, have raised serious questions about BULOG's cost structure and its long-term role in the rice economy (Timmer, 1996). The drought of 1994 and *El Niño* in 1997, and the resumption of large scale imports in the last two years, have also raised questions about BULOG's ability to stabilize rice prices, even in the short-run.

In addition, studies by Arifin (1998) indicate that the overall policy implementation of price stabilization results in economic distortion, market power imbalance, abuse of market operation, especially during the economic crisis. These have caused price disparity between producer or farm-gate price and retailer's or consumer price. In mid- 1998 producer and consumer prices posted the biggest in the history of modern rice economy. Price disparities are caused by several factors such as unprecedented low production, import-dependent national stocks, non-transparent procurement systems, a complex rice distribution system, illegal rice re-exportation, and the dilemma of price-policy pressures from farmers who also happen to be net-consumers of rice.

The larger question that has arisen, though, is whether BULOG should continue to stabilize rice prices, given that the rice sector is no longer the barometer of the economy. Observations by Tabor and Meijerink (1997) show that price stabilization through BULOG might not be necessary under current conditions. Rice distribution is much better than thirty years ago, largely on account of BULOG. The reasons include a significant improvement in road and irrigation infrastructures and more diversified economic activities. Competition in rice trading and marketing has improved in the last ten years so that market integration - both in the flow of goods and information - has significantly also expanded. Consequently, government has been given the ability to focus on drafting and implementing rules and regulations that encourage the local markets to be more competitive as well as more integrated with regional and international markets.

2.3 Structure of Rice Trading

In this section, the structure of rice trading is presented in a general fashion based on data from available literature. The subject is more thoroughly examined later in the light of the results of field observation of rice trading in Indonesia.

As mentioned briefly in the previous sections, rice trading in Indonesia is an interaction between the government rice market and the actual rice market governed by the price system. The composition of the two markets at the national level is not well documented, and could vary significantly depending on the definition and scope of the market being used. Rice trading and rice distribution through the so-called "free market" accounts for more than 80 percent of total rice trading activities. The remaining 20 percent constitutes that which passes through government agencies like BULOG, Depot Logistics at the provincial level (DOLOG) and cooperatives (KUD) at the rural level (Mubyarto, 1998; Ruky, 1999).

These observations are very likely based either on the assumption of normal conditions in the rice distribution system, or that provision for military and civil service constitutes government rice trading. During a severe crisis period, government trading becomes more dominant, especially when market operation is involved. A special report by Smeru (1998) confirms that special market operations (*Operasi Pasar Khusus* or OPK) performed by BULOG reached nearly 13 million poor families in 1998. In addition, the market operation under a scheme of Social Safety Net (SSN) program conducted by the State Ministry of Welfare Affairs (BKKBN) was able to distribute cheap rice to nearly 17 million targeted poor families in 1998.

These dual market systems have caused the government to experience serious fluctuations in rice demand, especially when consumers constantly mill around public and private outlets of rice trading. Consequently, the government had to provide a large amount of rice for the national stock, a move that has led to a significant amount of public spending. Costs of this buffer stock management increase considerably because the government and the Central Bank have to provide interest-rate subsidy for stocking activities and other logistic purposes.

It becomes clear now that buffer stock management not only requires efficient trading and effective distribution systems which are able to reach remote areas of the country; it also needs access to more accurate market information at the micro level, particularly information on producers and consumers' performance and preference for particular types of rice. Failure to access such information causes the rice trading and distribution systems to become inefficient and the buffer stock systems to be mismanaged. In addition, institutions responsible for the national buffer stocks also become exposed to ineffective banking systems and to non-flexible access to other financial systems, as what happened when the economic crisis hit Indonesia.

As a stabilizing agent and buffer stock institution, BULOG often experiences delays in transferring procurement funds to rural cooperatives (KUD). This delay obviously affects the overall performance of national rice procurement systems and buffer stock operations. This is because only farmers who could delay the harvest time and who could afford high storage costs could sell rice to the government. Under such a condition, it is only the financially well-off farmers who are able to benefit from the system (Ruky, 1999). Poor farmers, who could not sell their rice to the government trading systems, become automatically ineligible to join the floor rice policy. These are the farmers who could not fulfill the minimum requirements of 14 percent water content and five percent broken rice, etc. If they insist on selling their rice, they get a farm-gate price that is well below the standard floor price.

The structure of rice trading becomes more complicated when considered in the light of the fact that rice for the national stocks are procured from domestic as well as international markets. The import mechanism for rice has faced serious non-transparency problems for more than three decades. Import licenses for rice and other food commodities handled by BULOG have been given to a ring of the "usual suspects" consisting of conglomerates like the Salim Group and cronies of former President Soeharto. An investigative report suggests that these conglomerates could draw economic rents from rice trading margins amounting to around US\$ 10-15 per ton. For a 2.3 million ton import provision a year, an importing company could obtain a net benefit of US\$ 23 - 35 million (see Arifin, 1998).

The transition government of B.J. Habibie tried to foster transparency in rice importation through the use of the international competitive bidding mechanism. This strategy should be further encouraged and supported by legal security, proper institutional arrangements, and a policy thrust towards freer and fairer competition. Otherwise, the market reform within the internal organization of BULOG and in the Indonesian economy as a whole will never be started.

2.4 Methodology of the Study

This study on "food security and markets in Indonesia: the state and private sector interaction in rice trade" was conducted using the methodology of field investigation, in-depth interviews and desk analysis of the subject. Four Indonesian provinces, namely, West Java, East Java, Lampung and DKI Jakarta were chosen, by purposive sampling technique, to be the subject of field investigation. Such investigation was conducted from May to June 1999. Java was selected because it represents about 60 percent of the total population of Indonesia while Lampung province was selected because it is one of the major rice baskets in the island of Sumatra.

A more structured interview was conducted using a traditional questionnaire, with collector traders, rice milling units, wholesalers, and retailers in the four provinces as respondent-interviewees. Additional questionnaires for farmers were also used to investigate rice-selling and other farming activities in the region.

An open-ended questionnaire was used to interview policy makers and government officers. Key informants included the Chief of Depot Logistics (DOLOG) at the provincial level and Sub-Dolog at the district level, the Head of Agricultural Services (Dinas Pertanian Tanaman Pangan dan Hortikultura) at both the provincial and district levels, officers of the Ministry of Industry and Trade (Depperindag), the Ministry of Cooperatives and Small-Medium Enterprises Development (Depkop dan PKM), and researchers and faculty members of a local university.

In the province of DKI Jakarta, the investigation focused on large-scale rice trading activities in the Jakarta Food Stations of Pasar Induk Cipinang and other small market places in the vicin-

ity of South and East Jakarta. In-depth interviews were also conducted with government officials connected with the National Logistic Agency (BULOG), the State Ministry of Food and Horticultural Affairs (Menpangan), Ministry of Agriculture (Deptan), National Development Planning Agency (Bappenas), People's Legislative Council (DPR), Depperindag, Depkop dan PKM, researchers with the University of Indonesia's Institute for Economic and Society Research (LPEM-UI), Institute for Resource Information at Bogor Agricultural University (LSI-IPB), Center for Agricultural Policy Studies (CAPS), and the World Bank Indonesia Office.

For West Java, the field investigation was concentrated in Bandung, and the District of Karawang and Cianjur. These districts comprise the center of rice paddy production in West Java. In the City of Bandung, the observation was done around the market place of Pasar Gede Bage, Pasar Caringin and Pasar Soreang.

The field investigation in the province of East Java was conducted in Surabaya, the capital, and the two district production centers of Malang and Sidoarjo. The city of Surabaya, the second largest in the country, was selected as a consumer area.

In Lampung, the investigation was concentrated in the city of Bandar Lampung, specifically in the Pasar Bambu Kuning and Pasar Koga areas, and the three districts of Central Lampung, South Lampung and Tanggamus; these areas comprise the provincial rice production center. Observation of rice milling units and traders in the market place was focused in Pasar Metro and Trimurjo in Central Lampung and Pasar Gedong Tataan in South Lampung, and Pasar Talang Padang in the District of Tanggamus. Interviews with farmers were conducted at the village level, particularly in the sub-district (Kecamatan) of Punggur and Trimurjo in Central Lampung; the sub-district of Gedong Tataan and Sri Bhawono in South Lampung; and, the sub-district of Talang Padang in Tanggamus.

No farmers were interviewed in the province of DKI Jakarta. Respondents for field investigation consisted of collector traders, rice milling units, wholesalers, and retailers in Jakarta Food Station (Pasar Induk Cipinang) in East Jakarta, Pasar Kebayoran Lama and Pasar Minggu in South Jakarta.

The number, composition and distribution of samples for each study location are described in the following table:

Table 2.1
Number, Composition and Distribution of Sample
for Traders and Farmers in the Study Locations:

No.	Study Location (Province)	Traders		Farmers	
		Count	Percentage	Count	Percentage
1	West Java	78	40.80 %	15	24.00 %
2	East Java	77	40.30 %	21	34.00 %
3	Lampung	20	10.50 %	25	41.00 %
4	DKI Jakarta	16	8.40 %	-	-
	Total	191	100.00 %	61	100.00 %



3.

Recent Developments in the Rice Economy

This chapter examines recent developments in the rice economy of Indonesia. Focus of analysis is on trends in rice production and consumption, price movements and price differentials between domestic price and domestic price. Examination of rice import and buffer stock arguments proposed by the government will complement the analysis of price differentials. Finally, regional disparities in rice security are tackled to surface and strengthen arguments regarding the importance of harmonious interaction between the state and private sector in rice trading in Indonesia.

3.1 Trends in Rice Production and Consumption

Rice production declined in 1998 on account mainly of the following factors: severe drought impact of *El Niño* in 1997; the wet seasons of *La Niña* in 1998; rice field conversion to non-rice land uses; and other agro-climatic factors unfriendly to rice production. Data from the Central Agency of Statistics (CAS) and the Ministry of Agriculture show that rice production in 1998 was 46.3 million ton in the form of dried rice grain (GKG) or about 26.3 million ton rice equivalent. This amount represents a sizable 23 percent decline from rice production levels in 1996 and a slower 9 percent decline from 1997 levels. Rice production in 1996 reached 55.1 million tons (grain terms) or 33.1 million tons (rice), while production in 1997 reached 49.4 million tons (grain) or 32.1 million tons (rice).

By region, declines in rice production were significant only in Java. Some regions such as North Sumatra and West Nusa Tenggara actually experienced large increases in rice production

in 1997 and 1998, compared with 1996. In East Nusa Tenggara, where drought effects were generally severe, decline in rice production was quite small in 1998. Given the highly diverse and regional effects of the crisis, these data reveal the difficulty of making statements about the crisis' national effects on agriculture, especially on rice production. A general observation suggests that a policy failure in the production system would contribute to a sharp decline (25-30 percent) in rice production, a development that, in turn, could affect the national stock of rice. What Indonesia should adopt therefore is an integrated policy strategy in the food production system, particularly in rice. Such strategy should cover seed procurement, broaden fertilizer subsidy, reform the credit system for production factors, improve extension methods and management, decentralize upland management, etc.

Based on the most optimistic forecast, rice production in 1999 could reach 48.7 million tons in grain or about 30 million tons in rice (Table 3.1).

The table also shows that the growth in food crop has contributed to the agricultural overall economic growth. During the first half of 1980s, food crop grew at a rate of more than 8 percent per year, mostly because of the peak success of Green Revolution technology. This has enabled Indonesia to achieve a level of self-sufficiency in the mid-1980s, a development that analysts called a "miracle of Indonesian agriculture." Such growth performance, however, slowed down in the first half of the 1990s, and continued to decline in the second half of the decade, due to a combination of economic, policy, ecological and natural problems. Some of these problems included unfavorable agricultural commodity prices, slower rate of agricultural land expansion, ecological limits on increased cropping intensity, severe droughts and unanticipated climatic factors.

Sustaining the rice self-sufficiency achieved in 1985 became more difficult during the early 1990s because of the sensitivity of rice production to said problems. Since that time, Indonesia has been importing rice. The country also diversified production to secondary food and cash crops, especially in the upland areas. This is in line with the acceleration of development in the underdeveloped regions of the outer islands, where the government has encouraged public investment in expanding production capacities for cash crops, plantation and other estate crops.

Table 3.1
Growth of Harvested Area, Yield, Production,
and Rice Equivalent, 1971-1999

Year	Harvested Area (ha.)	Yield (ton/ha.)	Production (000 ton)	Rice-Equiv. (000 ton)	Change (%)
1971	8,325	2.52	20,966	14,257	
1972	7,898	2.57	20,281	13,791	-4.76
1973	8,404	2.56	21,481	14,607	6.81
1974	8,509	2.64	22,464	15,276	2.03
1975	8,495	2.63	22,331	15,185	-0.60
1976	8,368	2.78	23,301	15,845	4.30
1977	8,360	2.79	23,347	15,876	0.20
1978	8,929	2.89	25,772	17,525	10.40
1979	8,850	2.97	26,283	17,872	2.00
1980	9,005	3.29	29,652	20,163	12.80
R71-80 (%)	0.79	2.38	3.20	3.20	
1981	9,382	3.49	32,774	22,286	10.50
1982	8,988	3.74	33,584	22,837	2.50
1983	9,126	3.85	35,302	24,006	5.10
1984	9,764	3.91	38,134	25,933	8.00
1985	9,902	3.97	39,033	26,542	2.30
1986	9,988	4.00	39,726	27,014	1.80
1987	9,923	4.04	40,078	27,253	0.90
1988	10,138	4.11	41,676	29,340	4.00
1989	10,531	4.25	44,726	29,072	2.60
1990	10,502	4.30	45,179	29,366	1.00
R81-90 (%)	1.13	2.11	3.26	2.80	
1991	10,282	4.35	44,689	29,048	-1.10
1992	11,103	4.34	48,240	31,356	7.90
1993	11,013	4.38	48,181	31,318	-0.10
1994	10,734	4.35	46,641	30,317	-3.20
1995	11,439	4.35	49,744	32,334	6.70
1996	11,569	4.41	51,101	33,215	2.70
1997	11,141	4.43	49,377	32,095	-3.70
1998	10,788	4.45	46,290	29,167	-8.80
1999*	10,500	4.64	48,700	30,681	5.19
R91-99 (%)	0.23	0.71	0.95	0.60	

Notes: Figures in 1999 are forecast at the most optimistic scenario
Source: Calculated from Central Bureau of Statistics (1999); State Ministry of Food and Horticultural Affairs (1999) and BULOG (1997)

Land productivity in food crop areas has been increasing over the last three decades on account of several factors, namely, increased land expansion, intensified land-use and yields phases (Arifin, 1997). Specifically, improvement in the sources of production growth and diversification has effectively increased land productivity. Technological change through more intensive land-use

practices such as the application of fertilizer and utilization of new varieties has also increased land productivity. Likewise with improvement of irrigated lands, which has stimulated the intensity of agricultural land use and increased yields per harvested area. On the whole, with the decrease in the land-labor ratio and the progressive use of bio-chemical inputs, agricultural labor productivity has also improved.

On the national level, the use of bio-chemical inputs corresponds negatively with farm size but positively with labor force and irrigated land. This coincides with small holding concentration in Javanese agriculture due to subdivision through inheritance and large holding consolidation of uncultivated land outside Java. Given the limitation of a fixed supply of land, farmers with smaller holdings utilize the land more intensively, for example, by applying more bio-chemical and other land-saving inputs. Larger holders, on the other hand, tend to face more complex management problems as they apply more bio-chemical inputs and hire non-family labor despite their having better access to credit or capital markets.

There is a difference in the extent of labor used in the application of bio-chemical technology in lowland and upland areas. In lowland areas, more labor force is required in applying bio-chemical technology, including new varieties, fertilizer and other chemical inputs, and other land "investment" activities such as land clearing, leveling, and maintaining irrigation channels. In upland areas where farmers grow mostly cash crops and secondary food crops, more labor force is needed for fertilizing, weeding, and harvesting. In the steep slopes of the uplands, land "investment" includes the adoption of conservation practices to minimize land degradation.

Rice consumption in Indonesia has grown significantly following population and income level increases over the last two decades. Rice consumption estimates vary by agency and organization. Data from the 1996 National Social Economic Survey (SUSENAS) of the Central Bureau of Statistics (CBS) show rice consumption at 123 kilogram per capita per year, where consumption level is higher inside rather than outside Java. Estimates made by BULOG are generally higher, where the recent consumption level is nearly 150 kilogram per capita per year. The estimation

method used by BULOG follows the concept of stocking and logistic, where available rice production—less 10 percent loss and expenses for seed needs—is added to net imports to arrive at the consumption figure. BULOG's estimate should be viewed as the upper level of consumption since it includes stocks preserved by consumers, traders and rice milling units (Table 3.2).

What becomes clear is that the level of rice consumption in Indonesia is now the highest among Asian countries. Average rice consumption per capita in the most populous country, China, is only 80 kilograms (kg) per year. The consumption level in Korea and Japan is 70 and 60 kg, respectively, which is a significant decline from figures two decades ago. Given that the production performance is somewhat dependent on volatile natural and economic conditions, the high rice consumption level carries an implication on the amount of rice traded in the world market. Problems usually arise when the world rice trade and distribution activities are not operated properly due to bureaucratic mismanagement of the rice price stabilization and consumption subsidies. The very high level of rice consumption could trigger more problems for the Indonesian economy unless the diversification movement began in the last decade is operationalized beyond paper. The movement could probably be combined with the development of a type of food technology that is simple yet modern, complements, and is compatible with Indonesia's food production system.

Another important issue in rice consumption is food subsidy. The Indonesian government provided subsidies for the import and sale of rice, and some other staple foods, until 1998. For that year, the amount of food subsidy was estimated to rise from around Rp 12 trillion to Rp 14 trillion for rice, sugar, soybeans, wheat corn, soymeal and fishmeal. It is a well known fact that food crop producers are among the poorest in Indonesia. Policies, which depress food prices, will reduce welfare allocations for these groups. Tabor *et al.* (1998) suggest that in the case of "major" price distortions, the welfare effects are typically much larger than the fiscal effects of subsidies.

In addition, for the lower income groups, rice is a major part of the diet and accounts for a significant share of their total expendi-

Table 3.2
Rice Consumption, Net Import, Initial Stock,
and Consumption per Capita 1971-1999

Year	Rice-Equiv. (000 ton)	Seed & Loss (000 ton)	Net Import (000 ton)	Initial Stock (000 ton)	Consumption (000 ton)	Population (000)	Cons./Capita (kg./cap.)
1971	14,257	1,426	503	530	13,334	118,808	112.23
1972	13,791	1,379	748	531	13,160	121,632	108.19
1973	14,607	1,461	1,639	168	14,785	124,601	118.66
1974	15,276	1,528	1,058	579	14,806	127,586	116.05
1975	15,185	1,519	669	847	14,336	130,597	109.77
1976	15,845	1,585	1,293	731	15,554	133,650	116.37
1977	15,876	1,588	1,989	541	16,277	136,650	119.12
1978	17,525	1,753	1,833	462	17,606	139,960	125.79
1979	17,872	1,787	1,914	1,075	17,999	143,245	125.65
1980	20,163	2,016	2,003	783	20,150	146,631	137.42
R71-80 (%)	3.53	3.53	14.82	3.98	4.21	2.13	2.05
1981	22,286	2,229	525	1,667	20,582	149,520	137.66
1982	22,837	2,284	300	2,217	20,853	152,465	136.77
1983	24,006	2,401	1,155	1,666	22,760	155,469	146.40
1984	25,933	2,593	365	1,588	23,705	158,531	149.53
1985	26,542	2,654	-405	2,754	23,483	161,655	145.26
1986	27,014	2,701	-241	2,725	24,072	164,839	146.03
1987	27,253	2,725	5	2,128	24,533	168,086	145.95
1988	29,340	2,934	6	1,508	26,412	171,398	154.10
1989	29,072	2,907	273	746	26,438	177,362	149.06
1990	29,366	2,937	43	1,901	26,472	179,829	147.21
R71-80 (%)	2.80	2.80	-22.14	1.32	2.55	1.86	0.67
1991	29,048	2,905	-301	1,384	25,842	182,940	141.26
1992	31,356	3,136	-561	885	27,659	186,043	148.67
1993	31,318	3,132	-564	2,065	27,622	189,136	146.04
1994	30,317	3,032	876	758	29,086	192,280	151.27
1995	32,334	3,233	3,014	650	32,130	194,755	164.97
1996	33,215	3,322	1,090	2,370	30,229	198,343	152.41
1997	32,095	3,210	3,582	2,398	30,600	201,390	151.94
1998	29,167	2,917	5,783	1,409	32,033	204,738	156.46
1999*	30,681	3,068	4,000	2,204	31,613	208,142	151.88
R71-80 (%)	0.60	0.60		5.25	2.24	1.43	0.80

Notes: + Data for 1994-1997 are figures for the fiscal year (starting from April 1)

* Data for 1999 are forecast at the most optimistic scenario

Source: Calculated State Ministry of Food and Horticultural Affairs (1999), BULOG (1997)

tures. The 1996 SUSENAS data also show that only about 28 percent of the total rice supply are consumed by the lowest 30 percent of income-earners. The upper 70 percent of income

consume 72 percent. Therefore, targeting food relief directly to the food insecure – in urban areas – might provide a more cost-effective way of providing assistance to the poor compared to just providing general price subsidies.

In August 1998, the government introduced a targeted rice subsidy program, the OPK in order to protect the rice consumption levels of low-income households. In September, the government announced that BULOG would confine its agricultural market activities to rice only and would dispose of its non-rice food stocks. In other words, the government has liberalized trade in sugarcane, wheat, soybeans and rice. In November, the government also abolished fertilizer subsidies, liberalized fertilizer imports, and announced that domestic fertilizer companies could peg their own market price. In addition, the government increased subsidized credit for food crop production, lowered agricultural lending rates from 12 to 10.5 percent, and forgave payments on pre-1996 agricultural loans. These policy changes from a low and subsidized output and agricultural input pricing policy to a market-oriented agricultural pricing policy are yet to be fully implemented.

3.2 Price Movement: Differentials of Domestic and Border Price

Despite the price stabilization policy, rice price is still very much influenced by the current economic crisis. The price disparity between producers and consumers, between domestic and border prices, is really disturbing. In 1998, the disparity between consumer and farm-gate prices was more than double, between Rp 2500-Rp 3000 and Rp 1500 per kilogram, the announced floor price. Price disparity is worse in remote areas outside Java where infrastructures are not adequate in supporting rice distribution and trading activities.

High consumer prices were a major contributing factor to hyperinflation in 1998, reaching more than 70 percent, especially after the social chaos of May that year. The hyperinflation depressed the purchasing power parity of most consumers, especially those who stayed poor due to the current crisis. On the other hand, a very low level of farm-gate price served as a disin-

centive for rice farmers to improve the production performance and productivity.

The government tried to close this price band through the OPK program (aimed especially at the urban poor) and other efforts to lower the consumer price of rice. By the end of 1998, rice prices had declined by 10 percent and was projected to continue declining due to weather conditions more favorable for rice production. Public stocks for rice were adequate and import prices were much lower than those in 1997. Average consumer rice price in some cities of Indonesia, in fact, declined from Rp 2700 to as low as Rp 2300 per kilogram in September of 1998 (Table 3.3).

Table 3.3
Food Price, Consumer Price, Exchange Rate and Rice Price
during the Economic Crisis (June 1997 – March 1999)

Month	Food Price Index (%) 1996=100	Consumer Price Index 1996=100	Exchange Rates		Consumer Rice Price (Rp./Kg.)	Change (%)
			Rupiah to US \$	Change (%)		
June 1997	104	105	2,450	0.40	1,033	
Nov 1997	117	110	3,648	-0.10	1,207	3.96
Dec 1997	121	112	4,650	27.47	1,215	0.66
Jan 1998	133	120	10,375	123.12	1,290	6.17
Feb 1998	158	135	8,750	-15.66	1,439	11.55
Mar 1998	167	142	8,325	-4.86	1,475	2.50
Apr 1998	177	149	7,970	-4.26	1,532	3.86
May 1998	183	157	10,525	32.06	1,621	5.81
June 1998	196	164	14,990	42.42	1,988	22.64
July 1998	220	178	13,000	-13.28	2,202	10.76
Aug 1998	240	189	12,700	-2.31	2,529	14.85
Sept 1998	261	196	10,700	-15.75	3,010	19.02
Oct 1998	256	196	7,550	-29.44	2,725	-9.47
Nov 1998	256	196	8,200	8.61	2,612	-4.15
Dec 1998	263	198	7,579	-7.57	2,773	6.16
Jan 1999	265	207	8,519	12.40	2,802	1.05
Feb 1999	266	210	8,797	3.26	2,758	-1.57
Mar 1999	265	208	9,008	2.40	2,702	-2.03

Sources : Calculated from Bank Indonesia (1999) and BULOG (1999)

Food prices generally contributed to the significant decline in the rate of inflation and the consumer price index at the start of 1999. The monthly inflation rate for January and February that year was pegged at 2.97 and 1.26 percent, respectively. The

downtrend continued through the months of March to July when it reached a deflation rate of less than negative one percent. Some saw this change as a positive sign for the economy, but others were worried that the decline indicated a slowdown in consumer purchasing power to a level worse than had earlier been projected.

To be sure, the domestic rice retail price was still high for most local consumers but the price movement was still low compared to the international market. Another consideration is the exchange rate. In 1998, the Rupiah depreciated more than five times relative to the US dollar. This development was favorable to Indonesia as the price movement served as a “protection” against the flooding of rice imports into the domestic market. Based on the nominal protection rate (NPR), the domestic price of rice in January 1998 was 59 percent lower than its border price. The highest price difference occurred in June 1998 when the domestic price was 62 percent lower than the world market.

Such price movement also represents an incentive for traders to re-export the cheap rice import to the world market where it would generate more economic rents. Some media reports have

Table 3.4
Domestic, world market, border price and nominal
protection rate (NPR) from January 1998 to March 1999

Month	Price of Thai Rice (US\$/ton)	Exchange Rate (Rp/US%)	FOB Price (Rp/kg)	Border Price (Rp/kg)	Retail Price (JFS_IR) (Rp/kg)	NPR (tariff=0%)
Jan 1998	250,00	10.375	2.593,75	3.300,39	1.350	59,10
Feb 1998	243,00	8.750	2.126,25	2.791,86	1.300	53,44
Mar 1998	246,00	8.325	2.047,95	2.596,16	1.200	53,78
Apr 1998	253,00	7.970	2.016,41	2.513,43	1.200	52,26
May 1998	265,00	10.525	2.789,13	3.403,79	1.350	60,34
June 1998	266,00	14.990	3.987,34	4.835,18	1.850	61,74
July 1998	270,00	13.000	3.510,00	4.319,67	1.900	56,02
Aug 1998	265,00	12.700	3.365,50	3.781,21	3.200	15,37
Sept 1998	275,00	10.700	2.942,50	3.707,55	2.725	26,50
Oct 1998	275,00	7.550	2.076,25	2.357,38	2.525	7,11
Nov 1998	257,00	8.200	2.107,40	2.384,33	2.527	5,98
Dec 1998	255,00	7.579	1.932,65	2.181,47	2.775	27,21
Jan 1999	259,00	8.519	2.206,42	2.490,50	2.751	10,46
Feb 1999	243,00	8.797	2.137,67	2.412,90	2.594	7,51
Mar 1999	228,00	9.008	2.053,82	2.318,25	2.382	2,75

Source: BULOG 1999

already indicated this tendency but it would be better if a legitimate verification and reconfirmation at the field level is conducted.

Yet another issue related to rice price movements is the influence of rice imports on farm gate prices. BULOG authorities insist they only import high-quality rice while the Ministry of Agriculture claims that only lower grades are imported. The situation becomes more complicated when BULOG and the Ministry of Cooperatives and Small-Medium Scale-Enterprises – which is responsible for some local procurement and distribution – begin accusing each other of spreading illegal mixtures of low-quality imported rice and high-quality local rice.

3.3 Import and Buffer Stock Arguments

The government maintains public rice stocks amounting to around 2 million metric tons as a buffer against possible disruptions in world market trade. It is alright to import rice to maintain the buffer stocks in light of domestic rice production, which is generally lower than consumption, especially during bad weather conditions. The amount of imported rice grew significantly from 1.3 million tons in 1995 to nearly 6 million tons in 1998. The government maintains these buffer stock arguments for the sake of national food security, especially as this relates to the so-called “budget group,” which includes the military and civil servants.

Due to the effects of *El Niño* in 1997, BULOG considered it necessary to build up its stocks to anticipate the production decline projected for 1998. The 1997 and 1998 stocks came mostly from imports, a departure from the last two decades when BULOG acquired most of its rice from domestic sources. Then, import procurements became necessary only for buffer stocking purposes and to support the price stabilization policy.

Data from the State Ministry of Food and Horticultural Affairs show that rice stocks were adequate in 1998 due to large imports. The initial stocks for that year was 1.4 million tons, a lot higher than in January of 1997. With very high imports – as against domestic procurement, which amounted to only 250,000 tons– the government was able to raise the national stocks to 7.4 million tons. Rice distribution to the budget group and for other purposes reached 5.2 million tons, leaving a balance of 2.2 million

tons, after a 3.9 thousand ton loss, by December of 1998 (Table 3.5).

Table 3.5
Rice Stocks, Procurement and
Distribution Systems, 1998 (in ton)

Year/ Month	Initial Stock	Procurement		Total	National Stock	Distributi- on	Loss	End Stock
		Domestic	Import					
	a			b	c=a+b	d	e	f=c-d-e
January	1.408.686	0	399.812	399.812	1.808.498	568.463	174	1.239.861
February	1.239.861	0	427.214	427.214	1.667.075	628.254	149	1.038.672
March	1.038.672	202	663.871	664.073	1.702.745	539.554	152	1.163.039
April	1.163.039	42.025	843.464	885.489	2.048.528	270.257	74	1.778.197
May	1.778.197	56.080	724.972	781.052	2.559.249	231.531	165	2.327.553
June	2.327.552	30.408	323.750	354.158	2.681.710	311.018	632	2.370.060
July	2.370.060	8.369	252.600	260.969	2.631.029	364.237	288	2.266.504
August	2.266.503	2.515	293.600	296.115	2.562.618	455.794	336	2.106.488
September	2.106.488	13.042	362.182	375.224	2.481.712	511.131	220	1.970.361
October	1.970.361	42.218	375.550	417.768	2.388.129	424.740	241	1.963.148
November	1.963.147	44.471	587.796	632.267	2.595.414	404.947	393	2.190.074
December	2.190.074	12.572	528.115	540.687	2.730.761	525.496	1.121	2.204.144
1998-Total	1.408.686	251.902	5.782.926	6.034.828	7.443.514	5.235.422	3.945	2.204.147

Source: State Ministry of Food and Horticultural Affairs (SMFHA), 1999

In line with the buffer stock arguments, the government invested tremendously in warehouses, offices and other infrastructures. Rural cooperatives also became involved in the buffer stock business, procuring from local farmers especially during the harvest season and in market operation, importing rice themselves during the planting season and when the current economic crisis erupted. With over 2,400 grain warehouses in the country, the government has the largest network of food storage facilities, one of the reasons why it is considered a monopoly in the rice distribution system.

But the government does not merely engage in rice importation. It controls the business, participating in all its phases from planning to ensure quality and quantity to appointing the contractor-traders. It usually pursues a “big country” argument whereby it assumes total demand for rice as being very high. Given this argument, Indonesia’s trading behavior and its distribution

activities necessarily affect the world market. A government estimate suggests that each additional ton of rice import by Indonesia increases the world market price for rice by as much as US\$ 50 per ton (Silitonga, et al. 1997). This argument justifies non-transparent government behavior in rice importation but runs counter to the interest of many poorer countries in Asia and Africa which could end up victims of unfair world trading in rice. It is a simplification that obviously must be reviewed if Indonesia is to move towards greater trade liberalization and lesser government monopoly in rice trading and distribution.

Rice importations are a convenient way of easing the political pressure on the government when it is faced with dwindling rice stocks. As pointed out earlier, the imported rice are sold at subsidized prices locally. The policy of importing rice and selling them at a loss domestically has the effect of depressing domestic prices. This favors consumers, especially those with higher incomes, but places domestic rice farmers at a severe disadvantage. In the end, local production suffers further as the low price for their product discourages farmers to produce better.

The issue of non-transparent government decisions in the importing process and in the appointment of rice importers have already been widely discussed (see Arifin, 1998). During the Soeharto regime, big conglomerates such as the Salim Group and former President Soeharto's cronies were the dominant rice importers who benefited awesomely from the import transactions in terms of economic rent and profit. As much as US\$ 10-15 were obtained per ton of rice import. This is not to mention earnings made possible by the difference or spread between the world market price and the contract price set by the government. The benefits from such windfalls became even more magnified when such companies and interests came to control the distribution system.

The fall of Soeharto in May 1998 placed a monkey wrench on the operations of said companies and on the performance of the rice distribution system in general. According to one unconfirmed report, some 200 rice distributors stopped operating for security reasons. What may be closer to fact is the story of how the transition government of President B.J. Habibie encouraged small and medium enterprises (SMEs) – and cooperatives – to play a more dominant role in the national economy. For larger distributor com-

panies which used to have more economic and political access to the policy-making process, the new policies were thought to create more rivalries within the rice distribution system. As of this writing, no firm conclusion could be drawn regarding the achievement of the cooperatives and SMEs in developing a better or alternative rice distribution system in Indonesia.

3.4 Regional Disparities in Rice Security

The issues of regional disparities in rice security emerge because of pessimism regarding the effectiveness of the targeted rice subsidy to low-income people across the country. In a larger context, Bulog has the capacity to move large quantities of rice within the country relatively quickly. The threat of rice shortage arising from lack of supplies seems unlikely to happen. However, rice insecurity at the regional level could be caused by a lack of purchasing power on the part of a particular social group.

A field survey conducted by a special team of the World Bank shows an interesting relationship between the economic crisis and initial level of poverty (Soenarto, et al., 1999). Some areas that were not initially poor have been hit so hard by the crisis that people in these areas are now relatively poorer than those in other areas identified as poor. Areas of West Java are a very good example of this phenomenon. The same holds true for the greater Jakarta area (known as Jabotabek – Jakarta, Bogor Tangerang, and Bekasi), which has become poor. However, according to the survey, this area has not yet reached the level of absolute poverty incidence reported in traditionally poor areas.

In this context, the affordability of food for the poorest people has become a special focus of the newly established policy instru-

Table 3.6
Examples of Different Impacts of the Economic Crisis

Different Impacts	Relatively Well-off Pre-Crisis	Relatively Poor Pre-Crisis
Hard-hit	Greater Jakarta West Java	East Nusa Tenggara East Kalimantan
Not Hard-hit	Central Sulawesi Bali	Maluku Jambi

Source: Soenarto, et al. (1999)

ment known as special market operation or OPK. Under this instrument, rice is sold at prices around Rp 1000 per kilogram, which is equivalent to 50 percent of the market price, and significantly below the international price. The quantity of rice a household could purchase at the subsidized price was initially 10 kilogram per month. Subsequently, this has been increased to 20 kilogram per month.

A special report from the Social Monitoring and Early Response Unit (SMERU, 1999) suggests that the OPK is reaching needy people, even though not all needy people are receiving the OPK. The SMERU team visited 21 urban areas and 19 rural areas in five provinces: DKI Jakarta, Central Java, Central Sulawesi, Maluku and South Sumatra. The team found out that in some areas, the delivery and payment mechanisms on the OPK are operating well, but in many areas local government and their agents need to be given more adequate operational budgets and guidelines that allow for innovation. In addition, payments by local governments to the local logistic agency (DOLOG) for rice allocations are lagging significantly in many regions.

The rice quality in the OPK scheme is usually third-grade or 25 percent broken. Recent data show that BULOG sold around 350,000 tons of rice between July 1998 (when the program started) and December of 1998. In 1999, the quantity of rice sold at a subsidized level of price under the OPK is expected to increase significantly, one of the reasons the program might continue for the near future regardless of the political change after the general election.



4.

Roles of the Private Sector in Rice Trading

This chapter examines the roles that the private sector plays in rice trading in Indonesia, focusing primarily on the country's rice trading map and patterns of transaction found therein. As mentioned previously, the private sector has been involved in rice trading in Indonesia far longer and more dominantly than the state. Government intervention in rice trading in Indonesia started only in the late 1960s when Indonesia faced serious threats from food security and an economic recession.

Players in Indonesia's rice trading industry generally include the following: collector traders, rice milling units (RMU), wholesalers, bazaar traders, and retailers. The scale and extent of participation of each of these economic actors vary from the household and small-scale trader level to the level of conglomerates which control rice-milling units, wholesalers, bazaar traders and retailers. Consequently, the level of business, market share, marketing power and access to market information, sources of capital and government policies, also varies significantly. Most of these traders have been involved, both directly and indirectly, with government policies on price stabilization and in the rice distribution and marketing system. These actors have dealt, also both directly and indirectly, with a large number of producers or rice farmers under special patterns of transaction. But only a few of them, the rice milling units and wholesaler-traders most especially, have direct access to the retail rice market and therefore, to the largest number of rice consumers.

As a general rule, economic actors with limited market and information access are not able to accumulate large amounts of capital. They often remain as small-scale as when they started. The

reverse is true in the rice trading industry of Indonesia. Most of the existing large-scale rice milling units and wholesalers started the business at the household level in the 1970s and 1980s. Few of them were involved with the government policies on rice procurement and import activities through special arrangements with BULOG. These businesses developed very rapidly in the 1990s in accordance with the tremendous increase in rice consumption in the country that occurred during the period. They grew on account of economic profits obtained from the rice trade, which they used to generate new investments aimed at achieving economies of scale. Such big businesses are the ones that have survived and have even grown significantly despite and even because of the current economic crisis.

The remaining sections of this chapter tackle the marketing system and the marketing power inherent in the rice business. Economic analysis of marketing margins and the marketing efficiency of the system are used as benchmark bases for business decisions on new investments. The chapter also discusses the differences in market access and sources of capital, capital accumulation and incentive systems arising from business activities.

4.1. The Rice Trading Map: Charting The Geographic Flow of Rice in Indonesia

The marketing process connecting rice production to rice consumption in Indonesia has followed an evolutionary track. The process before was centralized. This means that the marketing of non-BULOG rice was centralized to the wholesalers or Bazaar traders. The main function of such a system was to stabilize the price of rice by selling through several marketing institutions representing either producers or consumers. This system follows three main stages – collecting, standardization and grading – all of which determine the quality of rice being traded. The centralized system has evolved into a more decentralized pattern of trading involving other marketing institutions such as the village, sub-district or district collector and rice milling unit (or the miller).

For West Java, rice that flows to the market, especially in a big city like Bandung, comes from the southern part of West Java, and from Central and East Java. Meanwhile, rice sold in the main

market place of Cipinang, also known as Jakarta Food Station (Pasar Induk Cipinang) in Jakarta, come from the northern part of Java (Karawang, Bekasi, Cirebon dan Indramayu).

Generally, the marketing of rice in the District of Karawang in West Java involve such actors as farmer-producers and collectors (at the village, sub-district and district levels); millers; bazaar traders and retailers. Another marketing institution is the KUD at the district (sub-DOLOG) and provincial (DOLOG) levels. Some of the branded rice which are traded include IR-64, Cilamaya and Muncul. In this area, average retail price of rice is determined by Presidential Decree (Inpres) No. 32/1998. For example, the price of humid and non-husked paddy (GKP) is about Rp 1.020/kg; dry and non-husked paddy (GKG), Rp 1.200/kg; paddy for Muncul variety, Rp 1.200/kg; Cisadane, Rp 2.300/kg ; and , IR-64, Rp 23.350/kg.

In East Java province, rice that flows to Surabaya, the capital city, do so through two entry points, namely, Pabean market place (North Gate) and Bendul Merisi market place (South Gate). Pabean absorbs rice taken from East Java's northwestern coastal region and partly from Central Java (Surakarta, Pati, Bojonegoro, Cepu, Tuban, Lamongan and Gresik). Daily volume loaded and unloaded in Pabean is estimated at between 7 to 10 Fuso-type trucks or an equivalent of 70-100 tons of rice (at 10 tons per truck).

Meanwhile, the South gate market absorbs rice from the following regions: Sidoarjo, Malang, Pasuruan, Banyuwangi, Jombang, Mojokerto, Madiun, Ngawi (East Java) and Solo, Sragen (Central Java). Daily volume loaded and unloaded is estimated at 15 to 20 Fuso-type trucks or approximately between 150 to 200 tons of rice per day. These figures do not yet include rice coming in from other sources outside Surabaya.

In Lampung province, rice delivered to Bandar Lampung market comes mainly from the districts of Central Lampung, South Lampung and Tanggamus. There are three big market places in the city of Bandar Lampung, namely: Bambu Kuning, Koga, and Teluk. During periods of low harvest such as the one that occurred in 1997, traders in Lampung obtain rice from West and Central Java and possibly, by importing. During peak harvests, traders in Lampung bring in rice from the southern part of Sumatra.

Much of the rice traded in Lampung is of the IR-64 and IR-50 varieties, commercially branded in some places as Talang Padang and Pandan Wangi. Daily volume loaded and unloaded is about 5 to 7 Fuso trucks or approximately between 50 to 70 tons. This excluded rice brought in also by commercial traded for use in government market operations.

4.2. Description of Channels and Actors Involved

Generally, rice trading patterns in Indonesia do not differ significantly by region. Rice trading could be seen as one step in the overall process of rice marketing, that is, the process for distributing the rice from producers to final consumers. However, by marketing channel available in a particular region, rice trading follows a different pattern. Marketing institutions involved in rice trading are collectors (village, subdistrict and district), wholesalers, Bazaar traders, retailers and final consumers or end-users. Other institutions involved are rural cooperatives (KUD), millers, DOLOG/sub DOLOG, BULOG and importers.

Following are the institutions involved in rice trading in Indonesia categorized by type of channel and pattern of trading they engage in (please see the corresponding Figure 4.1):

Private Channel

First Pattern: Farmers - Collector Traders - Wholesalers (also Rice Millers) - Bazaar Traders - Retailers - Consumers.

Second Pattern: Farmers - Collector Traders - Rice Millers - Urban Markets

Third Pattern: Farmers - Collector Traders - Rice Millers - KUD - Bazaar Traders - Retailers - Consumers.

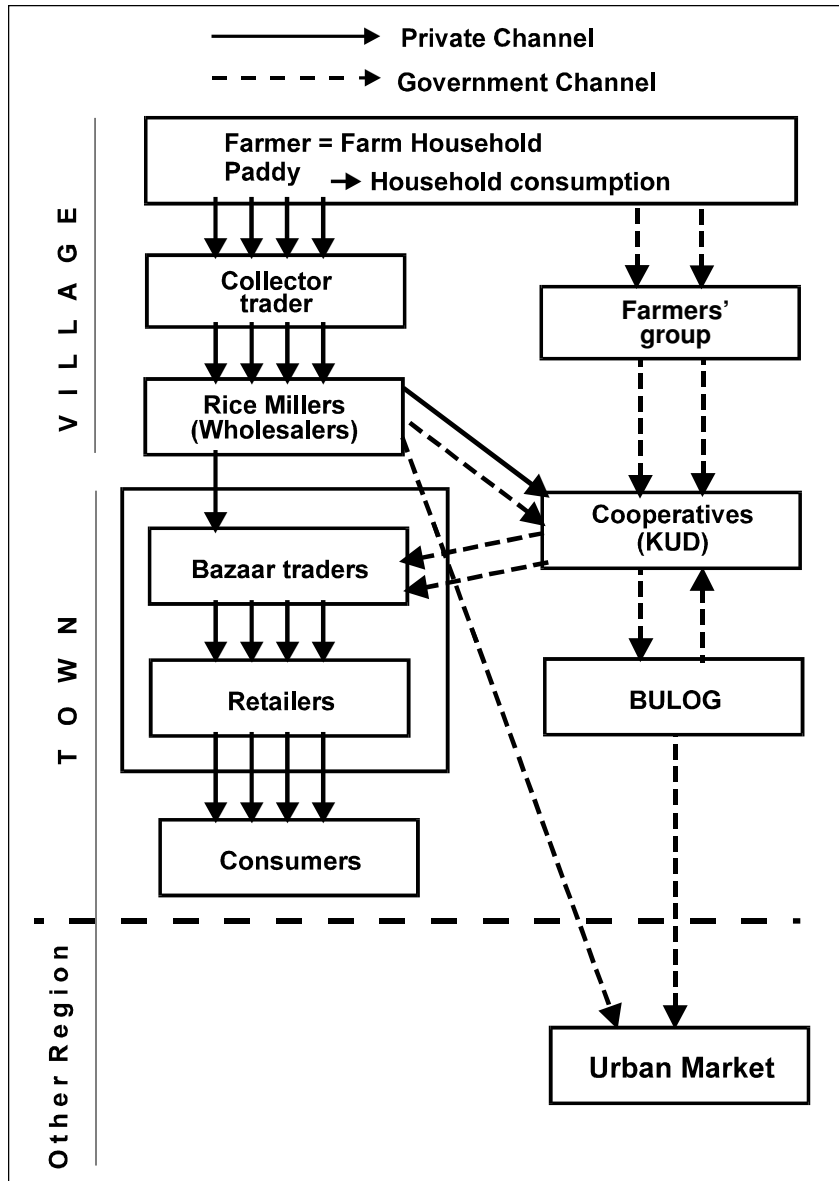
Fourth Pattern: Farmers - Collector Traders - Rice Millers - KUD - Bulog - Urban Markets

Government Channel

Fifth Pattern: Farmers - Farmers' Group - KUD (also Rice Millers) - BULOG (also Rice Millers) - Urban Markets.

Sixth Pattern: Farmers - Farmers' Group - KUD (also Millers) - BULOG (also Rice Millers) - Bazaar Traders - Retailers - Consumers.

Figure 4.1
Marketing Channels of Rice in Indonesia



The first and second patterns involve purely private channels while the fifth pattern utilizes a purely government channel. The third, fourth and the sixth patterns involve a marketing channel characterized by an interaction between the private and government channels.

- Farmer (Producer)

The farmer is the one who produces the rice or engages in rice farming as agricultural investment. The farmer manages the production factors and decides on which mix of land resources (rent, own or sharecrop), labor (family and non-family), capital (fixed and current), and managerial skill would yield the best crop. Farm management should be market-oriented, although not all rice farmers in Indonesia are able to engage in such an approach to doing farm business. Some farmers operate only at a subsistence level, where rice products are mostly used for the household consumption. Others sell the products to a broker-trader (locally known as tengkulak) or collector-trader before or after the harvest.

The farmer, as a main producer of food crops, especially paddy, is the first institution in the rice marketing system. Most farmers now follow a rational decision-making process in planting the rice that considers not only economic factors like profit and loss, but also non-economic factors, *i.e.*, rice as a socially important commodity and a staple food for most Indonesian people. The farmer decides to plant paddy because of an incentive system (manifested by the existing price policy) or social aspect (household food security for owning extra amount of rice).

In the Karawang area (West Java), most farmers sell their products in wet non-husked and humid paddy (GKP) form. They sell this directly to the tengkulak in the field (sawah). This happens particularly during the wet season (rendeng) when farmers are not able to dry paddy. During such times when the quality of their product is such, the farmers are in no bargaining position. The price of rice they sell is thus dictated by the buyers, in this case, the broker or tengkulak. Some farmers avoid this situation by selling directly to the millers. Meanwhile, in the district of Malang (East Java), farmers sell their product in bulk. The labor cost of the harvest is charged to the trader or tengkulak. In Sidoarjo cases

(East Java), farmers sell to the local trader or penguyang, using the weighted system (quintals) instead of the bulk system. Under such a system, farmers shoulder the labor cost of the harvest.

- Collector Trader:

The collector trader is one who buys paddy from the farmers in the form of wet and non-husked grain (GKP) or dry and non-husked grain (GKG). The collector trader could also be full or part-owner of a rice milling unit (RMU). In East Java, the collector trader is known as penguyang, who, aside from being paddy collector, also sells rice.

Paddy collectors may be classified according to their area of business operation. There are three types: the village, sub-district and district collector. The village collector obtains the paddy from the farmers, processes it to rice before reselling it to the sub-district or district collector. The average volume of paddy traded is relatively small, between 5-10 tons weekly. In some regions, collector traders supply the DOLOG. They do this by contracting paddy procurement through rural cooperatives or Koperasi Unit Desa (KUD). Collector traders also sell the paddy through the miller or RMU at the sub-district (kecamatan) and district levels. Traders at the district level generally have the option of selling the rice outside the region, especially if they do not own a milling unit.

- Rice Milling Unit (RMU)

RMUs mill or hull paddy brought in by either the farmers or collector traders. In some cases, RMU owners double as collector traders. In such cases, the RMU owners have two sources of income: milling and trading.

The milling activity is a marketing service performed for the tengkulak, collectors or individual farmers. Generally, such a service is not covered by a contract agreement. A collector trader (tengkulak or penguyang) is free to choose which rice-milling unit to use in the region. As pointed out earlier, a miller can earn both from the milling services he performs for farmers or from buying paddy for milling and selling the same in the form of rice. The difference between a miller-owner and a miller-trader is in terms of scale and volume of business. Generally, the miller-owner uses a milling machine that has a relatively small capacity.

Miller-traders buy rice grain directly from the farmers, especially during the harvest season. Increasing quantity and quality of available infrastructure has made the role of the smaller rice-milling units in rural areas all the more important. These are the marketing actors who are closest to the production location.

In West Java, especially in the district of Karawang, the number of existing RMUs are as follows: two in the city of Karawang with a capacity of 1,960 tons; 10 in Kecamatan Rengasdengklok with a capacity of 9,800 tons; one unit in Kecamatan Tirtamulya with a capacity of 980 tons; four units in Kecamatan Jatisari with a capacity of 3,980 tons; and, two more units in Kecamatan Cilamaya with a capacity of 1,960 tons. In KUD Sri Mulia, sub-district of Rengasdengklok, there are 2 units of a Caterpillar brand miller, single, with a capacity of 15-20 tons per day and 1 unit of machine with capacity 10-15 tons. The size of a warehouse, floor and kiosk building (GLK) is 5 x 20 meters and 15 x 40 meters, respectively, for two and one unit.

Table 4.1
Income Analysis of Rice Milling Unit

Description	Price (Rp/unit)	Value (Rp)
Return Component		
1. Mill Services for 26 Kw of Rice *	10.000,-	260.000,-
2. Sekam, 50 Kw gabah = 50 bag	350,-	17.000,-
		277.500,-
Expense Component		
1. Labor wages, 5 man day		50.000,-
2. Cost of fuel (Solar), 30 liter	550,-	16.500,-
3. Maintenance Cost		20.000,-
4. Depreciation of machine per day	30.000.000/360	8.333,-
Total Expense		94.833,-
Total Revenue minus expense		182.667,-

Source : Calculated from Field Data, 1999

Notes * Mill services is taken from net result of rice. For each quintal of rice, the mill services is about four (4) kg of rice. Assume that price of rice is Rp 2500- per kg, so the milling services for 1 quintal of rice is : $2,55 \times 4 \text{ kg} = \text{Rp } 10.000,-$ (Conversion for 5 ton gabah x 52% = 2,6 ton of rice).

The rice-milling unit usually determines the wages of mill laborers as follows:

1. By fixing wages at Rp 18 /kg of non-husked wet paddy (GKP), where half of the total cost of milling (comprised of gasoline (solar), roller, operator and mechanics) is charged by the owner of RMUs while the other half is charged by the owner of paddy (Maro System). Milled rice comes in the following forms: coarse flour (sekam), fine flour (katul), and fine-broken rice (menir). The conversion for each 100 kg of dry and non-husked paddy (GKP) to rice is about 52-65 kg rice, assuming 52%-65% for each kg GKP. Dedak and menir goes to the owner of rice milling unit or the miller.

2. By profit-loss sharing or wages in terms of rice (in kind) obtained from the paddy being milled. For each quintal of rice, the services of a miller costs the equivalent of 4 kg of rice. Assuming the price of rice is at Rp 2500 per kg, the cost of milling paddy to produce 1 quintal of rice is: $2.55 \times 4 \text{ kg} = \text{Rp } 10.000$ (conversion for 5 ton paddy x 52% is equal to 2.6 ton rice).

- Wholesalers and Bazaar traders

Wholesalers and Bazaar traders are those that engage in big volume rice trading. To get their supply, Bazaar traders usually obtain their rice from medium-sized miller traders. They generally trade in the central district of a provincial area.

In West Java, big traders can be found in the main markets (Pasar Induk) of Caringin, Gede Bage, Ciparang, Cicadas and Soreang in Bandung City; and Pasar Muka and Inpres Cianjur in the district of Cianjur. In Karawang, the main market is in Johar. For East Java, it is the Pabean and Bendulmerisi market places. In Lampung, large-scale traders operate in Metro, Talang Padang, Pringsewu and in the Bambu Kuning, Koga and Teluk market places in the city of Bandar Lampung. In the greater Jakarta region, big volume traders can be found in the Jakarta Food Station at Cipinang, Jakarta. The big trader generally has a marketing network inside and outside the region. They normally get their rice supply from collector traders, except in certain cases when there is a market operation by DOLOG.

Some big traders like PT Alam Makmur at the JFS in Jakarta also function as rice importers. Their activities are not confined to a certain area. They also engage in trade among the regions. Johar's traders generally get rice from millers and collectors in Karawang. Some traders function as brokers, receiving commissions from collector traders for redistributing their product to other traders such as those based in Bekasi, Bogor and Tangerang (West Java).

Bazaar traders move about 5 to 10 tons of rice per day, enjoying a profit margin of Rp 50-100/kg. If a trader bought rice at Rp 2400 to Rp 2450 per kg and sells it at Rp 2450 to Rp 2500/kg (medium quality), he realizes a profit of 2.08% ($50/2400 \times 100$). Even if the profit margin is relatively small, the absolute profit is big enough. This is because the turnover from trading is relatively big. For instance, if a trader sells 5 tons of rice, the profit is approximately Rp 250.000. Deducting labor wages for 3 persons, valued at about Rp 22.500 ($=3 \times 7500$), the net profit for Bazaar traders is Rp 250.000 (Rp 22.500, Rp 227.500,- per day).

- Retailers

Retailers refer to rice traders who buy big and sell small. Anyone can be a retailer; there is no entry barrier to the industry. This explains why there are more rice retailers than there are wholesalers, collectors and Bazaar traders in Indonesia's rice trading industry.

Rice retailing in Indonesia follows two standards: the kiloan (weighted standard) and the literan (volume standard). Rice retailers do not sell any particular brand of rice or for that matter, rice only. The trader also sells other brands and other products, mainly staple food (corn, soybean, peanut). Retailers get their supply from the Bazaar traders, collector and miller traders (known as penguyang in East Java). The rice volume traded by retailers reaches from 50 kg to 500 kg per day.

Retailer profit levels vary according to the type of transaction, *i.e.*, literan or kiloan. For instance, if the retailer buys from a trader Rp 2500,-/kg to Rp 2.600/kg of medium quality IR-64 rice and sells the same to final consumers at approximately Rp 2.700,- to Rp 2.800/kg under the kiloan standard, he or she stands to earn Rp 100,- to Rp 200 per kg or a profit margin of approximately 10% -25%. If on the average, the retailer sells 100 kg per day, he or she stands to earn a total of Rp 25.000.

- Rural Cooperatives (KUD) :

Rural cooperatives (KUD) are economic institutions engaged in businesses in rural areas, particularly in the agricultural sector. KUD play an important role in the marketing of paddy, which they buy from farmers and redistribute through the DOLOG or Sub DOLOG.

For instance, KUD Sri Mulia, located in Kampung Sawah, Kecamatan Rengasdengklok, is one of the biggest suppliers of rice to the Sub-DOLOG of Karawang, moving as much as 8,000 tons seasonally. The KUD also supplies an average of 150 tons per day to traditional markets like Cilegon, Serang, Depok, Cibitung and the main market Cipinang. Its warehouse capacity is about 1500 tons, with the drying floor capacity approximating up to 70 tons and drier capacity approximating 40 tons. Paddy for the Sub DOLOG Karawang is procured mainly from farmers in areas closest to Rengasdengklok. If the stock in the area close to Rengasdengklok is low, the KUD buys paddy in another region such as Solo, Sragen, Grobogan and Klaten in Central Java.

A problem faced by the KUD in procuring paddy is the limited credit available for such a purpose with the DOLOG. According to results of the latest field inquiries, the DOLOG still owes the KUD and farmers approximately Rp 240 billion (8000 ton x Rp 2310). The reason for the debt is DOLOG has not received funding from the Bank of Indonesia, which is the intermediary bank throughout BRI. This problem has discouraged farmers from participating in the government's (BULOG) paddy procurement program. There is a need for closer coordination among government institutions like the Bank of Indonesia (BI), BULOG/DOLOG and the Ministry of Finance, if the government's rice procurement program is to succeed.

- Roles of BULOG/DOLOG in Rice Procurement

The Sub DOLOG District V, which covers the Karawang and Bekasi areas, is one of the Sub DOLOG suppliers of rice to the main market of Cipinang Jakarta as well as Johar, Karawang and Bekasi markets. The normative role of DOLOG in price stabilization is to implement the floor price policy. DOLOG is expected to absorb the excess rice production of farmers during the harvest

season by applying the credit instrument in food procurement either through the Sub DOLOG, KUD or non-KUD coops. On the other hand, if rice stocks are low, DOLOG is expected to stabilize the price by implementing Market Operation. This is not an easy role since the DOLOG itself sometimes functions as a trader while intervening in the market through the rules and regulation of rice marketing. Some traders have complained that DOLOG is not helping any. They point out that DOLOG's market operation is not effective because DOLOG sells the rice if it is low in quality. If high in quality, DOLOG reserves the rice for certain people enjoying government subsidy.

As mentioned earlier, another complaint raised against DOLOG is its being late in paying debts to farmer groups like the KUD. A case in point is Rengasdengklok DOLOG's two billion rupiah non-performing loan with the KUD committee. DOLOG explained that the credit scheme has not yet been implemented. It has also lodged its own complaint of having too many tasks. One of this is BULOG's special operation program for the poor (OPK Khusus) organized by the Ministry of Food to help poor people cope with the monetary crisis. The program is specifically intended to supply poor people with government-subsidized rice. DOLOG has been drafted to implement the program, an additional workload that, DOLOG says, is making it difficult to perform its original mandate.

For the special operation, DOLOG prepares the network for distributing rice throughout several rural areas in West Java. The implementation of OPK at the first stage covers approximately 2,000 of the target 5,000 households (KK) in 235 villages in the Karawang area. Assuming that each household needs two (2) Kg of rice, the total estimated need that needs to be served is approximately to 4,000 kg. Meanwhile, the allocation for the budget group (civil servants and military/ABRI) is estimated at 5% to 10% of the national stock held by DOLOG.

How does DOLOG stabilize the price of rice during the harvest season? By implementing the floor price policy. This means that when the price falls below the floor price, DOLOG will buy the paddy from farmers at the floor price. Conversely, when the price of rice increases particularly during the low season, DOLOG will sell its rice stock through the market operation to maintain overall supply at equilibrium. However, the findings of the study suggest

that the effectiveness of the DOLOG's role in price stabilization is debatable because there is a lag between the real price in the market and the reaction or implementation of the price policy of DOLOG.

During the harvest season, DOLOG buys the excess rice production of farmers but only if this passes quality control rules such as those relating to water content, dryness level and wastage. Farmers, however, have difficulty in complying with such rules especially during the wet season. Consequently, DOLOG ends up rejecting paddy from farmers, causing them to become frustrated and resentful of DOLOG rules and regulation. Moreover, only a few people, the big capitalists in particular, know about DOLOG's market operation. Only certain people are also given license to import rice. Consequently, a lot of traders fail to get the allocation needed for them to do their part in the market operation.

Following are some problems with paddy price that arose during the harvest season of January-March 1999, especially in the district of Karawang:

- KUD as a rural economic institution was not able to absorb all the rice produced by farmers. This was due to the limited or delayed delivery of financial credit for paddy procurement during the harvest season.
- The mechanism that allows traders to obtain rice from farmers on credit (payable during the next season) is highly disadvantageous to the latter. Oftentimes, payments to farmers are delayed. In some cases, as what happened in Teluk Jambe, traders disappeared without paying farmers. Farmers are particularly vulnerable when there is a rice surplus. This drives the price down and farmers are left in a weak bargaining position.
- Lack of coordination among members of the DOLOG task force team. Aside from this, the limited scope of DOLOG operation automatically excludes remote areas of the countryside from the service. The floor price monitoring team established by DOLOG is not able to respond to the problem of price fluctuation in the field.
- Limited farmers' access to or ownership of post-harvest fa-

ilities and technology, especially driers and power threshers. This has caused production losses during the harvest season on account of backward technology such as sun-drying. Power threshers can decrease farmer losses up to Rp 67 billion or an equivalent of 304.5 tons per season. Based on data provided by BPS, there are only 95 thresher units in the district of Karawang. Karawang's optimum need, however, is for 2,500 units given a production area of 90,000 has. Aside from this, there is also a need for driers in Karawang. The area has 44 units each with a capacity of 8 tons per day or 352 tons per day.

4.3. Patterns of Transaction : Economic and Social Relationship

The process of distributing rice from producers to the final consumers or end-users in Indonesia involve the following private marketing institutions: collectors (village, subdistrict and district), wholesalers, Bazaar traders and retailers. Public or government-run or supported marketing institutions include the cooperative (KUD), the miller (RMU), DOLOG/sub DOLOG, BULOG, and the importer.

These institutions adhere to the following types of relationship: trust relationship, family, ethnic and business relationship.

· Trust Relationship

Some traders conduct their business based on trust relationship. This is particularly true in Pasar Johar, Karawang where some groceries function as brokers by storing rice that they procure from collector trader and selling the same to regional traders/retailers, whence they earn a broker fee of Rp 10,000 per ton. A trust relationship also exists between collector traders and farmers whereby the former pays the latter in advance for production cost. When harvest season comes, farmers sell to the traders who are given the privilege of pegging the price of the rice produce. In such a case, farmers function as price takers.

· Family Relationship

Rice trading may be run by family relations, with kin running some, if not all, marketing institutions involved in the process. One relative may own a processing unit (RMU) while another may

be functioning as a collector. Such is the case of the sub-district collector who supplies main markets (Pasar Induk) like Cipinang in Jakarta and Pasar Johar in Karawang whose parents used to be in the rice trading business.

· Pure Business Relationship

This means the marketing process is run solely on cash basis. Each marketing institution is required to put up capital to pursue his or her trading activity. Retailers need Rp 3 million up to Rp 10 million to go into the business; collectors, from Rp 30 million to Rp 50 million; and big traders, from Rp 100 million to Rp 300 million.

Ninety percent of the rice demand in Indonesia is served by the private sector while 10% is covered by the government through BULOG, DOLOG and KUD. The government, through the OPK, sells the cheaper rice. Consumers can easily shift buying rice from the government to private outlets, in which case the government faces a fluctuation in consumer demand. Consequently, the rice price could also fluctuate. The government stocks should be big enough to be able to cope with price fluctuations, especially during the harvest and planting seasons.

4.4. Marketing Margin and Efficiency Analysis

The marketing margin indicates the difference between price paid by the end-consumers (retailers) and the real price received by the farmers or rice producers. The concept of marketing margin covers all marketing cost incurred by the marketing institution, from collectors to wholesale/Bazaar traders to retailers. Marketing cost is that which accrues from the creation of value-added, *i.e.*, form utility from dry paddy to rice; place utility, which represents the value-added created in the transit of the product from producers to final consumers, from rural to urban areas; and, time utility as a consequence of holding rice in the warehouse especially during off-season. In this analysis, the exploration of the marketing channel of rice starts from the producer (farmer) to the final consumers. This is an important part to tackle before proceeding to analyze the marketing cost and profit among marketing institutions involved in rice trading.

Three assumptions in conducting marketing margin analysis of agricultural products, especially rice:

First, marketing margins differ by pattern, region or institution involved. This is because different services transpire in the transit of rice from the farm gate to the final consumers. A high marketing margin does not necessarily reflect the efficiency of services in one marketing system or pattern. It could just mean that the marketing system is more efficient compared to those in other regions. One benchmark that is used is the price received by farmers compared to those received by retailers. Known as the farmer's share in certain regions, this shows the bargaining position of farmers in the rice marketing system.

Second, the marketing margin of agricultural products, especially rice, increases as the price share of farmers decreases. This is because agricultural service tends to be more labor-intensive than agro-industrial processing. The effect therefore of real wages in the long term is greater for marketing institutions who trade processed and semi-processed goods compared to the agricultural sector which churns out the primary product. If there is a change in household income as a consequence of economic growth, consumers tend to favor high quality to local quantity.

Third, the marketing margin, in the short run, is relatively stable especially for agricultural products. This is because of the dominance of the wage factor and the fact that the level of profit taken by the marketing institution is relatively constant in percentage compared to the price fluctuation of agricultural products.

The average cost of marketing components per marketing institution is shown in Table 4.2.

The biggest average marketing cost is accounted for by the village collector, at Rp 183,05,- per kg while the smallest is that incurred by the retailer, at approximately Rp 20,75,-/kg. It can be implied that the farther the marketing channel is from the producer, the smaller the marketing cost becomes, the larger the profit margin.

Based on the percentage contribution of each marketing institution, the marketing cost component of each marketing institution is shown on Table 4.3.

It can be seen that the biggest marketing cost component for the village collector is picking cost, at 33.25%. For the sub-district

Table 4.2
Average of Rice Marketing Cost (Rp/Kg)

Cost Elements	Village Collector	Sub district Collector	District Collector	Bazaar traders	Wholesaler	Miller	Retailer
Drying	26,05		6,25	4,67	1,83	8,00	10,00
Milling	52,69	100,00	37,50	13,33	20,13	45,20	14,00
Sorting	48,75		3,00				
Packaging	75,55		60,00			9,50	10,00
Transport	51,15	22,00	31,66	41,00	18,57	19,17	15,18
Labor	17,54	11,25	6,50	4,94	5,71	42,89	5,69
Mandor	105,00			6,00			5,50
Losses	51,29	14,00	50,00	50,00		39,00	4,25
Picking	252,50						0,80
Others	146,88	62,63		17,50		92,25	
	183,05	99,33	86,18	74,55	32,00	89,94	20,75

Source: Calculated from Field Data, 1999

Notes:* Average of total marketing cost from each respondents

Table 4.3
Proportion of Marketing Cost (in percentage)

Cost Elements	Village Collector	Sub district Collector	District Collector	Bazaar traders	Wholesaler	Miller	Retailer
Drying	3,43		4,31	1,97	3,96	3,12	15,29
Milling	6,94	46,98	25,87	47,73	43,52	17,66	21,40
Sorting	6,42		2,07				
Packaging	0,99		41,39			3,71	15,29
Transport	6,74	10,33	21,84	17,27	40,16	7,49	23,20
Labor	2,31	5,28	4,48	2,08	12,36	16,75	8,69
Mandor	13,83			2,53			8,41
Losses	6,75	6,58	0,03	21,06		15,23	6,50
Picking	33,25						1,22
Others	19,34	30,83		7,37		36,03	
Total	100,00	100,00	100,00	100,00	100,00	100,00	100,00

Source: Calculated from Field Data, 1999

collector, Bazaar traders and wholesaler; the biggest marketing cost is milling cost. For the district collector, the biggest cost is packaging, at 41.39 %, while for the retailer, it is transporting cost, at 23.2% of total marketing cost.

Field observation at KUD Sri Mulia, Kampung Sawah, Sub-district of Rengasdengklok has yielded the following data: price of dry paddy received by farmers during the harvest season is approximately Rp 1.100/kg - Rp 1.400/kg. In the market, the price becomes Rp 2.250/kg to Rp 2.700/kg. This means that the farmers' share of the retailer price, known as farmer's share, is approximately 48.88 % to 51.85 %. Transportation cost determined by DOLOG regulation is Rp120/kg. However, one respondent (chief of KUD) wants this to be at a higher Rp 220/kg consisting of the following components: cost from farm gate to the processor, Rp 5/kg; cost from processor to warehouse, Rp 2.5/kg; cost from Warehouse to DOLOG Rp 7.5/kg; and, maintenance cost, Rp 5/kg. What remains after these costs is the profit margin.

The marketing channel may be a farmer who is a member of KUD or a farmer group. Or he or she could be a non-KUD member who is a collector who sells his or her product to KUD. Whichever, marketing costs entailed are as follows: drying cost, Rp 7/kg; milling cost, Rp 5/kg; bag/packaging cost, Rp 2.5/kg; loading and unloading cost, Rp 2.5/kg; transport cost from Karawang - Jakarta, Rp 17.5/kg; and, transport cost to DOLOG, Rp 10/kg. What if the rice is rejected by DOLOG due to the low quality? KUD would have to absorb the marketing cost. But even if KUD meets DOLOG's standard, its payment could still be delayed for at least two weeks.

A study conducted by LPEM-FEUI in 1998 found a 4% gross margin for medium quality rice traded in Karawang. This value already considers all activities conducted by collector traders through the RMU such as collecting, processing, packaging and transportation. For retailers, who sell the rice using the literan or kiloan (the smallest unit of weight) standards, the gross margin obtained from transportation activities and piling the rice is 4%. The gross margin for rice in Karawang is shown on Table 4.4.

Meanwhile, gross margin is about 2 percent, reckoned in terms of marketing function. The whole gross margin from producer to final consumer, therefore, is about 18%. Comparatively, based on the results of a study conducted by Garcia-Garcia (1998) for an entire region in Indonesia, the overall marketing system indicated significant results as shown in Table 4.5.

Table 4.4
Gross Margin of Rice Marketing for Medium Quality
(in Karawang)

Distribution Pattern of Rice	Gross Margin (in percentage)
Farmer - Intermediate Trading (RMU)	4
Intermediate Trading (RMU) - Wholesaler	2
Local Wholesaler - Big Retailer outside region	4
Big Retailer outside region - small retailer	2
Small Retailer - Final Consumer	2
Farmer (Producer) - Final Consumers	18

Source: LPEM-UI, 1998

Table 4.5
Gross Margin of Rice in Indonesia, 1994/95 - 1998/99

Distribution Channel	Gross Margin of Rice (in percentage)				
	1994/95	1995/96	1996/97	1997/98	1998/99
Importer to Bazaar traders	2	2	2	2	2
Bazaar traders to the retailer	5	5	5	5	5
Retailer to the final consumer (end users)	5	5	5	5	5
Bazaar traders to the final consumer	10	10	10	10	10
Importer to the final consumer/end users	12	12	12	12	12
Farmer/Producer to the warehouse in Jakarta	12	12	12	12	12

Sources: Garcia-Garcia, 1998

These tables suggest that during the five-year period of observation, the marketing margin of rice was relatively constant for each pattern distribution. The smallest margin was obtained in the pattern involving rice flowing from the importer to the Bazaar trader while the biggest margin was from the importer to the final consumers, and from the farmer to the warehouse in Jakarta, at 12 percent each.

The results of marketing margin analyses conducted in four locations (three in Java: West Java, East Java and DKI Jakarta) and one in Sumatra (Lampung) are summarized in Table 4.6.

Meanwhile, an analysis of production in the district of Karawang during the five-year period shows a surplus of rice in an area mea-

Table 4.6
Results of Marketing Margin Analysis for Rice (Rp/Kg)

Status	Buying Price (RP/Kg)	Selling Price (RP/Kg)	Marketing Cost (RP/Kg)	Profit Margin (RP/Kg)	Gross Margin (%)
Farmer		12000,00			46.85*
Village Collector	1755.55	2494.44	133.94	604.95	23.63
Sub-district Collector	2633.33	2750.00	107.20	9.47	0.37
District Collector	2475.00	2550.00	131.05	-56.05	-2.19
Rice Miller	1387.50	2425.00	79.61	957.89	37.42
Wholesaler	2453.33	2767.67	24.00	199.33	7.79
Bazaar Trader	2113.64	2509.09	31.58	363.87	14.22
Retailer	2379.79	2559.58	17.50	162.29	6.34

Source: Calculated from field data, 1999 (Based primarily on First Pattern)

*Farmer's share is a part of price received by the farmer compared to the price paid by the final consumer (retailer price) in percentage.

suring 10.000 to 25.000 hectares. The increasing productivity (yield) is due to a number of factors. One is the application of agricultural technology such as "supra insus" and "Panca Usahatani." Another is the fact that most agricultural land in West Java is irrigated by water from the Jatiluhur Dam. Karawang is also known as a national buffer stock area of rice for the Jakarta population. The problem, however, is that even if there is a surplus, this does not mean that there is no food crisis in the area. The surplus is only in terms of production. Purchasing power is another matter, a problem faced by the population in Karawang since the eruption of the financial crisis in the second semester of 1997. A lot of factories and similar businesses have gone bankrupt. Many workers in the formal sector have been laid off. The agricultural sector could not absorb the formal sector. Thus, despite the production surplus, the population is not yet free of the food crisis.

Table 4.7 suggests that since the financial crisis, the volume of rice that Karawang could trade with the other regions (marketable surplus) has decreased by 48.6% from 370.000 tons in 1997 to 190.000 ton in 1998. This has been due to a decrease in net production and the harvested area, which has, in turn, caused a decrease in total production. A decrease in the production of dry

Table 4.7
An Analysis of Marketable Surplus
for Rice in Karawang, 1997-1998

Description	Marketable Surplus 1997	Marketable Surplus 1998
1. Harvested Area (Ha)	184,304.00	179.911
2. Production (ton GKP)	1,296,579.28	917.640
3. Production Losses (ton GKP)	213,546.56	151.135
4. Net Production (ton GKP)	1,083,032.72	766.505
5. Conversion GKP to GKG (86.59%)	937.798,03	663.716,68
6. Seed : 25 kg/Ha	4.607,60	4.497,77
7. Net Production (ton GKG)	933.190,43	659.219,23
8. Production equal to rice (65%)	606.573,77	428.492,50
9. Consumption *	235.879,64	237.996,64
10. Marketable Surplus (ton)	370.694,13	190.495,86

Source : Dinas Pertanian Dati II Karawang, 1999

Remarks *) Number of Population * Per capita Consumption

and unhusked paddy (GKP) means a decrease in dry paddy (GKG) production. The conversion rate from GKP to GKG is about 86.95% while the conversion of rice from GKG is about 65% . On the other hand, total consumption has increased on account of increasing population in Karawang.

4.5. Assets and Capital Accumulation : New Investment Decisions

Investment basically means cost accumulation for activities. In this case, investment can be of two types. The first type is investment related to farming or food crop planting activities. The second type is investment related to the marketing or trading of rice. Each investment decision is based on the farmers' rational consideration and expectation of profits and losses from farming activities. This can be done by revenue cost analysis. On the trading side, investment decisions can be reached by marketing margin analysis. An earlier description of this approach shows its usefulness in determining the proportion of the rice price that goes to farmers as producers (farmer's share), the marketing cost for each marketing institution, and the level of profit margin.

Analysis of profit and loss in farming activities can be done using the following methods: revenue cost (R/C) ratio, benefit cost analysis (B/C) ratio and an analysis of Net Present Value (NPV). However, since rice is a seasonal crop, R/C is the preferred tool of analysis. As we know, the R/C analysis can be used to measure production cost or expenses against revenue received. The production cost component consists of purchases of seeds, fertilizers, pesticides, labor and other expenses such as levies and taxes (PBB), irrigation service fee (ISF) and social cost (zakat). The revenue obtained from production (yield) of paddy is multiplied by the level of price received by farmers (farm gate) to get the R/C ratio.

Based on a comparison of returns and costs incurred by farmers, Lampung province has the higher R/C ratio compared to West Java and East Java farmers. This is because of the low production cost and high revenue received by Lampung farmers compared to their counterparts in West and East Java. To illustrate: the average yield of paddy in Lampung is 7 tons/ha. East Java, 6 tons/ha. and, West Java, 4-5 tons/ha. On the national level, the average R/C ratio is 2.80, which indicates that for each rupiah of production cost spent by farmer, the revenue return is 2.80 rupiahs. The R/C ratio for Lampung is 4.94; East Java, 3.27 and West Java, 8. Since the R/C ratio is greater than one, this indicates that paddy farming is profitable (see Table 4.8).

Capital used for farming comes in two forms: equity and debt (borrowing). Debt capital is none other than credit (KUT) needed to obtain farming inputs. The limitation of credit in some areas is the main constraint facing small farmers in particular. The amount of capital used for the farming activities and rice trading for each status level can be seen in Table 4.9.

The amount of farming capital needed by farmers is Rp 5 million. Most small farmers are not able to raise the amount on their own. This is the reason why they need credit. Table 4.10 shows the proportion of farm capital supplied by farmers themselves and the borrowings they need to do to raise the required production amount.

Table 4.10 also shows that on the average, 60.7 percent of respondents were able to raise capital from their own sources; 26.2 percent of respondents borrowed; while the remaining (13.1 per-

Table 4.8
Analysis of Return to Cost (R/C) Ratio for Paddy (Rp/Ha)

Item	West Java	East Java	Lampung	Average
Seed	99922.22	95403.20	101360.00	98955.75
<i>Fertilizer</i>				
- Urea	218222.22	294791.12	313800.00	283753.23
- K CI	149629.63	81569.08	181805.56	140515.12
- SP 36/ZA	211611.11	112590.35	373500.00	250660.22
Pesticide	150133.33	250219.47	81043.48	150381.32
Herbicide	62500.00	79919.58	46000.00	62383.45
<i>Labor:</i>				
Land preparation	24688.89	307170.03	200000.00	252717.30
Nursery	83000.00	44337.04	90000.00	64903.02
Planting	142000.00	117649.83	90000.00	112982.70
	207916.67	281489.90	81250.00	212467.73
Fertilizer	29200.00	32875.66	20000.00	31037.54
	29033.33	31791.01	30000.00	30624.62
ISF/Tax	110133.33	73672.91	22050.00	61314.99
Others	1530388.90		39545.45	899647.44
Total Cost (Rp)	3140044.40	1552008.70	1328448.00	1850886.10
Revenue (Rp)	5451000.00	6213001.40	6610000.00	5911853.60
R/C ratio	1.87	3.27	4.94	2.80

Source: Calculated from Field Data, 1999

Table 4.9
Working Capital according to Marketing Actors (in Rp 000)

No.	Marketing Actors	Capital Required (Rp 000.-)
1.	Farmers	5.000,
2.	Village Collector	9.350,
3.	Sub District Collector	19.290,
4.	District Collector	15.330,
5.	Millers (RMU)	53.150,
6.	Wholesaler	16.250,
7.	Bazaar trader	52.080,
8.	Retailer	5.500,

Source: Calculated from Field Data, 1999

Table 4.10
Source of Fund for Farming Activities by Respondents (%)

Sources of Capital	West Java	East Java	Lampung	Total
Equity	13,30	47,60	100,00	60,70
Debt	46,70	42,90	0,00	26,20
Mixed	40,00	9,50	0,00	13,10
Total	100,00	100,00	100,00	100,00

Source: Calculated from Field Data, 1999

cent) is a mix of own and borrowed capital. If we look at the areas covered by this study, we will see that all or 100% of the respondents in Lampung were their own sources of capital. In West Java, only 13.3% of farmers provided their own capital compared with East Java, which had 47.6 percent. Forty-seven percent (46.7%) of those who borrowed capital were from West Java while 42.9 percent were from East Java.

The general conclusion from this table is that majority of Javanese farmers have access to credit. This indicates that the farming credit allocation (KUT) covers only the Javanese farmer with access to the financial institution.

Table 4.11
Sources of Capital According to Marketing Actors (in percent)

Marketing Actors	Own Capital/ Equity (%)	Borrowing/ Debt (%)	Mixed (%)
Village Collector	71,4	5,7	22,9
Sub-District Collector	14,3	28,6	57,1
District Collector	66,7		33,3
Millers (RMU)	38,5		61,5
Wholesaler	87,5		12,5
Bazaar trader	73,3	3,3	23,3
Retailer	83,6	4,1	12,3

Source: Calculated from Field Data, 1999

Based on Table 4.11, most village traders and kabupaten collectors used their own capital to run their business during the period under study. Millers and kecamatan traders used a combina-

tion of equity and borrowed (credit) capital. By external sources, capital for rice trading came from banks, informal financiers, friends and relatives, and processors/traders, as indicated in the following Table 4.12. The table also shows that most of capital on credit came from banks, especially for big traders and processors or millers (RMU). Meanwhile, 50% (the biggest percentage) of re-

Table 4.12
Source of Borrowing Capital by Origin (%)

Marketing Actors	Bank	Informal	Relative	Family	Processor	Broker
Village Collector	36,4		27,3	9,1		18,2
Sub-District Collector	33,3		66,7			
Millers (RMU)	83,3			16,7		
Wholesaler	100					
Bazaar trader	50,0		50,			
Retailer	33,3	8,3		8,3	16,7	33,3
Total	45,5	2,3	25,0	6,8	4,5	13,6

Source: Calculated from Field Data, 1999

spondents got their capital from family sources. These were the sub-district collector/trader and Bazaar traders.

The process of arriving at farming investment decisions are affected by several factors. These include availability of capital (either through debt or equity) and accessibility of finance for farming activities or food security. These, in turn, are influenced by movements in bank interest rates and crop insurance levels. There is also the price policy in the rice production that either encourages or discourages farmers from producing more yield. Finally, there is the incentive system based on the granting of subsidies on farming inputs such as seeds, fertilizers and pesticides.

5. State Intervention on Rice Trading

This chapter examines the Indonesian state's intervention in rice trading, focusing primarily on relevant "regular" policies on food security and rescue policies such as the ongoing special market operation to cope with the current crisis. Government intervention in rice trading in Indonesia started in the late 1960s under the first Five-Year Development Plan (Pelita I) of the New Order Government of President Soeharto. Procurement systems involving imports and other trading activities performed by state institutions are analyzed in detail to obtain a more objective view of relevant issues. An examination of the "success story" that is the special market operation (Operasi Pasar Khusus or OPK) is conducted to provide a broader argument in favor of income transfers in the rice trade.

5.1 Government Laws, Regulations and Programs on Food Security

The most popular food policy in Indonesia is the floor price policy, which has been in place since the beginning of Pelita I. The objective of the policy is to protect farm producers by helping them get the best price for their produce especially during the harvest season. During such a season when there is excess rice supply, the price of the commodity usually plummets. To reduce losses for farmers, the government applied the floor price policy whereby it purchased the production surplus of rice farmers. The price stabilization policy is important because rice, being a staple food of the Indonesian people, is a political commodity. To run this program, the government established BULOG as a national logistic

agency for food, especially rice. BULOG initially served primarily as a purchasing agency for rice.

In 1969, the government passed a presidential decree (Kepres RI No. 11/1969) that changed BULOG's organizational structure and mission as a bufferstock holder, and added distribution and budgeting classification to its routine tasks. As a distribution agency, BULOG's function was to distribute not only rice but also other commodities such as sugar, wheat, soybeans, corn, peanuts and other food crops.

The ultimate aim of the government policy was to stabilize the price of rice through direct purchases of paddy from farmers. This had the effect of subsidizing both the consumer and producer regions to a point that kept price distortion at the farm level. Rice price was practically determined by the BULOG official.

From 1969 to 1971, the policy succeeded in stabilizing the price of rice. It stalled during the dry season of 1972 when rice production fell, causing the national buffer stock to be depleted and the price of rice to increase. Cooperatives and DOLOG failed to supply rice/paddy to consumers.

Government's intervention in the rice market continued under the Second Five-Year Development Plan (Pelita II), which aimed to keep food prices at levels beneficial to both consumers and producers while helping to improve nutrition. Under Pelita II, BULOG's function was expanded by Presidential Decree No. 39/1978 to include price stabilization not only of rice/paddy but also of wheat and other staple foods.

Pelita II was geared towards increasing not only rice production but also income and employment opportunities. Its ultimate goal was to diminish discrepancies in income distribution. The program was a response to the oil boom of 1973/74, which resulted in economic development for Indonesia that was lopsided in favor of urban areas. The government tried to reduce the income discrepancy between the urban and rural areas by purchasing paddy/rice from farmers through the village unit cooperative (KUD) and building a buffer stock for BULOG.

Pelita III was implemented in the wake of a long dry season that caused domestic rice production to fall below target. To meet the basic need of the population, the government resorted to im-

porting rice from other countries. It also implemented such programs as special intensification (Insus) and special operation (Operasi Khusus).

These programs were implemented by virtue of a presidential instruction (Inpres) on the importance of the staple food that was issued in 1974. This was followed by presidential instruction (Inpres) No. 20 in 1979 which mandated the improvement of community food nutrition.

This policy was strengthened during Pelita IV (1984/85-1988/89), which gave attention to achieving equilibrium between food supplies and food consumption and to decreasing infant mortality through the formulation of the welfare small norm (NKKBS).

In 1993, another presidential decree (Keppres Nomor 103 year 1993 Annex 2) was issued expanding BULOG's tasks to include price stabilization, maintenance of food security, imposition of quality controls for paddy (rice), wheat, flour, soybean and other food crops, including poultry feed. To implement these tasks, BULOG purchased the excess supply of paddy during harvest season and sold it by market operation to the consumers during off-season and when there was excess demand.

In 1995, the government issued presidential decree (Kepres) No. 50, 1995 enhancing the role of the national stock agency BULOG in price stabilization and in the management of food and animal feed supplies. This decree was an improvement over Kepres No. 103 1993) in that it covered the position, main task, function, organizational structure and work mechanisms of BULOG.

Kepres No. 50/1995 referred to BULOG as a non-governmental institution that is directly accountable to the president. It reiterated the main task of BULOG in price stabilization and inventory management for rice, sugar, wheat, flour, soybeans, animal feed and other staple food for consumers and producers. To implement this task, BULOG functioned as a procurement, distribution and supervising agency.

Presidential Decree (Kepres) No. 45/1997 simplified the position, main task, function, organizational structure, and working mechanisms of BULOG. The ultimate goal was to increase the agency's efficiency in managing staple food inventories and accelerating the commodity flow from producers to consumers. This decree was an improvement on Kepres No 50/1995, specifically

Annex 2, which mandates BULOG's main tasks as price stabilization and keeping food quality in accordance with government policy.

Presidential decree (Kepres) No. 19/1998 aimed to improve the effectiveness of BULOG as a manager of inventory for staple foods and in accelerating the commodity flow. Kepres No. 19/1998 sharpened the ability of BULOG in regulating price and managing and assuring the quality of food stocks.

Table 5.1 summarizes the government interventions and policies in rice trade, covering old and new policies of development and rescue.

5.2 State Procurement System: Import and Trading Activities

The primary objective of rice procurement by BULOG is to stabilize price in order to increase the farm production and farm income. The secondary objective is to accumulate rice stocks for the following purposes: as commitment stock for rationing to budget groups like civil servants and members of the military, and other government officers; as stabilization stock for the needs of market operation; as emergency stock for disaster and other social needs; and, as carry-over stock in preparation for the next planting season.

To guarantee the buffer stock, BULOG imports rice from other countries. The main supplier is Thailand. Others are Japan, Taiwan, the Philippines, Myanmar, and the United States of America (USA). BULOG sees to it that rice imports are delivered on schedule (during the off- or pre-planting season) to ensure a sustainable logistic system for fulfilling demand for staple food. Rice imports are targeted mainly for delivery to consumer areas where rice supply is at a deficit. These include Riau, East Kalimantan, West Kalimantan, North Sulawesi, South East Sulawesi, East Nusa Tenggara, East Timor, Maluku, and Irian Jaya.

Table 5.2 presents state procurement figures for the period of 1990-1999 in comparison with domestic rice production during the same period. The table suggests that the quantity of rice obtained through the state procurement system is quite small, not more than 5% of total domestic production. This is consistent with the trend discussed in previous chapters, where only 30 percent

Table 5.1
Policy Matrix of Government Intervention on Rice Trade

Policy	Contents of Policy	Law Basis
I. Direct Policy		
a) Floor Price Policy	Designates BULOG as a bufferstock holder for stabilization of rice price, especially during the harvest season.	Kepres No. 11/1969
b) Procurement of rice through KUD	Mandates participation of KUD in procurement of rice from farmers to ensure floor price policy implementation at the producers' level.	Inpres No. 4/1973
c) BULOG Price Stabilization, either at the Producer or Consumer Level	Mandates BULOG to stabilize price, supervise the supplier, assure food security and improvement of paddy (rice) quality.	Kepres No. 103/1993
d)	Strengthens BULOG capability to implement its mandated tasks, i.e., price stabilization and management of staple food stocks and animal feeds.	Kepres No. 50/1995
e) Organizational and Institutional Policy (position, main task, function and organizational structure of BULOG)	Enhancing the efficiency of BULOG in managing the inventory of rice and accelerating food commodity flow.	Kepres No. 45/1997
f) SSN : Social Safety Net	Increasing BULOG's effectivity in managing the inventory of food and accelerating the flow of food commodity from the government to target beneficiaries.	Kepres No. 19/1998
II. Indirect		
a) Mass Guidance (Bimas) and Mass Intensification (Inmas) Program	Increasing paddy production by subsidizing credit for fertilizer and other farm inputs through KUD.	Ministry of Agriculture (MOA) and Ministry of Finance (MOF)
b) Credit Liquidity of Bank Indonesia	Provision of funding support for BULOG rice procurement through liquidity credit from Bank Indonesia (Kredit Likuiditas Bank Indonesia (KLBI))	Bank of Indonesia
a) Supervision Program of Market Information		Minister of Agriculture Decree No. 01/Inst/TP.840/10/9

Source: Compiled from several sources (1999)

of rice production enters the domestic market, while 70 percent end up for farmers' own consumption. About 61 percent of domestic rice production come from Java and only few come from the other islands. This issue of rice production could turn into a serious threat on the procurement system once the production centers in Java, Lampung and South Sulawesi, experience socio-economic and environmental problems.

Table 5.2
State Procurement, Compared to Rice Production

Year	State Procurement (ton)	Domestic Rice Production (ton)	Procurement/ Production (%)
1990	1,270,455	29,366,000	4.33
1991	1,430,339	29,047,000	4.92
1992	2,564,913	31,356,000	8.18
1993	1,963,175	31,318,000	6.27
1994	938,347	30,317,000	3.10
1995	922,980	32,334,000	2.85
1996	1,431,053	33,216,000	4.31
1997	1,948,811	31,206,000	6.24
1998	249,078	30,340,000	0.82
April 1999	955,692	n.a.	n.a.

Source: Calculated from the SMFHA, 1999

In anticipation of such problems, the government has invested tremendously in providing the state procurement system with warehouses, offices and other infrastructures. It has also enlisted the support of rural cooperatives (KUD), which have been involved in the buffer stocking business since the early 70s. KUDs also helps the government in rice importation particularly in planning for quality and quantity, and appointing the contractor-traders.

The policy of importing rice has helped a lot in reducing the political pressure on the government. This is particularly true when there is a deficit in the national rice stocks. As mentioned previously, the imported rice is sold at subsidized prices, a policy that benefits consumers, especially those with higher incomes. This is probably the most significant disincentive for farmers to improve productivity.

But what has exposed the state procurement system to a lot of criticism is the lack of transparency in rice importation activities. During the Soeharto regime, big conglomerates such as the Salim Group and former President Soeharto's cronies were the number one rice importers. Only few companies had access to the state procurement systems. As a result, it has been extremely very difficult to obtain reliable data on private sector involvement in the state procurement system.

An investigation by Pilar Magazine showed that only 12 conglomerates were authorized by BULOG to import rice. About half of these companies were directly affiliated or closely identified with the Soeharto regime. These companies were able to land US\$800 million in contracts representing nearly two million tons of rice imports for fiscal year 1997/1998 alone. The six other companies were able to come in with only 400,000 tons of rice imports valued at US\$133,000. (Table 5.3).

Table 5.3
Rice Importing Companies for BULOG 1997/1998

No	Big Conglomerates	Owner	Volume (ton)	Contract Value (US\$ million)
1.	Timur Madu Sejati	?	100,000	29.50
2.	Airlink Resources	Siti Hutami	300,000	90.32
3.	Ginivy Trading	Sudono Salim	357,725	101.21
4.	Graphical Management	Sudono Salim	517,900	119.92
5.	Datam Nilam Latipson	Siti Hediati	35,000	29.92
6.	Calvin Service	Sudono Salim	1,147,000	349.59
7.	G. Premjee Trading	Kirit C. Shah	30,000	9.36
8.	Siam Rice Trading	Pitak Jirapinyo	50,000	17.25
9.	Thai Mapam Trading	A Yong (?)	12,000	4.16
10.	Dong Thap Commerce	A Yong (?)	20,000	6.10
11.	Interlink Asia	Sudono Salim	300,000	86.77
12.	Consortia World Trade	Dasuki Angko	225,000	67.12
	Total		3,094,625	911.22

Source: Pilar Magazine, No. 13, July 14, 1998

Another transparency issue that has confronted BULOG is that which is related to the fees earned by participating companies from rice import transactions. For instance, in 1997/1998, BULOG fixed the annual price of rice imports at US\$ 320 per

ton and paid US\$ 10-15 per ton additional fee for every contract to participating companies. In 1997-1999, the average CIF price of imported rice (25 percent Thai) varied according to quality and country of origin from US\$ 257 to US\$ 300 per ton. Thus, a two-million ton contract of imported rice given to Salim Group and Soeharto's cronies was able to generate for them an excessive fee or economic rents of much as US\$ 2 million. Company profits could have been more given the US\$25 per ton of price difference between average international price (US\$ 295 per ton) and the contract price (US\$ 320 per ton). The bigger the rice import volume, the higher the level of economic rent that these generated for the companies involved.

The lack of transparency in rice importation has contributed heavily to wastage and inefficiency in the handling of state funds. There is a need to review the state procurement system if efforts to reduce government monopoly in the rice trade are to be achieved.

The quantity of rice concerned here is actually quite small (only 10-20 percent) compared to total domestic rice production. It is also subject to fluctuation depending on the production and import performance. However, the cost of procurement tends to increase significantly. In fiscal year 1984/1985, procurement cost was only Rp 856 billion. This increased to Rp 1 trillion in fiscal year 1995/1996. The cause of increase in the last two fiscal years was low production due to *El Niño*. In fiscal years 1996/1997 and 1997/1998, total expenses for state procurement by BULOG further rose to Rp 1.4 and Rp 1.7 trillion, respectively.

Indonesian dependence on imported rice has been on the uptrend since 1995, on account mainly of the weather and political disturbances, which had prompted the government to increase subsidies to civil servants and the military, the so-called "budget group." Rice imports grew significantly from 1.3 million tons in 1995 to nearly 6 million tons in 1998. In 1996, the volume of imported rice exceeded the "psychological limit" of 2 million tons on account of the aforementioned reasons.

Table 5.4 presents the import performance of the Indonesian rice sector over five years and the respective annual change.

Another important aspect of the state procurement system that is worth examining is the involvement of a liquidity credit from the

Table 5.4
Quantity and Volume of Imported Rice, 1993-1998

Year	Quantity of Import (Ton)	Import Value (US\$ 000)	Change (%)
1993	24,317	7,196	-
1994	633,048	157,322	2,086.24
1995	1,307,875	514,476	227.02
1996	2,149,758	766,316	48.95
1997	349,681	108,932	-85.78
1998	5,783,000	n.a.	n.a.

Source: BULOG, 1999 (see Table 3.2)

Bank of Indonesia (KLBI). This liquidity credit is intended for the state procurement of rice and sugar, another commodity under BULOG monopoly. In 1998, the total amount of liquidity was Rp 5.9 billion, more than three times the amount in 1993. In January of 1999 or in the month of Idul Fitri, the amount was Rp 7.8 billion or more than 26 percent of the total KLBI earmarked for other uses and institutions during the period (see Table 5.5).

Table 5.5
Liquidity Credit from the Bank of Indonesia (KLBI) for the State Procurements on Rice and Sugar

Year	Amount Credit for Rice & Sugar (Billion Rp)	Share to total KLBI (%)	Change (%)
1993	1,846	14.39	-
1994	2,230	16.17	20.80
1995	2,734	15.99	22.60
1996	4,586	22.26	67.74
1997	5,595	22.42	22.00
1998	5,876	21.83	5.02
Jan 1999	7,781	26.30	-
Feb 1999	6,990	24.15	-10.17
Mar 1999	5,567	19.41	-20.36
Apr 1999	6,781	22.22	21.81

Source: Bank of Indonesia, 1999

This very high amount of liquidity credit is said be one of the main factors that caused BULOG's inefficiency. The most recent financial audit on BULOG in the period between April 1993-March 1998 conducted by Arthur Andersen indicates that weak monitor-

ing and internal evaluation also contributed to the inefficiency which resulted in losses reaching Rp 1.3 trillion. Specifically, the inefficiency has caused BULOG's debts to rise to Rp 611 billion and for the agency to incur losses from exchange rate fluctuations amounting to Rp 582 billion. (Chapter 6 provides a more complete discussion of this issue).

5.3. Special Market Operation : Social Safety Net

On July 1, 1998, in response to increasing food insecurity caused by the deepening economic crisis, the Government of Indonesia announced a new social safety net program called Operasi Pasar Khusus Keluarga Pra Sejahtera (OPK) - special market operations for poor households. BULOG has been tasked to implement this program, which is similar to general market operation in that the government also injects rice into commercial markets in order to stabilize rice price. The program is in collaboration with the State Minister of Social Welfare or the Agency for National Family Planning (BKKBN) and local governments in all of Indonesia's 27 provinces.

The original program design called for BULOG, through its provincial and district DOLOG offices, to make available 10 kilograms of medium-grade rice every month to the target households. The subsidized price for this rice has changed, especially during the extreme volatility of late August and early September 1998. On average, this monthly distribution now represents the equivalent of a cash transfer of about Rp 15,000 per household – less than 30% of the GOI-calculated poverty line for a household of one person, and less than 6% for a household of five.

The OPK program uses household-level data collected by the National Family Planning Agency (BKKBN) to identify the neediest households. BKKBN data focuses on five indicators of overall standard of living and well being – food intake, housing, clothing, and medical and religious practices. Households failing to meet a minimal standard on any one of these five variables are designated as "pre-prosperous families". The minimal standards include :

- Eating at least twice everyday
- Having a floor that is not primarily dirt

- Having different clothes for work and leisure
- Going to a medical clinic (not a traditional healer) when children are sick
- Following the fundamental practices of the family's religion

The original OPK allocation of 10 kilos is only a fraction of the normal monthly food requirement of most recipient households, which averages 1-1.5 kilos per day depending on family size. Nevertheless, even at the subsidized prices, the total payment required is out of reach of many in the target group. In particular, the requirement to pay for such a large amount of rice all at one time is inconsistent with the consumption pattern of the target group, who normally purchase their rice on a daily basis. Consequently, many of the target groups are only able to collect their OPK rice after borrowing from family or neighbors or selling small assets. At the national level, BULOG reports that the rice stock set aside for OPK is sufficient only for the next four to five months. Field reports from DOLOG suggest that there are no ongoing problems with stock or availability.

The OPK is a centrally designed program with national guidelines, and intended to be implemented uniformly in every region throughout Indonesia. In the field, it found that distribution methods vary from one region to another. It has been observed that in most cases, these variations are appropriate and effective responses to differing local challenges and conditions. In three provinces visited, most aspects of the implementation process - financing, payment schedules, storage and handling of rice, and the organizations responsible for each stage of the problem - have been tailored to the local conditions and geography of the area. And in these three provinces, the locally - initiated changes seem to be working reasonably well and are resulting in effective logistical implementation.

By the end of 1998, after six months of implementation, the OPK program was providing a monthly rice ration of 20 kilograms per family to approximately nine million households at more than 30,000 distribution points. Although the program was designed as an emergency-relief measure, it offers an alternative to rice price stabilization. In the near future, however, the challenge is to sharpen the cost-effectiveness of the program: to concentrate more

Table 5.6
The Special Market Operation (OPK) Target Numbers

Provinces	BULOG (Central Gov)	Regional Data	KPS (BKKBN)
DI. Aceh	157,914	403,177	157,914
North Sumatera	157,017	148,532	157,017
Riau	105,666	141,468	105,666
West Sumatera	16,348	243,257	16,348
Jambi	58,223	58,223	58,223
South Sumatera	208,332	591,394	208,332
Bengkulu	45,981	89,070	45,981
Lampung	447,054	642,664	447,054
DKI Jakarta	23,389	48,555	23,389
West Java	708,951	3,115,832	708,951
Central Java	2,661,980	3,097,963	2,090,827
DI Yogyakarta	111,124	122,465	111,124
East Java	1,987,103	2,224,038	1,178,107
West Kalimantan	69,802	75,591	69,802
East Kalimantan	25,663	147,006	25,663
South Kalimantan	21,990	27,246	21,990
Central Kalimantan	32,221	150,487	32,221
North Sulawesi	67,051	81,058	67,051
Central Sulawesi	104,568	227,051	104,568
South-East Sulawesi	72,089	67,702	72,089
South Sulawesi	78,114	105,885	78,114
Bali	12,133	44,927	12,133
West Nusa Tenggara	176,975	197,115	176,975
East Nusa Tenggara	384,596	449,477	384,596
Maluku	98,900		98,900
Irian Jaya	142,823	260,087	142,823
East Timor	95,719	97,876	95,719
Total	8,071,726	12,858,146	8,071,726

Sources: 1) BULOG report on 22 October 1998,
2) BKKBN report on 16 September 1998

of the assistance in urban areas, tighten eligibility criteria, increase public awareness, improve beneficiary reporting, and ensure that the program is extended and placed on a financially sound footing. To reach the large numbers of excluded urban poor, the government plans to involve NGOs in the distribution of subsidized foodstuffs. A better public/private partnership in relief distribution could extend the reach of the OPK effort as long as strict standards of program accountability are maintained.

The crisis has drawn attention to the fact that assuring food security is largely an income problem, that income levels can change rapidly, and that even some of the most prosperous parts of the country have large numbers of households without food security. A variety of data sources could be used to monitor food security status and to design appropriate medium-term measures for providing assistance to vulnerable households. These might include some combination of targeted OPK effort, ration shops, village granaries, food stamps, and subsidized food stalls.

5.4. Incentives, Barriers and Implication to farmers

The narrowing of BULOG's mandate to rice left the agency with large stocks of wheat, sugar, soybeans and other foodstuffs, but attempts to sell these stocks have been frustrated by weak domestic demand and the availability of imports at a price well below BULOG's procurement price. Although rice trade has been liberalized and rice tariffs are to be fixed at 5 percent, the government is still attempting to use a floor price and market operations program to support producer incomes and stabilize consumer prices. The government has failed to understand that prices cannot be free to follow the movements of world markets while being kept stable domestically.

Rice, of course, is far too important a commodity in Indonesia to allow hasty and inconsistent changes in policy. The country needs to seek a comprehensive and thoughtful solution to these issues. In the near term the government must focus its attention on ensuring that basic food requirements are met. Thereafter, the main challenge is to stimulate economic recovery. Agriculture, as one of the least distressed sectors of the economy, offers considerable hope for the future, especially for farmers as rice producers. Within

agriculture, rice production offers significant scope for growth, employment generation, and productivity improvement. Priority should be accorded to crafting incentives conducive to sustained agricultural growth and rural development.

Historically, the government has tried to protect rice farmer incomes. Since demand is price-inelastic and shock primarily affects domestic supply, government attempts to stabilize producer prices tended to stabilize farm incomes and improve the environment for agricultural innovation.

But the raising of the paddy floor price from Rp 1,000/kg to 1,500/kg in December 1998 set the price at a level that was more than 30 percent higher than the prevailing import parity price. As a result, BULOG found it difficult to procure paddy in the first quarter of 1999. Although the agency has enough credit to buy nearly 1.8 million metric tons on the domestic market, it is doubtful that it will be necessary to procure so much to keep farm prices firm. A combination of a smaller than expected crop, build-up of farm stocks, and wet weather has kept prices high.

Although there is merit in using a floor price scheme to protect farm incomes, certain principles should be adhered to. The floor price should be a minimum guarantee price, and BULOG should act as the buyer of last resort. Accordingly, the floor price should not be set above world market-import parity prices, adjusted for expected inflation.

At present, there are few channels for transferring income to small rice farmers other than agro-input subsidies. Over time, however, it may be possible to develop institutional mechanisms to support producer incomes, without distorting prices. Block grants to rice-producing villages, for example, might be explored as an alternative to floor price protection.

The effectiveness of appropriate floor prices hinges on the effectiveness of domestic procurement operations. The objective should be to defend the floor price in a commercially viable manner, with clear criteria for qualified suppliers of public stocks. Procurement credit should only be channelled through qualified suppliers. Preferential terms for cooperatives and NGOs should be phased out.

In the medium term, the government should consider developing other programs to protect farmers from the risks of the

post-harvest price declines. One option would be to create a warehouse receipts system, in which farmers would pre-sell a portion of their crop and use warehouse receipts as collateral to finance future production.

6.

Synthesis of Sound Policies and the Market Mechanism

This chapter is a summary of sound policies and market-friendly mechanisms for rice trading in Indonesia. Focus is on widely known policies like farm income support (aka floor price policy), targeted food subsidies (aka market operation), price stabilization (which is the more general term for BULOG's price stabilization mandate), public stocks (known as buffer stock arguments), and rice marketing policy (known as enhancing information quality of the private rice market). An examination of the issue of market-friendly mechanisms is geared towards surfacing a price-responsive mechanism especially when the market is not functioning properly.

This chapter begins with a section on the interaction between the private sector and the state in rice trading based on the analysis presented in the previous chapters. The workability of market mechanisms is then examined based on the implementation of the state policies to assure food security and to achieve the objectives of price stability. Potential area of intervention policy is discussed in relation to suggest future policies on rice trading in Indonesia

6.1 Private Sector and State Interaction in Rice Trading

Interaction between the private sector and the state in rice trading occurs when the commodity is traded through the government or other institutions which have direct and indirect relationship with the government. Such interaction can be observed at all levels of the marketing system where parties enter into a business relationship. How one party dominates the others depends a lot

on the pattern of marketing system taking place in the particular areas.

Based on the marketing channels of rice presented in Chapter 4 (Figure 4.1 page 4-5) of this report, the private sector is generally the more dominant party in rice trading because it accounts for more than 80 percent of the total volume of traded rice in Indonesia. The first and second patterns are clearly private sector trading activities, where the market mechanism is supposed to work properly. The third and fourth patterns partially involve interaction between the private and state sectors. In the third pattern, interaction occurs only very partially, especially when involving rural cooperatives (KUD) that have been assigned by BULOG to take part in state rice procurement operations. In this case, KUD has to follow certain rice requirements set by BULOG such as 14 percent water content, 17 percent broken, 5 percent dirty, etc., in order to be considered as a business partner in the food security business. Farmers often do not bother to fulfill these requirements and rely on a private channel in marketing their rice products. This is especially true in the harvest season – such as during this study's period of observation – when the farm-gate price was well below the floor price because of excess supply in the market.

The fourth pattern also involves private and state sector interaction, especially after the paddy grain is milled and transformed into rice. As in the third pattern, KUD also has to follow Bulog requirements. Private sector involvement stops at KUD level because the rice has to go to the state or BULOG's warehouses where further rice marketing decisions are already within the province of the government. The KUD rural cooperatives also need to be left alone to develop their own rice-milling capacities and thus generate more profits from rice trading.

Rice traded through state channels comprise only 20 percent or less of the total volume of rice traded domestically. According to Figure 4.1, the fifth pattern involves pure state marketing whence trading activities are mostly for state procurement purposes, for government distribution to the "budget group" and for market operation to maintain price stability. The sixth pattern involves partial interaction between private and state sectors, especially when KUD cooperatives obtain the rice from farmers'

groups and from collector traders selling rice to Bazaar traders in the market place. In this case, KUD plays a very vital role in forming the market-clearing price of rice in the private sector channel.

Since the rice being traded through private channels is much higher (80 percent or more) than that which flows through the state channel, the market-clearing price theoretically is more dominant as well. However, this is not always the case. Farmers do not always benefit from such a market mechanism because of the price-taker status in rice trading. It might be true that farmers as producers are free to choose which marketing channel they want to use. However, because most farmers have a special relationship with collector traders that make them socially dependent on the latter, such freedom is not always exercised. Under the current system, a competitive market structure in rice distribution and fair trading in the rice market are ideal conditions that are difficult to achieve in the near future.

In the case of imported rice, all of which go through the state channel, interaction among players is more complicated because of the lack of transparency in the appointment of participants. Under the reformed transition government, BULOG has been tasked to adopt an internationally competitive bidding mechanism for the procurement of rice stocks. As mentioned previously, big companies that have been working together with BULOG as appointed traders have generated abnormal profits. These companies operate only on a fee basis. They also earn from price differences between the actual world price and BULOG's contract price. These companies further strengthen their hold on the rice distribution business by forging business deals with smaller "downline" companies within their own network.

Table 6.1 presents the estimated amount and the sources of inefficiency that beset BULOG. The information here is based on the financial audit that the transition government under President B.J. Habibie report had commissioned world-renowned Arthur Andersen Consulting to conduct on BULOG for the period April 1993 to March 1998.

The audit report valued the total inefficiency incurred by BULOG during the five-year period at Rp 6.7 trillion or US\$ 2.0 billion. Sources of inefficiency that resulted in losses amounting to

Table 6.1
Estimated Amount and Sources of Inefficiency in BULOG
(Rp trillion)

Itemized Activities	Sources of Inefficiency in BULOG			
	Unfair Trading Requirements	Illegal Practices	Weak Monitoring	Total
Procurements	2.1	-	-	2.1
Transportation	0.1	-	-	0.1
Warehouses	-	-	0.7	0.7
Processing	0.2	-	-	0.2
Sales and Distribution	0.1	1.8	0.3	2.2
Supporting Services	0.1	-	-	1.4
Total	2.6	1.8	1.0	6.7

Notes: During the period of audit (April 1993-March 1998), BULOG also handled several commodities other than rice, such as sugar, wheat flour, cooking oil, soybean, soymeal, garlic, etc.

Source: Government Announcement, October 11, 1999

Rp 2.6 trillion for Bulog were identified as follows: unfair trading requirements in almost all activities involving the private sector such as procurements, transportation, sales and distribution and supporting services. More losses were also incurred as a result of illegal practices and weak monitoring by BULOG throughout the country. Illegal practices alone accounted for Rp 1.8 trillion in losses from inefficiency in sales and distribution involving the private sector.

It appears from the foregoing that state intervention in price stabilization (through interaction between BULOG and the private sector) is no longer necessary under present conditions. Rice distribution using private channels is now much better than 30 years ago when BULOG came into being. One reason for this is the fact that road and irrigation infrastructures have been significantly improved and the economy is now more diversified. Another reason is that there is now greater market integration (both in terms of flow of goods and information) as a result of the improvement of competition in rice trading and marketing.

The role of government therefore should now be focused on implementing rules and regulation that encourage local markets

to be more competitive and integrated with regional and international markets. Moving away from a system of administrative trade controls and agricultural market restrictions is not an easy task. But this must be done if the ongoing challenges relating to food security, the food production system, agricultural diversification, agribusiness and regional development are to be met and hurdled successfully.

6.2 Workability of Market Mechanism

In the coming years, private sector involvement in rice trading should be focused on the workability of the market mechanism. There has been a public debate on whether or not the market mechanism in rice trading is still working. The policy on special market operation is intended not only to help the majority of the people to cope with the crisis but also to ensure that the market mechanism is working properly. Many are in favor of the continued implementation of the price stabilization policy to promote food security particularly in the current crisis when the announced floor price is often too low to catch up with real wage, factor and general price increases. The floor price policy benefits high-income urban middle-class consumers but discourages rice farmers from improving their productivity.

On the other hand, special market operations have turned out to be good only for relief purposes. It has not been effective as a market mechanism for rice trading during the current crisis. The continued depreciation of the Rupiah and the widening gap between international and domestic prices has caused the policy of rice importation for national buffer stocking purposes to wreak havoc on the state budget.

The government thus needs to forge a policy that keeps prices stable and affordable, protects farmers from excessive price declines during the harvest season and provides an adequate incentive for private traders to hold rice and ensure smooth supplies for the rest of the year. In the near term, BULOG's farm-gate procurement price has relatively little direct effect on marketing margins because only a small volume of rice is procured domestically. However, if agricultural production recovers - as expected

this year - it is important that the margin between BULOG's farm-gate procurement price and retail sales price be enough to provide adequate incentive to farmers and private traders. Otherwise, private stockholdings will not be viable and the market mechanism will fail. (Tabor, et al. 1998).

Another way of ensuring the workability of the market mechanism in the international market is to start liberalizing the importing process. The transition government of B.J. Habibie encouraged BULOG to adopt an international competitive bidding mechanism in state procurement for national rice stocks. In addition, the Habibie administration opened rice importation to general importers instead of just limiting it to BULOG's appointed traders. The transition government also encouraged small and medium enterprises (SMEs) - and cooperatives - to play a more dominant role in the economy, including the rice distribution business. Cooperatives and SMEs need to show that they are capable of developing and sustaining an alternative rice distribution system in Indonesia in the coming years.

6.3 Potential Areas of Policy Intervention

Should government intervention in rice trading be maintained in the near term, it has to be in accord with the latest deregulation program approved by the World Bank on December 1, 1998. This program has the following features:

- (a) Liberalization of the rice market, whereby prices are determined by market mechanisms and general importers are permitted to import rice;
- (b) Special market operations for rice at subsidized prices are to be targeted only to food insecure people, defined as those with incomes below the official poverty line;
- (c) The rice subsidies are to be reduced. Some reports have suggested that the new rates will be no more than 20 percent;
- (d) All food subsidies for commodities other than rice are to be eliminated;
- (e) Fertilizer subsidies (for Urea, Sp-36, and KCl) are to be eliminated and their prices determined by market mecha-

nism.

Some of these measures are already being implemented (beginning FY 1999/2000), not without shock to the economy. Features (a) and (d) do not involve border interventions like tariffs or import subsidies but they have triggered heated debates on trade liberalization, particularly on the issue of its adverse effects on the sugar industry. These measures have effectively reduced the scope of BULOG's work. Rice subsidies are to remain but at a much reduced rate.

Policy intervention in the near future should be geared towards building the capacity of BULOG and related government institutions to arrive at decisions that are in tune with the rapidly changing world environment. The rigidity of the bureaucracy has prevented the rice import market to operate more efficiently, especially since BULOG does not have enough autonomy and independence on the overall political system. Inaccuracies in data forecasting on rice import needs should be corrected and never repeated.

6.4 Areas of Policy Reforms

Following are some policy reform areas that need to be addressed to enhance food security and rice trading in the future. These areas are farm income support; targeted food subsidies; price stabilization; public stocks; and, private rice market information.

(1) Farm Income Support

The initial objective of the policy is to stimulate agriculture development by: (i) guaranteeing minimum prices and keeping the rice market competitive to stimulate productivity, growth and increase producer income; and, (ii) operating the public rice procurement program in a sound, commercial manner, and encouraging efficient farm-level stockholding.

Following are some short-term policy reforms that may be considered:

- (a) The rice floor price should be used as a minimum guarantee price and BULOG should be the buyer of last resort.

The price should not be set above expected world market paddy prices adjusted to inflation.

- (b) Procedures for public procurement need to be placed on a commercial basis, with clear criteria defined for qualified suppliers of public stocks. Procurement credit should only be channeled through qualified suppliers. Procurement price premium for the coops should be phased-out

Medium-term policy reform proposals are as follows:

- (a) Examine options for introducing producer income support that is WTO-consistent and delinked from price support.
- (b) Alternative means of stimulating private price stabilization should be explored, such as the warehouse receipt system suggested by the World Bank.

(2) Targeted Food Subsidies

The objective of the policy is to ensure minimum food consumption levels of the poor and those hard-hit by the crisis.

Short-term policy reform proposals are as follows:

- (a) Expand urban coverage, partly by adding an NGO-based subsidized rice distribution effort in urban and peri-urban slums;
- (b) Limit eligibility criteria to State Ministry of Social Welfare (BKKBN) indicators that capture household food insecurity only;
- (c) If possible, extend program duration to the coming fiscal year;
- (d) Mount a public information campaign, establish a dispute resolution mechanism and improve reporting on beneficiaries reached;

In the medium-term, the following may be considered:

- (a) Preparation of a food insecurity monitoring system, either built on the BKKBN data or measures of Movement Towards Improving Nutrient Levels for the Community (UPGM).

- (b) Examine alternatives for targeting assistance to food insecure households after the OPK program concludes. Such alternatives might include a more targeted OPK effort, ration shops, village granaries, food stamps and subsidized food stalls

(3) Price Stabilization

The major objective of the policy is to maintain a level of price stability for rice that can reduce risks for consumers, producers and traders

Short-term policy reforms policy can be formulated as follows:

- (a) BULOG's price stabilization mandate to be limited to rice;
- (b) Enforce the September 1998 and December 1998 regulations which allow general importers to import rice;

Medium-term policy reforms can be formulated as follows:

- (a) Liberalize rice exports;
- (b) Assess the possibility of a shift to a variate levies system to help stabilize domestic rice prices;
- (c) BULOG to be authorized to undertake more frequent market operations and to utilize options and other financial instruments to reduce costs and enhance domestic price stability;
- (d) Stock distribution should be authorized to bonafide distributors only

(3) Public Stocks

The objective of the policy is to assure that public stocks are managed efficiently and to protect the country from unexpected supply by maintaining stocks.

Short-term policy reforms can be formulated as follows:

- (a) Sell off non-rice stocks of BULOG by a target date through sales to qualified private wholesalers and processors;

Medium-term policy reforms can be formulated as follows:

- (a) Gradually reduce the provision of rice rations to civil ser-

wants to reduce public stock requirements

(4) *Rice Marketing Policy*

The objective of the policy is to enhance the information quality of the private rice market.

Short-term policy reforms can be formulated as follows:

- (a) BULOG to establish an information release and outreach effort.

Medium-term policy reforms can be formulated as follows:

- (a) Establish an appropriate set of grades and standards for the traded rice.
- (b) Deregulate the permit requirements for rice mills, and encourage construction of modern, and cost-effective mills.

(4) *BULOG Management and Tasks*

The objective of the policy is to ensure that the rice policies listed above are implemented as efficiently and effectively as possible.

Short-term policy reforms can be formulated as follows:

- (a) BULOG's mandate to be limited to rice market operations
- (b) A study of rice market policies and restructuring options must be completed.
- (c) Government studies of rice policy options to generate information for making informed policy choices on rice stabilization approaches.

Medium-term policy reforms can be formulated as follows:

- (a) Design a plan for corporatizing BULOG. The plan should address BULOG's balance sheet, and the structure, organization and management of BULOG operated as a commercial entity.
- (b) Restructure BULOG to shed excess assets.
- (c) After BULOG is able to operate successfully as a commercial rice policy implementing enterprise, establish a plan for privatizing BULOG.
- (d) As a commercial entity, BULOG should enter into annual performance contracts with the government to satisfy pub-

lic rice policy tasks.

In addition, a food security policy that relies more on liberal trading arrangements is both possible and desirable. On the one hand, this will involve deregulation of the main agricultural input and output markets. On the other hand, it will require the development of new competencies, within government, to stabilize food prices and ensure adequate food availability by proper management of import tariffs for the major grains. In addition, the policy objectives could be achieved by encouraging private food stock management, by redoubling efforts to promote technological innovation in the food sector, by opening up new regions to food production through irrigation, and by building effective food markets in the poorer villages. These policy instruments should be in consonance with the spirit of capacity-building at the local level and decentralized decision-making process in the food and agricultural sectors.

Even though Indonesia has agreed to liberalize agricultural trade and marketing within the framework of the World Trade Organization (WTO) Uruguay accord, the ASEAN Free Trade Area (AFTA) accord, and the various Asia-Pacific Economic Commission (APEC) accords, progress in this direction has been scant. The issues then rely on the question of whether or not free trade results in more stable prices. If one accepts that stability in staple food prices is a goal worth pursuing, perhaps free markets would provide more stability than the current set of policies in many ASEAN countries.

Dawe (1997) suggests two important factors to consider before accepting the arguments. On the one hand, it is argued that many countries currently maintain policies that insulate the domestic market from the world market. These insulation policies make world markets unstable than they otherwise would be. Therefore, elimination of these policies should help to make world prices more stable. On the other hand, it is also recognized that reform of agricultural policies in the United States and Europe would lead to reduction of grain stocks. Lower levels of stocks would place more of a burden on price changes to absorb the effects in production. This factor should tend to make world prices unstable in the future. The net effect of these two influences is uncertain, so that the world grain prices could be either more or less unstable in

a free trade world.

For Indonesia with a very small portion of rice traded, domestic price stability - instead of world price - is the more appropriate basis of comparison in assessing the policy changes in the direction of free trade might affect welfare. One should note that changes in government stocks do not necessarily require adjustments in prices, because the government policy does not have to be governed by profit and utility maximization. Therefore, government stocks can potentially absorb production fluctuations without forcing consumers and traders to adjust. Under free trade, there would be no government stocks so that any fluctuations must be absorbed by changes in private consumption or stocks. Unless private stocks become significantly more sensitive to price changes (under free trade), then consumption will have to bear more of the adjustments. Finally, there is no compelling case against price stabilization for staple foods, because arguments against protectionism are not arguments against stabilization.

7.

Concluding Remarks: Policy Recommendation

This chapter summarizes the findings of this study on "food security and markets in Indonesia: state and private sector interaction in rice trade". As mentioned, the objective of this research is to produce policy proposals for promoting the development of sustainable and dynamic rice-producing sectors capable of improving food security and markets in the country. This report is mainly on data taken from field investigations, in-depth interviews and desk analysis. The field investigations were conducted in four provinces of Indonesia, namely, West Java, East Java, Lampung and DKI Jakarta, from May to June 1999. Direct interviews, using a traditional questionnaire, were conducted with collector traders, rice milling units, wholesalers, retailers and farmers in study locations in the four provinces. An open-ended questionnaire was used to interview policy-makers and government officials, researchers and university faculty members.

7.1 Summarized Conclusions

Food Security

The findings suggest that Indonesia is now confronting one of the most serious food security episodes of the post-independence period. In terms of food availability, the primary cause of the problem is the long drought of *El Niño* and forest fires which affected the production systems; and the high inflation and great depression arising from the financial and economic crisis, which has lowered purchasing power and heightened the poverty level.

These food supply shocks arose after several years of slow, below expectation growth in food production. In response, the gov-

ernment has sharply increased food imports to fill domestic demand gaps. However, the current economic collapse has also sharply increased the numbers of the food insecure. Many families with income marginally below the poverty line in 1996 have found that they can no longer keep pace with the rapidly rising prices of essential commodities. Some areas that were not initially poor have been hit so hard by the crisis. People in these areas are now relatively poorer than those in other areas long classified as poor. Areas of West Java are a very good example of this phenomenon. The greater Jakarta area (known as Jabotabek - Jakarta, Bogor Tangerang, and Bekasi), which was well off before the crisis, has been among the hardest hit by the crisis.

Rice Trading

The volume of rice trading in Indonesia is quite small. Only 30 percent of rice production enters the domestic market while 70 percent is retained as farmers' own-household consumption. About 80 percent or more of the 30 percent of domestic market volume is traded through private channels while the remaining 20 percent or less is traded through government channels. About 61 percent of domestic rice production comes from Java and only a few come from the other islands. This issue of rice production could turn into a serious threat to the procurement system once the production centers in Java, Lampung and South Sulawesi, experience very high fluctuation in price due to environmental and socio-economic problems. Private sector involvement in rice trading is as old as trading activities in general and is far more dominant than state involvement. Government intervention in rice trading in Indonesia started only in the late 1960s when Indonesia faced a serious threat to its food security due to an economic recession.

Private Actors

Players in Indonesia's rice trading industry include collector traders, rice milling units, wholesalers, bazaar traders, and retailers. The business scale of these actors varies from the household and small-scale trader levels to the level of conglomerates which control rice-milling units, wholesalers, Bazaar traders and retail-

ers. Consequently, the level of business, market share, marketing power and access to market information, sources of capital and government policies, also varies significantly. Most of these traders have been involved directly and indirectly with the government policies on price stabilization and rice distribution and marketing system. These actors may have dealt both directly and indirectly with a larger number of producers or rice farmers under special patterns of transaction. Only few of the actors, especially rice milling units and wholesaler traders, have direct access to the retail market of rice and thus, to the largest number of rice consumers.

Actors with limited market and information access generally could not accumulate a large amount of capital. The scale of their business has remained small since start-up. The opposite is true for those engaged in larger-scale rice trading. Most existing large-scale rice milling units and wholesalers started their businesses at the household level in the 1970s and 1980s. Few of them were involved with the government policies on rice procurement and import activities through special arrangements with BULOG. These businesses developed very rapidly in the 1990s in line with the tremendous increase in rice consumption in the country. Profits from the rice trade contributed further to the development and such businesses could now generate new investment for the purpose of achieving economies of scale. In the current economic crisis, such big businesses have the capacity to survive and even grow further.

State Procurement System

State intervention in Indonesian rice trading comes mainly in the form of buffer stocking and special market operations for the purpose of stabilizing the price of rice during the harvest season and providing for the food insecure during an economic crisis such as the one now besetting the country. In this work, the state has been helped by rural cooperatives (KUD) which absorb the rice production surpluses during the harvest season and by private traders who are appointed by the government to import rice during the off or lean season.

Rice imports have done a lot to reduce the political pressure on the government. It has also benefited higher income urban con-

sumers who are able to access cheap highly subsidized rice imports. The practice, however, has discouraged rice farmers from improving their productivity. Another thing going against the state procurement system is the transparency in the appointment of private importers of rice stocks. During the Soeharto regime, big conglomerates such as Salim Group and former President Soeharto's cronies dominated rice importing activities. Only few companies had special access to the state procurement system, one reason why it has been extremely difficult to obtain reliable data on the private sector's involvement in the state procurement system.

Private Sector-State Interaction

Private and state sector interaction take place in the marketing channels particularly after the paddy grain has been milled and transformed into rice. Rural cooperatives (KUD) here also follow BULOG requirements on rice stocks. The rice being traded through the state channel is only 20 percent or less of total volume of rice traded domestically. Partial interaction between the private and state sectors also occurs when KUD obtain the rice from farmers and from collector traders who are selling to bazaar traders in the market place. In this case, KUD plays a vital role in forming the market-clearing price of rice in the private sector channel.

Since the rice being traded through private channels is much higher (80 percent or more) than that which goes through the state channels, the market-clearing price theoretically is more dominant. However, this is not always the case. Farmers most often, do not benefit from such a market mechanism because of the price-taker status in rice trading. It might be true that farmers as producers are free to choose which marketing channel they want to enter. However, because most farmers have a special relationship and are therefore socially dependent on collector traders, such a freedom cannot always be maintained. A competitive market structure for rice distribution and fairer trade in rice market is an ideal condition that is difficult to achieve under present conditions.

In the case of imported rice, all of which go through state channels, private sector and state interaction is more complicated because there is a lack of transparency in the appointment of traders

who can engage in rice importation. Under the transition government of B.J. Habibie, BULOG was assigned to adopt an international competitive bidding mechanism in state procurement for national rice stocks. During the Soeharto regime, big companies which were working with BULOG as appointed traders generated abnormal profits. These companies operate only on a fee basis and realize further earnings from price differences between the actual world price and BULOG's contract price. These companies further strengthened their hold on the rice trading industry by forging business deals with smaller "down-line" companies within their own networks.

7.2 Policy Recommendations

6.4 Areas of Policy Reforms

Following are some policy reform areas that need to be addressed to enhance food security and rice trading in the future. These areas are farm income support; targeted food subsidies; price stabilization; public stocks; and, private rice market information.

(1) Farm Income Support

- (a) The rice floor price should be used as a minimum guarantee price and BULOG should be the buyer of last resort. The price should not be set above expected world market paddy prices adjusted to inflation.
- (b) Procedures for public procurement need to be placed on a commercial basis, with clear criteria defined for qualified suppliers of public stocks. Procurement credit should only be channeled through qualified suppliers. Procurement price premium for the coops should be phased-out
- (c) Examine options for introducing producer income support that is WTO-consistent and delinked from price support
- (d) Alternative means of stimulating private price stabilization should be explored, such as the warehouse receipt system suggested by the World Bank.

(2) Targeted Food Subsidies

- (a) Expand urban coverage, partly by adding an NGO-based subsidized rice distribution effort in urban and peri-urban slums.
- (b) Limit eligibility criteria to State Ministry of Social Welfare (BKKBN) indicators that capture household food insecurity only.
- (c) If possible, extend program duration to the coming fiscal year.
- (d) Mount a public information campaign, establish a dispute resolution mechanism and improve reporting on beneficiaries reached.
- (e) Preparation of a food insecurity monitoring system, either built on the BKKBN data or measures of Movement Towards Improving Nutrient Levels for the Community (UPGM).
- (f) Examine alternatives for targeting assistance to food insecure households after the OPK program concludes. Such alternatives might include a more targeted OPK effort, ration shops, village granaries, food stamps and subsidized food stalls.

(3) Price Stabilization

- (a) BULOG's price stabilization mandate to be limited to rice.
- (b) Enforce the September 1998 and December 1998 regulations which allow general importers to import rice.
- (c) Liberalize rice exports.
- (d) Assess the possibility of a shift to a variate levies system to help stabilize domestic rice prices.
- (e) BULOG to be authorized to undertake more frequent market operations and to utilize options and other financial instruments to reduce costs and enhance domestic price stability.
- (f) Stock distribution should be authorized to bonafide distributors only.

(3) Public Stocks

- (a) Sell off non-rice stocks of BULOG by a target date through sales to qualified private wholesalers and processors.

- (b) Gradually reduce the provision of rice rations to civil servants to reduce public stock requirements.

(3) *Rice Marketing Policy*

- (a) BULOG to establish an information release and outreach effort.
- (b) Establish an appropriate set of grades and standards for the traded rice.
- (c) Deregulate the permit requirements for rice mills, and encourage construction of modern, and cost-effective mills.

(4) *BULOG Management and Tasks*

- (a) BULOG's mandate to be limited to rice market operations
- (b) A study of rice market policies and restructuring options must be undertaken to generate information for making informed policy choices on rice stabilization approaches.
- (c) Design a plan for corporatizing BULOG. The plan should address BULOG's balance sheet, and the structure, organization and management of BULOG operated as a commercial entity.
- (d) Restructure BULOG to shed excess assets.
- (e) After BULOG is able to operate successfully as a commercial rice policy implementing enterprise, establish a plan for privatizing BULOG.
- (f) As a commercial entity, BULOG should enter into annual performance contracts with the government to satisfy public rice policy tasks.

In addition, a food security policy that relies more on liberal trading arrangements is both possible and desirable. On the one hand, this will involve deregulation of the main agricultural input and output markets. On the other hand, it will require the development of new competencies, within government, to stabilize food prices and ensure adequate food availability by proper management of import tariffs for the major grains.

The policy objectives could be achieved by encouraging private food stock management, by redoubling efforts to promote technological innovation in the food sector, by opening-up new regions to food production through irrigation, and by building ef-

fective food markets in the poorer villages. These policy instruments should be in consonance with the spirit of capacity building at the local level and decentralized decision-making process in the food policies.

Even though Indonesia has agreed to liberalize agricultural trade and marketing within the frameworks defined under the World Trade Organization (WTO) Uruguay Accord, the ASEAN Free Trade Area (AFTA) Accord, and various Asia-Pacific Economic Commission (APEC) accords, progress in this direction has been scant. For Indonesia with a very small portion of rice traded, domestic price stability - instead of world price - is a more appropriate basis of comparison in assessing the policy changes in the direction of free trade might affect welfare. Government stocks can potentially absorb production fluctuations without forcing consumers and traders to adjust. Under free trade, there would be no government stocks so that any fluctuations must be absorbed by changes in private consumption or stocks. Finally, there is no compelling case against price stabilization for staple foods, because arguments against protectionism are not arguments against stabilization.

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Annex A
Data on Rice Farmers



Table A1
Sample Distribution of Farmer

Province	Sample	%
West Java	15	24.60%
East Java	21	34.40%
Lampung	25	41.00%
Group Total	61	100.00%

Source: Indef's Survey, 1999

Table A2
Farming Experience (year)

Experience (Yr)	Number	Percentage
3	1	1.60%
4	1	1.60%
5	2	3.30%
7	1	1.60%
10	3	4.90%
15	4	6.60%
18	4	6.60%
20	9	14.80%
24	3	4.90%
25	4	6.60%
28	2	3.30%
29	1	1.60%
30	4	6.60%
31	1	1.60%
32	2	3.30%
34	2	3.30%
35	1	1.60%
37	3	4.90%
38	1	1.60%
39	4	6.60%
40	6	9.80%
50	2	3.30%
Group Total	61	100.00%

Source: Indef's Survey, 1999

Table A3
Land Size of Farms (ha)

Area (ha)	Number	Percentage
0.12	1	1.60%
0.25	1	1.60%
0.3	1	1.60%
0.5	13	21.30%
0.75	4	6.60%
1	13	21.30%
1.25	6	9.80%
1.35	1	1.60%
1.5	7	11.50%
2	5	8.20%
2.5	3	4.90%
3	2	3.30%
3.3	1	1.60%
5.7	1	1.60%
6	1	1.60%
8	1	1.60%
Group Total	61	100.00%

Source: Indef's Survey, 1999

Table A4
Land Status by Farmer

Land Status	Percentage
Owned by Respondent	91.80%
Rent/Lease	3.30%
Share Crops	4.90%
Group Total	100.00%

Source: Indef's Survey, 1999

Table A5
Seed Varieties Used by Farmer
in Current Year

Seed Varieties	Number	Percentage
1. Cirata	1	1.60%
2. IR 64	42	68.90%
3. Muncul	2	3.30%
4. Ciliwung	16	26.20%
Group Total	61	100.00%

Source: Indef's Survey, 1999

Table A6
Structure of Marketing Cost (Rp/ha)

Cost Structure	Mean
Drying	9370,2
Transportation	5500
Packaging	5620
Storing	-
Depreciation	-
Employers	6225
Others	10450
Total	17835.17

Source: Indef's Survey, 1999

Table A7
Is Capital a Main Constraint?

Answer	Percentage
Yes	31.50%
No	68.50%
Group Total	100.00%

Source: Indef's Survey, 1999

Table A8
Farm's Experience (year)

Experience (Yr)	Number	Percentage
< 10	8	13.10%
11-20	17	27.90%
21-30	14	23.00%
31-40	20	32.80%
41-50	2	3.30%
Group Total	61	100.00%

Source: Indef's Survey, 1999

Table A9
Land Size of Farmer (ha)

Area (ha)	Number	Percentage
< 2	52	89.70%
3 - 4	3	5.20%
5 - 6	2	3.40%
> 7	1	1.70%
Group Total	61	100.00%

Source: Indef's Survey, 1999

Annex B
Data on Rice Traders

Table B1
Classification of Trader Respondents (%)

Age	DKI Jakarta	West Java	East Java	Lampung	Total
< 21	0	3.9	0	5.3	2.2
21 - 40	66.7	51.4	40.3	26.3	45.1
41 - 60	33.3	36.8	53.2	57.9	45.6
> 60	0	7.9	6.5	10.5	7.1
Jumlah	100	100	100	100	100

Source: Indef's Survey, 1999

Table B2
Sampling Distribution for Farmer

Province	Sample	Percentage
DKI Jakarta	16	8.4
West Java	78	40.8
East Java	77	40.3
Lampung	20	10.5
Group Total	191	100.00%

Source: Indef's Survey, 1999

Table B3
Classification of Trader Respondents by Sex (%)

Sex	DKI Jakarta	Jawa Barat	Jawa Timur	Lampung	Total
Male	87.7	89.7	68.8	55	77.2
Female	14.3	10.3	31.2	45	22.8
Total	100	100	100	100	100

Source: Indef's Survey, 1999

Table B4
Status of Trader Respondents (%)

Status	DKI Jakarta	West Java	East Java	Lampung	Total
Married	100	92.3	93.5	85	92.6
Unmarried	0	7.7	6.5	15	7.4
Total	100	100	100	100	100

Source: Indef's Survey, 1999

Table B5
Level of Education Among Trader Respondents (%)

Education	DKI Jakarta	West Java	East Java	Lampung	Total
Illiterate	0	1.3	3.9	15.8	3.8
Elementary School	0	28.9	31.2	26.3	27.4
Junior High School	21.4	28.9	36.4	26.2	31.2
Senior High School	71.4	34.2	20.8	31.7	31.1
University	7.2	6.7	7.7	0	6.5
Total	100	100	100	100	100

Source: Indef's Survey, 1999

Table B6
Cost Components of Traders (%)

Firm Status	Drying	Hulling	Sortir	Storage	Packaging	Transportation	Labor	Mandor	Depreciation	Levies	Others	Total
Village collector	3.43	6.94	6.42	0	0.99	6.74	2.31	13.83	6.75	33.25	19.34	100
Rice Milling Unit	3.12	17.66	0	0	3.71	7.49	16.75	0	15.23	0	36.03	100
Wholesaler	3.96	43.52	0	0	0	40.16	12.36	0	0	0	0	100
Grocery	1.97	47.73	0	0	0	17.27	2.08	2.53	21.06	0	7.37	100
Retailer	15.29	21.4	0	0	15.29	23.2	8.69	8.41	6.5	1.22	0	100
Kabupaten collector	4.31	25.87	2.07	0	41.39	21.84	4.48	0	0.03	0	0	100
Kecamatan collector	0	46.98	0	0	0	10.33	5.28	0	6.58	0	30.83	100
Total	9.36	26	17.56	0	5.94	16.95	7.9	16.28	0	0	0	100

Source: Indef's Survey, 1999

Table B7
Component of Marketing Cost (Rp/Ton)

Status Usaha	Packaging	Transport	Employment	Supervisor
Village Collector	7,555.6	51,148.2	17,538.5	105,000.0
Rice Milling Unit	9,500.0	19,166.7	42,888.9	-
Wholesaler	-	18,571.4	5,714.3	-
Grocery	-	41,000.0	4,937.0	6,000.0
Retailer	10,000.0	15,178.6	5,687.5	5,500.0
Kabupaten Collector	60,000.0	31,666.7	6,5000.0	-
Kecamatan Collector	-	22,000.0	11,250.0	-
GroupTotal	11,656.3	34,234.4	15,871.2	34,071.4

Source: Indef's Survey, 1999

Table B8
Component of Marketing Cost (Rp/Ton)

Firm Status	Depreciate	Tax	Others	Total
Village Collector	51,290.0	252,500.0	146,875.0	183,045.2
Rice Milling Unit	39,000.0	-	92,250.0	89,937.5
Wholesaler	-	-	-	32,000.0
Grocery	50,000.0	-	17,500.0	74,550.0
Retailer	4,250.0	800.0	-	20,752.6
Kabupaten Collector	50.0	-	-	86,183.3
Kecamatan Collector	14,000.0	-	65,625.0	99,333.3
GroupTotal	32,952.3	168,600.0	88,840.9	101,168.5

Source: Indef's Survey, 1999

Table B9
Sources of Buying and Payment Mechanism

Status of Respondents	Sources of buying		Payment Mechanism			Group Total Row %
	Cash	Credit	Konsiny-asi	Cash and Credit	Cash, Credit, Contingency	
Farmer	67.40%	4.70%	7.00%	20.90%		100.00%
Village Collector	75.00%	8.30%	8.30%	8.30%		100.00%
Rice Milling Unit	52.80%	37.70%	3.80%	3.80%	1.90%	100.00%
Wholesaler	77.80%			22.20%		100.00%
Grocery	75.00%		25.00%			100.00%
Village Unit Cooperation	80.00%	20.00%				100.00%
Kecamatan Collector	72.70%		9.10%	9.10%	9.10%	100.00%
Farmer, Village Collector, RMU			100.00%			100.00%
Village Collector, Kecamatan Collector, RMU	25.00%			75.00%		100.00%
Village Collector, RMU Wholesaler	100.00%					100.00%
Group Total	63.90%	15.80%	7.00%	12.00%	1.30%	100.00%

Source: Indef's Survey, 1999

Table B10
Sex of Sample Farmer's

Sex	Row %
Male	100.00%
Female	0.00%
Group Total	100.00%

Source: Indef's Survey, 1999

Table B11
The Object of Rice Distribution

Firm Status	Wholesaler		Retailer, Agent Consumer	Retailer, Agent	Group Total
	Agent	Consu- mer			
Village Collector	4.80%	19.00%		4.80%	100.00%
RMU			25.00%		100.00%
Wholesaler		50.00%			100.00%
Grocery		6.30%		18.80%	100.00%
Retailer		4.50%	9.10%		100.00%
Kabupaten Collector					100.00%
Kecamatan Collector					100.00%
GroupTotal	1.50%	10.30%	4.40%	5.90%	100.00%

Source: Indef's Survey, 1999

Table B12
The Object of Rice Distribution

Firm Status	Whole- saler	Retailer	Agent	Consu- mer	Retailer	Retailer, Agent	Wholesaler, Retailer, Consumer
Village Collector	38.10%	14.30%	4.80%	9.50%	4.80%		
RMU	25.00%	25.00%				25.00%	
Wholesaler				50.00%			
Grocery	6.30%	50.00%			6.30%	6.30%	6.30%
Retailer				81.80%	4.50%		
Kabupaten Collector		50.00%				50.00%	
Kecamatan Collector		100.00- %					
GroupTotal	14.70%	20.60%	1.50%	30.90%	4.40%	4.40%	1.50%

Source: Indef's Survey, 1999

Table B13
Sources of Borrowing Capital

Firm Status	Bank	Informal Funders	Colega	Family	Fabric	Tengkulak	Farmer	Group Total
Village Collector	36.40%		27.30%	9.10%		18.20%	9.10%	100.00%
Rice Milling Unit	83.30%			16.70%				100.00%
Wholesaler	100.00%							100.00%
Grocery	50.00%		50.00%					100.00%
Retailer	33.30%	8.30%		8.30%	16.70%	33.30%		100.00%
Pengumpul								100.00%
Kecamatan	33.30%		66.70%					100.00%
GroupTotal	45.50%	2.30%	25.00%	6.80%	4.50%	13.60%	2.30%	100.00%

Source: Indef's Survey, 1999

Table B14
Capital Resources

Firm Status	Own by Respondent	Borrowing	Mixing	Group Total
Village Collector	71.40%	5.70%	22.90%	100.00%
Rice Milling Unit	38.50%		61.50%	100.00%
Wholesaler	87.50%		12.50%	100.00%
Grocery	73.30%	3.30%	23.30%	100.00%
Retailer	83.60%	4.10%	12.30%	100.00%
Kabupaten Collector	66.70%		33.30%	100.00%
Kecamatan Collector	14.30%	28.60%	57.10%	100.00%
GroupTotal	72.80%	4.70%	22.50%	100.00%

Source: Indef's Survey, 1999

Table B15
Ownership of Trading Place

Firm Status	Ownership			Group Total
	Rent	Own	Others	
Village Collector	17.40%	78.30%	4.30%	100.00%
Rice Milling Unit	10.00%	90.00%		100.00%
Wholesaler	14.30%	85.70%		100.00%
Grocery	41.40%	58.60%		100.00%
Retailer	24.30%	75.70%		100.00%
Kabupaten Collector		100.00%		100.00%
Kecamatan Collector	25.00%	75.00%		100.00%
GroupTotal	24.80%	74.50%	0.70%	100.00%

Source: Indef's Survey, 1999

Table B16
Kind of Firm

Firm Status	Purely Private	Joint Private	Group Total Row%
Village Collector	88.60%	11.40%	100.00%
Rice Milling Unit	100.00%		100.00%
Wholesaler	100.00%		100.00%
Grocery	96.80%	3.20%	100.00%
Retailer	95.90%	4.10%	100.00%
Kabupaten Collector	66.70%	33.30%	100.00%
Kecamatan Collector	42.90%	57.10%	100.00%
GroupTotal	92.40%	7.60%	100.00%

Source: Indef's Survey, 1999