Objective

Rice is the staple food of about 80 percent of Filipinos, and therefore a major item in the consumption budget of the consumers. It is the single most important agricultural crop in the Philippines, and therefore a major source of income of millions of Filipino farmers. Because of its political significance, the government is heavily involved both in the supply and distribution of rice to assure consumers sufficient and stable supply of rice at low prices and to maintain reasonable return to rice farmers with adequate price incentives. This has been the government’s policy for quite some time. However, because of the poor performance of the policy in attaining its desired goals, it has been widely criticized for its inefficiency and ineffectiveness. Empirical studies indicate that government intervention in rice entails huge amount of economic as well as financial cost. Thus, the current rice policy is now a subject of major policy reforms (Asian Development Bank, 1999).

The main objective of the proposed research is to analyze the distribution and poverty impacts of the rice policy reform in the Philippines. To address this, the paper proposes to develop an economy-wide model that can adequately capture the basic features of rice production in the Philippines and the relation of the sector to the rest of the economy, and to link model with detailed information on households. In this proposal we do not provide a detailed description of the specification of the model, but we sketch out some basic features of rice production in the Philippines that we may have to take into account in the actual model specification. On the other hand, in linking the model with detailed information on households, the paper proposes to utilize a microsimulation approach wherein the representative household assumption in the traditional CGE models is replaced with the information from the Family Income and Expenditure Survey (FIES) in order to capture responses of individual households to a policy shock and their feedback to the general economy (Cockburn, 2001; and Cororaton, 2003(b)).

A major part of the reform may be worked out through the price system. Thus, through simulation exercises using the model, the paper proposes to analyze the distribution and poverty effects of the policy reforms through two transmission channels: changes in factor and output prices and changes in consumer prices. Changes in factor and output prices can impact on household income, while changes in consumer prices can affect the consumption pattern of households and the value of the poverty threshold. The paper also proposes to introduce a third channel through which income distribution and poverty may be affected. This is unemployment effect, which may be captured through the introduction of wage curve (Blanchflower and Oswald, 1995).
Significance of the Proposed Research

A number of studies have looked at the policy issue, but the methodology mostly applied is partial equilibrium analysis. Partial equilibrium analysis however, underestimates the possible effects of the reforms because rice, being a major agricultural crop, has many direct and indirect linkages with the rest of the economy. Furthermore, most of the empirical work done on the policy issue does not extend its analyses to look at its effects on poverty. While existing literature provides estimates of changes in consumer and producer surplus and Gini coefficient, it does not provide insights on the effects on poverty incidence, gap, and severity. The proposed study however, can adequately provide estimates of these poverty indices because it directly utilizes individual household information in the family income and expenditure survey.

Rice Policy

Figure 1 presents a broad diagram of how government interventions may have influenced activities in rice. Three major components affect the supply of rice: local production, buffer stock, and imports. On the other hand, three factors affect the demand side: domestic market, buffer stock and exports.

The present pricing policy of the government involves setting and defending officially set price floor and ceiling. It also minimizes seasonal price variations in the various regions. Furthermore, the government monopolizes the importation and exportation of rice through its various procurement and disbursement operations in order to influence domestic price levels. Currently, government interventions are implemented through the National Food Authority (NFA), which is an attached agency of the Department of Agriculture. The NFA took over the National Grains Authority (NGA), which was in operation from 1972 to 1981. The administration of NGA in turn succeeded the Rice and Corn Administration, which operated from 1962 to 1972.

Figure 1: Rice Activities

Source: Chupungco (1991)
Policy Evaluation

Existing literature indicates that the government policy on rice is relatively more successful in defending consumer price ceilings than price floors. As a result, farm prices remained below paddy support prices because of a number of reasons which include inadequate procurement budget by the NGA, delayed timing of NFA purchases, etc. Thus, margins are squeezed, resulting in reduced investment in postharvest facilities and less planting because of unattractive price to farmers. On the other hand, in the long-run the consumer-oriented pricing policy does not benefit consumers because it reduces rice availability.

A partial equilibrium analysis of Roumasset (2000) indicates that the excess burden of the current rice policy amounted to P48.79 billion in 1999 (Figure 2). This estimate does not account for the financial cost of subsidies to the NFA.

![Figure 2: Excess Burden of Price Controls on Rice, 1999](image)

Policy Reform

In 1999 ADB approved a loan facility amounting to US$75 million to support a grains policy reform in the Philippines, which is called the Grains Sector Development Program (GSDP). The policy framework of GSDP focuses on: (i) liberalizing and instituting more cost effective grains pricing and import policies; (ii) improving the administration of grain buffer stocks; (iii) restructuring the NFA from a grains marketing monopoly into a public regulatory agency and separate private sector marketing
corporations; and (iv) implementing a well-targeted and effective food subsidy program for the poor.

Rice and Poverty

About half of rural households live below poverty, while one-fifth of urban households fall below the poverty threshold (Table 1). More than 60 percent of expenditure of rural poor households is on food; about half of which is on cereals, which is mainly rice. An almost similar structure is observed in the expenditure pattern of urban poor households. Furthermore, rural and urban poor households—landless agricultural laborers, small-scale farmers, and urban unskilled workers—are principally net buyers of rice (David and Otsuka, 1994). These indicate that policy reforms on rice have a potentially significant impact on the consumption pattern of both rural and urban poor households, and therefore on poverty.

Table 1: Food and Poverty

<table>
<thead>
<tr>
<th></th>
<th>Rural</th>
<th></th>
<th>Urban</th>
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<tr>
<td></td>
<td></td>
<td>50.7%</td>
<td>21.6%</td>
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<tr>
<td>Poverty Incidence</td>
<td>48.8%</td>
<td></td>
<td>18.6%</td>
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<tr>
<td>Consumption</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Nonpoor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food Consumption*</td>
<td>63.6%</td>
<td>63.6%</td>
<td>47.6%</td>
</tr>
<tr>
<td>Cereals*</td>
<td>29.5%</td>
<td>28.8%</td>
<td>15.4%</td>
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<td></td>
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<tr>
<td></td>
<td>61.4%</td>
<td>60.8%</td>
<td>38.8%</td>
</tr>
<tr>
<td></td>
<td>24.5%</td>
<td>23.0%</td>
<td>8.6%</td>
</tr>
</tbody>
</table>

*Percent of Total Expenditure
Source: 1997 and 2000 Family Income and Expenditure Survey

Grains production utilizes most of the agricultural resources. In particular, about 5 million hectares of arable land are devoted to rice and corn production, of which two-thirds are under paddy. Furthermore, majority of rural population—about 1.8 million people—depends on the grains sector. Thus, if as a result of government intervention farm paddy prices fall below the support price, then its impact on farm incomes and therefore on poverty can be substantial as well.

Modelling Issues

This will be our first attempt to look at agriculture-related issues in the Philippines, thus we may not be able to give a detailed description and comprehensive discussion of the model at this initial stage. We still need to go over the vast literature on Philippine agriculture to get a real sense of the extent of the issue at hand. However, a number of important modelling issues may have to be taken into consideration in the actual model specification.

1. There are two types of rice lands in the Philippines: rain-fed rice lands and irrigated rice lands. The productivity performance in terms of yield per hectare per year of the two varies widely because of the following reasons: (a) while high yielding modern rice variety is planted on the latter, traditional/native low yielding rice variety is planted on the former; (b) while modern rice variety has much higher response rate to fertilizer
inputs in terms of yield, traditional/native rice has low response rate; (c) while the latter have 2 to 3 planting cycles per year, the former have 1 planting cycle, during the rainy season. The issue on productivity has to be taken into account because it affects prices of rice, which is one of the transmission channels that is looked at in the proposed study. Also, by differentiating rain-fed and irrigated rice, one may be able to incorporate two other major concerns in agriculture modelling: land and water.

2. Because of the difference in productivity performance, there is a high rate of labor migration from low yielding rice lands to high producing rice farms. A microeconometric-based study finds that this labor migration widens the wage differential between the two areas and affected negatively the income distribution. This feature has to be incorporated also into the model because one of the main concerns of the paper is to trace the impact of rice reform on income inequality through factor prices.

3. Although rice is a dominant crop in the Philippines, it is not planted evenly across the country. Some regions are predominantly rice producing, while others are not. There is a large-sized, Orani-type CGE model in the Philippines that treats separately agriculture in Luzon, Visayas and Mindanao, the three main islands in the Philippine archipelago. We may have to look into the technology used in that model.

4. Fertilizers and other chemical inputs are crucial not only to rice production in particular, but to agriculture production in general. The relation of rice production with fertilizer input may have to be accounted for in the model specification.

5. Rice production is generally small-scale, produced by large numbers of small farmers. Thus, in the production side, this feature may somehow approximate a perfect competition structure. However, in the demand side, it may be the other extreme because of heavy government intervention through the NFA. The model may have to accommodate these features to be able to capture and trace through adequately the effects of the reforms.

6. Since one of the transmission channels that is looked at involves factor prices, it is important to have an adequate disaggregation of the sources of household income, especially for agriculture-dependent households. In the FIES, family labor income is disaggregated into agriculture labor income and non-agriculture labor income only. Thus, there is a need to disaggregate agriculture labor income further into rice production-based and non-rice production based agriculture labor income. The same treatment may have to be made in capital income. However, there are no official data that may be used in breaking up family income into these sources. While there are various annual surveys of establishments (ASE) on agriculture, the information that may be sourced from these may not reflect the true structure because rice production is predominantly done by small farmers. ASE could somehow provide good information on plantation-based agriculture. However, there are a number of small surveys in various studies in the literature that may be utilized instead.
7. In the consumption side, the FIES provides an adequate breakdown of food expenditure into cereals (which is mainly rice), and other food items. Thus, in modelling household consumption this may have to be taken into account. This is important because one of the key concerns of the reform involves rice price ceiling, which affects rice consumers.

8. There are a number of microeconometric-based estimates of production and demand elasticities available in the literature in the Philippines. A method may have to be devised based on the available techniques in applied general equilibrium literature to be able to utilize some of these estimates in the model, especially in the model calibration.

9. To be able to capture adequately the intervention of the government on the rice, we may need to go over the mechanism of how it sets the price ceiling and floor through the NFA and how to specify them and incorporate into the model. It is important also to identify and incorporate the mechanism of how the NFA determinates the buffer stock and rice imports.

10. Since one of the main concerns of the study is to look at the poverty effects of the rice reforms, we need to capture the effects on the following: (a) production reallocation effects from rice to non-rice production and vice-versa, output prices, factor prices, factor income, and finally household income; (b) household expenditure pattern; (c) poverty threshold. These effects may be analyzed by employing a microsimulation approach wherein detailed household information from the FIES is utilized.

Researchers

The research will be carried be out by two researchers:

1. Caesar B. Cororaton, Research Fellow, Philippine Institute for Development Studies.

2. Erwin Corong, Graduate Student, De Lasalle University, Philippines

Research Dissemination

The results of the proposed research may contribute to the pool of empirical evidences used in the ongoing debate and discussion on the rice policy reform. The Philippine Institute for Development Studies (PIDS) has regular discussion series with the general public (through the “Pulong Saliksikan” program) and the Philippine Legislators (both the Senate and the House of Representatives). The results of the proposed research may be included and scheduled for discussion during these two major public discussion series. Also, PIDS has a number of publication outlets, which may accommodate the results of the study for wider dissemination and distribution. The paper may also be submitted for publication in international journal.
References


