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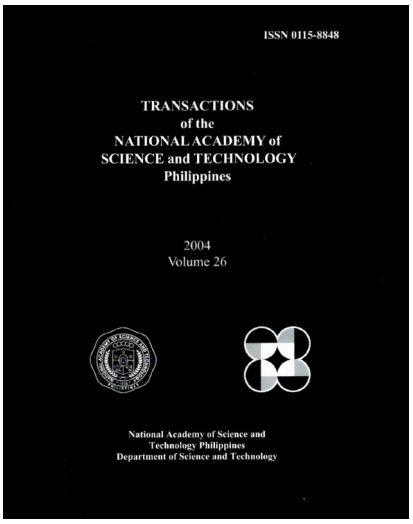

Philippine Agriculture in a Globalizing World

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PHILIPPINE AGRICULTURE IN A GLOBALIZING WORLD

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Abstract

The paper reviews the performance of Philippine agriculture in an Asian context. It shows that domestic policies and institutional bottlenecks, rather than global environment for agricultural trade, explain much of the country's comparatively weak performance in food production, employment creation, agricultural trade, and poverty reduction. Poor governance has also weakened the sector's capacity to respond efficiently to urbanization influences, especially changes in consumption patterns and land use owing to the combined impact of population growth, rising incomes, and developments in information and technology. The "business as usual" approach to governing agriculture and the rural sector needs to be abandoned in favor of more aggressive governance reforms and strategic investment aimed at raising agricultural productivity and sustaining gains in farm incomes, reducing the "cost of doing business" in rural areas, and taking advantage of opportunities for growth offered by globalization.

Keywords: Philippine agriculture, globalization, urbanization, domestic policies

Introduction

Production growth in Philippine agriculture during the first four years of this decade averaged 3.9% a year. This growth is quite respectable by the standards of the previous two decades and of the major developing Asian countries. The growth for the first quarter of 2004 is even more impressive: 7.7% compared with 3.3% for the first

quarter of 2003. Does this performance reflect a structural departure from the low-growth path that characterized the sector in the 1980s and 1990s? Put differently, is this growth sustainable?

The issue of sustainability is paramount partly because the agriculture sector contributes substantially to national income, employment, and poverty. The sector's output accounts for about a fifth of the Gross Domestic Product, while the total number of people engaged directly in agriculture is over one-third of total employment. The sector's high share in employment, combined with its relatively low share in national income, suggests though that labor productivity in agriculture is low compared with the rest of the economy. Not surprisingly, the large majority—61%—of the poor come from this sector [1]. Even poverty in urban areas is partly an indirect effect of poverty in agriculture, i.e., extreme deprivation or lack of livelihood opportunities in rural areas induces rural-urban migration.

The low productivity in agriculture, combined with a trade policy regime that effectively inhibits importation of food products, translates to high food prices, which, in turn, reduce the purchasing power of household incomes, hurting especially the poor, including the large majority of small farmers who are net buyers of food. High food prices also put upward pressure on wages (since food is a "wage good"), thereby eroding the competitiveness of the country's domestic producers vis-à-vis foreign producers. In successful cases of rural development, wages rise as a result not of high food prices but of rising labor productivity and increasing labor scarcity induced by sustained expansion of employment opportunities in the economy.

The concentration of poverty in this sector suggests that an effective poverty-reduction strategy has to involve sustained efforts to raise agricultural productivity and farm incomes, tame increases in food prices, and create employment opportunities for the rural population. Indeed, recent Asian development experiences demonstrate that agricultural development fuelled primarily by productivity growth is key to sustained growth and poverty reduction.

The challenge is to identify key drivers of sustained agricultural growth, especially policy responses to the twin forces of globalization and agricultural trade liberalization. By globalization, we mean the growing integration of economies through the flow between countries of goods, services, capital, people, information, and ideas. Not a few, including government officials, contend that these twin forces are a bane—not a boon—to the agriculture sector and the poor. The popular call is to protect the sector from import competition through a reinstitution of trade barriers, especially for so-called "sensitive products." Indeed, the domestic policy response has included active participation in trade coalitions whose main objective is to secure protection for these sensitive products (in the Philippine case, these are rice, corn, sugar, and meat), while demanding removal of all forms of trade restrictions, domestic support, and subsidies of developed countries to their agriculture sector.

But as the saying goes, there is no such thing as a free lunch. The policy posture of protecting agriculture through import-limiting restrictions results in higher domestic food prices. As shown below, food prices are notably high in the Philippines compared with the country's major competitors in the Asian region. High food prices are a recipe for hunger and food insecurity, especially for the rural population whose access to infrastructure, technology, and credit is very limited. Perhaps not surprisingly, malnutrition and hunger indicators are persistently high in the Philippines compared with Asian countries of similar income levels.

This paper attempts to identify key drivers of sustained agricultural growth and rural poverty reduction in the context of a globalizing world. The first section provides an overview of globalization and trade liberalization in relation to agricultural and poverty outcomes in developing countries. The second section then examines the performance of the Philippine agriculture sector from an Asian perspective, specifically focusing on the nature and consequences of the "rice problem." The third section moves on to discuss key drivers of agricultural growth in a globalizing and liberalizing world. The fourth section gives the concluding remarks.

Globalization and Trade Liberalization: A Bane or a Boon?

Sustained agricultural growth, especially pro-poor growth, does not come out of a vacuum. Domestic policies and institutions play a significant role. And so do the global trading regime for agriculture and the external forces associated with globalization. Indeed, as noted earlier, not a few contend that the twin forces of globalization and agricultural trade liberalization are a bane – not a boon – to the poor in the Philippines. The main argument, put simply, is that the country has neither the broad infrastructure (physical and human capital) nor the institutions (good governance) to effectively gain from the benefits that globalization and trade liberalization offer. Even more fundamental, however, is the additional argument that, in practice, "free trade" in agriculture is not "fair trade" since the developed countries continue to provide enormous subsidies to their farmers (thereby limiting the access of developing countries to their domestic markets), while the developing countries, including the Philippines, have taken great strides in fulfilling their part of the bargain (i.e., opening up their domestic markets).

From an empirical perspective, is it the case of globalization and trade liberalization tending to systematically hurt the prospect for food security and agricultural development in developing countries, including the Philippines? In what ways do these erode—or enhance—the welfare of the poor? What should the policy responses to globalization be? What institutional arrangements can be pursued at the national and regional levels to enhance the chances of developing countries to benefit from—and not be doomed by—globalization and multilateral liberalization? These issues are admittedly complex and not impervious to impassionate discussions.

Globalization and poverty

Globalization is not a new economic phenomenon. It has come in waves during the past 150 years. The first wave, which occurred in the 1860–1910 period, was interrupted with the re-imposition of trade, capital, and migration controls that followed the First World War and the Great Depression. The second wave, from 1950 to 1980, witnessed the unprecedented integration among the developed countries, while most developing countries chose to restrict their involvement in foreign trade and investment. The third wave, which began in the late 1970s and continues to this time, has seen the unprecedented participation of large developing countries – China, India, Mexico, Indonesia, and Vietnam among them – in foreign trade and investment.

The driving forces toward globalization have been the advances in transport, communication, and information technologies. Key innovations in transportation have significantly reduced the cost of doing business in terms of time and money [2]. Between 1930 and 1990, the real cost of ocean freight transport fell by 54%, while that of air transportation declined by 84%.

The past 45 years have also seen significant developments in telecommunication and computing. Rapid technological advances have led the real price of computers and peripheral equipment to fall by more than 100% between 1960 and 2000 [2]. At the same time, improvements in their computing and processing capabilities have resulted in innovations in the different stages of the production process, which have translated to further cost savings. The past 15 years have also seen the exponential growth of the newest form of communication, the Internet, which has made communication dramatically faster and cheaper. Cheaper, faster, and more reliable telecommunication and information technologies have reduced the effective distance between markets, successfully inducing rapid developments in financial intermediation and international trade in goods, services, and ideas.

The popular view about contemporary globalization is that it has led to increases in inequality and poverty in developing (as well as developed) countries. The weight of evidence, however, does not support this view. There is simply no systematic relationship between any measures of globalization and household inequality and poverty [3, 4, 5]. Some countries that opened up did experience increases in inequality; others did not. What is evident is that developing countries whose economy grew comparatively fast as they opened up did witness substantial decline in absolute poverty. Between 1993 and 1998, the number of absolute poor in globalizing developing countries declined by 120 million, while poverty increased by 20 million in the rest of the developing world. Poverty reduction in China and Vietnam, in particular, is unprecedented in history. The reduction is also strong in India (since the late 1980s) and other globalizers in the region. While the Asian financial crisis reduced incomes in the two worst hit countries, namely Indonesia and Thailand, the gains in poverty

reduction during the past-quarter century of growth and trade liberalization have largely remained intact.

To be sure, globalization does redistribute income among groups. There are winners and losers, both among the rich and among the poor. There are risks, too, as demonstrated by the Asian financial crisis. The crisis resulted in currency devaluation and higher food prices, which proved to be very disruptive to the poor. There is a lot to be said on the role of governance to ensure that the risks associated with globalization are mitigated, if not altogether avoided. Globalization, for example, will result in job displacement, even in agriculture.

WTO agriculture negotiations

Globalization and the World Trade Organization (WTO) Agriculture Negotiations, though quite distinct developments, are intertwined. As noted above, globalization pertains to the increasing integration of economies and societies through the flow of goods, services, technologies, finance, and information. The Uruguay Round/WTO Agriculture Agreement's overall purpose is to correct and prevent restrictions and distortions in world agricultural markets.

The Uruguay Round Agreement provided a framework of rules and started reductions in protection and trade-distorting support, including agriculture. The current Agreement ends in 2004, but Article 20 of the Agriculture Agreement committed members to start negotiations on continuing the reform beginning in early 2000. In the initial phases of the negotiations, the main issues were substantial reductions in tariffs, domestic support, and export subsidies, although other issues also acquired prominence. Some countries raised non-trade concerns as an important area for negotiations, while others (including the Philippines) insisted that special and differential treatment for developing countries should be an integral element of agriculture negotiations.

The November 2001 Doha Ministerial Declaration builds on the work already undertaken in the agriculture negotiations, reconfirms and elaborates the objectives, and sets timelines for the negotiations. In this declaration, agriculture becomes part of the single undertaking in which virtually all the linked transactions are to end by January 2005. As in Article 20 of the Agriculture Agreement, the Declaration affirms that the main objective is to establish a fair and market-oriented trading system through a program of fundamental reforms. The program encompasses strengthened "rules of the game" and government commitments to substantially reduce trade-restricting distortions, prominent of which are market access restrictions, export subsidies, and domestic support.

The Declaration makes special and differential (S&D) treatment for developing countries an integral part of the WTO negotiations, emphasizing that all S&D provisions should be effective in enabling developing countries to meet their needs, in particular, food security and rural development. It also confirms that non-trade

concerns – environmental protection, biodiversity, food safety, animal health, etc. – reflected in the negotiating proposals already submitted are to form part of the negotiations. Moreover, it recognizes the prerogative of a member country to take measures for the protection of human, animal or plant life, or of the environment at levels it considers appropriate, provided that these do not constitute arbitrary or unjustifiable discrimination between countries, or a disguised restriction on international trade.

The wide range of views and interests among member governments makes the negotiations difficult. Setting this difficulty aside, the benefits of open and non-discriminatory multilateral trading systems are enormous. This is particularly the case for many developing countries whose economies depend on an increasingly diverse range of primary and processed agricultural products that are exported to an increasing variety of markets. Moreover, freer trade regimes and better government focus on support services would allow for a more efficient resource allocation among and within sectors of these economies, thereby providing an enduring foundation for sustained rural growth, food security, and poverty reduction.

In practice, realized benefits have been much less than expected. While developing countries endeavored to meet the targets agreed upon under the WTO Agriculture Agreement, many developed countries reneged on commitments made in the Uruguay Round. Nominal protection on agriculture in OECD countries has remained high – in fact, it has increased in the second half of the 1990s and at the turn of the new century.[1] Domestic support and export subsidies continue to be historically high in a number of these countries. Moreover, many developed countries—and, to some extent, also developing countries—have increasingly employed non-tariff barriers, particularly sanitary and phytosanitary measures, as well as anti-dumping measures, more to protect domestic interests rather than to address genuine human health or industry-injury concerns.

Given the aforementioned problems, it is tempting to suggest that the Philippines should withdraw from any future agriculture negotiations, or that it should put back trade measures aimed at restricting entry of foreign goods competing with locally produced goods. Ironically, it would be a terrible mistake if the country does. Neither would it be in the country's best interest – at least from an efficiency ground – to link its reforms with the domestic policy stance of developed countries. In the same vein, its undue focus on global coalition-building deflects much-needed attention from what essentially are domestic concerns. As will be explained below, from the viewpoint of sustained poverty reduction and food security, these options are inferior to a trade regime of openness, no matter how imperfect the multilateral trading system is at the moment.

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[1] Nominal rates of agricultural protection in OECD countries rose from 45% in 1986 to roughly 70% at the turn of the century.

Philippine Agricultural Growth and Poverty in an Asian Perspective

Prior to the country's accession to the WTO in 1995, the performance of the agriculture sector was quite pathetic compared with those in other Asian countries. During the period 1980-94, Philippine agriculture grew at a measly 1.5% a year, the lowest among the major developing Asian countries (Table 1). The growth was even less than the rate of population growth (averaging about 2.4% a year). The mediocre growth mirrored the poor performance of the overall economy.

In the period following the country's accession to the WTO, the country's agricultural growth improved to 2.4% a year, though this was still pale in comparison with the averages for China (3.5%) and Vietnam (4.2%), two of the most aggressive globalizers in the Asian region. The figure is surprisingly higher than the averages for Malaysia and Indonesia and comparable with Thailand's. Note, however, that in both Malaysia and Thailand, the relative importance of agriculture in national income had declined substantially during the past two decades of rapid economic growth, while in Indonesia, the Asian financial crisis of 1997-98 left a deep puncture on the economy and the agriculture sector.

Table 1. Average agriculture growth rates (% per year), 1965-2002

	1980 - 1994 Pre-WTOAccession	1995 - 2002 Post-WTO Accession
Malaysia	2.44	0.64
Sri Lanka	2.71	1.19
Indonesia	3.51	1.74
India	4.12	1.75
Philippines	1.49	2.40
Thailand	2.87	2.78
Nepal	3.36	2.94
Bangladesh	2.29	3.41
China	5.16	3.50
Pakistan	4.12	3.52
Vietnam	3.24	4.25

Note: Data for Malaysia starts only in 1971; Nepal in 1966; Vietnam in 1986
Source: World Bank [6].

Viewed from a historical perspective, the growth rate posted in 1995-2002 was still way below what was achieved during the height of the "green revolution" period (1965-1980) when it averaged 4.1% a year. Indeed, during this period, the Philippines was a

star performer in the agricultural growth race in the Asian region. The period was marked by the diffusion of modern rice technology and substantial public investment in irrigation and other rural infrastructure. The rice sector was a driving force in Philippine agriculture, accounting for nearly one-fifth of total agricultural output.

What Table 1 suggests is that, contrary to popular claims, especially by many nongovernmental organizations (NGOs) and influence peddlers in government, the country's accession to the WTO could not be a compelling reason for the comparatively poor performance of agriculture in recent years. All the other major developing countries in the Asian region operated in a similar global trading environment as that of the Philippines but had significantly higher agriculture and overall economic growth rates than that achieved by the Philippines.

Production growth could come from either expansion of the cultivated area or from increases in output per unit area. The former is no longer a practical option for the Philippines. Hence, output growth would have to come from productivity growth through sustained technological improvements.

A comprehensive measure of productivity growth is total factor productivity (TFP) growth. This measure represents output growth net of the growth in all production inputs. It is thus an appropriate indicator of efficiency (and competitiveness) improvement. The available TFP data for the 1970s suggest that the Philippines at that time fared comparably with Thailand and Indonesia (Table 2). However, the succeeding two decades saw productivity stagnating in the Philippines (0.2% a year), while it continued to grow in Thailand (1.0% a year) and Indonesia (1.5% a year). China, on the other hand, enjoyed a very high TFP growth rate of 4.7% per year during this period, though the figures pertain to grains only. At this rate, it is not surprising that China increasingly has become a major producer of cheap agricultural commodities in the world commodity markets. Also, at this rate, China could well afford to reduce tariff protection for its farmers even before it acceded to the WTO without reducing farmers' net incomes [7].

Table 2. Growth of total factor productivity (TFP) in agriculture(% per year)

Period	China	Thailand	Indonesia	Philippines
1970-1980	Na	1.3	1.6	1.0
1980-2000[f]	4.7	1.0	1.5	0.1
All Period		1.2	1.5	0.2

[f]1979-95 for China (covering rice, wheat, and corn only), 1981-95 for Thailand, 1981-98 for Indonesia, and 1980-98 for the Philippines.

Source: Mundlak et al. [8] for Indonesia, Thailand, and Philippines; Jin et al. [9] for China.

As noted earlier, the low productivity growth in agriculture, where the bulk of the poor are located and in which they depend on for incomes and livelihood, mirrors what would be expected on the evolution of farm incomes, household incomes in general, and poverty. As recent experiences in Asia and elsewhere suggest, productivity growth in agriculture exerts strong direct and indirect influence on poverty and food insecurity [5, 10, 11, 12]. It is thus not surprising that the progress in reducing hunger incidence and malnutrition has been quite miserably slow in the Philippines compared with virtually all the developing countries in Asia (Table 3).

Table 3. Proportion of people who suffer from hunger

Country	Percentage of children under 5 years of age who are moderately and severely underweight		Proportion of the population below minimum level of dietary energy consumption	
	Early 1990s	Late 1990s-Early 2000s	Early 1990s	Late 1990s-Early 2000s
Cambodia	40	45	43	36
China	16	10	16	9
Indonesia	35	26	9	6
Lao PDR	44	40	29	24
Malaysia	23	18	3	-
Philippines	30	28	26	23
Thailand	26	19	28	18
Vietnam	45	33	27	18
Bangladesh	67	48	35	35
India	53	47	25	24
Nepal	49	48	19	19
Pakistan	38	38	25	19
Sri Lanka	38	29	29	23

Source: ESCAP [13], Figure I.3.

The rice problem

The rice sub-sector is a microcosm of Philippine agriculture. Accounting for about 20% of agriculture's gross value added, it is the single most important source of livelihood among small farmers and landless agricultural workers who make up the bulk of the agricultural labor force (which, in turn, represents 40% of the labor force nationwide). It is thus not surprising that the growth trend in rice production roughly mirrors that in agriculture.

After averaging 2% a year in the 1980s, rice production picked up in the 1990s, growing at an annual average rate of about 2.8%. This performance was attributable to the rising real domestic rice price (despite falling world price) and falling real input prices, except wages. The onslaught of the El Niño phenomenon in 1998 caused rice production to fall sharply by 24.2%. However, an equally sharp rebound took place in the following year when output rose by 37.8%, thereby permitting a positive production growth for the decade.

Despite growth in recent years, the Philippine rice sector still performed poorly compared with other countries in Asia. Yield (output per hectare of land) is a crude indicator of productivity, but it usually is a reasonably sufficient comparative device. Under this measure, average rice yield in the Philippines ranked lowest at 3.2 t/ha among the country's neighbors from 2000 to 2002 (Table 4). The figure is even lower than the average for East and Southeast Asia combined and the average for all developing countries at 3.7 and 3.9 t/ha, respectively.

The same story can be gleaned from the yield of corn, the country's second most important crop in terms of its contribution to total agricultural output and area. The country's average corn yield of roughly 2.0 t/ha is the lowest in Asia, only two-thirds that of the average for all developing countries, and only one-half that of China. The Arroyo administration has paid much less attention to the development needs of this sector.

The rice policy framework of the government is to intervene heavily in the rice sector to achieve the twin objectives of stable and high prices for farmers and of stable and low prices for consumers. It has employed a variety of instruments—output procurement, credit subsidies, tariffs and quantitative trade restrictions, provision of rice subsidy to consumers, and public spending in research, irrigation, extension, land reform, other support services—to effect these objectives.

Table 4. Rice and corn yield, average of 2000-02 (t/ha)

	Rice	Corn
East & South East Asia	3.7	2.6
Developing Countries	3.9	3.0
Philippines	3.2	1.8
Myanmar	3.5	2.0
Vietnam	4.4	2.8
Indonesia	4.4	2.8
China	6.2	4.8

Source: FAO Database [14]

Of these interventions, perhaps the most controversial ones have to do with the operations of the National Food Authority (NFA), the government's price and supply stabilization arm in the rice sector. NFA has (until lately) the virtual monopoly over international trade of rice, the discretion to issue import licenses, and the mandate to operate the marketing and price support operations of rice and corn. Its interventions have been justified on the grounds that the world rice price is highly volatile and that private traders extract monopoly profits from farmers during harvest season and from consumers when rice is scarce. Various studies, notably by David [15], Roumasset[16], and Balisacan et al. [17], have shown that these interventions have in fact exacerbated market failures, increased the volatility of domestic prices, reduced the welfare of both consumers and producers, discouraged the private sector from investing in efficiency-enhancing distribution and storage facilities, and bred corruption and institutional sclerosis.

Rather than gaining from NFA operations, taxpayers have in fact been in the losing end. Roumasset [16] estimated the total costs of price controls on rice in 1999 to the tune of P49 billion: P3.7 billion from foregone tariff revenues, P18.5 billion from foregone consumer tax revenue, P7.9 billion from foregone producer tax revenue, P6.4 billion from excess burden to consumers, and P3.3 billion from excess burden to producers. In 1998, the financial subsidies to NFA amounted to over P6.3 billion. This amount was far more than the amount (less than P1 billion) provided to agricultural research and development in rice, which arguably yield far higher social rates of return. In recent years, the cost to the government and taxpayers of a P1 income transfer to the poor through the NFA's general price subsidy scheme is from P3 to P6 [18].

Notwithstanding the enormous resources spent on NFA operations, domestic rice prices are far higher in the Philippines than in other developing Asian countries, especially since the mid-1990s (Figure 1). In the late 1990s, following the ascension of the country to the WTO, domestic prices soared, rising 86% and 40% higher than in Thailand and Indonesia, respectively. In the same year (1996), the Philippine nominal wholesale price was almost twice (91%) as much as the world price. Given that rice is the country's main staple, especially among the low-income groups, this high-rice-price policy hurt the poor and contributed to the high incidence of malnutrition in the country. Clearly, there is a need to reexamine this policy posture.

In 1996, in conformity with the country's accession to the WTO, the Philippine Congress passed Republic Act 8178, which lifted all quantitative import restrictions in agriculture except rice. In lieu of these restrictions, their tariff equivalents were put in place. But because finding the tariff equivalent of a quantitative restriction (QR) is not a simple exercise, the process led to "dirty tariffication." Nearly all the commodities were given tariff rates of 100 percent, even though the nominal protection rates of these commodities, based on strict comparison of domestic price and world price, were much lower [15]. In other words, the tariffs given were much more than the tariff equivalents

of the protection regime existing before the accession to the WTO. At the end of the 1990s, the overall tariff protection for agriculture (13.3%) was higher than that for industry.

For rice, the tariff equivalent of its present QR from 1995 to 2002 is 67.2%. Clearly, this commodity has been highly protected in recent years. As noted earlier, this protection has been justified by the need to shield the incomes of small farmers from erosion caused by competitive imports. However, this stance fails to address the root causes of the farmers' incapacity to ably compete with imports, foremost of which is the government's failure to secure a healthy investment climate and provide the required public support services necessary to increase productivity.

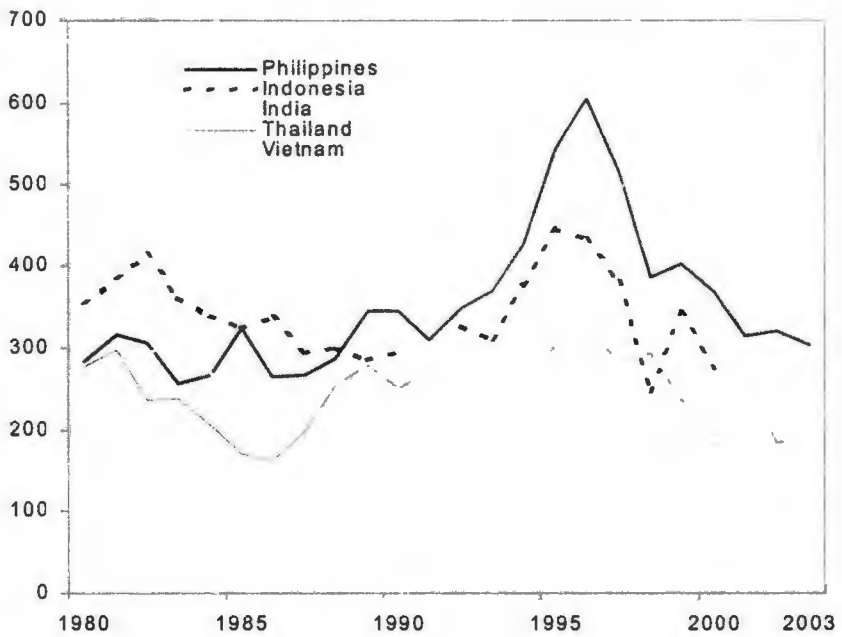

Figure 1. Wholesale price of rice, US$/mt

Sources: IRRI; BAS; Bank of Thailand; Nielsen 2003; Ministry of Agriculture Government of India

"Business as usual" vs. "strong reform" agenda

To further examine the rice and agriculture problem, an enhanced multi-market simulation model of Philippine agriculture, the Agricultural Policy Simulation Model (APSM), was used to generate probable outcomes to a variety of "what if" questions.[2] Two cases are shown here: a base scenario or the "business-as-usual" agenda and a "strong reform" agenda. In the base case, QRs equivalent to 50 percent tariff rates are maintained for the major sub-sectors of agriculture (rice included), while public investments in the sector continue at a slow pace, as in the 1980s and 1990s. This simulation roughly corresponds to the status quo. The strong-reform agenda, on the other hand, is characterized by gradual liberalization of agricultural trade – removal of QRs and reduction of tariffs over a five-year period – complemented by increased public investment in support services, particularly irrigation, R&D, and extension. This roughly corresponds to China's "reform path" for agriculture and rural development (see, e.g., Huang et al. [7]). Some results are summarized in Table 5.

The business-as-usual simulation results suggest that yield growth rates in the medium term are low by historical and international standards. Imports of the country's major staples – rice and corn – rise significantly during the period. Poverty reduction is slow, especially in rural areas. Furthermore, the low growth of incomes in rural areas compared with urban areas induces substantial rural-to-urban migration, thereby accentuating population-related urban problems.

On the other hand, the "strong reform agenda" scenario suggests reduced domestic agricultural prices arising from the reduction in tariffs and removal of QRs. Farm household incomes rise despite the fall in farm prices owing to increases in agricultural productivity brought about by a more aggressive public investment in irrigation, R&D, and information generation and diffusion. Furthermore, the impact on poverty is high in the medium term; poverty incidence in this scenario is lower, on the average, by 10 percentage points than in the base case.

Clearly, in the Philippine case, the business-as-usual approach to governing agriculture and the rural sector needs to be abandoned in favor of more aggressive reforms and investments aimed at raising agricultural productivity and sustaining gains in farm incomes, reducing the "cost of doing business" in rural areas, and taking advantage of opportunities for growth offered by globalization. This should also be coupled with ensured accountability, improved coordination, and program focus among agriculture-related agencies of the government. This is an important area where the NGOs, local governments and civil society shou d come in. They must play an active role in planning, implementing, and monitoring agricultural and rural development programs. This would foster accountability and sustainability in the system.

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[2] For a discussion of the model, see Asia-Pacific Policy Center, Pathways to Sustained Poverty Alleviation: Agrarian Reform Communities and the New Economic Paradigm (report submitted to the Food and Agriculture Organization, April 2002) [19].

Key Drivers of Agricultural Development in a Globalizing World

As noted above, agricultural growth and rural development is key to poverty reduction and food security. However, this does not take place in a vacuum. An effective strategy to achieve it is one that is comprehensive, encompassing the entire stretch of the supply chain, while keeping focused on strategic areas where potential economic returns on investment (time and money) are high and broadly based. With respect to production inputs, the issues of availability and quality, accessibility and affordability, especially by small farmers, need to be addressed. Meanwhile, the solution may require policy changes, prioritization of public expenditure programs, and the establishment or strengthening of national and local institutions.

Access to modern science and technology

There have been tremendous advances in agricultural science and technology, which, if fully harnessed, could accelerate the growth of the agriculture sector.

The profile of agricultural inputs has been changing and, in general, the "quality" has been deteriorating – smaller farm sizes, degraded lands, extreme weather conditions, and incidence of new types of pests and diseases. These factors notwithstanding, some countries have managed to increase significantly their agricultural output through technological improvements. In Thailand and China, the key factor has been the widespread use of modern plant varieties that are high-yielding and resistant to biotic stresses. Their experience suggests that farmers are generally risk-neutral and receptive to new technology, although also concerned about affordability and profitability.

On the other hand, consumer demand for food (i.e., food type and quality) is largely driven by income. Different countries demand different types of food and high-income consumers are willing to pay a premium for quality. The R&D and extension program must be able to respond to these demands. It must be able to inform producers on the proper technology of producing different food items of a certain quality. Furthermore, post-production technologies designed to prolong the shelf life of food should be given high priority in the program.

However, financially viable and location-specific technologies take time and resources to develop. Governments, as well as the private sector, need to invest in their development and diffusion. The Philippines has been underinvesting in R&D over the past 20 years. The country's public expenditure on agricultural R&D averages only 0.3% of GDP, way below those of Malaysia (1.1%) and Thailand (1.6%). The norm for developed countries, in contrast, is about 3% of GDP (e.g., Taiwan's average is 3.4%).

Alston et al. [20] report very high internal rates of return for agricultural R&D in Asia-Pacific, averaging 49.5%. The same order of magnitude has also been found for the Philippines (see Intal [21]). It is not surprising then that the private sector has

assumed a more active role in this area such as in Thailand. In such cases, the government's role would be to direct R&D efforts with consideration for the needs of small farmers, and, if necessary, take on the slack. In other countries, the role of government is to create a policy environment that is conducive to private R&D. In the case of biotechnology, for instance, the government may have to broker dialogues between opposing parties or support studies that objectively evaluate the issues.

A technology-driven growth in agriculture is possible only when the rural populace has the tools and skills necessary for modernization. Furthermore, investment in education has reinforcing effects on poverty through health, nutrition, reduced fertility rates, and higher productivity.

Extension systems, if of good quality, provide avenues for human development and generate externalities to the entire sector. These twin objectives are achieved through the dissemination of new technologies coming out of the research system and the feeding back of problems actually faced by farmers to the research systems. Demonstration farms, for example, have been used to integrate research and extension processes. Recently, the trend elsewhere (e.g., India) has been toward setting up of ICT-based on-farm research that essentially completes the cycle of research-extension-feedback-research.

Access to land

More often than not, labor is the poor's only asset and, for the most part, they could offer unskilled labor only. Providing them access to land will enable them to have command over another major factor of production. Note, though, that they will need to be given secure property rights over the land. Insecure tenure creates uncertainties and leads to sub-optimal outcomes both for short-term agricultural output and sustainable development. For instance, it would not be rational to plant perennial crops nor invest in land development if the farmer is not secure over his tenure of the land.

Secure land rights likewise offer opportunity for smoothing consumption in the event of adverse income shocks, such as when one is hit by a sudden unemployment spell or by a natural calamity. Land is an attractive collateral, thereby affording its owner access to formal financial intermediation. Studies on the Comprehensive Agrarian Reform Program (CARP) show that, as a whole, the land transfer program has effectively increased the beneficiaries' farm productivity, real incomes, and rates of physical asset accumulation by more than those realized by non-beneficiaries [1, 22]. Moreover, children of land reform beneficiaries have accumulated human capital faster than those of non-beneficiaries. The progress in poverty reduction is likewise notably faster in agrarian reform communities (ARCs) than in comparable non-ARCs [23, 24].

These achievements have, however, come at a high price. The unduly long CARP implementation has eroded confidence and certainty in rural land markets, thereby inhibiting much-needed private investments. Hence, the program's implementation needs to be accelerated. At the same time, all possible avenues for achieving the equity

goal of CARP have to be pursued with greater vigor and political resolve. Toward this end, it is imperative to expand the scope for community-managed land reform, as well as other institutional arrangements that have proven effective in reducing poverty in agrarian communities (e.g., joint ventures).

Access to rural infrastructure

Oftentimes, the quality of extension service is hampered by the poor state of rural infrastructure. In addition, deficient farm-to-market roads prevent producers from bringing their raw agricultural produce to markets in urban areas where their products could command higher prices. Too often, this explains the large gap between farm gate and market prices. Furthermore, high transport and communication costs weaken the employment-creating linkages between agriculture and the rest of the economy. With high transaction cost, the potentially strong response of poverty to agriculture growth and urban demand growth is muted.

Increased public investment in rural infrastructure will have to be accompanied, therefore, by reforms that will effectively liberalize land transport, inter-island shipping, port cargo handling, and telecommunication. These policy reforms will bring down the production and marketing costs in all sectors. At the same time, increased private sector participation in road building and maintenance of upland areas should be encouraged.

Irrigation development

Agriculture is highly dependent on moisture. Unfortunately, natural sources are unpredictable, at best, and very scarce, at worst. Consequently, farm incomes are very uncertain at best, and very small at worst. Irrigation development, apart from technology, is key to resolving the situation. Hence, it can be a major source of growth in the agriculture sector. However, it is imperative that constraints to irrigation development be immediately identified and properly addressed. David [25] describes the poor state of irrigation development in the country. Less than 30% of potential irrigable land is served by an irrigation system. Worse, the present systems are very inefficient and in urgent need of repair and rehabilitation.

Irrigation development should focus on small-scale, farmer-operated irrigation systems (e.g., shallow tubewells). These are far cheaper (on a per-hectare basis), more sustainable, and more favorable for crop diversification, than the large systems operated by the National Irrigation Administration (NIA). The cost per hectare to develop small-scale, farmer-operated systems is just about one-third of that for large NIA systems. The current NIA practice of irrigation development binds farmers to rice farming, rather than expanding farmers' options to move to more profitable crops or farming systems. This practice effectively closes a very important avenue for long-term poverty reduction in rural areas.

Incentive structure and governance

Contrary to popular belief, farmers, even traditional farmers, do respond to economic incentives, especially price incentives. For instance, China in the mid-1980s exhibited dramatic growth in agricultural output mainly due to the institutionalization of the household responsibility system in place of the old system, where output in excess of state-determined quota reverts to the state and not to the producers themselves.

Government must concentrate on creating a macroeconomic environment that encourages investment. For instance, maintaining a reasonably healthy public finance reduces private investment risk. On the other hand, an exchange rate policy that results in an overvalued home currency penalizes the tradable sector, wherein the agriculture sector is a prominent player.

There is also a lot to be said about governance. If the rules are not transparent, and worse, if they lend themselves to subjective judgment, then there are ample opportunities for rent-seeking activities. Apart from distorting the demand and supply situation and discouraging above-board trading activities, these raises the "cost of doing business" in the country.

A very critical problem in agriculture-related government agencies—and, to be sure, virtually in all other public agencies, including both houses of Congress—is that there is no system in place that allows one to check whether the billions of pesos being spent for agriculture and rural development programs are in fact actually benefiting the small farmers and fishers. Putting in place an impact monitoring system need not be expensive if appropriate statistical practices are employed. It is best that the monitors be independent of those who design and/or implement government programs. There are many credible research organizations around the country, including state universities and colleges (SUCs), that could be tapped to perform this task.

Well-targeted safety net program

While globalization is expected to be beneficial on the whole, it may also have adverse effects on particular sectors. Resources will tend to be allocated to the more efficient industries and away from sectors where the home country does not have a comparative advantage. In order to address the needs of these sectors, government must implement a well-targeted safety net program, thereby containing political unrest. The objective is to provide short-term assistance and facilitate the re-tooling of the affected sectors. The program should, however, be designed carefully, ensuring that it is incentive-compatible, i.e., unintended beneficiaries do not find it worth their while to preempt the program benefits, while the intended beneficiaries do.

Concluding Remarks

The recent resurgence of agricultural growth is not a call for comfort. The problems ailing Philippine agriculture are far more serious and urgent than recognized

so far by the national leadership and body politic. The roots of these problems have to do with the country's failure to secure sources of productivity growth and income diversification in the rural economy.

Both domestic policies and institutions have constrained efficiency and raised the "cost of doing business," thereby blunting productivity growth and eroding the country's competitiveness in the global marketplace. Rice, the population's staple food, has become more expensive in the Philippines than in other developing East Asian countries, owing principally to the government's ill-advised self-sufficiency objective. Liberalizing rice trade enhances the welfare of the poor, especially the landless workers and urban consumers, although the short-term cost to the rice sector in terms of reduced incomes and labor displacement may be quite substantial. However, when this is combined with public investment in productivity-enhancing support services (particularly R&D and irrigation), rice trade liberalization is a win-win proposition.

In addressing the pressing issues of today vis-à-vis poverty and food insecurity, it is important not to lose sight of the key lessons on agricultural growth and development in Asia in the past half-century. One such powerful lesson has to do with enabling the rural poor through policy, investment, and institutional reforms that enhance the efficiency of domestic markets and provide improved access to technology, infrastructure, and education. This enabling environment allows rural growth benefits to be broadly based, thereby enhancing overall nutrition, human capital development, and productivity and economic growth in the medium- to long-term. Almost invariably, the successful cases of rural development and poverty reduction have shown tenacity in the pursuit of efficiency-enhancing reforms. The key driver to these reforms has been neither globalization nor agricultural policy in developed countries. Rather, it is—by and large—the internal realization that reforms are for the benefit of the country and its citizens.

Globalization has its downside risks, but it also offers potentially enormous benefits. Many developing-country globalizers have shown that those benefits more than outweigh the costs: the speed of poverty reduction is, for example, unprecedented in China, Vietnam, and India. The challenge for the Philippines is to find the appropriate mix of policies and institutions needed to exploit the benefits, while being on guard for the downside risks. Fortuitously, for agriculture and the rural sector, the aforementioned key policy and governance reforms required to enhance efficiency (raise productivity and income) are largely compatible with globalization as well.

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