State Intervention and Private Sector Participation in Philippine Rice Marketing

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Management and Organizational Development for Empowerment

Southeast Asian Council for Food Security and Fair Trade

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Cataloging in Publication Data

Ramos, Charmaine G.
State Intervention and Private Sector
Participation in Philippine Rice Marketing.
Quezon City: MODE, 2000

1. Rice trade – Philippines.
2. Rice trade – Government policy – Philippines.
3. Rice production – Economic aspects – Philippines.
4. Rice distribution – Economic aspects – Philippines.
I. Title HD 9066.P6 R35 2000

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Foreword

This paper stems from a regional research project of the Management and Organizational Development for Empowerment, Inc. (MODE) in partnership with the Southeast Asian Council for Food Security and Fair Trade (SEA Council) entitled *Food Security and Markets in Southeast Asia: State-Private Sector Interaction in Rice Trade*. The objective of the study was to provide a clear portrait of the political economy of rice trading and marketing in each country and hopefully, of Southeast Asia. The end-goal was to come out with policy proposals in each country and possibly region-wide which could promote the development of dynamic and efficient rice markets and sustainable rice producing sectors. This NGO- based research project examined state intervention in unmilled and milled rice marketing in terms of investments, pricing policy, information dissemination, and other regulatory functions. It also analyzed the private sector in the unmilled and milled rice trading and marketing in terms of their investments, organization, strategies, and sources of information.

The draft country reports (Indonesia, Philippines and Thailand) were presented to the members of the SEA Council in October 1999 in Kuala Lumpur for review. The report on the Philippine rice trade was also presented in a special meeting of the Board of Trustees of MODE in March 2000.

MODE is very grateful to Dr. James Putzel of the London School of Economics for his guidance and editorial inputs, to Dr. Joseph Lim of the School of Economics, University of the Philippines, the paper reader of the Philippine country report, and to Francisco Lara, Jr., for the original concept. MODE also acknowledges the research assistance of Joseph Dacuma, Susan Morales-Barias and Charity Torregosa; the administrative support of MODE staff: Fe Canta, Posedia Lood, and Rodolfo Lacsamana.

Our utmost gratitude to the institutions which have supported our food security research and advocacy programme: MISEREOR, OXFAM-

UK, Dutch Interchurch Aid and 11.11.11 (NCOS). To the farmers, millers, traders and and government officials whose information and insights made this paper possible, our heartfelt thanks. Responsibility and coordination of the work was with the Research and Advocacy Unit (RAU) of MODE.

It is hoped that this paper will contribute in achieving greater efficiency in rice marketing and the development of sustainable and dynamic rice producing sectors in the Philippines.

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Introduction

Introduction

In the Philippines, rice is a means of sustenance in two senses: as basic staple and as source of income. Filipinos consume at least 21,500 metric tons (MT) of rice per day and rely on this staple for 40-80 percent of their daily calorie intake. Rice provides the means of livelihood to at least 2 million farmers, 86,000 wholesalers and retailers, and 12,000 millers[1] (BAS, 1998). Given the diversity of agents and interests in the rice sector, one can only begin to imagine how equally diverse the impact of any public policy choice the state makes in governing the rice market.

The Philippine rice market is highly politicized. Because rice plays a sensitive role in the economy, the central government has participated extensively in the market. For example, the government, through the National Food Authority (NFA), enjoys monopoly rights over importation and engages in domestic operations to defend farm support prices. The government also continues to employ quantitative restrictions in rice imports having successfully negotiated with the World Trade Organization (WTO) to exclude rice from the list of agricultural commodities that the country committed to liberalize. As a result of these interventionist policies, rice remains one of the most protected agricultural commodities in the Philippines.

However, the emerging policy environment is one of decreasing government intervention. First, the Estrada government is set to support moves to decouple the regulatory and marketing functions of the NFA. Legislation to effect this was shelved in the latter part of 1999 when the Estrada government categorically stated that it would not privatize NFA for the duration of its term. However, it was forced to reconsider its position when multilateral agencies threatened to withhold the release of loan packages[2] if the central government did not commit to privatizing the agency.

Second, for the first time since the inception of NFA, licenses were bid out to private traders in March 1999 to import almost 75,000 MT of rice, an amount equivalent to 79 percent of the country's minimum access volume (MAV)[3] commitment for the year.

Third, and perhaps most important of all, is the impending removal of effective quantitative restrictions by 2004 and the implementation of the country's commitment to AFTA to reduce rice tariffs to 50 percent by 2010.

The policy shift in the rice sector from a regime of heavy state intervention to market deregulation has spawned public policy debates. As in the past, the terms of the debate have often been cast in terms of states against markets or distilled as a battle between protectionist and neo-liberal prescriptions. This paper wishes to enrich the debate by veering away from ideological diatribes and contending that the state-market dichotomy in the rice economy need not be an either-or proposition. It proposes that the best way to understand the rice market is to explore the roles of those who act in the market and the institutional framework in which that action takes place.

With the rise of marketable surplus, efficiency in rice marketing has become an important determinant of rice consumer prices and producer incomes. The administrator of the Bureau of Post-Harvest Research and Extension (BPHRE) said that at least 15 percent of the yield is regularly lost as post-harvest wastage[4]. However, the post-harvest rice market remains vastly under-studied. Hayami, *et al.* (1998) echoes the observation that critical analytical and empirical gaps in this regard have somehow permitted the permeation of the deep-rooted belief that marketing actors exploit rice producers and consumers through monopoly pricing and usury. Whenever fluctuations in supplies and prices are noted, both civil society actors and government agencies turn to marketing agents as the ultimate source of market distortions. This politically colored view of marketing agents has time and again been used to rationalize and/or call for government interventions in the market.

This paper hopes to contribute to closing the information gap in our knowledge of the rice marketing structure in the hope of providing a more objective evaluation of the problems and prospects of the Philippine rice market. It studies the post-production

rice market in the Philippines: its market structure, its institutions and the nodes of state intervention. It seeks to describe and analyze the organization and practices of both the private market and the state in the country's post-production rice market. Based on the empirical findings, this paper then seeks to suggest possible public policy measures that would help make for a more competitive and efficient private sector and more effective state intervention in rice marketing.

Methodology and approach

This paper seeks to analyze private and public sector participation in rice marketing. Tracking public sector participation was straightforward-we engaged in archival work in the form of secondary data collation and a survey of literature, as well as interviews with key officials in relevant government agencies.

Documenting private sector activities was more daunting. Traders, as with most businessmen, are not very cooperative in divulging the workings of the rice business. They are usually suspicious of any research activity delving into detailed accounts of rules and norms governing their trade and are especially hard-put to reveal cost and income schedules.

In the face of these obstacles, this study employed a two-pronged approach to gather field-level data pertaining to marketing activities of private actors. We used the milling sector as the starting point in going up and down the marketing chain servicing two major urban consumption centers in the country, namely Davao City and Metro Manila.

First, a short survey of mills was conducted involving 10 percent of rice millers in three municipalities with the most milling capacity in four major rice-producing provinces, namely Isabela, Nueva Ecija, Bulacan, and Davao del Norte. The information provided by the millers regarding the agents they dealt with-both the upstream (farmgate to miller) and downstream agents (miller to retailer)-was used as a starting point for our investigation up and down the marketing chain.

The distribution of respondents across municipalities and provinces is shown in Table 1-1. The purpose of the survey was to gather information regarding (1) the rice millers' scope and network of operations; and (2) the extent of private sector investments in post-harvest facilities in the country. The survey segre-

TABLE 1
Research areas and distribution of respondents

Province and region	Total milling capacity (in cavs/hr)	No. of millers	No. of respon-dents	Research areas	% share in provincial milling capacity	% share in regional palay production
Bulacan, Central Luzon	4,614	192	19	Bocaue Baliuag Balagtas	43.9 9.9 8.1	13.9
Nueva Ecija, Central Luzon	5,013	273	27	San Jose Gapan Talavera	17.5 16.4 11.6	46.3
Isabela, Cagayan Valley	11,359	459	45	Santiago Cabatuan San Mateo	13.2 10.6 8.0	58.8
Davao del Norte, So. Mindanao	2,137	166	17	Tagum Panabo Compostela	19.6 14.8 12.3	29.6

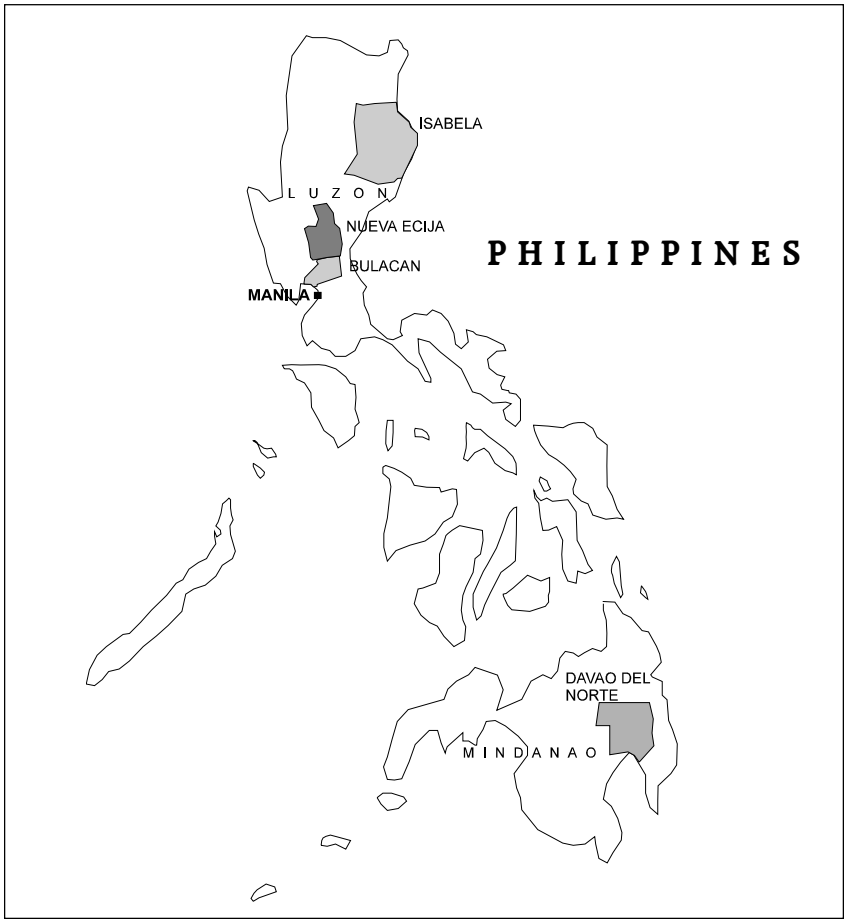
gated the millers according to the capacity of their mills. Millers with an operating capacity of less than 15 cavans per hour are deemed as small-scale millers; those with between 15 to 30 cavans per hour, medium-scale and those with a capacity of over 30 cavans per hour, large-scale. The survey was conducted between September 1998 and April 1999. Data gathered pertained to two months of operation as shown in Table 1.2: the peak month taken as the last completed month of harvest at the time of interview and the lean month taken as three months before or after the harvest month.

TABLE 2
Time of Interview and reference for peak and lean months

Province	Time of interview	"Peak"	"Lean"
Isabela	May 1999	April 1999	February 1999
Nueva Ecija	September 1998	April 1998	July 1998
Bulacan	February 1999	October 1998	February 1999
Davao del Norte	December 1998	November 1998	August 1998

Second, based on the contacts provided by millers, key actors up and down the marketing chain were interviewed regarding the more qualitative aspects of their operations and relationships with other actors in the marketing chain. The interviews, using a semi-

FIGURE 1
Research areas



structured guide, gathered preliminary information regarding the formal and informal rules governing the relationships of different marketing channel actors and the points of value-added and mark-up levels at each point of the trading process.

It must be noted at the onset that timing is one basic weakness of the field survey and field interviews. Much of the fieldwork, especially the survey, was done in the latter half of 1998, a year marked by the confluence of two extra-ordinary episodes.

First, a financial crisis swept through Asia. Local businessmen reeled from the consequences of spiraling interest rates and the devaluation of the Philippine peso. The ballooning of credit costs and squeezing of credit availability severely hampered the opera-

tions of many rice marketing actors, most of whom depended on bank loans not only for purchases of equipment but also for working capital requirements. The observed decline in lending operations of many traders may be directly attributed to the crisis.

Second, the prolonged dry spell brought by the *El Niño* weather disturbance led to severe declines in local paddy production and the disruption of the seasons. Therefore, the information gathered regarding volumes processed may not be reflective of normal levels. Moreover, the choice of "peak" and "lean" months and the disparity of operations between the same may not be entirely reliable.

In general, the data gathered in a span of one year (July 1998-July 1999) cannot be treated as information yielding a complete and decisive picture of the complicated network of rice marketing. The empirical findings intended to generate hypotheses-not definitive conclusions-regarding the structure of post-production rice markets and to suggest public policy issues that heretofore may not have been raised due to the poverty in the available rice marketing data.

Organization of the paper

The first part of this paper analyzes the most recent trends in rice production, consumption, international trade and prices. It highlights the sorry performance of the industry in terms of production and yield growths and the steadily increasing role of rice imports in the local market in the nineties. It analyzes the trends in farm gate, wholesale and retail prices of rice as well as the geographical patterns in rice consumption and production. The second part analyzes the policy environment that helped to shape these trends. In particular, it focuses on the policy handles that the NFA, the government's marketing board, has employed to intervene in rice marketing and distribution. It includes a brief review of economic literature regarding states, markets and the goal of food security. The third part describes the market organization and practices of the private sector. It draws from the results of the short survey and key informant interviews. The paper ends with a synthesis of the workings of the state and private sector in the rice trade and identifies the public policy issues that emerge from the study.

The performance of the Philippine rice sector

The performance of the Philippine rice sector

This section shows that the rice sector in the Philippines has exhibited slowing growth rates in production and productivity as well as an actual decline in per capita production in the 1990s. It continues to lag behind that of the neighboring countries in terms of productivity. If these trends continue, imports may be expected to play a bigger role-not only in averting either natural or man-made disasters-in supplying the staple needs of the population. The best way to ensure rice-sufficiency-as well as the protection of farmers against foreign competition-is to increase the yield and productivity of the sector. Given the geography of the islands, marketing-side bottlenecks will also have to be addressed.

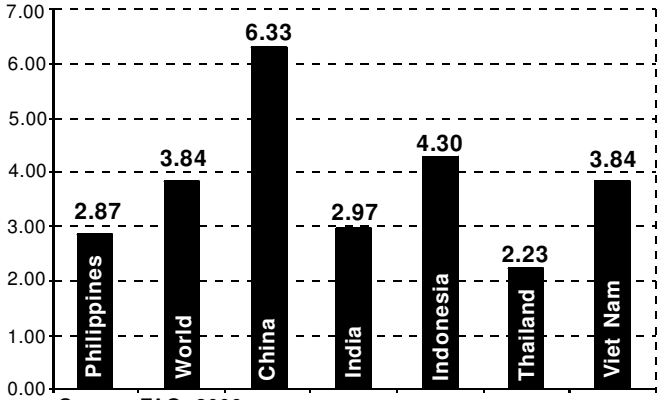
Production, hectarages and yield

The introduction of high yielding varieties (HYVs), the intensification of fertilizer use and the expansion of irrigated farmlands- all key aspects of the 1960's Green Revolution- saw a dramatic growth in production and productivity from from the 1960s to the 1980s. These also allowed the country a brief period of being net rice exporters in the early 1980s. (David and Balisacan, 1995) Since then, growth rates in productivity have significantly tapered off, as shown in Table 2.1, from a high of 44.5 percent growth in the period covering the 1970s to the 1980s to a modest 16 percent growth in the 1980s to the 1990s.

The slowing down of productivity growth in the 1990s is best examined in the light of diminishing public sector allocations to agriculture as well as a shift in priorities within the agricultural bureaucracy. Expenditures for agricultural research and irrigation were cut down beginning in the late 1980s in favor of agrarian reform activities and environmental management. (David,

1995) Of course, the trade-off became inevitable only because the whole sector suffered from budget cuts. As a result, irrigated farmland remained below 1.5 million hectares, less than half of the total potential irrigable land in 1999. Paved road network was only 17 percent compared to Malaysia's 75 percent and Thailand's 82 percent. Agricultural research was pinned at 0.3 percent of agricultural GVA, among the lowest in the region (Ramos, 1999).

FIGURE 2
Comparative yields, selected countries, 1999
(IN METRIC TONS PER HECTARE)



Source: FAO, 2000

TABLE 3
Paddy area harvested (IN HECTARES)**, production** (IN METRIC TONS) **yield** (IN METRIC TONS PER HECTARE) **and per capita production** (IN METRIC TONS PER PERSON)**: Average and growth rates**

	Area Harvested	Production	Yield	Per capita production
	Average			
1960s	3,184,990	4,260,936	1.34	0.13
1970s	3,499,631	6,109,240	1.74	0.14
1980s	3,345,540	8,423,668	2.52	0.16
1990s	3,581,309	10,439,927	2.92	0.15
	Growth rate			
1960s-70s	9.88	43.38	30.21	8.38
1970s-80s	(4.40)	37.88	44.51	9.01
1980s-90s	7.05	23.94	16.02	(0.99)

Source: FAO, 2000

All these have resulted in diminished productivity improvements. Figure 1 shows that, in comparison to neighboring countries and the rest of the world, the country's performance, although significantly better than Thailand, is slightly worse than India and way behind Vietnam, China and Indonesia.

That the sector's productivity is not growing fast enough is further proven by the fact that per capita paddy production suffered negative growth in the period covering the 1980s to the 1990s, as shown in Table 2.1. This means that paddy production as a ratio of the total population of the Philippines has fallen.

Rice imports

In consonance with diminishing growth rates in rice production and productivity in the 1990s, a deepening dependence on internationally-sourced rice can be observed especially in the latter half of the decade, as shown in Table 2-2. While it is expedient to associate the significant increase in the ratio of imported rice to domestic production to the country's accession to the WTO, the causality is hard to establish at this point. The jump in 1996 imports can be interpreted as government's reaction to the jitters brought about by the crisis in supply that occurred in 1995. Mean-

TABLE 4
Rice imports versus production: 1988-1998

	Rice imported (in MT)	Rice produced (in MT)/a	Imports as a % of production
1988	181,420	5,651,680	3.2
1989	208,869	5,959,025	3.5
1990	620,794	6,227,550	10.0
1991	-	6,094,154	-
1992	-	5,993,190	-
1993	209,994	5,943,551	3.5
1994	-	6,640,578	-
1995	252,952	7,108,668	3.6
1996	906,533	7,159,698	12.7
1997	720,209	7,099,848	10.1
1998	2,135,434	6,302,646	33.9

Source: BAS, 1999
a/ computed as 62% of paddy production

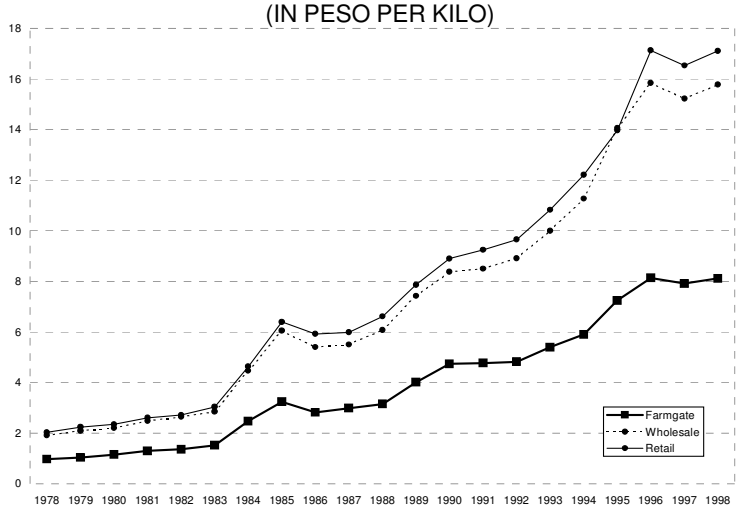
while, the 200 percent jump in rice imports in 1998 could be seen as a response to the expected decline in local production due to the El Niño weather disturbance. Of course, it must be pointed out that local production decreased only by 11 percent in 1998.

Another way to view the country's deepening dependence on the international rice market is to see it as a direct consequence of the sector's slowing growth rates in productivity and per capita production. Seen in this light, we can expect imports to figure even more in the future if the sector's productivity is not enhanced.

Prices

Trends in prices show that production-related bottlenecks are not the only source of the industry's torpid performance. The widening gap between farmgate paddy prices and wholesale and retail rice prices, as shown in Figure 2, gives a picture of the rising margin attributed to marketing costs. High marketing costs reflect inadequate physical and institutional infrastructure in the marketing system.

FIGURE 3
Farmgate, wholesale and retail prices: 1978-1998
(IN PESO PER KILO)



Source: BAS, 1999

In the Philippines, high marketing costs are reflected by the marketing margin averaging at 50 percent of the retail price from

1978 to 1998. However, Shepherd (1993) warns against using the disparity between what the farmer receives (farm gate price) and what the consumers pay (retail price) to prove that exploitative rents accrue to marketing agents like traders and millers. He argues that the marketing margin actually embodies the costs of marketing, which rise with the length and complexity of the marketing chain.

Geography of consumption and production

Paddy is produced all over the country, but production is concentrated in five regions - four of which are in the island of Luzon. In 1998, the produce of Central Luzon, Cagayan Valley, Western Visayas, Southern Tagalog and Ilocos accounted for about 61 percent of total paddy production. (BAS, 1999) The same regions accounted for 59 percent of total area harvested and 60 percent of total irrigated area harvest on that same year. Of the five, only the contiguous regions of Central Luzon, Cagayan Valley and Ilocos, rank among the country's most productive regions, owing per-

TABLE 5
Production, area harvested, yield, and population, by region: 1998

	Production (as a % of national totals)	Area harvested (as a % of national totals)	Yield (in MT/ha)	Population (as a % of national totals)
NCR	-	-	-	13.78
CAR	1.99	2.24	2.39	1.83
Ilocos	9.98	9.53	2.83	5.54
Cagayan Valley	12.97	11.28	3.10	3.70
Central Luzon	15.30	13.52	3.05	10.10
Southern Tagalog	10.40	11.16	2.51	14.49
Bicol	5.77	7.22	2.16	6.30
Western Visayas	12.21	13.05	2.52	8.42
Central Visayas	1.36	1.66	2.21	7.31
Eastern Visayas	4.23	5.85	1.95	4.91
Western Mindanao	3.09	3.17	2.63	4.07
Northen Mindanao	3.21	2.60	3.34	3.62
Southern Mindanao	6.55	5.44	3.25	6.71
Central Mindanao	7.53	6.59	3.08	3.44
ARMM	2.60	3.71	1.89	2.95
CARAGA	2.80	2.99	2.53	2.83

Source: BAS, 1999; NSO, 1999

haps to the concentration of irrigated lands in these areas.

The top paddy-producing areas also turn out to be the top rice-consuming areas. Table 2-3 shows the trends in regional shares in total paddy production and regional shares in total population. It gives a rough idea about which regions cannot feed themselves. Where share in population is greater than share in paddy production, there lies the possibility of a deficit. For instance, Southern Tagalog produces more than 10 percent of national paddy production, but it also accounts for almost 15 percent of the country's population. Based on this line of analysis, regions with considerable surpluses are Cagayan Valley, Central Luzon, Ilocos and they can also be seen as the logical suppliers of the deficit regions in Luzon. Field interviews reveal that some of the produce of these regions goes even further to Visayas and Mindanao. In the Visayas, only Western Visayas appears to have surplus capacity. Deficit is also considerable in Mindanao where only Central Mindanao has excess capacity. Ironically, the island that is being groomed to be the food basket of the country and that performs better in terms of productivity is actually dependent on Visayas and Luzon for its rice needs.

State intervention in rice marketing and distribution

State intervention in rice marketing and distribution

The rice marketing chain is the system that transfers rice from farms to sites of consumption. Before the staple reaches the consumer, paddy produced in the farm is transported, dried, stored, milled and packed—a range of activities that from hereon, we refer to as "marketing functions".

In the Philippines, the private sector handles the marketing functions for as much as 95 percent of domestic production. However, the state maintains its position as a looming figure in the marketing and distribution of rice as its sole importer. Although importing only an average of 6 percent of domestic production in the last 10 years, the state tries to time its importation during lean months to provide the downward pressure to high prices typifying those months. Traders in Bocaue, Bulacan posit that a mere announcement of NFA that it will import sends prices diving immediately.

To be sure, rice importation is only one of the many ways the Philippine government intervenes in the rice market. These nodes of state intervention in marketing can be categorized into two: explicit and implicit. Explicit policies are those where the government directly participates in marketing activities or influences market outcomes. These include government's policies in buffer stocking, pricing, importation, and domestic procurement and distribution. On the other hand, implicit policies are those where primary goals are not directed at intervention in private rice marketing activities but which nevertheless affects rice post-harvest markets. For instance, the government makes public investments into *barangay* roads with the general goal of making remote villages accessible to public transportation. But this public investment decision also serves to enhance the efficiency of rice distri-

bution systems by expediting the process of bringing produce from farm to market. Macroeconomic and credit policies also fall under this category.

While implicit policies are just as pivotal as explicit ones, much of the interaction between the private sector and the state occurs in the implementation of the explicit policies. This section thus zeroes in on what has been said about the explicit modes of participation that the Philippine government employs to intervene in rice distribution and marketing. But before that, it begins with a brief survey of economic theorizing about state participation in rice markets.

Rationale for state participation in rice markets

What justifies political intervention in market activities? Economic reasoning offers two distinct though related approaches to this question.

First, from the economics of public choice, states intervene where markets fail. Market failure refers to the set of conditions under which a market economy fails to allocate resources efficiently[1]. (WB, 1997) Where markets are incomplete or not competitive, the state steps in to protect public interest.

Second, from new institutionalism, states are seen to provide the regulatory framework for well-functioning markets. (Harris-White, 1985) States provide the environment for competition, a necessary requisite to market efficiency. Unrestrained competition destroys market exchange and for a market to function efficiently and competitively, elements of a regulatory system have to be established by the state.[2]

The first approach sees state participation as panacea to market failure; the second considers the same as a necessary ingredient to market success. This sub-section surveys how these two approaches have been used to explain state presence in rice markets.

Equity considerations and market failure in rice markets

Arguments flowing from the first approach can be grouped into three: food security, market structure and public good arguments.

Food security arguments. Rice by its very nature is a political commodity. In countries dependent on rice as a staple, it is no

accident that rice imports shoot up during an election year—politicians realize the potential damage that could be wrought by a rice shortage. For many monsoon Asian countries, rice security is food security. The most often cited category of arguments for state presence in rice markets stems from the sensitive role rice plays in food security.

Two characteristics of the rice market have a direct impact on the availability and accessibility of rice. *First,* as with all agricultural markets, it is marked by uncertainty and instability—a characteristic seen to imperil the poor's physical and economic access to their staple grain. *Second,* in countries where a big portion of the population—and among the poorest at that—is employed by the rice sector, the state faces the dilemma of reconciling the conflicting objectives of providing low rice prices for consumers and remunerative incentives to farmers.

Instability is caused by conditions both natural and man-made. Sudden harvest failures and even the natural cycle of sowing and reaping, make rice production inherently unstable. But volatile rice prices are only partly the result of nature's caprice. Many countries, in the pursuit of domestic price stability, impose barriers on trade that contribute to the instability of world markets. As the world grain market became increasingly integrated and the dependence of the less-developed countries on imports rose, instability in world prices became an important source of internal instability in many countries. (Bigman,1986) The poor are among the most vulnerable to these tides of the rice market. Having relatively elastic demand for staple foods—a consequence of the large share of their budget allotted to food—they find the bulk of adjustments resulting from supply or price changes imposed on them. (Mellor, 1978) Promoting social equity is often used as the rationale for government intervention in price stabilization.

Government stabilizes rice prices through a mixture of policies like involvement in domestic marketing operations, maintenance and judicious use of domestic buffer stocks, and imposition of restrictions on international trade. The goal of price stability leads policymakers to insulate domestic rice markets from the instability of world rice prices and foreign exchange adjustments. Monopoly control over international rice trade and domestic marketing operations is preferred over *ad valorem* duties because import taxes are seen to leave the domestic price vulnerable to world price fluctuations and changes in exchange rates. (David and

Huang, 1996)

These policies usually have the impact of artificially keeping consumer rice prices low, running counter to one other equity goal: providing remunerative incentives to rice farmers. This dilemma is most pronounced in developing countries in the early stages of development. The public choice theory explanation to this phenomenon is that in these countries, agricultural producers' real incomes are relatively insensitive to food price policy because of low market surplus and are disadvantaged in forming coalitions because of high organization costs. On the other hand, urban consumers and industrialists, have high stakes in cheap-food agricultural policy because food constitutes a high proportion of urban consumers' budget and food is a "wage good" in labor-intensive industries. Hence, the balance of power is in favor of urban consumers and industrialists. However, as more marketing surplus is generated and as the economy matures, the political pressures from consumers and agricultural workers tends to decline, allowing for the rising pressure from agricultural producers to eventually dominate. (Balisacan and Roumasset, 1987)

Market structure arguments. The second set of arguments justifying state intervention is related to market failures found inherent in the rice economy. These failures spring from features of the market structure[3] that affect the behavior and performance of actors in the rice market.

The rice market is characterized by information asymmetry. For instance, price formation occurs at centers of trade, usually geographically distant from centers of production. There also exists a great deal of information asymmetry as to the quality of rice traded—wholesale buyers, for instance, have no way of knowing whether the quality of the nth sack of rice they procure from the miller is the same as that of the first sack.

It has also been argued that there are segments in the marketing process where actors do not behave as price takers. Rice traders, for instance, influence price-setting to the extent that they can store produce. That they incur extra-economic rent from this behavior is a common-held belief.

These notions about the rice market violate key assumptions underlying key propositions about atomistic competition and thus justify state participation in the form of market presence and regulation.

Public goods arguments. The last set of arguments has to do with the valuation of a local rice economy as a good in itself. Here, leaving the very existence of the rice sector to the forces of the market may be contrary to the pursuit of public interest. In a world where the international rice market is thin, the preservation of local rice markets may be deemed a public good. Another often cited scenario is a situation of war where rice trade embargo may be used as political leverage. (Putzel, 1996) Obviously, maintaining domestic buffer stocks would be the only way to survive in such a situation.

The new institutional view of the rice market

New institutional economics incorporates institutions and ideologies into the analysis of markets, modeling the political process as a critical factor in the performance of economies, as the source of the diverse performance of economies and as the explanation for "inefficient" markets. (North, 1995) This approach proves useful in the analysis of the state's role in the rice market.

Harris-White (1995) identifies non-market relations and institutions in the "actually existing market"[4] for South Asian grains that are relevant for the purposes of this study. For instance, she posits that the market for rice is typically a bundle of other markets—one that cannot be reduced as the summation of comparable firms with comparable objectives. The functions of real rice marketing firms are not restricted to buying and selling but to multiple marketing functions. She says that:

> *"The terms of buying and selling will be affected by those of interlocked markets. Commonly agricultural commodity transactions are interlocked with credit contracts in ways, which can sometimes be shown to depress commodity prices below levels resulting from unconstrained transactions and to raise interest above market rates. … It is clear that interlocked commerce renders irrelevant both a comparison with a competitive alternative for a subordinate party deprived of choice and the separation of interest and price."*

Here, Harris-White argues that in actually existing commodity markets, the possibility of non-market price formation must be allowed. She expounds on other non-market relations that define how resources are appropriated in the "market system", thus:

> *"Buying and selling on class-specific terms and conditions may also be further affected by opportunistic speculation and hoarding. Resources may also be appropriated through capitalist relations in agro-processing and other productive activities necessary to the post-harvest commodity system abstracted as 'the market'. Resources are also commonly appropriated from producers in underdeveloped agricultural markets in primitive ways through crime and coercion (via fraud on weights and measures, arbitrary deductions, misinformation about price. etc.) as well as through the corrupt subversion of regulatory interventions of the state."*

What of these non-market relations and institutions? Harriss-White argues that an appreciation of real rather than abstract markets necessitates a complete understanding of institutions underlying these markets. Institutions of the market are conceptualized as responses to problems of the organization of information, of transactions and of property rights, under conditions of environmental and biological lags and uncertainty, opportunistic behavior and bounded rationality. The state's regulatory function is thus best designed by looking at the formal and informal rules that govern the market exchanges. Moreover, state participation is enmeshed in the market even as the state is conceptually separate. Along with the state, other institutions like family and ethnic relations and civil society also serve to define the dynamics of specific markets.

Table 3-1. Official NFA wholesale price of regular milled rice

We will return to these models when we attempt to distill lessons regarding policy from an analysis of state and market roles in rice trading. Meanwhile, we turn to the operations of the NFA. What is the logic behind its policies and how effectively has it performed?

NFA: premise versus performance

The Philippine government directly intervenes in the post-harvest rice market through the operations of the NFA. The NFA is governed by two imperatives: (1) to protect the food security of the country in times of calamity or crisis and (2) to stabilize prices at levels that would help attain the oftentimes contradictory goals of assuring farmers reasonable returns on their investments and, consumers, affordable retail prices.

The agency finds its roots in the National Grains Authority (NGA), a government agency organized in 1972 to absorb and unify the marketing functions of the defunct Rice and Corn Administration (RCA) and the regulatory functions of the defunct Rice and Corn Board (RICOB). Rice, corn, wheat and other grains were the commodity markets the agency was tasked to oversee. In 1981, the NGA was renamed NFA and the sectors for which it was responsible were expanded to include other non-grain commodities like meat, chicken and vegetables. However, in 1985, its powers were clipped with the limiting of its commodity coverage to its original mandate: rice and corn.

Policies and premises

The NFA is both participant and regulator in the post-harvest rice market. As market actor, it procures paddy, distributes and imports rice and keeps buffer stocks. As market regulator, it defines pricing policies and provides the rules and legal framework for the operations of rice businessmen.

Grains procurement and distribution. The NFA undertakes grains procurement to help prop up farmers' income when farmgate prices are lower than the government support price. In regions where the agency has warehouses, accredited actors, mostly farmers and cooperatives, directly deliver grains to NFA. In more remote areas, grains are assembled at farmers' collection centers on a scheduled basis and then hauled by the agency upon availability of NFA transport services. As in directly delivered stocks, grains are weighed, documented and paid for at NFA receiving warehouses. In areas with no NFA warehouses, weighing, documentation and payment may be done in the field.

Meanwhile, grains distribution is in principle undertaken when consumer prices go beyond a trigger price, considered as an indicator of affordability. During lean months, stocks are released and sold through the agency's accredited retailers as well as charitable institutions, government offices and government-run retailing stalls called *Bigasang Bayan*. For retailers, stocks are usually bidded out at the beginning of the lean season.[5] At the height of the *El Niño* weather disturbance, rice was also retailed through rolling stores piloted in severely drought-stricken areas on the island of Mindanao.

Buffer stocks. The NFA endeavors to maintain a 90-day buffer

stock by July of each year, the beginning of the lean season, and a 15-day anytime buffer as a contribution to the ASEAN rice security reserve[6]. The maintenance of rice inventories is necessitated by the highly seasonal nature of rice production in the Philippines. Rice harvested in the fourth quarter of the year accounts for 50 percent of private inventories while harvest from July to September accounts for only 10 percent. This situation is exacerbated by the fact that most of the 10-20 typhoons that hit the country every year do so during the lean season. The country's geography and sorry state of infrastructure further heighten the need for buffer stocks.

Pricing policy. Through the agency's procurement program, NFA offers price support to farmers. The price support is applicable for paddy that meet required quality specifications[7]; otherwise, price is discounted to account for the additional cost the NFA will be incurring in drying/cleaning the relevant stock. The prevailing support price, which rose from PhP 6 (1990-1995) to PhP 8 (1996-1999)[8], is evaluated by an inter-agency committee[9] based on the following parameters: cost of production, consumer price index, income of rice and corn farmers relative to those producing other crops and cost of end-product to consumers. The implementation of a support price is expected to safeguard farmers from severe price fluctuations during peak harvest months while at the same time assuring them of a ready market that guarantees a fair return on investments. It is also counted on to serve as a guide to grains businessmen as to the fair level of procurement price for paddy.

TABLE 6
Official NFA wholesale price of regular milled rice

	Price
1990	PhP 7.00
1991	7.75
1992	7.75
1993	9.50
1994	9.50
1995	13.00
1996	13.00
1997	13.00
1998	13.00

Source: NFA, 1999

To protect the interests of consumers, on the other hand, the NFA employs a trigger price mechanism. When the trigger price, which replaces the ceiling price scrapped in 1985, is breached, the NFA intervenes in the consumer market through distribution operations. In addition to this mechanism, the agency also sets the official selling price for NFA distributed rice at rates usually below the prevailing market prices. Table 3-1 shows the official wholesale rates for regular milled rice[10] from 1990 to the present.

Grains importation. As a matter of policy, NFA is supposed to resort to importation only when there is a shortfall in local production or when there are other verifiable reasons that may result in domestic shortage. Prior to the country's accession to the WTO, a shortage situation was determined upon consultation with farmer representatives and other industry actors, as mandated by the Magna Carta for Small Farmers. This law was amended in 1996 and the government is now not mandated to hold such consultations before importing. However, as has been stated in the introduction, quantitative restrictions in rice continue to be in effect, a privilege the sector will enjoy until 2004.

An important development in the NFA's grain importation policy began to unfold in 1997: for the first time, the private sector was allowed to import both glutinous and non-glutinous varieties of rice. In 1997 and 1998, allocations were granted on a first come-first serve basis. Procedures were rationalized in 1999 when allocations were auctioned off.[11] While NFA acted as cargo consolidator and imported private allocations on behalf of the private sector from 1997 to 1998, all activities related to importing were the sole responsibility of winning private bidders in 1999.

Licensing and other regulatory functions. The NFA gives out licenses to all grains businessmen involved in one or more of the following activities: retailing, wholesaling, milling, warehousing, threshing, processing, importing, indenting, packaging and mechanical drying. The agency ensures that these actors fulfill the legal requirements for doing business including, where relevant: business certificates and other documents depending on business organization, warehousing plans, location and pollution clearances and income tax returns. The agency also has the power to summon, arrest and impose sanctions on parties violating rules and duties[12] enforced by the agency.

Performance

How did the NFA perform in terms of fulfilling the premises behind its intervention in the market? The end goals of food security and price stabilization clearly underlie NFA policies. The following evaluates how these goals were achieved in the light of key aspects of the agency's performance[13].

Price support and procurement. Table 3-2 shows NFA's very low absorption capacity in terms of domestic procurement. In between

TABLE 7
NFA paddy procurement versus production: 1979-1998
(IN THOUSAND MT)

	Paddy production	Paddy procurement
1979	7,685	758
1980	7,647	551
1981	7,911	580
1982	8,534	646
1983	7,295	533
1984	7,829	298
1985	8,806	401
1986	9,247	422
1987	8,540	572
1988	8,971	264
1989	9,459	208
1990	9,319	572
1991	9,673	555
1992	9,129	420
1993	9,434	155
1994	10,538	61
1995	10,541	8
1996	11,284	124
1997	11,269	101
1998	10,237	59
	Average share of procurement to production (%)	
1979-1983	7.9	
1984-1988	4.5	
1989-1993	4.1	
1994-1998	0.7	

Source: NFA, 1999

1988 and 1998, it was able to procure 2.4 percent of local production way below its 5-10 percent mandated target. After 1990, the agency was only able to reach its minimum target twice, in 1990 and 1991. Tracking average shares of procurement in production over the last 20 years shows the steady decline of NFA's procurement operations.

One likely explanation for the decline in domestic operations between 1994 and 1998 is that support prices fell below actual paddy prices (Table-3-3). Farmer and trader interviewees in this study's field research also spoke of the additional transaction costs farmers have to bear in the face of stringent quality standards imposed by the agency. Farmers are also said to be disheartened by the paper work involved in the transactions—including the shoe leather costs of having to encash the payment they receive from the NFA for their produce. In sharp contrast, transactions with private traders are relatively painless with payments made in cash.

TABLE 8
Official NFA wholesale price versus national average wholesale price

(in PHP)

Year	Farmgate price	Support price
1990	4.74	6.00
1991	4.77	6.00
1992	4.82	6.00
1993	5.40	6.00
1994	5.90	6.00
1995	7.24	6.00
1996	8.13	8.00
1997	7.92	8.00
1998	8.11	8.00

Source: NFA, 1999

Consumer price protection. The agency appears to have been more successful in cheapening prices rice consumers face through the defense of retail prices, shown in Table 3-4, and the infusion of imports in major consumption centers. Table 3-5 shows NFA's record in its distribution operation is better than in procurement. The agency distributed an average of 6 percent of the nation's

TABLE 9
Official NFA support price versus national average retail price
(in PHP)

Year	Retail price	NFA retail price
1990	6.08	7.00
1991	7.42	7.75
1992	8.38	7.75
1993	8.50	9.50
1994	8.91	9.50
1995	10.00	13.00
1996	11.27	13.00
1997	16.53	13.00
1998	17.11	13.00

Source: NFA, 1999

TABLE 10
Rice requirement versus distribution: 1988-1998
(IN THOUSAND MT)

Year	Rice required	Rice distributed	Distribution as a % of requirement
1988	6,096	405	6.65
1989	6,461	472	7.31
1990	6,534	670	10.26
1991	6,096	158	2.59
1992	6,388	521	8.15
1993	6,643	485	7.30
1994	6,680	112	1.67
1995	7,154	257	3.59
1996	7,483	733	9.79
1997	8,030	623	7.76
1998	8,030	783	9.75

Source: NFA, 1999

requirements between 1988 and 1998. The downturn of the distribution between 1990 and 1994 is explained by the contraction of rice imports with the imposition of the Magna Carta of Small Farmers. Much of the rice distributed is sourced from abroad as domestic procurements, as has been shown, are very minimal.

The cheapening of consumer prices has not been without consequences, however. A former member of the House of Representatives[14], suggests that the combined policies and strategies by which NFA stabilizes prices and provides assistance to poor consumers,

has the unintended effect of lowering the prices received by the farmers by as much as 19 percent. This flows from the profit-seeking logic of rice traders who, knowing that the NFA will strongly defend the retail price from rising, will tend to compete by depressing farm gate prices even in the face of a shortage or import restrictions. (Debuque, 1999) It is difficult to conclude that this makes consumer price protection anti-farmer because farmers have been found to be net consumers of rice and hence are also bound to benefit from a cheap rice policy.

Food security. Two recent episodes come to mind in the evaluation of the NFA's ability to respond to crisis situations in food security. The first is the 1995 rice crisis, centered mostly in Manila, when retail prices skyrocketed in the face of shortage and ill-timed imports coinciding with a tight world supply. The second is the rice crisis situation that struck South Cotabato, a province on the island of Mindanao, in 1998 at the height of the onslaught of the *El Niño* phenomenon. Here, hundreds of *lumads* (natives) where driven to eat a potentially toxic root crop called *kayos* in the face of yellow corn harvest failures. The irony is that NFA warehouses within the vicinity of the stricken areas were stocked full. While the former shows the dire effects of running down public buffer

TABLE 11
Total inventory versus daily requirement and number of days supply (IN THOUSAND MT)

Year	Total inventory as of July 1	Daily rice requirement	Number of days supply
1988	1,231	16.70	74
1989	1,080	17.70	61
1990	1,149	17.90	64
1991	1,821	16.70	109
1992	1,627	17.50	93
1993	1,380	18.20	76
1994	1,257	18.30	69
1995	944	19.60	48
1996	1,602	20.50	78
1997	1,818	22.00	82
1998	1,927	22.00	88

Source: NFA, 1999

stocks in the face of uncertain and thin international rice markets, the latter shows that the mere presence of buffer stocks does not ensure food security.

Buffer stocks, however, remain the first line of defense against sudden supply contractions and emergency situations. Table 3-6 shows the comfort zone provided by 90 days of buffer holdings by both the NFA and private sector was achieved only in 1991 and 1992. Note that stocks were dangerously low during the crisis year of 1995. It must be noted, however, that during years of good harvest, the inability of government to keep desired levels of buffer stocks have not led to disastrous results. This suggests that there is room for flexibility as to the optimal levels of stocks the government should maintain.

Summary

Government intervention in rice markets is premised on two goals: food security and price stabilization. To pursue these ends the NFA administers buffer stocks and a subsidy scheme that allows it to purchase paddy at a high price while selling milled rice at a low price. Has NFA achieved its goals through these programs? More importantly, has NFA **efficiently** fulfilled its mandate?

To be sure, the goal of food security is too large to be left to the NFA. Food security after all goes beyond the availability of food supplies to the accessibility of those supplies to particularly vulnerable groups. An effective buffer-stocking policy is seen as one of the many components necessary for achieving said goal. NFA's track record in buffer-stocking and rice distribution lays bare the agency's fundamental institutional weaknesses. For instance, the NFA's ability to use buffer stocks as a tool to ensure food security under extra-ordinary circumstances is contingent upon how well it is able to forecast the supply situation. Central to an effective buffer-stocking policy then is the quality and timeliness of production information that the government processes. The ill-timing of imports that led to the rice crisis of 1995 informs us of how ill-equipped the agency is in terms of forecasting.

Moreover, the cost-effectiveness of public investments in buffer-stocks need to be investigated further. From 1995 to 1998, total subsidies and equity infusion to the NFA ranged from Php1.3 to 1.5 billion. Total net losses from 1988 to 1998 amounted to PhP20 billion. Its total debt, most of which are government-guaranteed

domestic bank borrowings, reached PhP17 billion, equivalent to 77 percent of its total assets. (Castillo, 2000) In the context of the government's fiscal constraints, the burden of buffer-stocking is obviously not trivial.

Meanwhile, the goal of price stabilization has been pursued by the NFA through a general retail price subsidy that has mostly benefited urban consumers. Because the subsidy is untargeted, there is a substantial leakage of benefits to the non-poor whose consumption represents about one-half of the total rice consumption.

On the other hand, the impact of government intervention on farmgate prices range from insignificant to nil. This section has shown that NFA's paddy procurement operations have been declining and largely unable to influence farmgate prices—with the subsidized government prices falling below market rates in a number of years. Here, weaknesses in institutional rules need to be addressed. For instance, the high level of moisture content requirements squeezes out of the program its intended beneficiaries: poor farmers without access to post-harvest facilities. Moreover, there may be a need to streamline the bureaucratic channels that lead to increased transaction costs for poor farmers and thus discourage them to sell stocks to the government.

In light of these observations, there may be wisdom in pursuing more targeted government interventions in the rice market. For example, the NFA could increase the volume of its operations in 5th and 6th class municipalities. Food stamp programs that directly deliver subsidies to the household and are more transparent may be more effective than the general price subsidy.

In general, the form of government intervention that has had the most impact on market outcomes has been NFA's import operations. Such operations directly affect marketing actors from the farmers to millers, who compete directly with the imports. The ability of these actors to compete with the imports depend on two factors: productivity and marketing efficiency. The next section hopes to shed light on the question of marketing efficiency by looking into the organization and institutions of private rice marketing.

Private sector operations in rice marketing and distribution

Private sector operations in rice marketing and distribution

Having outlined the nodes of state intervention in rice marketing, we now turn to the activities of the private sector. This section reports the most important results of the field research, covering key links in the marketing chain feeding into two major consumption centers: Davao City and Metro Manila. The field research, although geographically extensive in scope, was at best a reconnaissance into the complicated network of rice marketing involving elusive trade practices and contracts. It attempted to collect data about the structure of private rice marketing and, based on this data, gain insights about the institutional workings of the marketing system.

This section explores three points of inquiry.

First, how is the post-production rice market organized? Here, the geographic flow of rice is traced from Isabela to Metro Manila and from Davao del Norte to Davao City. The marketing actors are identified and the links between them are explained.

Second, what are the points of value-added and the extent of profit-taking at each node in the marketing chain? Based on the field interviews, the activities of the different marketing actors are explained. Illustrative examples of income and cost schedules of some marketing actors are presented to make conjectures about marketing margins at different points in the marketing chain.

Third, what do the findings of the survey of millers suggest about the "health" of the rice business? Here, features of the milling business that are suggested to indicate the viability of the rice business in the long run are examined. In particular, findings about the state and extent of private investments in key physical assets are discussed.

Organization of marketing

Geographical flow of rice in areas under study

The field research zeroed in on two major marketing chains: the Isabela-Nueva Ecija-Bulacan-Metro Manila chain-referred to as the "northern chain"-and the Davao del Norte-Davao City chain-the "southern chain". Table 4-1, which summarizes the scope of operations of the miller-traders in the northern and southern chains, gives an idea of the flow of rice in the areas under study.

TABLE 12
Scope of miller-traders' paddy procurement and rice distribution activities, by province
(IN PERCENT)

	Bulacan		Nueva Ecija		Isabela		Davao del Norte	
Source	peak	lean	peak	lean	peak	lean	peak	lean
w/in barangay	6.3	-	-	-	7.1	16.7	-	-
w/in municipality	0.0	12.5	6.3	6.7	28.6	8.3	16.7	14.3
w/in province	0.0	-	25.0	26.7	42.9	41.7	66.7	57.1
w/in region	6.3	6.3	18.8	13.3	14.3	16.7	16.7	28.6
beyond region	87.5	81.3	50.0	53.3	7.1	16.7	-	-
Destination								
w/in barangay	-	-	-	-	-	-	9.1	25.0
w/in municipality	6.3	6.3	-	-	15.4	15.4	27.3	12.5
w/in province	6.3	6.3	-	-	7.7	7.7	18.2	12.5
w/in region	-	-	-	-	-	-	36.4	25.0
beyond region	87.5	87.5	100.0	100.0	76.9	76.9	9.1	25.0

Source: Field survey

THE NORTHERN CHAIN

Rice that flows to Metro Manila is mostly sourced as paddy from the regions of Ilocos, Cagayan Valley and then milled into rice in the provinces of Isabela, Nueva Ecija and Bulacan. Traders and millers interviewed depict Isabela and Cagayan as centers of production and San Jose City, Nueva Ecija and Bocaue, Bulacan as centers of trade. Moreover, Dagupan St. in Metro Manila is depicted as the wholesaling center, although the millers do mention other minor wholesaling/retailing hubs within the metropolis.

Meanwhile, mills that feed into the northern chain are those

that are situated in towns along the highway leading from Isabela to Manila-where the towns chosen as areas of research are also situated (See Table 1-1). Research findings of this study in terms of geographic flow bear no radical departure from those of CONFED (1995), the most recent large-scale study on the rice marketing system in Northern Luzon.

Survey results indicate that most of the paddy milled in Isabela comes from within the province and the contiguous province of Cagayan Valley. Seventy-nine (79) percent of the respondents in Isabela procured paddy from within the province itself. During the peak season, all but one respondent sourced paddy from outside the region.

Manila is mentioned 53 percent of the time as the destination of rice milled by miller-traders in Isabela. However, a significant chunk appears to remain in Isabela, which is mentioned as destination 34 percent of the time. Provinces and cities further up north like Baguio, Pangasinan and La Union appear to be serviced by Isabela, too-cornering 9 percent of the responses.

In contrast, at least 50 percent of the respondents in Nueva Ecija source their paddy from beyond the region even at the peak season of harvest in their province. An estimate made by a trader somehow validates this finding. He says that at least 40 percent of the paddy milled in Nueva Ecija emanates from Cagayan Valley and Isabela and only 30 percent comes from Nueva Ecija itself.

All of the miller-traders interviewed in Nueva Ecija deliver at least a portion the rice they mill to areas beyond their province. Again, Metro Manila is the most mentioned destination (66 percent), followed by the provinces of Batangas, Quezon, Bulacan and Cavite in Southern Tagalog (17 percent) and other provinces/cities within Central Luzon namely Bulacan, Bataan, Olongapo and Angeles (10 percent).

Bulacan provides an even sharper contrast. Here, 88 percent of the respondents say that they sourced their paddy from beyond the region. Provinces in Cagayan Valley and the Ilocos region are the most mentioned sources of paddy (42 percent), followed by other Central Luzon provinces (34 percent). Meanwhile, Metro Manila corners 60 percent of the responses as destination of rice milled. However, Bulacan's reach also extends to outlying regions, servicing provinces and cities like Calamba, Cavite, Laguna, Tagaytay, Quezon and Lucena. This strengthens the claim that

Bulacan is more of a trading and milling hub than a center of production for rice flowing to Metro Manila and beyond.

THE SOUTHERN CHAIN

Meanwhile, rice that flows to Davao City mostly originate from Central Mindanao and other provinces in Southern Mindanao. Within Southern Mindanao, production is concentrated in the provinces of South Cotabato and Davao del Norte. Monteverde St. in Davao City is pointed to in interviews as the major wholesaling hub in the city. In contrast to the northern chain, where Manila is geographically at the end of the chain, Davao City is geographically situated in the middle of the network. More than one chain thus feeds into Davao City. This research only had the resources to investigate one chain.

Sixty seven percent of the miller-traders in Davao del Norte say that they procure their paddy from within the province. The most often cited areas of procurement are either barangays within the municipalities surveyed or municipalities within Davao del Norte (93 percent). This shows that the province is both a production and milling center.

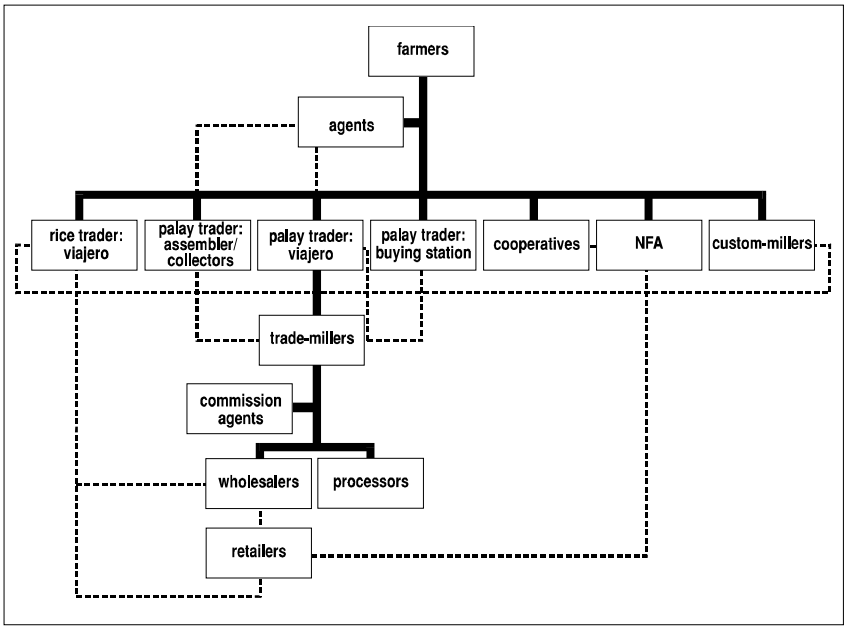
The scope of operations of miller-traders in Davao del Norte appears to be less extensive than of those in the northern chain. While more than half of the miller-traders operate beyond the region in the northern chain, only a minority of those in Davao del Norte extend beyond the region. This is because Davao City lies within the same region as Davao del Norte, in contrast to the northern chain, where the provinces under study are located in regions beyond Metro Manila. Davao City corners half of the responses in terms of destination while other municipalities within the province correspond to a little over a third of the responses.

The marketing actors

Figure 3 attempts to illustrate the intricate relations between and among marketing actors. At this point, it would be useful to define the roles of the key agents in the marketing chain. Marketing actors, we found out, typically perform multiple functions beyond buying and selling-an observation echoed by Harris-White (1992) in a study of Indian grain markets.

The chain begins with farmers, who grow paddy and supply it to downstream marketing actors. While farmers are predomi-

Figure 4
The organization of the post-production rice market



nantly small-holder producers, many downstream agents are also directly or indirectly involved in farming. Many of the buying station owners interviewed also managed farms that their families either owned or leased. Small *barangay*-based rice custom-millers are also usually farmers themselves.

Commission agents, more popularly known as *ahente* (agent), are middlemen with no capital of their own and who negotiate deals for their "employers". Trader-millers hire them to scour villages for paddy. Big buying station owners, on the other hand, sometimes employ agents based in milling centers as marketing representatives. For example, big buying stations in Isabela usually have agents to market their paddy in Bocaue, Bulacan.

Meanwhile, big trader-millers also hire agents to market the rice they mill in the centers of rice trade and consumption. Big millers in Isabela, for instance, usually have marketing agents in Dagupan, Manila. In Figure 3, they are shown as "commission agents" between millers and wholesalers. In Monteverde St., Davao City, they function as freelancers and are called "disers".

Their employment status and mode of compensation vary from network to network. The president of the agents' association

in Intercity, Bocaue, Bulacan claims that agents get only a fixed amount per truck of paddy sold, depending on the truck type. That is, only the paddy traders pay them. Agents in San Jose City, Nueva Ecija, in contrast, get a commission for every kilo from the miller and a tip from the paddy trader.

Palay traders are assemblers/collectors, buying stations or *viajeros*. Assemblers are small-scale, village-based traders who have minimal storage capacity and thus less extensive scopes of operations. They deal directly with farmers and are usually financed by bigger *palay* traders or miller-traders.

Buying stations are stalls strategically located along the highway or in town centers. At harvest time, agents, assemblers and farmers just walk in for spot transactions. After the harvest season in the province where the stations are based, owners use their own trucks to scour rice-producing villages outside their province. Bigger buying stations have agents of their own who market their paddy at the big milling centers.

Palay viajeros are traders who usually travel the length of the marketing chain to buy and sell paddy. Based on field research, they ply the northern chain buying paddy from farmers and buying stations in Isabela or Nueva Ecija and selling their procurement to millers in Nueva Ecija or Bulacan. There were no *palay viajeros* encountered in the southern chain.

Rice *viajeros*, in contrast, are truckers who buy paddy and sell rice. They shoulder the costs of milling and sell their paddy as soon as it is milled. Like *viajeros* trading paddy, we only encountered them in the northern chain.

Cooperatives organized at the village or town level act as either rice traders or *palay* traders. Like these actors, they offer transportation services credit and access to inputs. They also assemble paddy that may be sold to NFA. Some of them have milling facilities of their own, made possible by discounted loans from the Land Bank of the Philippines, through a government program.

Rice millers are either custom-millers or miller-traders. Custom-millers provide milling services to farmers and rice traders. Miller-traders are rice traders who mill, transport and distribute their own paddy procurements. Some of them are also involved in custom-milling. Big miller-traders finance farmers, buying stations and/or assemblers.

Wholesalers buy rice, stock and warehouse their procurements

and are involved in bulk sales of bagged rice to retailers. Some wholesalers sell to other smaller-scale wholesalers or department stores and/or are also involved in retailing.

Finally, the chain ends with retailers, who buy bagged rice from wholesalers and sell rice to households on a per kilo basis. Their operations range from *sari-sari* scale to selling in public market stalls or department stores. They are also the distributors of rice sold by the NFA.

The alternative marketing chains

FARMER-CUSTOM-MILLER-RETAILER

The most fundamental marketing network is the "farmer-custom-miller-retailer" chain. Small farmers with no credit ties to downstream trading agents, go to their village-based custom millers or to travelling millers (unlicensed millers with portable mills) for their milling needs. These are the farmers who set aside most of their milled rice for consumption, while selling the surplus to town based retailing markets. These farmers also shoulder all post-production costs.

Table 13
Type of operations, by capacity (IN PERCENT)

	Small	Medium	Large	Total
All provinces				
custom miller	76.00	44.00	5.88	46.79
miller-trader	24.00	56.00	94.11	53.21
Bulacan				
custom miller	75.00	0.00	8.33	20.0
miller-trader	25.00	-	75.00	80.0
Nueva Ecija				
custom miller	63.6	57.1	-	40.7
miller-trader	36.4	42.9	100.0	59.3
Isabela				
custom miller	92.3	66.7	10.0	68.9
miller-trader	7.7	33.3	90.0	31.1
Davao				
custom miller	44.4	20.0	-	29.4
miller-trader	55.6	80.0	100.0	71.6

Source: Field survey

In the survey, the operations of small-scale millers capture the above-mentioned marketing chain. As Table 4-2 shows, 76 percent of small-scale millers surveyed are custom millers. All of them custom mill paddy brought to the mill from farmers within their village or neighboring villages. These village-based custom millers mostly have a capacity of 5-10 cavans per hour, often owning a small farm of their own. In our survey, the chain is most prevalent in Isabela, where 53 percent of the respondents were small-scale custom millers. This bolsters the claim that Isabela is more a production than a trading hub. However, it must be noted that paddy serviced by these millers in Isabela represent only 1 percent of those processed by trader-millers.

In general, rice passing through this chain is not substantial. In all provinces, as Table 4-3 shows, custom-milled paddy is less than 4 percent of paddy procured for trading during the harvest season. This means that majority of the paddy processed is traded.

TABLE 14
Volume of paddy custom-milled by small-scale mills as a percentage of paddy procured for trading purposes by all mills during harvest month 1999, by province (IN PERCENT)

Province	
Bulacan	0.23
Nueva Ecija	2.76
Isabela	1.35
Davao del Norte	3.60

Source: Field survey

FARMER-TRADER-MILLER-WHOLESALER/RETAILER

One chain that caters to the commercial market is the "farmer-trader-miller-wholesaler" chain. Farmers who have direct financing arrangements with millers go this route. The millers, on the other hand, are those whose base of operations usually do not extend beyond the province. Through the years in business, they have developed contacts with farmers themselves in rice-growing villages. Rice processed by these millers then go directly to retailers and/or wholesalers in major public markets in the urban centers.

Millers who finance farmers are usually those who have developed long-term trade relationships with these farmers. They

advance production loan at an interest rate of 5 to 7 percent per month for 4 to 6 months. This is deducted from the proceeds of the paddy the farmers supply. In the field survey, millers directly funding farmers were typically themselves landowners while the

TABLE 15
Upstream agents millers deal with as a percentage of total responses, by scale and province (IN PERCENT)

	Peak			Lean		
Type of Agent	small	medium	large	small	medium	large
Bulacan						
farmer	100.00	-	9.09	100.00	20.00	9.09
REST	-	100.00	90.01	-	80.00	90.91
palay-agent	-	33.33	36.36	-	20.00	45.45
buying station	-	-	13.64	-	-	4.55
assemblers	-	16.67	-	-	-	-
viajeros	-	50.00	40.91	-	60.00	40.91
cooperatives	-	-	-	-	-	-
Nueva Ecija						
farmer	60.00	60.00	25.00	50.00	50.00	27.27
REST	40.00	40.00	75.00	50.00	50.00	72.73
palay-agent	-	20.00	18.75	-	16.67	18.18
buying station	20.00	-	12.50	25.00	16.67	18.18
assemblers	20.00	20.00	12.50	25.00	16.67	-
viajeros	-	-	31.25	-	-	36.36
cooperatives	-	-	-	-	-	-
Isabela						
farmer	50.00	60.00	29.17	100.00	50.00	37.50
REST	50.00	40.00	70.83	-	50.00	62.50
palay-agent	25.00	20.00	33.33	-	-	31.25
buying station	25.00	20.00	25.00	-	50.00	31.25
assemblers	-	-	8.33	-	-	-
viajeros	-	-	4.17	-	-	-
cooperatives	-	-	-	-	-	-
Davao del Norte						
farmer	55.56	57.14	60.00	75.00	50.00	50.00
REST	44.44	42.86	40.00	25.00	50.00	50.00
palay-agent	22.22	14.29	20.00	25.00	25.00	-
buying station	11.11	28.57	20.00	-	-	50.00
assemblers	-	-	-	-	25.00	-
viajeros	-	-	-	-	-	-
cooperatives	11.11	-	-	-	-	-

Source: Field survey

farmers they were extending credit to were tenants. Otherwise, these are relatively large farmers who have been a relatively steady source of supply through the years.

In the survey, this chain is captured by the operations of medium-scale millers in Nueva Ecija, Isabela and Davao del Norte. In Nueva Ecija, Table 4-4 shows that 60 percent of medium-scale miller-traders procure paddy directly, though not exclusively, from farmers and sell rice to wholesalers and/or retailers. The same is true for 60 percent of medium-scale miller- traders in Isabela and for 57 percent in Davao del Norte.

However, Table 4-5 shows that the share of paddy passing through this chain appears to be significant only in Davao del Norte, where mills are smaller relative to those in the northern chain. In all the other provinces, medium-scale miller-traders account for less than 10 percent of paddy traded.

TABLE 16
Share of medium-scale miller trader in total volume of paddy procured and paddy milled during harvest month 1999, by province
(IN PERCENT)

Province	share in total procured	share in total milled
Nueva Ecija	8.43	8.83
Isabela	3.72	1.21
Davao del Norte	16.93	22.04
Bulacan	1.85	1.63

Source: Field survey

FARMER-AGENTS /PALAY-ASSEMBLERS/BUYING STATION-TRADER-MILLER-WHOLESALER-RETAILER

Rice consumed in Metro Manila and Davao City usually pass through the "farmer-commission agent/palay-collectors/assemblers/ buying station-trader-miller-wholesaler-retailer" chain. During the harvest season, village or town-based collectors, mostly with agents, mediate between trader-millers and farmers. These farmers usually have financing arrangements with the *palay* collectors, who in turn are financed by trader-millers.

The financing arrangements between millers and paddy traders are mostly short-term loans or cash advances that could be

used for procurement. An owner of a buying station, for instance, says that she could borrow as much as 2 million pesos interest-free, for as long as she uses it for procurement and she returns the money on the afternoon of the day she borrowed it. For traders who have developed relationships of trust with millers, they are extended character loans at 3 to 5 percent monthly for 4-5 months or one season. In turn, these traders use this to finance farmers at 5 to 7 percent monthly interest over the same time period.

The trader-millers, whose reach goes far beyond their province during the lean months, are mostly large-scale millers. They bear the function of not only processing paddy into rice but also wholesaling in the collection of paddy and the distribution of milled rice to retailers. It is interesting to note that large rice millers in Isabela exhibit a degree of vertical integration. They own/finance buying stations, mill their produce and sell their rice through a marketing arm in Dagupan, a firm which they either own or which is owned by members of the family.

That paddy processed by medium- and large-scale millers pass through other intermediary actors can be inferred from Table 4-5. Here, the bigger the scale of millers' operations, the lower the share of farmers in the number of agents millers deal with. At the consumption-end, Table 4-6 shows that bigger millers tend to deal with wholesalers, except in Davao del Norte. It also shows that large-scale millers in Isabela and Davao del Norte also deal with commission agents at the wholesaling end. Moreover, survey results support the claim that most of the commercially available rice passes through this chain. Table 4-7 shows that at least 90 percent of paddy processed in all provinces, except Davao del Norte where this chain corners only 50 percent.

[illegible]

Rice flowing through Bulacan is best captured by the "farmers-*palay viajero*/rice *viajero*-trader-miller-retailer" chain. Tables 4-5 and 4-6 show the significant share of both *palay* and rice *viajeros* in the upstream and downstream network of Bulacan millers. Moreover, Table 4-5 shows the almost nil direct links that medium-scale and large-scale Bulacan millers have with farmers.

Here, *palay*/rice traders who procure paddy in northern regions travel to Bulacan to have the paddy milled. *Palay viajeros* interviewed indicate that Bulacan millers prefer dry paddy. Rice traders, on the other hand, rent the services of a mill and then

TABLE 17

Downstream agents millers deal with as a percentage of total responses, by scale and province (IN PERCENT)

	Peak			Lean		
Type of Agent	small	medium	large	small	medium	large
Bulacan						
wholesaler	-	20.0	47.8	-	20.0	47.8
retailer	50.0	60.0	13.0	50.0	40.0	13.0
commission agents	-	-	-	-	-	-
viajeros	-	20.0	26.1	-	20.0	26.1
own outlet	50.0	-	13.0	50.0	20.0	13.0
Nueva Ecija						
wholesaler	40.0	30.0	61.5	50.0	42.9	50.0
retailer	20.0	20.0	7.7	25.0	28.6	6.3
commission agents	-	-	15.4	-	-	6.3
viajeros	40.0	20.0	15.4	25.0	28.6	12.5
own outlet	-	30.0	-	-	-	25.0
Isabela						
wholesaler	40.0	25.0	50.0	50.0	20.0	50.0
retailer	40.0	25.0	22.2	50.0	40.0	22.2
commission agents	-	25.0	11.1	-	20.0	11.1
viajeros	-	-	-	-	-	-
own outlet	20.0	25.0	16.7	-	20.0	16.7
Davao del Norte						
wholesaler	25.0	33.3	33.3	20.0	66.7	37.5
retailer	37.5	42.9	50.0	20.0	33.3	37.5
commission agents	-	-	-	20.0	-	12.5
viajeros	12.5	-	-	-	-	-
own outlet	25.0	-	16.7	40.0	-	12.5

Source: Field survey

TABLE 18

Paddy processed by large-scale millers as a percentage of total, by province (IN PERCENT)

Province	Paddy procured	Paddy milled	Paddy procured	Paddy milled
	peak		lean	
Bulacan	97.06	97.24	98.28	98.30
Nueva Ecija	89.12	90.31	81.80	86.71
Isabela	96.13	98.52	95.55	98.30
Davao del Norte	66.50	51.96	42.66	59.29

Source: Field survey

distribute the rice themselves. Meanwhile, most of the millers interviewed in Bulacan are in Intercity, an industrial estate composed entirely of rice mills. Rice that flows from Bulacan, according to survey respondents, is sold directly to small wholesalers and retailers within Metro Manila outside of the Dagupan hub.

FARMERS-COOPERATIVES-RETAILERS OR FARMERS-COOPERATIVES-NFA-RETAILERS

The network least encountered in the field survey is one where cooperatives figure. Field research only came across such a chain in Davao del Norte. A study done on rice business networks in Davao del Norte (ASSIST, 1994) does mention that cooperatives have proliferated in the province and increasingly gained a significant role in rice marketing.

A manager of a province-wide farmers' cooperative with *barangay*-level satellite formations was interviewed in Tagum, Davao del Norte. His cooperative was a recipient of a JICA-funded government program that lent money to cooperatives to be used for buying post-harvest facilities. The cooperative acts as a trader-miller, procuring paddy from its members, milling it and selling rice directly to retailers or companies with which it formed partnerships. Like traders, it lends out production loans, albeit at a lower rate of 3 percent per month for five months. At the time of interview, it was milling an average of 2,600 cavans per month-equivalent to the operations of a medium-scale miller. However, it has the equipment of large-scale miller including: 2 mills with a total capacity of 70 cavans per hour; two mechanical dryers with a drying capacity of 220 bags per load; three warehouses with a total storage capacity of 70,000 cavans; and 7 transport facilities with a total hauling capacity of 2,000 cavans.

The manager comments that most of the cooperatives' equipment is underutilized. Because of this, it has had to shoulder high maintenance costs for the equipment. In the face of declining membership, the capacity of the cooperative to engage effectively in rice trading is weakened. Its situation is exacerbated by the inability of the farmer-members to pay their loans because of the cut in production brought about by the *El Niño* weather disturbance. At the time of interview, it had accumulated a loan exposure of 21 million pesos, with 30 percent classified as bad debt.

It is telling how the "farmer-cooperatives-NFA-retailers" chain

was not encountered in the field research. This could be indicative of the limited impact that NFA's domestic procurement activities have on the market.

Prices, profits and marketing margins

Activities and profits

This section attempts to outline in more detail the activities undertaken by the key marketing actors and where possible, determine how much profit they derive from these activities. The calculations are highly conjectural, given the small sample size and the sensitive nature of the data. Moreover, the computations are based on two highly simplistic assumptions: that a cavan is equivalent to 50 kilos and that a kilo of paddy yields 65 percent rice equivalent.

FARMERS

Farmers produce the object of trade: paddy. To be able to do so, they manage the use of land endowments and other factors of production. Moreover, they bear the risks imposed by nature on the production cycle. Most of the farmers interviewed in the field research were smallholder producers who practice monocropping. A focus-group discussion of farmer and farmer leaders was held in Santiago, Isabela while at least two farmers each were interviewed in San Jose, Nueva Ecija. A manager of a farmers' cooperative was interviewed in Tagum, Davao del Norte.

In the post-production activities, farmers typically shoulder the cost of harvesting, threshing, hauling and drying. In Isabela, interviewed farmers from rice-producing villages off the highway say that they pay harvesters one cavan for every 15 cavans harvested or about seven percent of total harvest. Threshing is computed at seven percent of harvesting fee. Farmers pay PhP 5 per cavan as drying fee. They spend around PhP 1,000 per hectare on food and labor expenses for hauling harvest from the farm to a point in the village accessible to traders' trucks. They estimate harvesting and post-harvest costs to take up as much as 20 percent of total costs per hectare.

They place a landowner's total costs per hectare, including labor, material inputs, and irrigation fee, to be at around PhP 15,000. Assuming that tenants set aside 15 cavans for the land-

owner, his total cost would come to about PhP 20,000. During the time of interview, the prevailing interest rate for debt incurred from informal sources like traders stood at seven percent per month for the duration of the season or four months. This means an additional PhP 4,200 -interest expense for every PhP 15,000 that a farmer typically borrows. At the time of interview, they say that in their villages, which are irrigated, a hectare yields as much as 100 cavans of palay. The prevailing price for ordinary paddy was about PhP 7 per kilo.

Given these assumptions, Table 4-8 summarizes a possible schedule of revenue and net income and income per kilo of paddy. These rough computations-figures that to a large extent are confirmed and validated by other farmers interviewed in Nueva Ecija show that credit and land rent are the major determinants of how much of the farmgate price goes back to farmers as profit. Given the above assumptions, a land-owning farmer with no credit earns a profit equal to 50 percent of the price. In contrast, a leaseholder with credit captures a profit equal to only 9 percent of the farmgate price.

TABLE 19
Schedule of income and revenue: Cordon, Isabela, May, 1999
(IN PESOS PER HECTARE)

Type of farmer	Revenue per hectare	Income per hectare	Income per kilo of paddy (in pesos per kilo)
landowner	32,667	17,667	3.53
tenant	27,417	7,417	1.48
landowner with credit	32,667	13,467	2.41
tenant with credit	27,417	3,217	.64

Source: Focus Group Discussion, Field Survey

AGENTS

Transactions and search costs give rise to the need for intermediary agents in the marketing chain. For instance, Hayami *et al* (1998) say that the transaction cost attributed to collecting paddy is high because individual farmers sell only a small amount. To increase the rate of utilization of his truck and trade skill, an independent trader would find it economical to employ agents who

have lower time opportunity cost to search for and strike contracts with neighboring farmers.

The same logic applies to large mills. For the sake of increasing the utilization rate of large fixed capital consisting of milling and drying facilities and a fleet of trucks, they need to procure a steady supply of paddy. In order to keep a mill running over the months beyond the local harvesting season, it is necessary to procure paddy from different areas with different harvesting seasons. Assemblage of a large amount from small producers over a wide territory makes it inevitable for the mill to rely on collectors in various localities. (Hayami, *et.al.*, 1998)

Agents can also be seen as an institutional response to information asymmetries in rice marketing. Because of the absence of up-to-date price information across links in the marketing chains, traders need agents to monitor price information at trading centers. For traders and millers who move big volumes, a price disparity of a single-centavo matters. Agents are also hired to match procurement with preferences of paddy buyers, especially millers. Agents are expected to be familiar with the type and quality of paddy emanating from different localities or traders. The sensitivity and importance of price and quality information to big traders and millers make credibility and trustworthiness valuable traits in agents. Principals who employ agents can thus be seen as paying a premium to these traits, too.

An agent does not incur cost other than his own labor-time. His income could thus be imputed from his revenues. An agent mediating between farmers and traders gets a per kilo commission from traders. In Santiago City, Isabela, the commission was placed at around two centavos per kilo. The scope of his operations is limited to villages where he is based and other adjoining villages within his town.

Meanwhile, an agent working between traders and millers usually gets a commission from traders during harvest and from millers during lean months. The commission comes to around five centavos per kilo for agents in San Jose City, Nueva Ecija. Sometimes, both parties pay the agent. Finally, an agent mediating between millers and wholesalers usually gets a commission from millers. When supply is scarce, wholesalers also compensate him. In Davao City, "disers" get PhP 1 to 5 per cavan of rice.

In general, the larger the collection an agent arranges, the

higher is his income. A village-based agent, whose operations are usually tied to the harvest season only, moves relatively smaller volumes and thus earns less. An agent further down the chain, say in a major trading and milling hub, may be able to move larger volumes because marketing operations there are year-round. It is interesting to note that many big traders encountered in the field survey started as agents.

To illustrate the comparative incomes of agents across marketing chains, first take the case of a commission agent based in Santiago City, Isabela. He works for a large miller based in the city and gets a commission of two centavos for every kilo he procures. Working in four contiguous villages, he says he can procure as much as 150 cavans a day at the peak harvest month. This is equivalent to an income of PhP 150 a day or PhP 4,200 a month assuming he works 28 days. During the lean season, he says he is only able to negotiate around 400 cavans per month or using the same assumptions as above, PhP 400 per month. Assuming that harvest months last for two months every year, this agent earns a gross income of about PhP 12,400 a year for his trading activities, an amount slightly below the country's poverty threshold for a family of six. However, these computations do not account for revenues that may accrue to the agent from the difference between his principal's quoted price and the price he was able to negotiate with the farmers. Though the agent does not admit this, millers opine that this could increase the margin of agents like the one interviewed by 20 centavos per kilo.

Another illustrative example is an agent based in San Jose City, Nueva Ecija. This agent negotiates deals between paddy traders and earns a commission of five centavos for every kilo he negotiates. He sometimes gets PhP 200 to 500 per truck, depending on the truck type, as "tip" from the paddy trader. He says that on the average he is able to negotiate with at least four trucks of 120 cavans each per a day. During peak months, he claims he can even place as much as 20 trucks per day. Assuming he maintains just 4 trucks a day, he stands to earn PhP 1,200 a day or as much as PhP 33,600 a month, from the miller's commission fee alone. Small wonder that from his earnings as agent, he has already bought a 1.5- hectare piece of land, which he leases to tenants. Moreover he runs a canteen near the gasoline station along the highway, where other agents congregate.

Agents from Intercity, Bulacan claim their business is less lucrative. Here, paddy traders and not millers pay them a commission fee. The agents' association president claims that said fee ranges from PhP 50 to 200 per truck. At two to three trucks per week in a lean month, and four to five trucks in a peak month, he says that on the average, the annual income they generate is no more than a minimum wage earners'. However, millers within the estate estimate agents' commission to be at a range closer to the San Jose hub, i.e., PhP 500-1,000 per truck.

PADDY TRADERS

The typical activities of paddy traders include hauling the produce from the farmgate to their warehouses, drying the paddy, and delivering the paddy to the millers or other paddy buyers. Their costs include labor fees (paid to those who oversee drying, haul, and deliver the paddy) and transportation expenses (drivers' fee, crude oil, gasoline, maintenance expense). Paddy traders are said to move volumes over 10 times that of commission agents (Hayami, *et al.* 1998).

Almost all of the big paddy traders interviewed in Isabela and Nueva Ecija began as small traders with limited scope of operations. However, almost all of them had landholdings of not less than 10 hectares. Most of them have families who have been involved in rice farming for at least one generation back. After having been able to save from their operations as small traders, they use their land as collateral to borrow money from the bank to buy trucks. They use their savings as initial working capital for buying paddy. Husband-and-wife tandems were also frequent.

A *palay viajero* in Isabela illustrates the cost and revenue schedule of a typical paddy trader. In April 1999, wet paddy can be bought in Isabela at PhP 7 per kilo. After a day of drying, the same could be sold in Nueva Ecija at PhP 7.75 per kilo. To be able to sell at least one ten-wheeler of paddy with a capacity of 25,000 kilos, he spends: PhP175,000 for paddy procurement, PhP2,500 for crude oil and driver's fee, PhP2,500 for other labor-related expenses, PhP2,500 as drying fee (at ten centavos per kilo) and PhP1,250 for the commission agent (at five centavos per kilo) for a total amount of PhP 183,750. This is equivalent to PhP7.35 of expenses for every kilo, or a profit margin of 40 centavos, a figure validated in interviews with three other traders in Isabela.

The same *viajero* has a fleet of two 10-wheelers, two trailers and two forward trucks. He uses the first four to deliver paddy in Nueva Ecija and Bulacan and the last two to haul paddy from villages in Isabela and Nueva Vizcaya. In 1999, he sold an average of 7,500 cavans of paddy during harvest months, and three-quarters of that in lean months. Assuming harvest lasts only 2 months every year and the rest are lean months, his annual income in 1999 amounts to more than PhP1.4 million. He says that he has invested as much as 6 million pesos in capital equipment (i.e., trucks and warehouse). Assuming this to be the total capital he uses, he enjoys a rate of return to capital in the order of about 24 percent per year.

As with agents, a paddy trader's income depends on the scope of his network. For instance, one small trader with just one truck and working only within contiguous towns within the province of Isabela says he was able to buy and sell 3,500 cavans for one whole season. At 7,000 cavans a year and assuming a profit margin of 40 centavos, he earns about PhP 140,000 a year.

MILLER-TRADERS

Miller-traders are principally rice traders who-instead of having their paddy procurement custom-milled by other millers-mill the paddy themselves. They earn from their trading activities but also earn from the sale of bran and brewer produced in the milling process. The earnings from the sale of by-products usually cover the cost of milling, although miller-traders from Bulacan note that this was not true at the time of interview. Meanwhile, they shoulder the costs of purchasing the paddy (including paying a commission fee to agents), drying, milling and distributing to wholesalers and/or retailers.

Rice millers interviewed in Bulacan and Nueva Ecija peg the cost of processing paddy into rice at PhP25 to 30 per cavan of palay or 50 to 60 centavos per kilo. This includes the cost of handling, drying and milling. Given an expected recovery rate of 65 percent, this amounts to 80 to 90 centavos per kilo of milled rice equivalent. Delivery costs stand at PhP 5 to 10 per cavan of rice or 10 to 20 centavos per kilo. Total processing costs per kilo of rice, range from 90 centavos to PhP1 per kilo of rice.

At the time of interview, paddy procured in Intercity, Bulacan stood at Php 9.00 per kilo of ordinary palay. This could be sold to

wholesalers in Manila at 15.00 per kilo. Assuming a recovery rate of 65 percent, millers in the area stand to earn about 15 centavos per kilo of rice or a profit margin of PhP7.50 per cavan of rice. This is a little bit lower than what is noted by interviewees in Bulacan and Nueva Ecija as the usual practice: a profit margin of 10 to 15 pesos per bag of rice or 20 to 30 centavos per kilo of rice. However, the mark-up should be up to around those figures if income from by-products is added. Moreover, this profit does not include earnings from the lending operations of the miller-trader. Miller-traders are typically wary of divulging the extent of lending operations-which could run up to millions for large-scale millers.

What do all these imply in terms of a miller's income? Take the case of a typical large-scale miller in Bulacan who has 2 modern multi-pass mills with a capacity of 50 cavans an hour each. He has two dryers and a fleet of trucks. His operations typically run for six days a week for 10 months. He has a warehouse to store part of the paddy procured during the harvest months to ensure continued operations during the lean months. He says that on the average, he processes and wholesales to Manila retailers a total of 1,000 cavans of rice a day. Saying he levies a mark-up of 12 per bag, he stands to earn PhP2.4 million a year in rice trading alone.

These rough computations do not include cost of money. The typical terms between millers and paddy suppliers are for millers to pay in cash. Wholesalers and retailers, on the other hand, pay on terms depending on the relationship that the buyer has nurtured with the miller. A typical arrangement is for wholesalers and/or retailers to pay in post-dated checks. In Bulacan, a miller says she charges an additional 10 pesos per cavan mark-up for a three to seven day term-payment.

It is important to note that the millers consider the risk of default as one of the biggest risks they face. Millers in both chains surveyed speak of instances where mills have closed down because of major defaults. The viability of the millers' business at its current level profits thus rests on maintaining relationships of trust with upstream and downstream agents.

WHOLESALERS AND RETAILERS

Wholesalers perform the function of distributing milled rice to retailers. They typically bear the cost of transporting the stocks from their warehouses to the retailers. Their business, as in most

of the rice marketing business, is a high-volume, low mark-up business. Big wholesalers in Dagupan, Manila buy from 5,000 to 10,000 kilos of rice a day and distribute this around Manila. Some reach outlying provinces in Southern Tagalog and the Visayas. According to a wholesaler in Dagupan, many of his fellow wholesalers there are really marketing arms of millers in Dagupan. Meanwhile, big wholesalers in Monteverde, Davao City mostly deliver within the city limits.

According to our source in Dagupan, the mark-up of wholesalers range from 10 to 30 pesos per cavan of rice, depending on the volume procured by the retailer. The rule of thumb is, the bigger the volume procured, and/or the longer the wholesalers have dealt with the retailer, the lower the mark-up. This mark-up corresponds to the cost of money as payments are made by retailers in terms of 5-7 days in Metro Manila and 7-15 days in Davao City. Retailers, on the other hand, make a profit of PhP 50 to 100 per bag.

Profit margin

Table 4-9 summarizes the data on profit margins acquired at each level of the marketing chain. Rough approximations of margins suggest that farmers get the biggest profit margins followed by traders and retailers. Trader-millers in the north chain take a smaller profit margin than the south chain, owing perhaps to the greater number of millers in the northern chain.

But because paddy traders and millers have command over and process greater volumes of paddy-they stand to get higher income and profits. A small farmer working on an irrigated farm has power only over 100 cavans of paddy or an equivalent of 65 cavans of rice per season, which lasts from 4-6 months. In contrast, a miller in Intercity buys and sells at least 1,000 cavans of rice per day while a wholesaler in Dagupan moves at least 5,000 cavans of rice per day.

Rice marketing is essentially a thin-margin, high-volume business. Traders seek to maximize the amount of paddy they collect while millers seek to achieve high utilization rates of their fixed capital. This is why competition is intense for hauling and processing as much paddy and selling as much rice as possible.

Source: Field interviews

TABLE 20
Estimates of profit margins of marketing actors, by marketing chain (IN PESOS)

	Profit margin per kilo of paddy	Profit margin per kilo of milled rice equivalent	Area data was gathered
Northern chain			
farmer	.4 to 3.5	.62 to 5.38	Cordon, Isabela; Cauayan, Isabela
agent	.02 to .05	.03 to .08	San Jose City, Nueva Ecija; Santiago, Isabela; Bocaue, Bulacan
paddy-trader	0.4	0.62	Santiago, Isabela
trader-miller		.2 to .4	Muñoz, Nueva Ecija; Bocaue, Bulacan
wholesaler		.2 to .6	Dagupan St., Manila
retailer		.50 to 1	Quiapo, Manila
Southern chain			
farmer	2 to 4	3.07 to 6.15	from a farmer's cooperative manager, Tagum, Davao del Norte
agent	.02 to .05	.03 to .08	Tagum, Davao del Norte
trader-miller		.6 to 1	Tagum, Davao del Norte
wholesaler		.02 to .1	Monteverde St. Davao City
retailer		.50 to 1	Bankerohan, Davao City

Case study: the milling sector

The milling sector is a vastly understudied aspect of the rice marketing chain and yet millers occupy a very important place in the marketing chain-they are in the middle of the marketing chain and thus are attuned to the workings of both producers and buyers of rice. Of the marketing actors, they have the most exposure in terms of physical capital. Large-scale millers invest millions in trucks, warehouses, mills and dryers. The extent of investments into the sector, as well as the state of post-harvest facilities, are good indicators as to the perception of private actors regarding the viability of the rice sector.

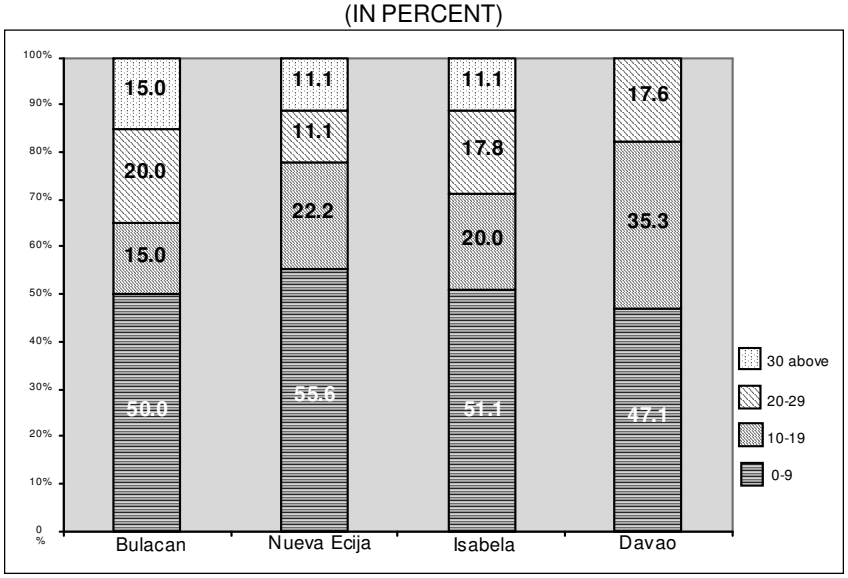
The emerging picture is that millers are educated, relatively young entrepreneurs. (See Appendix 1 for data on the survey respondents.) This is in sharp contrast to popular notions about millers being old and regressive voiced by both industry and government leaders. Many of the newer entrants are husband-and-

wife teams-with the husband overseeing the paddy procurement operations and the wife supervising the mill operations. Quite a number of them are landowners or are part of land-owning families in their provinces. Most of those encountered in the survey considered their work in the mills as a full-time job.

Age and capacity of mills

Figure 4 shows that majority of the millers have been in business only in the last 10 years. This does not preclude the possibility that the business was passed on to them by family. Based on our observations, this was prevalent in Cabatuan, Isabela where current millers are typically second, if not third generation millers. However, millers in Intercity, Bocaue, Bulacan were either self-made businessmen who began as traders or also had operations along the highway, the site of the older mills.

FIGURE 5
Years in business, by province
(IN PERCENT)



The years in business somehow coincide with the average year mills were bought, as shown in Table 4-10. It is especially interesting to note that the larger mills are also the relatively newer ones, implying investments coming into mills with commercial capacity. This is further validated by the fact that 62 percent of the respon-

dents have modified their mills at least once. Table 4-11 reveals that most of these additional investments, which were meant to modernize their machines, were made in the 1990s.

TABLE 21
Year mill was bought, by capacity

	Mean	Median	Mode
small	1987	1989	1978
Medium	1985	1985	1980
Large	1988	1990	1996

Source: Field survey

TABLE 22
Modifications made to mills

	Frequency	% of total	Mean year modification was made
Pneumatic	5	4.59	1996
Paddy separator	17	15.60	1993
Rubber huller	22	20.18	1990
Polisher/whitener	13	11.93	1995
Blower	13	11.93	1993
Grader	27	24.77	1995
Stoner	54	49.54	1993

Source: Field survey

Table 4-12 shows the mean capacity of mills, by province. The mean capacity of mills in northern chain provinces are mostly large in scale while that of Davao del Norte corresponds to medium-scale mills. The mean capacity of mills in all provinces is about 34 cavans per hour. This means that on the average, the provinces

TABLE 23
Capacity of mills, by province
(IN CAVANS PER HOUR)

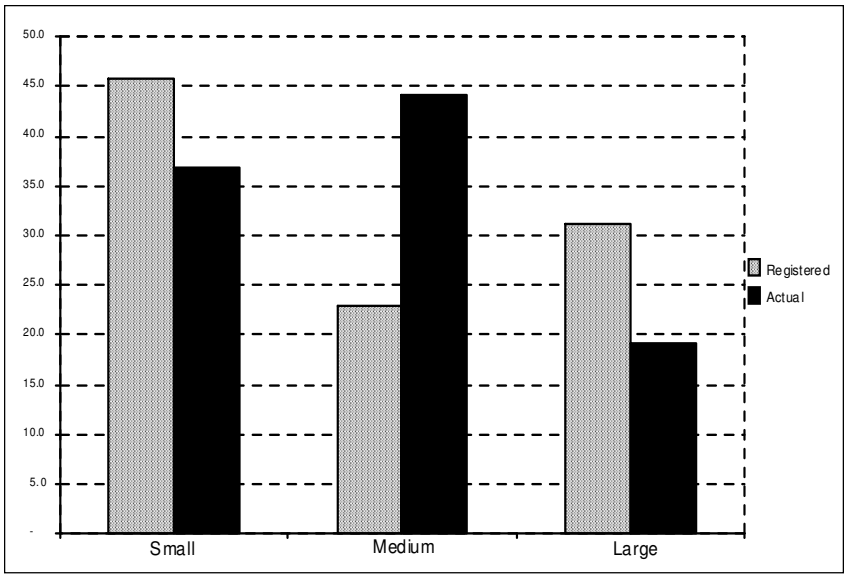
	Isabela	Nueva Ecija	Bulacan	Davao del Norte
Mean	33.52	34.97	45.18	18.12
Median	12.00	18.00	40.00	15.00
Mode	10.00	10.00	25.00	20.00

Source: Field survey

surveyed have the capacity to mill 13,600 kilos of paddy. Assuming that mills operate for eight hours, this amounts to about 8,840 kilos of rice in a given day. It is interesting to note that Bulacan appears to have higher-capacity mills than Isabela and Nueva Ecija even as it has lower overall capacity than the two (see Table 1-1). Notice also the distance between the mean and the mode in the northern chain provinces. This implies that a number of mills with capacity higher than the mean dot the picture. Meanwhile, that the mean is lower than the mode capacity in Davao del Norte suggests that many small- and medium-scale mills service the province.

Disparities between actual and registered capacity reveal that there may have been some downscaling of operations in 1998. Comments made by millers in the interviews were validated by survey findings depicted in Figure 5. The figure shows that, on the one hand, there are more medium-scale mills than have been registered. On the other hand, there are less large-scale mills than have been registered. This means that some large-scale mills may have down-scaled their operations in 1998. Of course, some of the disparity in medium-scale mills is accounted for by the under-reporting of some mills posing as small-scale mills.

FIGURE 6
Registered (1988) versus actual (1999) capacity



Millers' assets

The survey also attempted to make an inventory of millers' physical plant assets other than their mills. In particular, the survey looked into the breadth of investments of millers in dryers, warehouses, trucks and communication facilities.

DRYERS

Dryers are important equipment for millers. Drying improves the shelf life of paddy and increases the volume of rice equivalent. Table 4-13 shows that on the average, a mill has 2-3 dryers. In the northern chain, Isabela has the most drying capacity, while Bulacan has the least. The average years in which investments were made into dryers were 1995 and 1996. In the northern chain, this is often quoted as a year when many rice marketing actors benefited from the sudden rise in rice prices in Metro Manila. Most of the drying capacity is concentrated in commercial medium- and large-scale mills although in Nueva Ecija and Davao del Norte, even small-scale mills have drying capacity.

TABLE 24
Average year acquired, number of and capacity of dryers by province

	Isabela	Nueva Ecija	Bulacan	Davao del Norte
Number	3	3	3	2
Capacity (in cavans per load)	699	377	259	155
Year acquired	1995	1996	1995	1995
Capacity (in cavans per load), **by scale of operations**				
small		120.00		100.00
medium	360.00	120.00	25.00	160.00
large	736.67	487.14	306.00	180.00

Source: Field survey

WAREHOUSES

The warehousing capacity of millers determines their ability to cope with and profit from fluctuations in prices. As has been shown, trader-millers typically earn from their trading, not milling activities. The typical operations of a miller would then be to

procure and set aside paddy at the peak of the harvest when prices are expectedly low and release what they store during lean months when prices are low. However, many millers interviewed noted that in 1998, the spiraling interest rates made it risky for them to store. They would rather be safe and have cash in their hands and thus opted for continuous buying and trading operations even during the harvest time, when they received lower prices.

TABLE 25
Average year acquired, number of warehouses and total warehousing capacity, by province

	Isabela	Nueva Ecija	Bulacan	Davao del Norte
Number	1	2	2	1
Capacity (in cavans)	24,666	33,588	18,867	6,853
Year acquired	1987	1985	1988	1986

Source: Field survey

Table 4-14 shows that warehouses are among the first investments that a miller makes-with mean year the warehouses were built coinciding with the mean years businesses were established. Total warehousing capacity is highest in Nueva Ecija and Isabela and lowest in Davao del Norte. If juxtaposed against milling capacity, it may be conjectured that stock turnover is faster in Bulacan and Isabela, where total milling capacity is larger and warehousing capacity is smaller.

TRUCKS

A millers' fleet of vehicles determines the geographical scope of his operations. Smaller trucks like the "elf" (capacity: 120-150 cavans), which can negotiate smaller barangay and farm roads better than the bigger ones, are used to haul paddy from the villages. Bigger trucks like "forward trucks" (capacity: 200-250 cavans), "10-wheeler trucks" (capacity 300-350 cavans) and "trailers" (capacity 500-800 cavans) are used to haul paddy to the miller or rice to the wholesalers. Custom-millers use vehicles with lower loading capacity, like tricycles and jeepneys, to haul paddy from the farm. Some larger millers also have their own dump trucks, which they use to ferry their by-products.

Survey results, as shown in Table 4-15, indicate that millers in Isabela and Nueva Ecija generally have higher trucking capacity than those in Bulacan and Davao del Norte. The disparity on the part of Bulacan can be explained by the fact that most of the paddy processed in Bulacan is delivered right at the doorsteps of the miller. Meanwhile, the lower trucking capacity of millers in Davao del Norte reflect the lower volumes that the province processes compared to its counterparts in the northern chain.

As expected, the larger the millers' capacity, the more vehicles they have, and consequently the larger the scope of operations.

TABLE 26
Average number of vehicles,
by type, province and millers' capacity

Isabela						
millers' capacity	elf	forward	10 wheeler	trailer	others	total
small	0.5	0.1	-	-	0.4	1
medium	0.2	0.3	0.1	0.1	1.1	2
large	1.0	1.7	1.1	2.1	0.1	6
Nueva Ecija						
millers' capacity	elf	forward	10 wheeler	trailer	others	total
small	0.3	0.4	0.2	-	0.4	1
medium	0.9	1.0	0.4	-	-	2
large	1.0	2.7	2.0	0.2	0.2	6
Bulacan						
millers' capacity	elf	forward	10 wheeler	trailer	others	total
small	0.3	0.3	-	-	0.3	1
medium	0.5	0.3	-	-	-	1
large	1.3	1.1	0.8	-	0.1	3
Davao del Norte						
millers' capacity	elf	forward	10 wheeler	trailer	others	total
small	0.2	0.7	0.3	-	-	1
medium	0.6	0.8	0.4	-	0.2	2
large	2.0	1.3	0.7	-	-	4

Source: Field survey

COMMUNICATION FACILITIES

Communications facilities are central to keeping millers updated regarding price and stock movements in the centers of trade. Table 4-16 reveals that all millers, across capacity, have at least one phone connection and radio set. Again as expected, larger millers

have more extensive communications facilities. As a side note, the extent of phone connections in the province may be reflective of the relative success of allowing more players to come into the telecommunications industry in the country. Millers in Isabela and Nueva Ecija appear to be the most wired-relying not only on phone lines but also cellular phones and radio sets. This may be related to the extent of their transportation facilities. Sending more out, they need to monitor more units.

TABLE 27
Average number of communications lines and radio handsets, by province and millers' capacity

	Isabela	Nueva Ecija	Bulacan	Davao del Norte
land lines	2	1	1	1
< 15 = 15	1	1	1	1
>15; < or = 30	2	1	1	1
>30	3	1	2	1
cellular lines	2	2	1	1
< 15 = 15	-	1	-	1
>15; < or = 30	1	3	1	
>30	3	2	1	1
faxlines	1	1	1	-
< 15 = 15	-	-	-	-
>15; < or = 30	1	-		-
>30	1	1	1	-
radio sets excluding base	5	6	1	1
< 15 = 15	-	2	-	1
>15; < or = 30	6	4	-	2
>30	5	7	1	1

Source: Field survey

Synthesis: Institutions in rice marketing

What key institutional characteristics of private sector activities in rice trading can be observed in the organization of marketing?

Competition

Rice marketing is a business where capacity matters. The more volume an actor can produce, procure or process, the more he can make money. However, it is difficult to conclude from this alone that any actor has monopoly power over any segment of the market.

In the milling sector, we see small-scale actors thriving side by side with large-scale mills. There exists intense competition between millers not only within the same locale but also across provinces. Large-millers, in order to be assured of maximal plant and equipment utilization, are forced to compete with millers even in other provinces so that they can procure paddy during different harvesting seasons. Moreover, substantial investments to modernize milling operations across scale of operations can also be considered an indicator that mills are gearing up for competition.

The competition among millers across provinces has also given rise to innovation. A miller in Muñoz, notes that with the rising share of Intercity millers in volumes processed, millers from his locale are forced to compete by product differentiation. He observes that his neighbor-millers have become more keen about the quality of *palay* they procure. They are investing in technologies and equipment that would help them produce well-milled aromatic rice. A miller in Bulacan, observes on the other hand, that paddy that millers in Bulacan get are already those cast-off by those in Nueva Ecija and Isabela. Their response is to develop better contacts in supply areas so that they could also be assured of good quality paddy.

Paddy *viajeros* also appear to help in eroding the monopoly power of village-based traders. Many traders interviewed note that with their entry into the villages, farmers are beginning the practice of paying off their credit in cash. If they find that the *viajeros* can give them a better price for their paddy, they sell their paddy to these viajeros and then pay out of the revenue they get from the sale. Local traders are also forced to compete with these *viajeros* in terms of price-setting. Rosengrant *et. al.* (1995) echo these findings in the case of corn marketing.

Credit-tying

Credit-tying is one of the most maligned of rural institutions, often seen as an institution motivated by the desire of the credi-

tors to capture monopolistic profit. However, as Hayami *et.al.* (1998) note, it stems from the motive to save transaction costs arising from possible moral hazard and opportunism under the asymmetry of information. For one, the interest on credit must be seen not only as a return to the cost of money of the trader or miller. It is also a premium related to the risk taken on by the trader or miller as to the quality of paddy that he would get from the farmer, who is assured of a sale no matter what the quality of his produce is.

The emerging picture is one where maximal monopolistic rents are extracted in more remote villages, less accessible to competing traders and millers.

Interest rates for loans made to farmers in milling centers in the northern chain stand at 5 to 7 percent per month for 3 to 6 months. This amounts to 60 to 84 percent per annum, still way below non-collateralized consumption loan from informal money lenders which, based on interviews, stand at about 10 percent per month.

In contrast, farmers in more remote vilages in the southern chain, a cooperative manager in Davao del Norte posits, face up to credit-tie-in interest rates of 10 to 15 percent per month.

In general, markets-being situated in milling centers-were more "contestable" in most of the areas where the survey was conducted. In these areas, it is not entirely unheard of for farmers and middlemen to switch trade partners if their relationship with their existing "patron" is no longer satisfactory to them. Because of the presence of numerous traders and millers, the practice of borrowers reneging on their promise to supply paddy and choosing instead to pay in cash is not uncommon. Creditors, meanwhile, opt to accept the payment rather than end up with nothing. Because of stiff competition, neither can they just cut ties with "erring" farmers. It must also be noted that millers and traders appear to price the paddy at market rates. This is probably because farmers are better informed of price movements in milling centers.

A miller in Gapan says that he only extends credit to farmers with whom he has had long-standing relationship and who has assured him of paddy supply over a period of time. Therefore, it is not at all atypical for millers like him to deal only with relatively large farmers. These farmers, in turn, benefit from the relationship to the extent that direct sales takes away the margin that would otherwise have merely gone to commission agents.

Contracts

Contracts between actors, however crude, are often written. Between retailers and wholesalers, they come in the form of post-dated checks. Between a credit trader/miller and a farmer, a receipt and a document that proves that the farmer's land has been offered as collateral.

However, there are substantial transaction costs to pursuing any breach of trust. Everywhere in the chain, actors speak of contracts breached running from several hundreds of thousands to several millions. For this reason, repeated trade and maintenance of long-term relations is a key feature of interactions between actors.

Farmers are evaluated before they are given financing. Choice depends on size and tenure of land holding and history of default. Financing is usually given at the start of the planting season and paid right after harvest (after 3 to 5 months). Some millers also finance inputs and give outright cash loans.

Meanwhile, miller-traders and *palay*-traders usually purchase paddy from farmers in cash. They choose the type of downstream agent they deal with depending on their desired liquidity. Distribution to wholesalers and retailers outside Davao City or Metro Manila leads to higher returns, although payments are usually made in 15-30 days. Meanwhile, distribution to traditional wholesaling returns may lead to lower returns but are paid in shorter-terms.

Suki relations, a function of long-term interaction and good payment history, are an important aspect of contracts. The *suki* is usually given better terms. A retailer in Quiapo, Manila says that Chinese traders in Dagupan put a premium on the ability of retailers to keep their word. She says it is easy to be blacklisted among Chinese traders as any abuse of confidence is speedily transmitted through the Chinese network. This is why she takes care to keep her credibility with her *suki* in Dagupan, with whom she has had dealings for the past 20 years. She says that other wholesalers, knowing of her good reputation for her *suki*, lend her money even if they do not know her.

A paddy trader in Santiago City, Isabela says that Bulacan miller-traders are easier to deal with than wholesalers in Dagupan, who are a lot less trusting. He says that he sees an emerging sentiment among many *viajeros* in the northern chain that an advan-

tage of the Bulacan hub is that Chinese traders do not dominate it. Apparently, there are cultural norms that underlie the decision of rice marketing actors, too.

Entry

While each level of the marketing network is free and competitive, the nature of the various activities imposes capitalization requirements which provides a binding constraint to firm entry. The capitalization requirements are highest in the milling-trading and wholesaling business, and thus have relatively fewer entrants.

A miller-trader, who owns a buying station and began as a mere paddy agent, notes that while Chinese traders have once dominated *palay* buy and sell operations in Davao City, new entrants have emerged as a result of accumulated capacity from successful buy and sell operations. A substantial portion of millers in Intercity, Bulacan also serve as testament to this phenomenon.

A paddy-trader in Santiago says that the business of small-scale paddy-trading imposes the least capitalization requirement. Anyone with PhP50,000 can begin to rice trading business with the ability to operate in a 10-12 kilometer radius. However, to be able to operate beyond that scope, a trader needs at least one "elf" truck and one forward truck. At surplus second-hand markets, these could be bought at around PhP 200,000-300,000 each. To be able to utilize those trucks, the traders need around PhP 600,000 as working capital.

A miller in Bulacan, on the other hand, posits that to be able to operate a mill with a capacity of 40 cavans per hour, one needs PhP12 million for the mill, land, a truck and a delivery van. Working capital needed for this scale of operations would be around PhP 5 million for paddy procurement and PhP1 million for consumables/maintenance of mills.

Price-setting

Price-setting at the farm-gate is mostly buyer-driven. This is especially true in farming villages not accessible to many downstream agents. Farmers' ability to maximize profits is diminished by their lack of ability to store. They are marginalized in paddy price setting as they do not have the facilities like transportation and telecommunications to elicit proper market information.

Miller-traders, on the other hand, are regularly updated regarding the movements of prices from both the supply-end (through their agents and paddy-traders) and the demand-end (through their wholesalers and retailers). Although evidence in the milling and trading centers suggests that the extent to which miller-traders are able to dictate paddy price to farmers bound to a financing arrangements may not be pervasive as imagined, this power is still exercised in dealings with farmers in more remote villages.

In terms of distribution, miller-traders depend on the prevailing market price at the time of sale. While some miller-traders opt to stock rice to speculate on price, some are forced to unload stocks for liquidity.

Wholesalers have more power in determining prices if they pay in cash or in shorter-terms, which the millers prefer. Wholesalers in Monteverde St., for instance, are said to be able to command lower prices because they pay in cash. Miller-traders in need of spot-cash are forced to deal with them.

Retail-selling price is market-driven, determined largely by the wholesaler's price, the level of interest rate charged and the price set for NFA rice. In general, the retailer's price, in comparison to farm-gate price, does not react immediately to changes in domestic supply. This is indicative of the stabilizing power of NFA subsidized prices.

In the northern chain, San Jose City, Nueva Ecija, Bocaue, Bulacan and Dagupan, Metro Manila are the most cited sources of price information. In the southern chain, it is the Monteverde price that is most monitored.

Lessons for public policy

Lessons for public policy

What lessons can be drawn for the design of public policy from this study's findings about the operations of state and market in rice trading and distribution?

The primary findings of the study can be summarized as follows:

First, the rice sector, even as it has been touted to aid the recovery of the Philippine economy in 1999, has been largely unsteady, if not stagnant, in the 1990s. As with the whole agricultural sector, it continues to be weakened by the bottlenecks in infrastructure and research and development. The Philippines has a lot of catching up to do in terms of public spending in roads and irrigation as well as research and development. As of 1999, the promise of the Agricultural and Fisheries Modernization Act of 1998—that is additional appropriations for agriculture spending, especially infrastructure-related, in the amount of PhP105 million over a span of six years—remains to be realized.[1] There is reason to believe that with the drag imposed by infrastructure- and research- related backlog and at the rate productivity has stagnated, imports are going to figure more prominently in the future.

Second, of the government's direct market intervention tools, NFA's import operations also happen to have the most impact on the rice market. While the infusion of imports into the domestic market has helped stabilize retail prices, millers, traders and farmers are one in bewailing the impact of such intervention, especially when ill-timed, on their livelihood. Farmers and small-scale traders stand to lose most as their entitlements do not afford them to shift industries easily or without cost. The universal retail price subsidy, in conjunction with an ineffective farm gate support, program has neither been efficient nor egalitarian.

Third, the sweeping indictment of the private rice-marketing system as monopolistic is unfounded. In the case of traders, monopolistic tendencies only surface where infrastructure that enhances the access of farmers to more competitive markets are minimal or absent. Intense competition among millers across provinces is apparent. Old centers of market power like Dagupan are being challenged by new centers like Intercity.

Moreover, the margins that accrue to marketing agents are within reasonable bounds. The factor behind huge incomes for paddy and rice traders is not exorbitant margins but huge volumes. Because of the centrality of volume turn-over in the trading business, institutions of trust (credit-tying, *suki* system) have risen.

Finally, the millers appear to be a modernizing, entrepreneurial class. Contrary to popular notion, new and modernizing investments are coming into the milling-trading sector. They are important contributors to the viability of rural economies and must not be cast in the mold of regressive and exploitative patrons.

This section, by way of concluding the report, relates these key findings to three major public policy concerns in the rice sector.

Policing "monopoly" elements

The state's stance in relation to monopoly elements in rice trading is encapsulated by the way it deals with the trading sector when the supply situation tightens. At the height of the rice crisis in 1995, a Senate investigation was immediately orchestrated against the purported Binondo cartel. Late last year, the Intercity was also raided for purportedly processing and re-packaging non-commercial NFA rice.

While state regulation of predatory practices like hoarding is essential, this stance is inadequate when it is not accompanied by measures that will address the root of the problem. In the case of the rice crisis in 1995, the root of the crisis was the ill-timing of imports and the ill-quality of its supply forecasts. That is, the crisis erupted not because traders hoarded rice but because the government was remiss in its duty to monitor its buffer stocks. In the case of the re-packaging of NFA rice, the problem lies in the connivance of unscrupulous individuals within the government agency. The point is, state intervention must not only be directed at media-friendly actions but also institutional reform that will increase

the difficulty for private actors to behave in a predatory fashion.

Moreover, observations from the field indicate that the best way to lessen the rents accruing to traders from credit-tying is to help farmers gain access to markets through roads and credit. Thus, monopolisitic elements arise only to the extent that inadequate public spending allow them to.

The rice sector needs an efficient marketing sector to survive. A lopsided or heavily-colored view of actors that make possible the distribution of rice cannot be helpful.

On the impact of imports

Improved productivity and the provision of adequate infrastructure remain to be the first line of defense against imports. Trading actors posit that much of the obstacles to the competitiveness in the sector is in the production rather than the marketing-side. This study also found out that displacement brought about by imports is not concentrated on farmers but also custom-millers and petty traders whose livelihoods stand to be affected.

To be sure, very little conclusions can be gleaned from this study as to who should import and how much. At best, evidence about the inefficiency of the NFA in its import operations is anecdotal. However, many private actors have exhibited interest, especially big wholesalers and trader-millers, in importing rice. That the bidding of 79,000 MT of imported rice had takers shows that such an activity is potentially profitable for the private sector. It is hard to establish the impact of private importation on the market. Given that the private sector paid an equalization fee above the custom duties suggest that if infused in the market, this batch must have been very expensive.

However, given the structure of incentives, it is not difficult to imagine a scenario—assuming rice imports are totally privatized and tariffs are lowered in 2004—where big trader-millers (especially those stationed near disport centers) will cease milling and concentrate on trading imported rice. The big wholesalers will behave in a similar fashion. Based on our interviews, the free-on-board price of internationally-sourced rice is as much as 20 percent lower than domestic wholesale prices. This shows that addressing production-side bottlenecks and arresting the dip in productivity are essential in both a liberalized and protective trade regime.

Enhancing farmers' welfare

Farmers enjoy a big chunk of the marketing margin. The reason why they have relatively low incomes is that they do not produce substantial volumes. Their situation is worsened by their inability to store. The energies of the state must be directed towards enhancing productivity and the capability of farmers to fully participate in the market. The traders cannot be used as the perennial scapegoat for the farmers' poverty.

Moreover, this study has shown that millers—facing competition from imported rice and the growing number of other millers with better and bigger facilities—need to work on expanding their own capacities and to be increasingly concerned about the quality of paddy they procure. Farmers, to increase their income, must be given the means to develop their own productivity and quality of produce.

The large disparity in margins accruing to a land-owning farmer in comparison to a tenant suggests that land rent continues to be an important determinant of wealth and welfare. Therefore, asset-redistribution in the form of land reform remains relevant.

The minimal impact of government paddy-procurement activities suggests that the program may not be reaching its intended targets. The strident regulation as to moisture content and the red-tape involved before farmers receive payment are major reasons behind low levels of government absorption. Maybe, government resources are better used if they are channeled to improved paddy-procurement rather than concentrating on import operations.

Finally, farmers' access to timely market information—or the lack thereof—is at the root of their powerlessness in market relations. Thus, the possible roles of farmer organizations in providing price information and state regulation in the form of direct provision of information are important in enhancing farmers' welfare.

Endnotes

Intoduction

1 Note that these statistics do not include thousands of middlemen and agents whose exact number cannot be tracked because their business is unregulated by the government.

2 The president's initial statement in the middle of 1999 that it will not privatize NFA operations prompted the Asian Development Bank to postpone discussions regarding the release of a $100 million-loan package under its Grains Sector Development Program. By April 2000, the government's Economic Coordinating Council forged an agreement with the Asian Development Bank that will allow the government, among others: (1) to institute a government company that will later on be privatized to take charge of the trading operations of the NFA; and (2) to maintain control over the country's buffer stocks but that will also gradually be yielded to the private sector as grain sector reforms lead to more stable rice prices.

The government also committed to the International Monetary Fund to pursue reforms in the grain sector, "particularly the separation of the regulatory functions of the NFA from its market intervention functions and the implementation of a targeted food safety net program for the poor:" (Lugo, 2000; Manlagnit, 2000)

3 MAV refers to the amount of rice that can be imported at tariff rates lower than the WTO-set bound rates. It thus signals the extent to which the market for a given community is opened to freer trade.

4 Director Silvestre Andales was interviewed at the BPHRE-Manila office, Department of Agriculture, Quezon City on July 13, 1999.

State Intervention in rice marketing and distribution

1 Specific forms of market failures include public goods, externalities, information asymmetry, and natural monopolies.

2 Harris-White (1995) defines this system as composing of: rights to

exchange property rights; conventions about the scope of economic behavior, definitions of legal tender; rules about price formation; conventions about liability and penalties for delinquency.

3 The key factors in defining a market structure are: the short- and long-run objectives of buyers and sellers in the market; their beliefs about theirs and others' ability to set prices; the technologies they employ; the amount of information available to them about the good and about each other, the degree of coordination or non-cooperation they may exhibit, the extent of entry and exit barriers and the degree of product differentiation. (North, 1995)

4 As opposed to the neo-classical conception of perfectly competitive markets where: (1) economic exchange is impersonal, voluntary and made on an equal basis, (2) goods exchanged are homogeneous and (3) actors are large in number, autonomous, self-interested and able to enter and leave freely—"actually existing markets" are governed and shaped by extra-economic interactions and institutions. Institutions are defined as formal and informal rules that mediate human behavior.

5 One interesting piece of information we gathered from the field is that bidders are expected to be members of CONFED, the national organization of grains businessmen. While the market auction is formally open to all, extra-economic and informal rules like this actually govern the bidding process.

6 The Philippines is a signatory to the Agreement on the ASEAN Food Security Reserve, which binds it to earmark at least 12,000 MT of rice every year for emergency use of ASEAN-member countries.

7 The moisture content of paddy must be no more than 14 percent.

8 The effective support price as of late 1998 was actually PhP 9. The additional PhP 1 is accounted for by special incentives. PhP .50 may be availed of by accredited cooperatives under the Cooperative Development Fund. An additional PhP .50 was granted, under the El Niño Assistance Program, to assist farmers and help mitigate the ill effects of the droughts the country suffered from in the second half of 1998.

9 This committee is headed by the undersecretary for operations and research of the Department of Agriculture (DA). The co-chairperson of the committee comes from the Bureau of Agricultural Statistics (BAS). Its members include representatives from the DA policy analysis and field operations offices, the Bureau of Plant Industry (BPI), the National Agriculture and Fishery Council (NAFC), the NFA, the Department of Trade and Industry (DTI), the National Economic and Development Authority (NEDA) and the Federation of Free Farmers (FFF). Representatives from the Department of Finance (DOF), the National Irrigation Authority (NIA), the Philippine Rice Research Institute (PRRI)

and the Philippine Atmospheric Geophysical and Astronomical Services Administration (PAG- ASA) are considered members "on-call".

10 Regular milled rice refers to rice grains from which the hull, the germ and the outer bran layers have been removed, but parts of the lengthwise streaks of the bran layers may still be present in 15-40 percent of the sample kernels. (NFA, 1997)

11 Auctioneers were allowed to bid from 100 to 15,000 MT imported rice at a minimum equalization fee of PhP .50/kilogram. The equalization fee is a payment above the FOB and tariffs made for every kilo. A total of 27 auctioneers bidded and were awarded allocations.

12 For example, retailers are expected to display market prices prominently. All grains businessmen are required to also display prominently signage of their permit numbers.

13 This paper will not be able to evaluate one other important aspect of any government agency's performance: possible extra-economic costs incurred by the promotion of rent-seeking activities. Allegations of bribery in relation to the allocation of export quotas and licenses have been raised intermittently. Anecdotal evidence regarding the mixing of NFA rice with commercial rice and selling of the same at commercial rates by some of the agency's accredited retailers done even in connivance with employees of the agency was also spoken of by some of the millers and traders in our field interview. However, as most of the data are not conclusive, this paper is unable to tackle this aspect of the NFA's performance.

14 Representative Mar Roxas, proponent of a bill that sought to decouple the NFA's functions but was shelved in 1999, cites an ADB study not publicly available as source of computation.

4. Private sector operations in rice marketing and distribution

1 Miller-traders are usually medium to large-scale millers who procure paddy, mill what they procure and sell rice. They stand in contrast to small, usually village-based, custom millers who sell milling services and are not involved in the trading business. See Sections 4.2 and 4.4 for further discussion.

2 It is estimated that 7 percent of the total volume of paddy milled becomes rice bran. As of the time of interview, a kilo of bran sold at 2.80 per kilo, down from a high of 7.00 per kilo.

3 It must also be noted that traders are often wary about giving their true warehousing capacity. Warehousing capacity has been stigmatized as a blanket indicator of monopoly power. Figures above may therefore be understated.

5. Lessons for public policy

1 A look at the latest edition of the General Appropriations bill reveals that appropriations for the program appear not to be allocations on top of existing Department of Agriculture budget but merely a re-channeling of existing budget.

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Appendices

TABLE A.1
Age of respondents

	Frequency	% of total
under 20	0	-
20-29	9	8.3
30-39	23	21.1
40-49	34	31.2
50-59	24	22
60 above	16	14.7
Total	106	97.2
missing	3	2.8
mean age	46	
median age	45	
mode age	41	

TABLE A.2
Civil status of respondents

	Frequency	% of total
Married	96	88.1
Single	9	8.3
Widow	4	3.7
Separated	0	-
Total	109	100

Table A.3
Gender of respondents

	Frequency	% of total
Male	66	60.6
Female	43	39.4
Total	109	100

TABLE A.4
Relationship of respondent to owner

	Frequency	% of total
owner/manager	70	64.2
wife/husband	11	10.1
son/daughter	12	11
other relative	13	11.9
unrelated	3	2.8

TABLE A.5
Education Attainment of Respondents

	Frequency	% of total
Some elementary	7	6.4
Elementary graduate	8	7.3
Some high school	5	4.6
High school graduate	8	7.3
Vocation graduate	4	3.7
Some college	15	13.8
College graduate	57	52.3
Post graduate	2	1.8
Total	106	97.2
missing	3	2.8