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Agricultural Modernization in China and the Philippines

Lessons and Implications

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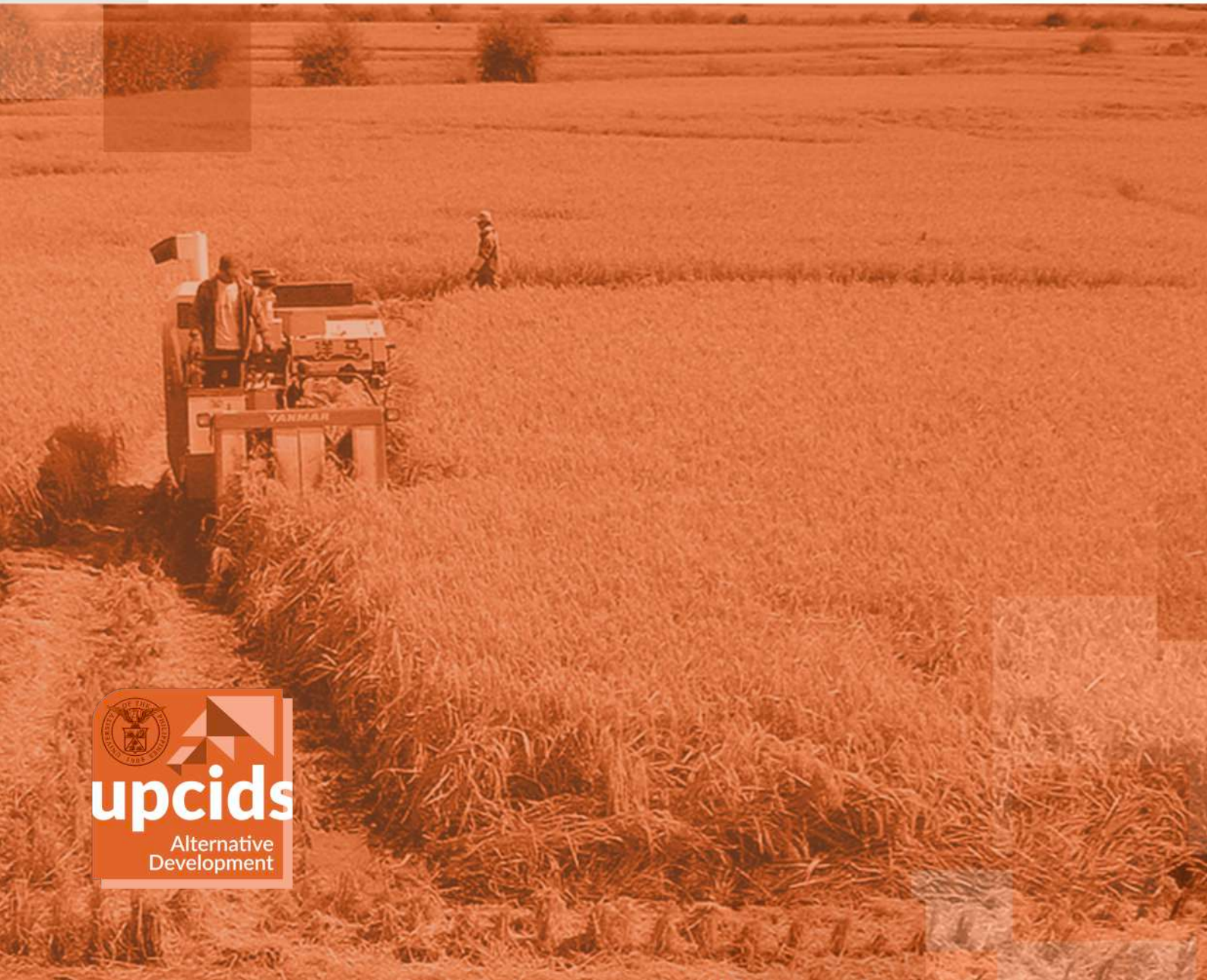
EDUARDO C. TADEM
ROMEO ROYANDOYAN



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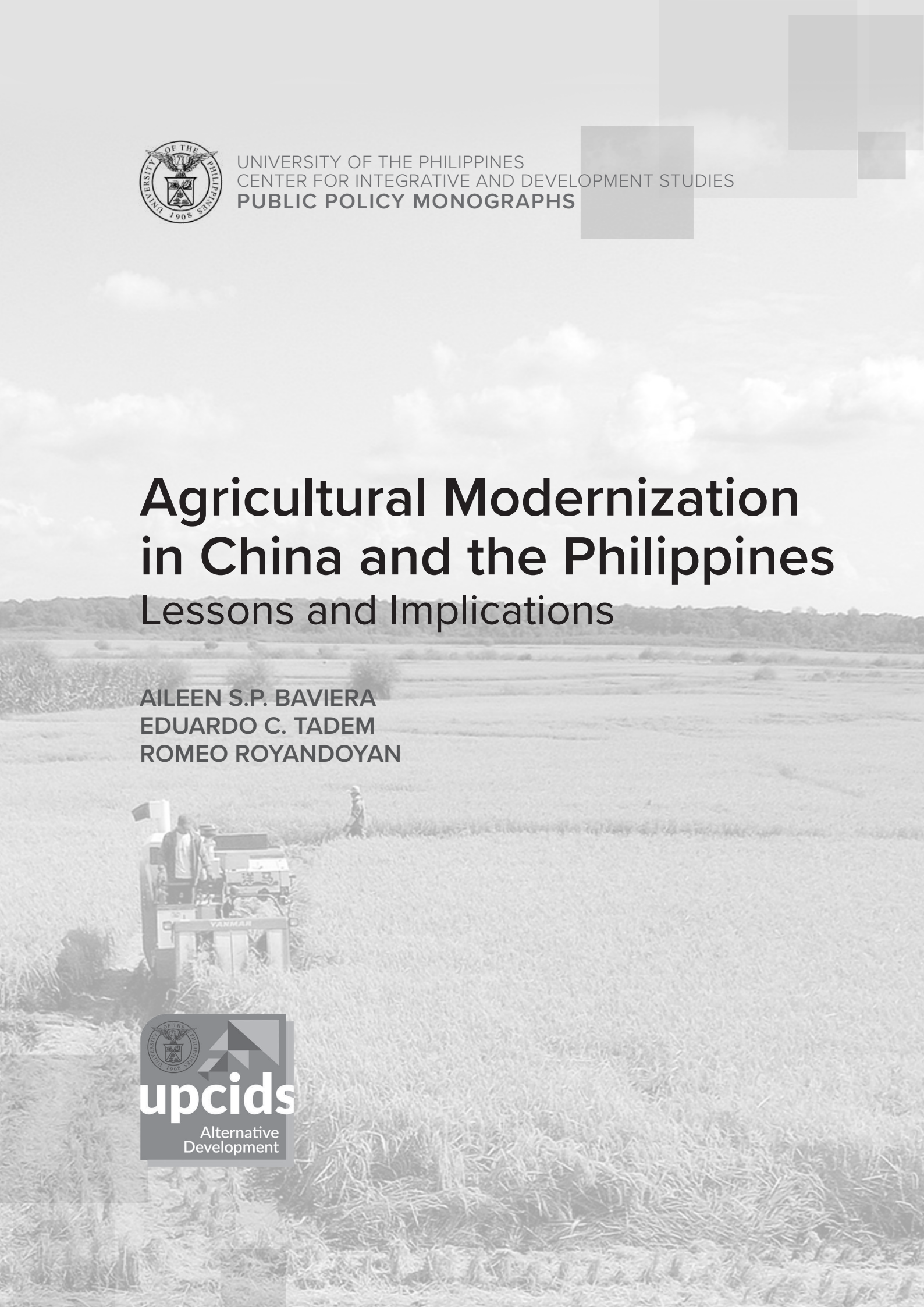

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Introduction[1]

When the Estrada administration assumed office in June 1998, among the President's first official pronouncements was that he would put agriculture and food security at the top of his national development agenda. He also said that his first foreign trip would be a mission to China to learn about how China has managed to solve its food security problems. The President eventually decided not to go personally to China on such a mission. Instead, he sent two of his Cabinet members, Secretary of Agriculture William Dar and Secretary of Agrarian Reform Horacio Morales, together with their technical staff, to conduct an observation tour of Chinese agricultural development in September 1998.

The interest in learning from China's experiences in agricultural modernization stems from the realization that China has indeed achieved a great feat in being able to ensure basic food self-sufficiency for its 1.2 billion people, given its limited land and water resources. After all, China, despite its huge landmass, has only 7% of the world's arable land, and yet it feeds roughly 20% of the world's people. China is not only land-poor, but it is water-poor as well. Like many developing countries, it suffers from lack of capital, technology, and infrastructure, and for a long time had underdeveloped market and distribution networks for agricultural produce. Yet China, especially in recent years, continues to produce bumper harvests and has managed to keep grain imports to a minimum.

However, in 1995, the Worldwatch Institute's food expert Lester Brown raised alarm bells over China's increasing food requirements.[2] Brown argued that, due to China's rapid urbanization and industrialization, the amount of agricultural land in China was quickly getting depleted. Massive conversion of land from use in grain production to cash crop production, or from agricultural to commercial or industrial use, was threatening food production. Moreover, the population continued to grow annually by 15 million. Food consumption patterns were changing as a result of higher purchasing power, with a growing demand for meat and dairy products.

Brown's thesis was that soon China would be unable to feed its own population, and that this would put pressure on other agricultural countries to share the burden of feeding China. Even the entire grain production of the United States—the world's biggest grain producer—would be insufficient to make up for the shortfalls, Brown argues. The prospect of massive importation of grain by China would mean that other parts of the world would go hungry.

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[1] This previously unpublished study was conducted in 2001 by the Asia Pacific Studies Program of the University of the Philippines Center for Integrative and Development Studies (UP CIDS), which was co-coordinated by then Associate Professors Aileen S.P. Baviera and Eduardo C. Tadem of the UP Asian Center. UP CIDS is publishing this study in 2020 as a historical document, but also recognizing its contemporary policy implications on agricultural policies for both China and the Philippines. This also serves as a tribute to Professor Aileen S.P. Baviera, who passed away in March 2020 due to complications from COVID-19. Romeo Royandoyan was then Executive Director of the Philippine Peasant Institute.

[2] Lester R. Brown, *Who Will Feed China? Wake-Up Call for a Small Planet* (New York/London: W.W. Norton & Company, 1995).

In contrast, a 1997 study by the World Bank on China's food situation, given impetus by Lester Brown's projections, predicted that:

> China can remain food secure over the next two or three decades and domestic food production will largely keep pace with population growth—if it can overcome obstacles to growth in agriculture and infrastructure and implement several policy reforms.[3]

Somewhere between what appears to be the Estrada tadministration's rosy perception of Chinese agriculture and Lester Brown's nightmarish scenario is the truth of China's food security situation. This study tries to get to this truth by first, examining the reasons behind China's basic food self-sufficiency from 1978 to the present; and second, finding out what problems still plague the agricultural sector. Both will be done with a view to exploring if there are replicable and applicable lessons for Philippine agriculture.

The paper is divided into three sections. The first section looks at the policy framework and measures for agricultural modernization that have been pursued in China, especially since 1978 which was the year when China made the "strategic shift" in its economic strategy from central planning to a more market-oriented approach. It also describes the results of policy reforms and evaluates their contributions to China's agricultural modernization and food security. The second section examines the situation of Philippine agriculture, with emphasis on the obstacles to achieving food security. Finally, the concluding section outlines lessons and policy implications that may be drawn from a comparison of the two agricultural economies.

The study is intended to focus on the policy framework rather than the technical aspects of agricultural modernization. It explores the crucial areas for state intervention and the impact of government policies on food security at the levels of production, distribution, and consumption.

[3] World Bank, *At China's Table: Food Security Options* (Washington, D.C.: World Bank, 1997), 1.

1
Agricultural Modernization in China

AILEEN S.P. BAVIERA

Between seventeen to eighteen percent of the world's population live and work in the Chinese countryside. A great social transformation has swept this countryside since 1949, but most especially in the last twenty years.

China's rural sector in the late 1990s is no longer exclusively a farming economy. While agriculture still accounts for half the national employment, rural industries have mushroomed and driven a rapid process of urbanization. Moreover, the integration of China's domestic economy with the international economic order has involved many rural enterprises, making the more recent changes in the Chinese countryside inseparable from the forces of globalization.[1]

The outcome of the transformation is that compared to twenty years ago, residents of rural China today have better diets, are better clothed and better-housed, have greater access to consumer goods and greater disposable income to purchase such items, and have wider choices of employment and other opportunities for livelihood. The poverty situation has significantly been mitigated, with relative poverty (across regions and provinces), rather than absolute poverty, being the dominant feature.

This is not to say that serious problems do not exist. There are still many challenges facing the rural sector, from frequent bouts with natural disasters and low levels of productivity to issues in product distribution as well as food consumption. But the attainment of basic food security, translated as near self-sufficiency in staple food requirements for a population of 1.2 billion may indeed be considered admirable. It is no less than remarkable if one considers that the Chinese are living off only seven percent of the world's arable land, and that as recently as in the 1960s, there were wide areas of the country experiencing famine.

By one estimate, China has 130 million hectares of farmland or a mere 0.1 hectare per capita, which is one-third of the world's average per capita farmland. Only 50.66 million hectares of its fields or 53 percent of its arable land are irrigated, but this area produces two-thirds of the country's total grain output.

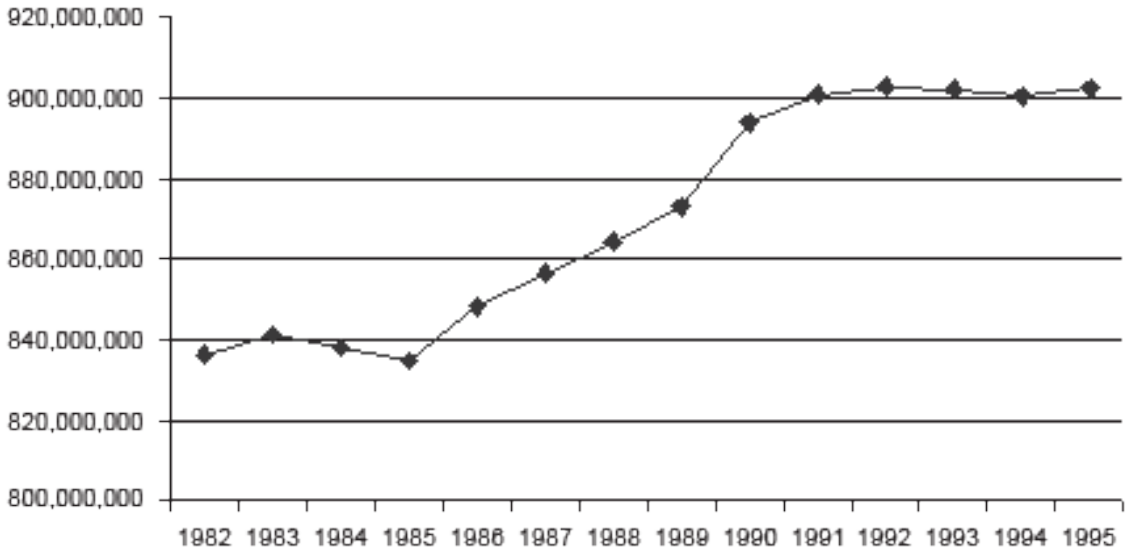
It has only one-fourth of the world's average water per capita in cubic meters (m^3). Seventy percent of its water lies south of Changjiang (Yangtze) and Yellow Rivers, leaving the north with severe

[1] Robert F. Ash, "The Grain Issue in China: Domestic and International Perspectives," *China Review* (1997), 137.

shortages. Every year, the government has to allot huge amounts for irrigation and large-scale water conservancy projects, including major south-north water transfer schemes.[2] It also needs to develop rain-fed agriculture.[3] Eighty-eight percent of total water consumption went to agricultural uses twenty years ago, but the figure is expected to go down to 52 percent by the middle of the next century,[4] as rapid urbanization and population explosion bring up competition by industries and commercial establishments for water use.[5]

China is one of the world's primary producers of agricultural goods, and it is also one of the world's major consumers, with most of its food production consumed by its population. It is a primary producer of wheat, rice, roots and tubers, rapeseed, cotton, pigs, and eggs.[6]

FIGURE 1.1 • China's agricultural population, 1982–1995



The major challenge facing China's food security today is how to properly manage the transition from its present simple food system—one which is able to meet basic human consumption needs for a limited range of products—to a more mature and flexible system that can address changing demand conditions stemming from urbanization and increased incomes.[7]

A brief history of agriculture in China, 1949–1978

In 1949, at the time the communists took over, 70 to 75 percent of the cultivated land was owned by 10 percent of the rural population. Rent paid by tenants to landlords constituted 50 percent, sometimes 70 to 80 percent of their harvests. The communist government confiscated land and

[2] Helen Johnstone, "Agriculture in China: Planting the Seeds of Change," *Asian Business* 33, no. 5 (May 1997).

[3] Information Office of the State Council of the People's Republic of China, "White Paper: The Grain Issue in China" (1996).

[4] Jiang Xiding, "Food Security in China and Implications to the Philippines" (unpublished lecture paper, 1999).

[5] Henry Rempel, "China's Agricultural Sector: Emerging Trends and New Challenges," *Journal of the Asia Pacific Economy* 2, no. 3 (1997), 335.

[6] Ibid.

[7] Ibid., 339.

redistributed it to farmers, free of charge. It was hoped that farmers' enthusiasm would fuel productivity, but soon it was realized that left to themselves, the farmers could not cultivate the land economically.

Collective labor units were then organized in the form of mutual aid teams, which were upgraded into elementary agricultural producers' cooperatives (APCs). The APCs were transformed into advanced APCs in only three years. Under the new system, cooperative members held shares but no longer had claim to the land as private property.

The commune system was subsequently established during the Great Leap Forward campaign. The commune was a multi-functional economic, social, and political organization responsible for agricultural and industrial production as well as other activities of local governance such as delivery of basic health, education, and welfare services. However, the communes failed to improve agricultural production, and were found to be an ineffective vehicle for industrialization of the rural areas.

Low production volumes led to a readjustment policy that again allowed farmers to engage in sideline activities outside of their collective labor commitments. Private lands were restored, albeit within limits. Following readjustment, agricultural output increased 55 percent in five years from 1961 to 1966. Unfortunately for the economy, the decade-long Cultural Revolution from 1966 to 1976 led to an emphasis on political rather than economic transformation.

Despite the many political twists and turns since the founding of the People's Republic, the gross output value of agriculture increased from 1952 to 1978 by as much as 129.6 percent, an average annual increase of 3.2 percent. Basic needs of the rural population were met, and standards of health and education improved. Overall, life expectancy in rural areas rose from 35 years (40 in urban areas) in the pre-Liberation period to 67.9 years by 1981.[8]

During this period, there was virtually no increase in the size of total cultivated land. Growth in agricultural production was instead due to labor inputs and the use of more modern approaches, especially the introduction of machinery and chemical fertilizers. Fertilizer production and application grew 18 percent annually between 1962 and 1980. The irrigated area expanded by 11 million hectares, a full one-third of the original.

Through the late 1960s and 1970s, there was also large investment in agricultural research leading to the adoption of new technologies. New crop varieties increased grain yields by an average of 5.1 percent a year.[9]

However, the growth in inputs exceeded output growth, indicating a decline in total factor productivity from 100 in 1952 to 88 in 1978.[10] Moreover, throughout this period, crop production dominated output, with the share of livestock and fishery only at 2.6 percent.

Essential agricultural goods were priced below the cost of production, while non-essentials were priced well above costs of production. Both rural and urban price indices remained generally stable. However, while agriculture contributed much to state capital accumulation, the state did not in the same proportion plow back capital investments into this sector. Only 12 percent of the accumulated investment from 1952 to 1979 were re-invested in agricultural production.[11] As a result,

[8] Most of this historical narrative comes from David Hsu, "Experience and Lessons for China's Agricultural Development," *Journal of Contemporary Asia* 20, no. 2 (1990): 212–23.

[9] World Bank, *At China's Table*.

[10] Hsu, "Experience and Lessons," 216.

[11] Ibid.

peasant incomes and living standards did not improve in the same proportion as did agricultural production.

In 1978, the household responsibility system (also known as the contract responsibility system) was introduced by the reform-oriented Deng Xiaoping government. This reverted farming activities to the family unit, gave farmers the freedom to decide on matters related to production, linked output with income, and strengthened incentives for agricultural production.

The government immediately raised purchase prices of grain by 20 percent, stimulating unprecedented growth in output and a rapid rise in the per capita income of farm families. The highest growth was achieved from 1980 to 1984, when per capita consumption in rural areas increased from RMB 162 to RMB 274. During this time, there was little increase in biological inputs and use of mechanical technology, and state investment in agriculture even declined, leading many to conclude that it was the unleashing of peasant initiatives that accounted for the high growth. The people's commune system was finally abolished in 1983, and by 1984, 96.6 percent of all rural households were implementing the contract responsibility system.

After 1984, however, agricultural growth began to lose steam, and growth rates for production of grain, cotton, oil-bearing crops, and tobacco began to fall. Mismatches between production and demand became apparent. The prices of inputs such as pesticides and chemical fertilizers rose by as much as 51.8 percent and 85.2 percent respectively in 1987, making it less attractive for farmers to invest in agriculture. The annual per capita grain consumption dropped from 393.5 kilograms in 1984 to 359 kilograms in 1988 (including grain used as feeds, seeds, and industrial input), compared to the target annual consumption of 410 kilograms for the year 2000.[12] On the other hand, production of livestock and fisheries registered high growth after 1995 (see Table 1.1 and Figure 1.2 below).

TABLE 1.1 • Growth rate (%) of agricultural economy by sector and selected agricultural commodities, 1970–1996

	Pre-reform period 1970–1978	Reform period		
		1979–1984	1985–1995	1996
Agricultural output value	2.3	7.5	5.6	9.4
Crop	2.0	7.1	3.8	7.8
Forestry	6.2	8.8	3.9	5.6
Livestock	3.3	9.0	9.1	11.1
Fishery	5.0	7.9	13.7	13.9
Grain production	2.8	4.7	1.7	8.1
Rice	2.5	4.5	0.6	5.3
Wheat	7.0	7.9	1.9	8.2
Maize	7.0	3.7	4.7	13.8
Soybean	–1.9	5.1	2.9	0.1
Cash crops				
Oil crops	2.1	14.9	4.4	–1.8
Cotton	–0.4	7.2	–0.3	–11.9
Rapeseed	4.3	17.3	5.4	–5.9
Peanut	–0.2	10.8	5.2	–0.9

[12] Yeh Chi, "Mainland China's Grain Crisis," *Issues and Studies* 25, no. 12 (December 1989): 69.

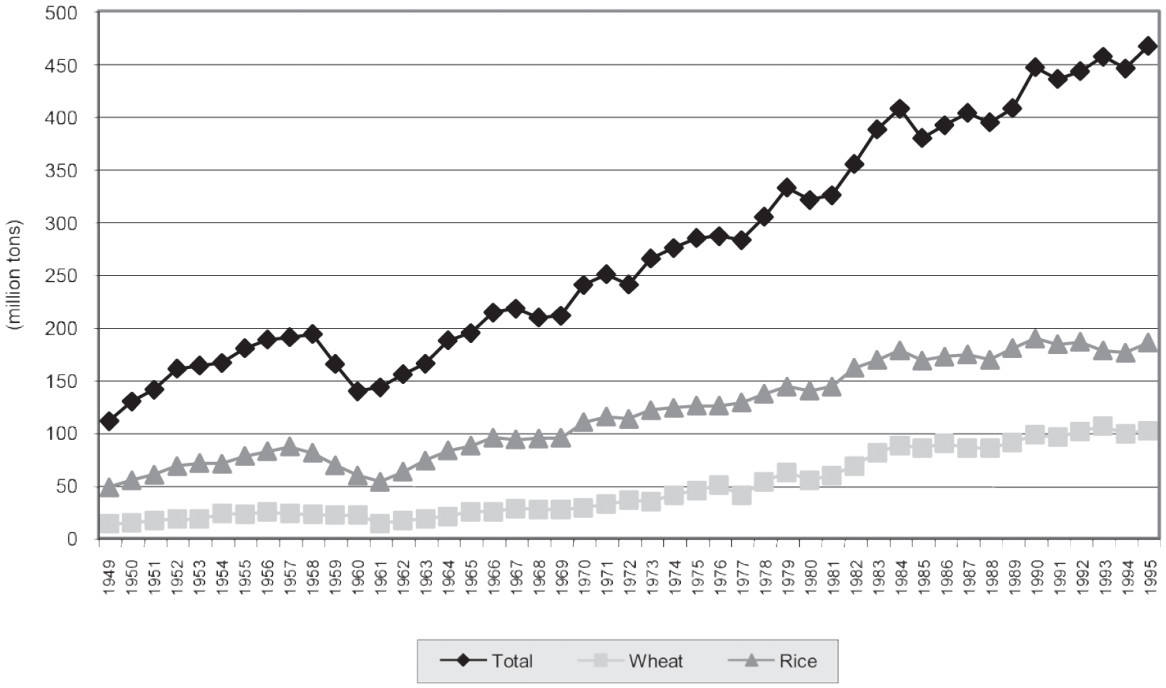
TABLE 1.1 • Growth rate (%) of agricultural economy by sector and selected agricultural commodities, 1970–1996 *(continued)*

	Pre-reform period 1970–1978	Reform period		
		1979–1984	1985–1995	1996
Fruits	6.6	7.2	12.7	10.4
Red meat	4.4	9.1	8.8	11.9
Pork	4.2	9.2	7.9	10.7

Note: Growth rates are computed using regression method. Growth rates of individual and groups of commodities are based on production data; sectoral growth rates refer to value added in real terms.

Sources: State Statistical Bureau, *Statistical Yearbook of China*, various issues; State Statistical Bureau, *A Statistical Survey of China* (1996); Ministry of Agriculture, *Agricultural Yearbook of China*, various issues; cited in Food and Agriculture Organization, *Poverty Alleviation and Food Security in Asia: Lessons and Challenges* (Bangkok: FAO Regional Office for Asia and the Pacific, 1998), 127.

FIGURE 1.2 • Total grain production, 1949–1995



Nevertheless, from 1978 to 1996, agricultural growth averaged 6.1 percent a year.[13] Remarkable changes in income and consumption patterns reflect the high growth of the last twenty years.

[13] World Bank, *At China's Table*, 3.

FIGURE 1.3 • Average per capita expenditures, 1952–1992

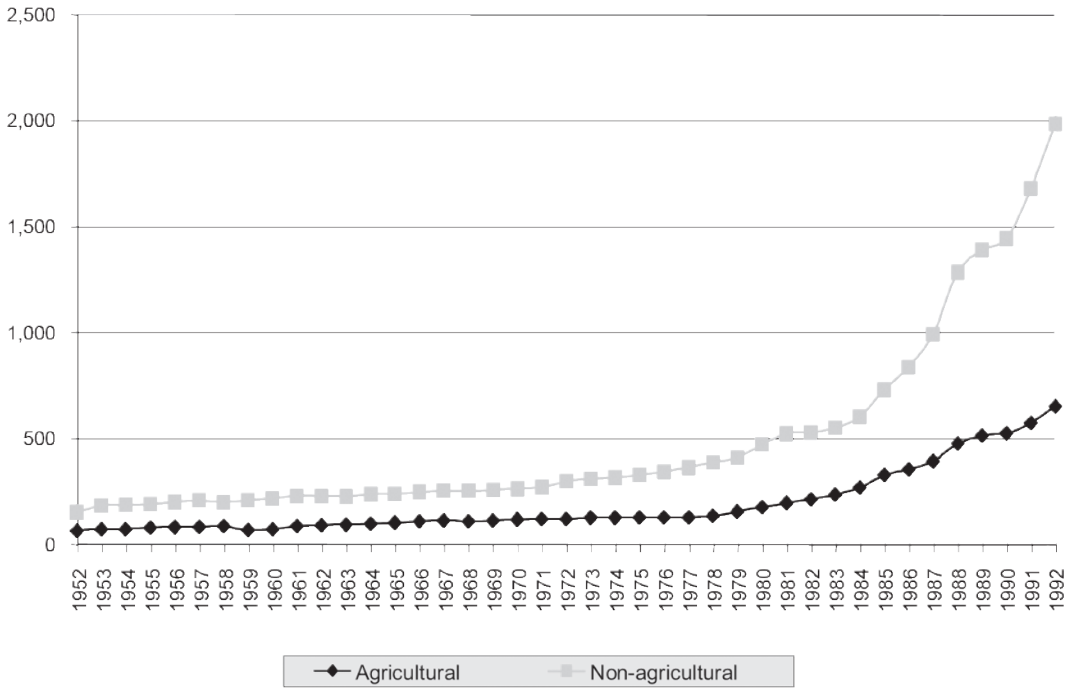


FIGURE 1.4 • Peasant household per capita consumption (in kilograms), 1978–1992

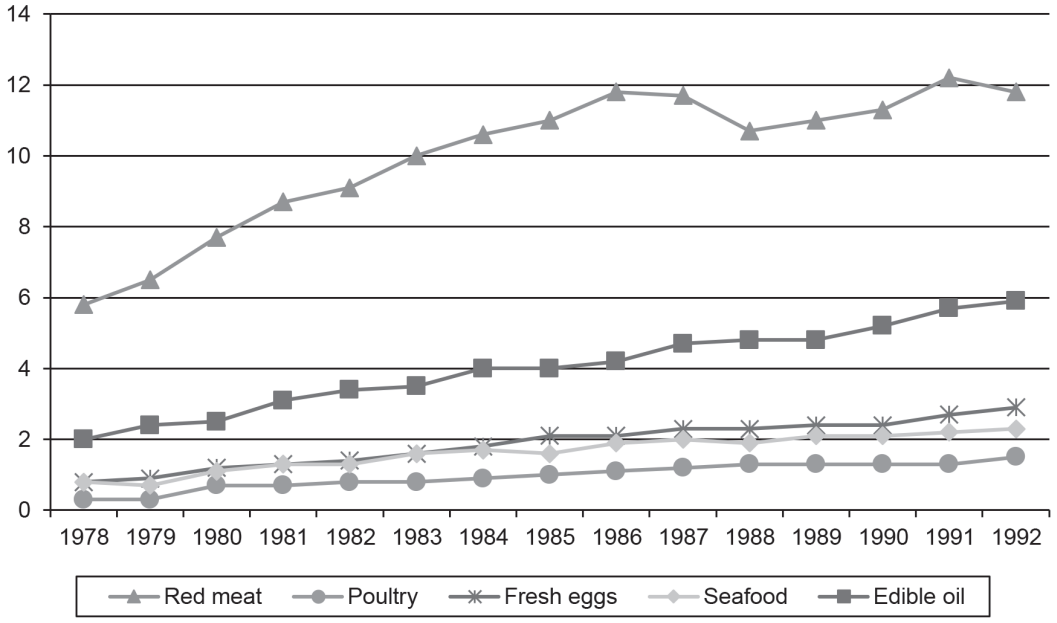
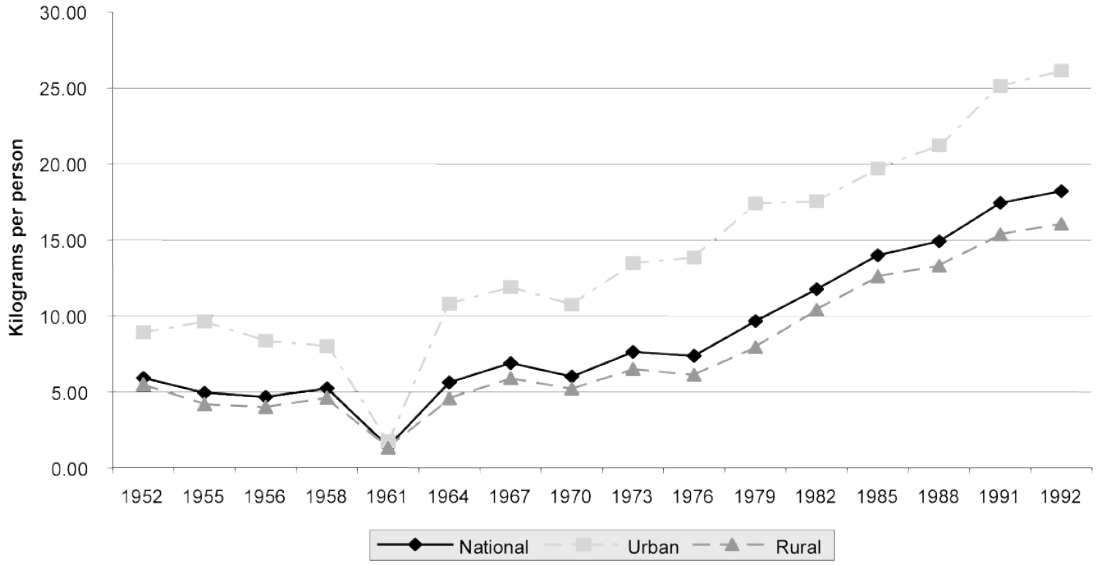


FIGURE 1.5 • Urban and rural pork consumption per capita, 1952–1992



Modernization of agriculture: Key policy measures

1. Placing agriculture at the center of economic development with grain production as the focus

A 1996 Chinese government White Paper on agriculture, entitled "The Grain Issue in China," declares that agriculture remains the basis of the national economy and that the increase in grain production is the key point in rural economic work.[14]

In fact, the role of agriculture in the national economy had been declining over the last two decades. This was true in terms of gross value added, employment, capital accumulation, urban welfare, and foreign exchange earnings. Before 1980, it accounted for more than 30 percent of the GDP, decreasing to below 20 percent by the early 1990s. Employing 81 percent of labor in 1970, the sector employed only 50 percent in 1996.[15]

TABLE 1.2 • Changes in the structure of China's economy, 1970–1996

	1970	1980	1985	1990	1994	1995	1996
Share in GDP							
Agriculture	40	30	28	27	20	20	20
Industry	46	49	43	42	48	49	49
Services	13	21	29	31	32	31	31
Share in employment							
Agriculture	81	69	62	60	54	52	50
Industry	10	18	21	21	23	23	24
Services	9	13	17	19	23	25	26

[14] Information Office of the State Council, "White Paper."

[15] Food and Agriculture Organization, *Poverty Alleviation and Food Security in Asia: Lessons and Challenges* (Bangkok: FAO Regional Office for Asia and the Pacific, 1998), 124.

TABLE 1.2 • Changes in the structure of China's economy, 1970–1996 *(continued)*

	1970	1980	1985	1990	1994	1995	1996
Share in export							
Primary Products	NA	50	51	26	16	14	15
Food	NA	17	14	11	8	7	7
Share in import							
Primary Products	NA	35	13	19	14	18	18
Food	NA	15	4	6	3	5	4
Share of rural population	82.6	80.6	76.2	73.5	71.4	70.9	70.6

Sources: State Statistical Bureau, *Statistical Yearbook of China*, various issues; State Statistical Bureau, *A Statistical Survey of China* (1996); Ministry of Agriculture, *Agricultural Yearbook of China*, various issues; cited in Food and Agriculture Organization, *Poverty Alleviation and Food Security in Asia: Lessons and Challenges* (Bangkok: FAO Regional Office for Asia and the Pacific, 1998), 124.

TABLE 1.3 • Sectoral shares of agriculture in the rural economy, 1978–1996

	1978	1980	1985	1990	1994	1995	1996
Share in rural output value	100	100	100	100	100	100	100
Agriculture	69	69	57	45	26	25	NA
Industry	20	20	28	37	50	51	NA
Construction	6	6	8	6	7	7	NA
Transportation	2	2	3	4	5	5	NA
Commerce and others	3	4	4	9	12	12	NA
Share in agricultural output value	100	100	100	100	100	100	100
Crop	80	76	69	65	58	58	58
Forestry	3	4	5	4	4	4	3
Livestock	15	18	22	26	30	39	30
Fishery	2	2	4	5	8	8	9
Real agricultural output value (billion yuan at 1985 price)	226	285	362	608	966	1129	1235
Crop	170	208	251	404	659	788	851
Forestry	8	13	19	32	44	49	52
Livestock	43	59	80	141	223	249	277
Fishery	4	6	13	22	39	43	49

Sources: State Statistical Bureau, *Statistical Yearbook of China*, various issues; State Statistical Bureau, *A Statistical Survey of China* (1996); Ministry of Agriculture, *Agricultural Yearbook of China*, various issues; cited in Food and Agriculture Organization, *Poverty Alleviation and Food Security in Asia: Lessons and Challenges* (Bangkok: FAO Regional Office for Asia and the Pacific, 1998), 125.

These reductions, however, are mere reflections of the expansion in the role of other economic sectors such as industry and services. They have not affected the overall food self-sufficiency picture in China, as agricultural production growth rates have in the main surpassed growth of the population.

Despite the liberalization of the rural economy, the State still has not abdicated responsibility for guaranteeing sufficient supply of grain for the domestic requirements of the country. Grain is understood to be a social commodity; its adequate supply and affordable price are seen as basic requisites to social stability in a country still largely made up of rural citizens. As if to underscore the importance and sensitivity of grain to the national polity, the amount of China's actual grain reserves officially remains a guarded State secret to this day.

One of Mao Zedong's favorite economic slogans had been to "take grain as the key link;" as a national policy, this tended to be over-emphasized and implemented at the expense of production of other food crops as well as at the expense of ecological balance. But, as a result, China from the 1960s and 1970s had been a net exporter of grain. It was only in 1995 when it began to import in large amount (11 million tons), thus inspiring Lester Brown's analysis.

Today, there are advocates of comparative advantage in China who argue that it is acceptable for the country to import more and more of its domestic grain requirements. Some scholars from the Chinese Academy of Social Sciences and the China Center for Economic Research of Beijing University have called on the central government to abandon its policy of grain self-sufficiency and to instead concentrate on higher value products. They have argued that China lacks land and water to be internationally competitive in grain production, saying that China should in fact import more grain to develop its livestock industry and devote more land to cash crops for export.[16]

However, the policy of grain self-reliance is not likely to change easily. The present official target is to maintain self-sufficiency at 95 percent of consumption requirements. This will however require increased State control over the production, pricing, marketing, as well as international trade in grain.[17] The 1996 White Paper clarifies that China will use foreign grain if necessary, but only to regulate varieties, in case of crop failures and to support poor regions. It argues that self-sufficiency in grain is not only necessary for China's social stability, but also for the employment of 400 million rural workers as well as to relieve pressure on the international market for grain.[18]

To maintain self-sufficiency, many problems will have to be addressed. Among these are low productivity of both the land and rural labor, declining soil fertility due to low organic substance content, and shortages in the means of production (chemical fertilizers, pesticides, diesel oil, etc.).[19] Comparatively speaking, yield of agricultural land tends to be low. Even for rice and wheat, products where China's total output ranks first in the world, yield per *mu* (1 *mu* = ⅛ hectare) is only ninth and seventeenth in the world respectively. Moreover, per unit yield varies widely across China, with a high of 15,000 kilograms per hectare and the lowest being 3,000 kilograms per hectare for grain.[20]

The solutions to decreasing grain output have been identified as increasing yield per hectare mainly by applying scientific inputs, reclaiming wasteland (at a target rate of 300,000 hectares per year), and by the exploitation of water, grassland, and sloping land resources.[21] The State moreover says China must minimize the use of grain as animal feeds or as a base of alcoholic drinks. This means they will have to develop alternative feeds such as compound feed and feed additives, green feed and southern aquatic forage, and should also grow grass artificially on a large scale.[22] Measures to curtail grain losses due to transportation, processing, and storage problems are being put into place.[23] There is likewise a need to

[16] "China: Still Growing Its Own by Decree," *The Economist*, August 9, 1997.

[17] The World Bank report says that China should reduce government control and permit more reliance on competitive market forces for determining prices, as these would result in better allocation of resources and ensure long-term food security.

[18] Information Office of the State Council, "White Paper."

[19] Yeh Chi, "Mainland China's Grain Crisis," 75–80.

[20] Information Office of the State Council, "White Paper."

[21] Of China's inland aquatic resources, only 69 percent of water area is used; of its offshore water area of 2.60 million hectares suitable for aquaculture, the utilization rate is only 28 percent. Ibid.

[22] Rempel, "China's Agricultural Sector," 343.

[23] The Food and Agriculture Organization (FAO) estimates China's grain losses due to transportation, processing, or storage problems at 15 percent of total output, which is three times the world average of 5 percent.

guide consumption patterns towards minimizing grain wastage and extravagance. Finally, China must improve its ability to fight natural calamities.[24]

Despite the recent re-emphasis on the importance of grain, during the overall reform period, there was much greater concern for production of other food crops, as well as livestock and fisheries development, as compared to the pre-reform period. Bigger increases in output were registered for these areas, compared to grain production.

FIGURE 1.6 • Livestock production (in 10,000 tons), 1975–1995

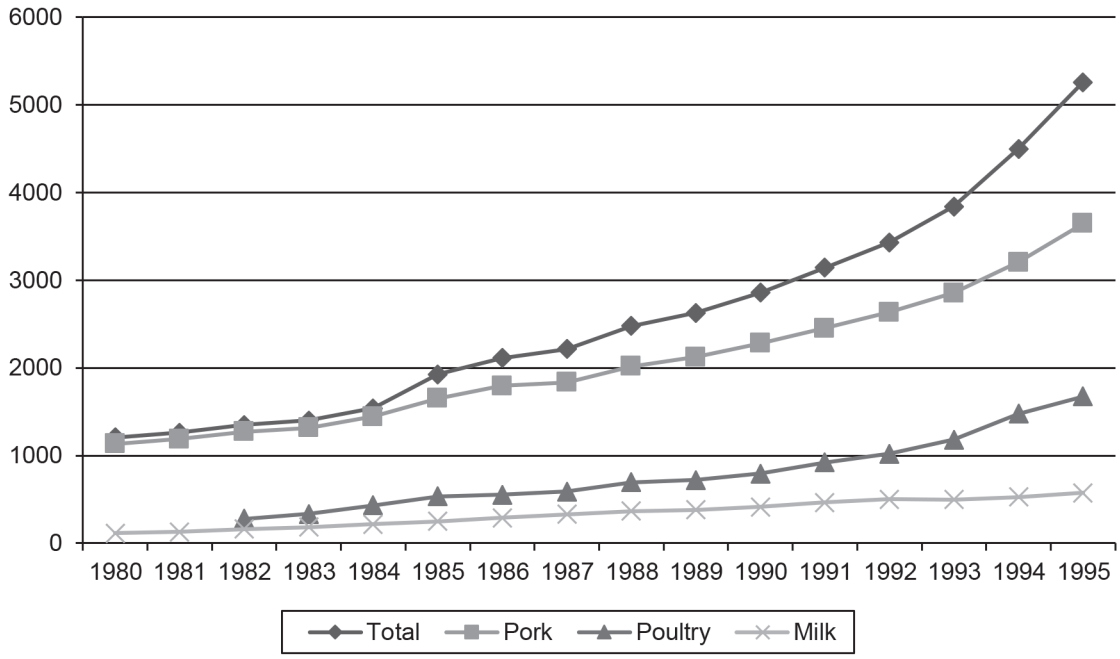
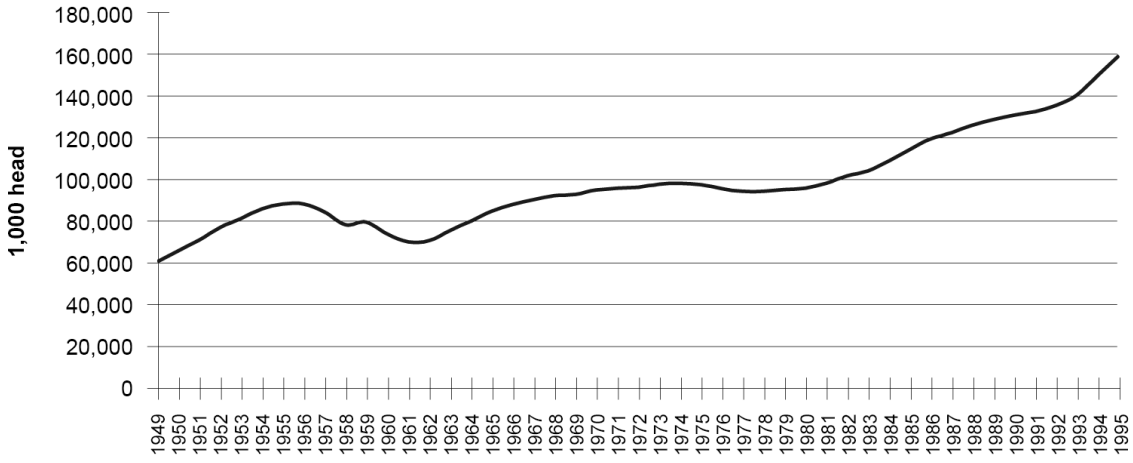
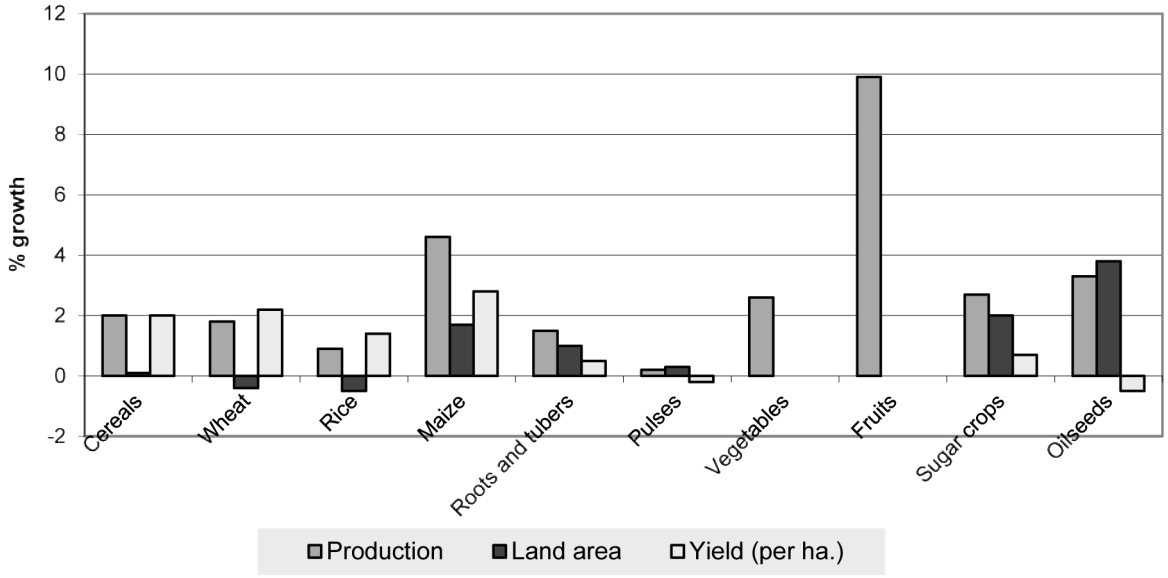


FIGURE 1.7 • Large animal year-end inventory, 1949–1995



[24] Information Office of the State Council, "White Paper."

FIGURE 1.8 • Rates of growth for major crops, 1985 and 1995



2. Redefining the role of the State from command and control to guidance and support

Understanding the proper definition and balance in the role of the State vis-à-vis market forces is a key problematique in China's development strategy. Past experimentation in agricultural policy revealed that it was during periods when farmer-producers were given autonomy but with the State providing different types of supports and incentives that production enjoyed the highest growth rates.

Since the 1978 decision of the Communist Party to embark on a strategic shift in China's development strategy, the State had reduced its role from traditionally providing mandatory plans and targets to providing mainly guidance and supports. The State-market balance in agricultural policy had slowly moved from being State-run to State-dominated combined with market-regulation and then to market-dominated with the State playing a supplementary role.

Since 1993, the central government has implemented its guidance function through an annual Rural Development Conference. The 1993 conference laid down the following policies designed to provide favorable conditions for farmers to increase their productivity:

- stabilize the contract responsibility system and prolong the land lease term by 30 years;
- carry out water conservancy and capital construction projects;
- arrange special loans to support grain and cotton producing areas;
- raise grain purchasing prices;
- increase production and importation of chemical fertilizer at stable prices;
- set up a grain reserve and risk fund system to protect the interests of producers, consumers, and merchants and to ensure domestic supply and demand balance; and
- lessen financial burdens on farmers, to increase their enthusiasm for production.

The 1997 Central Rural Work Conference identified eight areas of further work:[25]

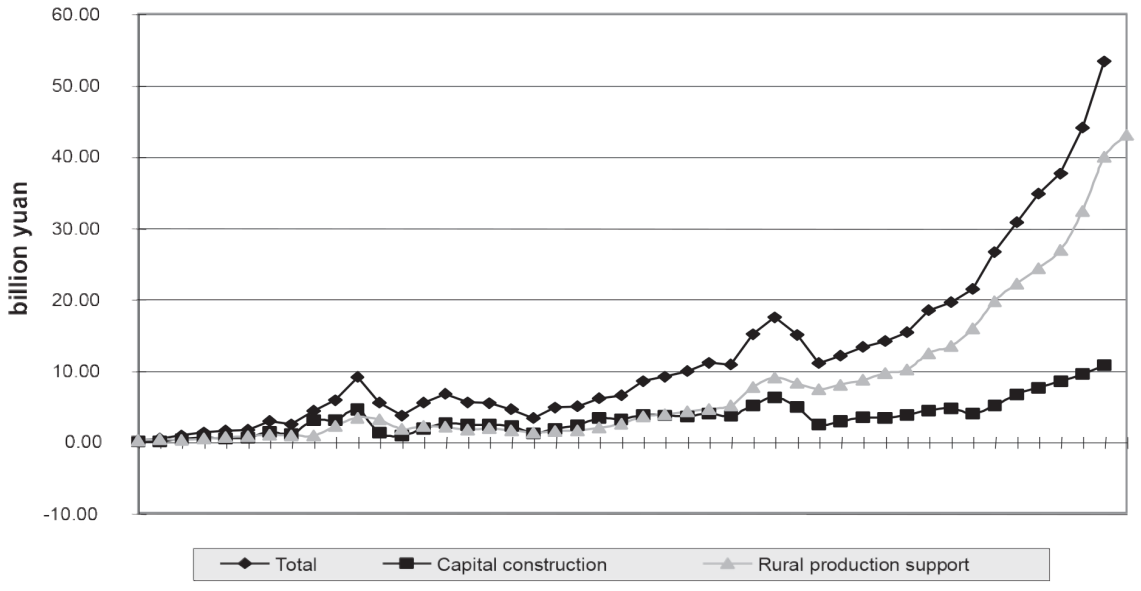
- all government levels should intensify agricultural development efforts and implement pro-agriculture policies, including in the allocation of budgets;
- efforts are needed to improve the grain purchase system, remove obstacles to circulation of farm produce, exercise multi-channel, open-management with few intermediate links, and establish market-oriented price mechanisms;
- need to promote applicable advanced agro-technology;
- optimize rural industrial structures to increase production, ensure the growth of grain and other crops and develop a diversified economy based on actual conditions in each locality;
- improve farmland irrigation, enhance disaster-resistance, and mobilize the public for reforestation;
- perfect the two-tiered management system centered on household contract responsibility system, with remuneration linked to output; mobilize the initiatives of both farmers and enterprises and improve social service delivery systems;
- reduce farmer's burdens and protect legitimate rights and interests of farmers; and
- promote socialist culture and ethics, improve public security, strengthen rural grassroots administrative organizations, and improve ideology and work style of rural cadres.

The State extends its supports mainly through investments, credits and subsidies, and price adjustments. This is done through, among others, substantial allocations in the government budget.

Investments

From 1991 to 1995 (the period of the Eighth Five-Year Plan), China's total agricultural expenditure was 250.76 billion yuan, accounting for 9.89 percent of the state budget. Of this, the State provided only one

FIGURE 1.9 • State budgetary expenditures on agriculture, 1950–1995



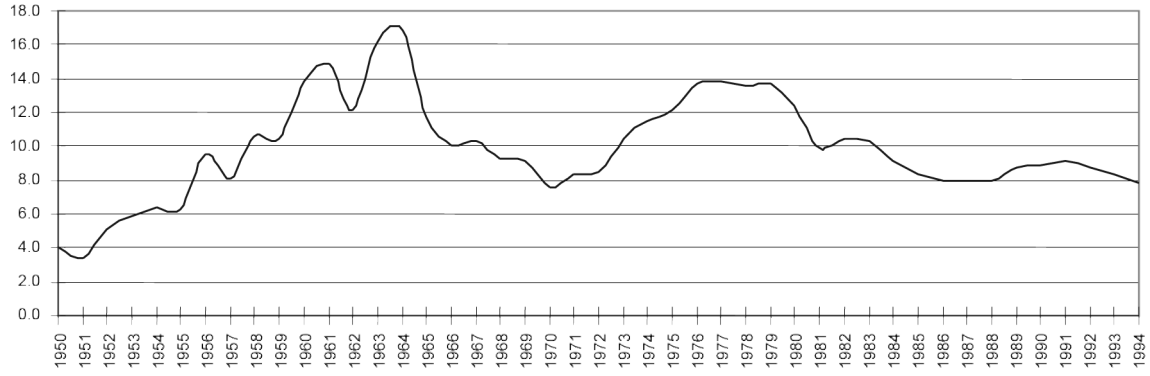
[25] http://www.china.org.cn/ChinaInBrief/97-6.html (inaccessible as of June 2020)

part, with farmer's households and local loans constituting the bulk of investment. This is especially true for the Pearl River Delta, Guangdong, Yangtze River Delta, and Hainan and Fujian provinces, where engaging in agriculture has become even more profitable than industry or commerce. From 1996, however, marked reduction in state investment in agriculture took place.

The trends have also shown decreasing State investment in relation to overall expenditures. The State however exerted efforts to attract foreign investments. Since 1979, China has attracted less than USD 10 billion FDI in agriculture, which represents less than 10 percent of total investment in agriculture. In contrast, FDI in the urban sector reached USD 26.8 billion during the first seven months of 1996 alone.[26] Beijing officially estimates that it needs at least USD 7 billion in foreign investment to meet food production targets for the next 5 years.[27] To attract foreign investments into agricultural production, China now allows foreigners to lease farmlands in certain provinces (e.g., Xinjiang) for as long as fifty years. Companies from Israel, Canada, the United States, and Hong Kong have reportedly expressed interest in joint ventures with some of the country's 2,120 state-run farms.

By the end of 1997, China approved 7,896 contractual foreign investment projects in agriculture worth USD 8.2 billion.[28]

FIGURE 1.10 • State support for agriculture as % of total expenditures, 1950–1994



Prices

In 1985, the State monopoly of purchase and marketing of grain was abolished. There are now four ways of purchasing grain: (1) State purchases through imposed fixed quotas; (2) State purchases through negotiations with direct producers; (3) purchases by grain-processing enterprises buying from wholesale markets; and (4) farmers selling at grain fairs. These helped ease the distribution system, so that by 1993, grain rationing in cities and towns was abolished. Shortages and spiraling prices of inputs, however, have also led to high market prices.[29] In 1994, a grain market risk fund system at the central and provincial levels was set up.[30]

[26] *China's Agricultural Newsletter*, November 1996.

[27] Ibid.

[28] Jiang Xiding, "Food Security in China and Implications to the Philippines."

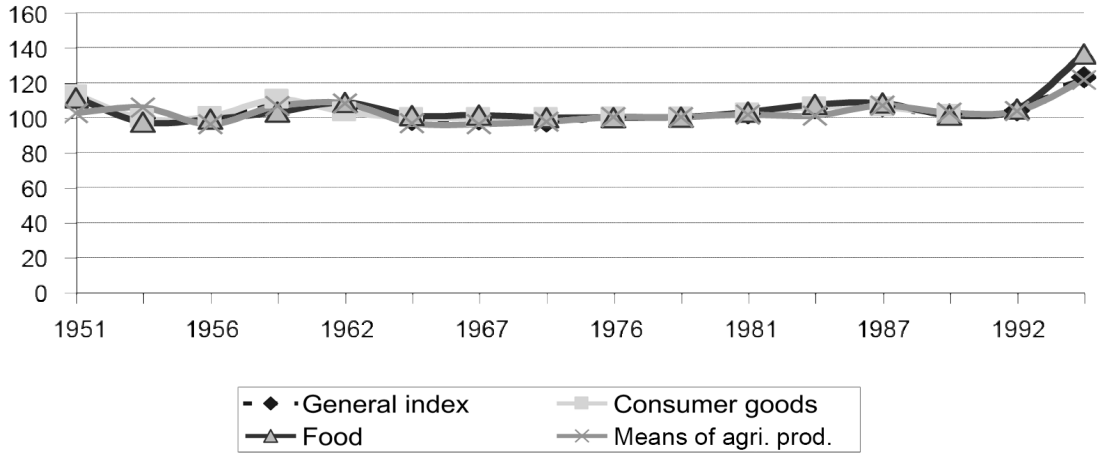
[29] *China's Agricultural Newsletter*, September 1996.

[30] Information Office of the State Council, "White Paper."

The State tries to ensure strong growth of grain procurement prices, which rose by an average of 21 percent per annum from 1992 to 1996. This demonstrates the determination to protect the living standard and production enthusiasm of the grain farmers by keeping purchasing prices at an adequate level. Having learned the dangers of susceptibility of the market price of grain to fluctuations, especially with the emergence of a buyer's market, the government now sees to it that surplus grain offered for sale should be purchased at protected rather than open prices.[31] Moreover, State-owned stores continue to supply grain at lower than market prices for urban families with low incomes.[32]

FIGURE 1.11 • Government price subsidies, 1978–1996

FIGURE 1.12 • Rural retail price index, 1951–1994



[31] Ash, "The Grain Issue in China."

[32] Information Office of the State Council, "White Paper."

Price stability, while a priority of the reform program, is becoming more and more difficult to attain since the introduction of more market-oriented policies.

3. Reforming the relations of production to mobilize the enthusiasm of the farmer-producers

Among the crucial interventions of the State in the rural economy, the introduction of new institutional arrangements such as (a) the contract responsibility system in the early 1980s, (b) township enterprises and specialized households in the mid-1980s, and (c) the rural shareholding cooperative system since 1992, have helped shape the present structure of the rural economy.

The contract responsibility system allowed the peasant household, as the main production unit, more autonomy than ever before. This included the freedom to engage in sideline production outside of the quotas for grain or crop production stipulated in their contracts with the State. Peasant households earned more and could retain more of their income. Between 1980 and 1984, when the implementation of the contract responsibility system was in full swing, incomes of peasant households increased by an annual average rate of 14.5 percent.[33]

Township and village enterprises (TVEs) rapidly developed as a result of surplus production and the diversification of production through sideline enterprises. Foreign investment, especially from overseas Chinese capital, and technological progress drove the mushrooming of TVEs. Many of these were involved in storage, processing, packaging, marketing, and transportation of agricultural produce, therefore helping to bridge the gap between city and countryside.

TVEs included those that were individually- or privately-owned, as well as those collectively-owned. They played a major role in absorbing rural surplus labor, increasing farmer's incomes, and promoting urbanization.[34]

TABLE 1.4 • Employment in TVEs by sector in rural China (in millions), 1978–1996

Year	Total	Agriculture	Industry	Construction	Transportation	Commerce/ food service
1978	28.3	6.1	17.3	2.4	1	1.4
1980	30	4.6	19.4	3.3	1.1	1.5
1985	69.8	2.5	41.4	7.9	1.1	16.9
1990	92.6	2.4	55.7	13.5	7.1	14
1994	120.2	2.6	69.6	16.2	7.3	24.5
1995	128.6	3.1	75.6	19.3	9.5	21
1996	135.1	3.4	78.6	19.5	10.6	19.2

Note: Figures for 1978 and 1980 include only those enterprises run by township and village, while figures for other years include all enterprises in the rural area except for the data for 1995–1996 which do not account for "extremely small enterprises" defined by the State Township and Village Enterprises Administrative Bureau.

Source: State Statistical Bureau

From 1984 to 1988, TVEs absorbed 12.6 million RMB of capital annually, but this dropped to only 2.6 million from 1989 to 1992. In 1991, the total output value of township enterprises reached 1,100

[33] Ricky Tung, "The Development of Rural Shareholding Cooperative Enterprises in Mainland China," *Issues and Studies* 30, no. 5 (1994), 3.

[34] FAO Regional Office for Asia and the Pacific, *Poverty Alleviation and Food Security in Asia*, 145.

billion yuan, with gross industrial output value at 850 billion yuan, a third of China's industrial output value.

Foreign investments in TVEs were concentrated in developed coastal areas such as the Pearl River Delta, which enjoyed more freedom in running their township enterprises. This was partly due to proximity to Taiwan, Hong Kong, and Macau, but many of the investments came not only from these places but from Europe, North America, and Southeast Asia. Nonetheless, as of 1994, State agricultural banks remained as the main source of funds for more than 20 million TVEs.[35]

The growth of rural industry, in turn, expanded markets for city-based production of agricultural inputs, consumer goods, and services.[36] Small towns were encouraged to develop secondary and tertiary industries to speed up the absorption of the rural surplus labor force.

TVEs were immensely successful in their first few years of existence, but before long, they also ran into problems. Compared to state-owned enterprises, their main advantages lay in the broad decision-making powers of the enterprise managers, their independence in taking full responsibility for profits and losses, small capital requirements, and their ability to adapt to the market and to exploit labor resources more easily. However, like state-owned enterprises, they tended to be ambiguous when it came to property rights, functions, authorities, and duties. Many suffered from expanded investment, excessive distribution, considerable debts, poor management, and low economic performance. The tendency of TVEs to become capital intensive also greatly weakened their capacity to absorb surplus rural labor (see Appendix for more information on the role of TVEs in the Chinese rural economy).

Thus, in 1993, the Ministry of Agriculture encouraged local governments to urge all TVEs to transform into Shareholding Cooperative Systems, whether they were individually-run, private enterprises, or joint household units cooperating on a voluntary basis. In November 1993, the Chinese Communist People's Consultative Committee gave the go signal to institute shareholding cooperatives *en masse*.

Shareholding enterprises are business units organized by rural worker households who voluntarily pool their money, materials, technology, and labor to produce goods, whether agricultural or otherwise. A shareholding enterprise usually has three layers of management: the shareholders who are the highest authority, the board of directors composed of the representatives of the enterprise's interest, and the director and manager of the enterprise who acts as chief operating officer.

Under shareholding cooperatives, enterprises exercised pluralist property rights. While local government interference is reduced, employees become shareholders and combine their interests with those of the enterprise.[37]

Questions were raised about the shareholding cooperative system. Is it socialist, capitalist, or a mixed economy in nature? One Chinese source argued that it was socialist because it emphasizes distribution according to work and keeps funds for public accumulation. Others call it capitalistic because of privately-held shares and preservation of individual property rights.

One advantage of the rural shareholding cooperatives was that it enabled farmers to once again explore economies of scale. In China, each of more than 200 million peasant households works on 7 *mu* of land, consisting of eight or nine scattered pieces depending on soil fertility and distance. The practice of scattering the plots one tills makes mechanized farming impossible.

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[35] Tung, "The Development of Rural Shareholding Cooperative Enterprises," 5.

[36] *China's Agricultural Newsletter*, April 1997.

[37] Liao Shaolian, "Development of Township Enterprises in Rural Fujian since the Early 1980s," *China Currents* (July–September 1995).

In contrast, the shareholding cooperative system pools contracted land, properties of families and enterprises for building irrigation works, organizing farm machinery service teams, raising vegetable growing sheds, and developing fruit growing and forestry. Cooperatives moreover found it easier to cooperate with research institutions.[38]

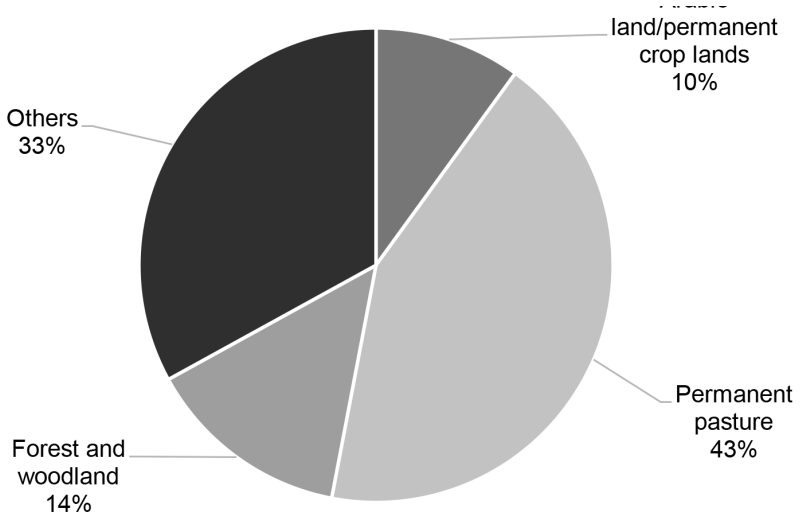
Under this system, it was argued, clear property rights should enable enterprises to become independent economic units responsible for their own operations, profits, and losses. Democratic means of supervision were to be instituted to prevent collective properties from being appropriated by village and township elites.[39] This system was attractive not only to individual producers but to social corporate bodies as well as foreign investors, as it facilitated "turn[ing] the idle consumption funds of society into production funds and help[ing] enterprises raise funds for technical innovation."[40]

The initial results of the shareholding system included higher incomes, increase in rural employment, and a greater diversity of produce available in urban markets. On the other hand, problems faced by the new shareholding system included non-responsiveness of local government units to the needs of cooperatives, and the lack of legal protections.

4. Land use policy

China being a socialist country, the land still primarily belongs to the State rather than being in the hands of private owners. To overcome disincentives to farmer-producers arising from their non-ownership of land, the Chinese government has been experimenting with various types of usufruct rights. In 1983, peasant households were given the right to use land for 15 years, in the manner stipulated in their contract with the State. In 1993, this was extended by 30 years. During the contract term, farmers could freely transfer land use rights with compensation, on the condition that the way it is used remains unchanged.

FIGURE 1.13 • Land use, 1994



[38] Ibid.

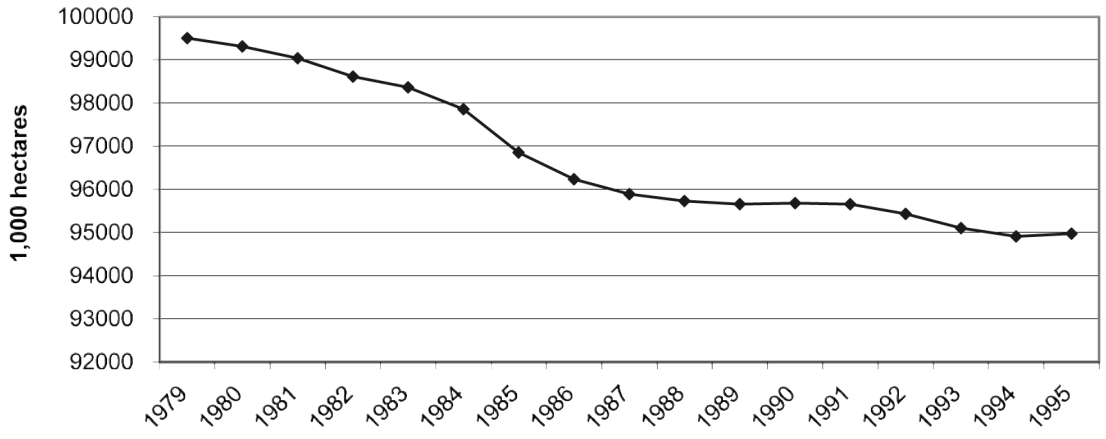
[39] Tung, "The Development of Rural Shareholding Cooperative Enterprises," 3.

[40] Ibid., 5.

Land use is a major concern of the state, because of the lack of arable land and high population densities in the more habitable parts of the country. The agricultural land base has been diminished by residential and industrial encroachments as well as infrastructure construction, especially since the beginning of reforms in 1978.

A survey done in 1993 showed that 70 percent of the 2,800 development zones (mainly industrial estates) established in China were done on arable land. Since 1988, losses of cultivated land are estimated to have reached 190,000 hectares a year. Figure 1.14 also demonstrates the reductions in year-end cultivation of land over time. Moreover, farmland productivity is also being reduced by floods, drought, erosion, water logging, salinization, and alkalinization.[41] In 1994 alone, a year of natural disasters, seven million hectares of farmland were wiped out, and another 30 million hectares were severely damaged.[42]

FIGURE 1.14 • Yearend cultivated area, 1979–1995



Thus, in 1997, China began restricting the use of arable land for non-agricultural purposes. A one-year freeze on land conversions was imposed. Land loss is also in part mitigated by land reclamation, now averaging 245,000 hectares a year.

5. Revolution in inputs

Increases in agricultural production from 1978 to 1984 were attributed to the introduction of the contract responsibility system. On the other hand, the continuing growth from 1985 was reportedly due to a massive infusion of inputs, including chemical fertilizers, and to new scientific and technological approaches.

Fertilizer use

The use of chemical fertilizer in China quadrupled from 1978 to 1995.[43] China's cultivation cycles are so intensive that average annual application of fertilizer is almost three times that of the United States.[44]

[41] *China's Agricultural Newsletter*, March 1997.

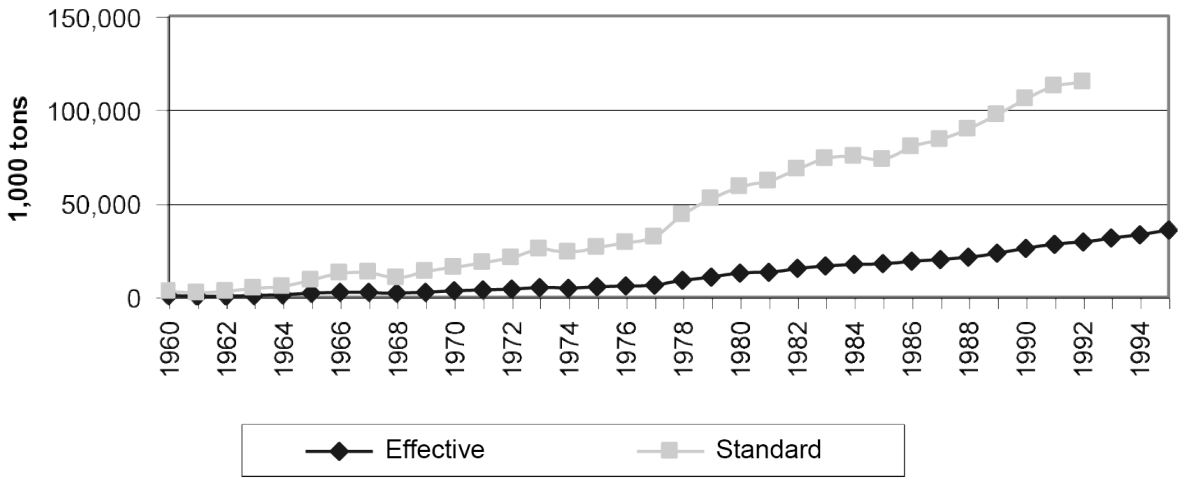
[42] World Bank, *At China's Table*, 19.

[43] Ibid., 16.

[44] World Bank, "China," East Asia and Pacific Brief.

The widespread use of chemical fertilizers has led to a remarkable increase in grain and food production. Much of the fertilizer is produced domestically, using both indigenous and international technologies.

FIGURE 1.15 • Chemical fertilizer application, 1960–1995



While this indeed contributed to higher production yields, there is also evidence of declining effectiveness of incremental chemical fertilizer application. In the future, therefore, added use of fertilizers may result in lower potential yield increases. Other problems relating to fertilizer use are the unbalanced and under-application of nutrients, poor quality of fertilizers, poor application methods, and poor distribution.

Irrigation

Inefficiencies in the delivery and diversion of water into crop areas continue to be a problem. Information from the World Bank says, "Actual water exploitation was only 60 percent of the potentially exploitable supply in 1993. Capturing more will require large investments in storage, diversion works, recycling, pumping, and conveyance systems."[45]

Moreover, much of the wastewater discharged into waterways for downstream use remains untreated.

Irrigation makes use mainly of residual water, having to compete with households, industries, and other municipal users, the last two of which are expected to expand demand in coming years.[46]

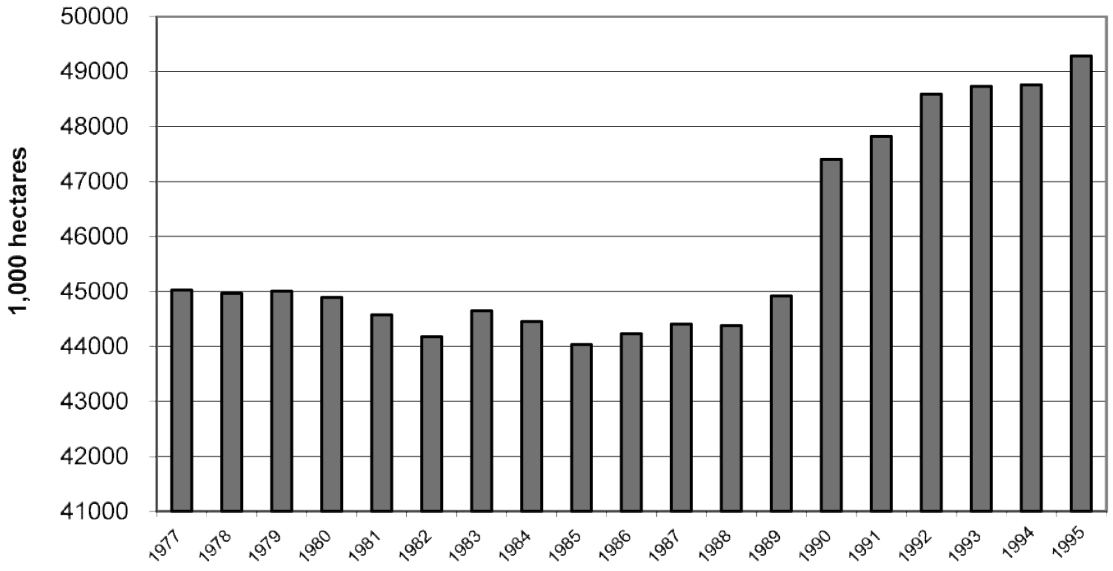
State investment in irrigation and water projects is estimated to comprise as much as 70 percent of total investment in agriculture. Figure 1.16 shows how the low level of State investment until 1990 led to stagnant growth in irrigated area. After 1990, irrigation investments increased by three times.[47]

[45] World Bank, *At China's Table*, 19–20.

[46] Ibid., 20.

[47] Ibid.

FIGURE 1.16 • Total irrigated area, 1977–1995



Popularization of agricultural science and technology

By official records, 39 percent of growth in China's agriculture production can be traced to enhanced contributions of scientific and technological research since 1985.

China was the first country to develop and spread the use of hybrid rice, and since then, its research institutions have been engaged in producing new varieties of rice. It also leads in research on integrated pest management and biological pest controls.

China's agricultural research system operates at all levels of government; it has "500-odd agricultural and forestry polytechnical schools, more than 2,000 county-level agricultural broadcasting and TV schools and grassroots agrotechnology popularization organs to improve farmers' abilities to accept and apply new agrotechnologies."[48] The 1996 White Paper says scientists are encouraged to go to the countryside and spread technology to farmers.[49]

The Academy of Agricultural Sciences, administered by the Ministry of Agriculture, has over 35 national commodity, resource, and disciplinary research institutes. In 1991, the Academy had 10,500 staff of which 5,000 were technical personnel.[50] There is, however, a trend towards commercialization and privatization of agricultural research, which is negating some of the earlier gains from state investment in research.

At the beginning of 1998, a document called "Agricultural and Technology Policies" was published, worked out by ten ministries and commissions, including the State Science and Technology Commission, the Ministry of Agriculture, the Ministry of Forestry, and the Ministry of Water Resources.

This document is a blueprint which sets targets for the next five to fifteen years, as follows:

[48] Information Office of the State Council, "White Paper."

[49] Ibid.

[50] Rempel, "China's Agricultural Sector," 349.

- improve agricultural research and development to international standards;
- promote technology so that its contribution to growth reaches 50 percent;
- strengthen S&T training among peasants; and
- increase investment for agricultural S&T.

TABLE 1.5 • Agricultural research expenditure in China, 1985–1996

Year	Agricultural research expenditure at 1990 price			Share of State finance (%)	Agriculture research intensity (%)	Expenditure per scientist (yuan)
	Total (m)	State finance (m)	Dev't income (m)			
1985	2196.7	1645.3	551.4	75	0.52	54559
1986	2058.5	1464.7	593.8	71	0.48	46917
1987	2000.3	1351.2	649.1	68	0.44	41352
1988	2142.9	1430.1	712.8	67	0.46	39613
1989	2139.5	1429.4	710.1	67	0.47	38303
1990	2049.8	1242.9	806.9	61	0.39	35213
1991	2313.8	1246.9	1066.9	54	0.43	39981
1992	2546.3	1330	1216.3	52	0.44	43735
1993	2667.1	1269.4	1397.7	48	0.46	44646
1994	2952.3	1387.6	1564.7	47	0.44	48688
1995	2832.3	1423.7	1408.6	50	0.39	47396
1996	2879.7	1514.4	1365.3	53	0.36	36657

Source: State Sciences and Technology Commission, cited in Food and Agriculture Organization, *Poverty Alleviation and Food Security in Asia: Lessons and Challenges* (Bangkok: FAO Regional Office for Asia and the Pacific, 1998), 138.

The State Planning Commission, the State Science and Technology Commission, and the State Economic and Trade Commission as well as the Ministry of Machine Industry are also working together, at different levels, to encourage research and development in new farming technologies and equipment, including water-saving technology and biotechnology processes.

TABLE 1.6 • Agricultural technology extension expenditure, 1986–1995

Year	Real agricultural extension expenditure (RMB at 1990 prices)	Real agricultural expenditure per staff (RMB at 1990 prices)	Agricultural extension intensity (%)
1986	1737	4508	0.24
1987	1810	4472	0.32
1988	1691	4113	0.24
1989	1545	3599	0.23
1990	1740	3828	0.23
1991	1993	4021	0.25
1992	2099	3408	0.25
1993	2081	3444	0.23
1994	2089	2850	0.24
1995	2170	3215	0.23

Source: Ministry of Agriculture and Ministry of Finance, cited in Food and Agriculture Organization, *Poverty Alleviation and Food Security in Asia: Lessons and Challenges* (Bangkok: FAO Regional Office for Asia and the Pacific, 1998), 139.

Mechanization

The majority of agricultural machinery in use in the countrysides of China are still small, hand-held tractors. Advanced agricultural machinery is still rarely found. Even in the most industrialized area of the country—Shanghai's suburbs—machinery is used for only 23 percent of agricultural production. The national average for mechanized farm acreage is a low 0.2 hectares per worker, but in Heilongjiang Province, the average is as high as 44 hectares per worker.[51]

Only 34 percent of rice production is currently mechanized, in contrast to 82 percent of wheat production. However, the increase in incomes in recent years has led to a sharp increase in the use of farm machineries. From 1994, when recorded sales of small tractors was 1.32 million, the figure in 1995 jumped up to 1.8 million.[52]

By the year 2002, PRC plans to use machinery for 70 percent of all production, mainly in rice. Machinery use is increasing 7 to 8 percent on the average nationwide. It is estimated that a minimum per capita income of 1,500 RMB is needed before a household decides to invest in a tractor. A specialized household that operates a combine worth 60,000 to 70,000 RMB (USD 7,230 to USD 8,430) can recover costs of the machine only in two to two and a half years.

The machines needed most include cotton production machinery, rice planters, combine rice planters, seeders, animal feed additive and trace element technology, seed processing machinery, vegetable oil pressers, and by-product machinery.

Both the Chinese government and the World Bank are extending loans in order to assist mechanization.

Conclusion

In summary, the process of agricultural modernization in China has all along been recognized as a fundamental objective and a requirement of development. Contrary to the thinking of many, growth in agricultural production was recorded even during the tumultuous years before 1978. But it has been since the 1978 reform that China experienced an extended period of political stability which allowed for more persistent experimentation and innovation in agricultural production and distribution systems.

The crucial elements that led to high growth and improved food security proved to be the following: mobilization of the farmers' initiative by directly linking income to output and by transferring to them more control and flexibility over production decisions; giving farmers greater access to support systems such as state loans and credits as well as extension services; employment of price subsidies and price regulation; and State investment in infrastructure.

At the same time, the timely mobilization of surpluses and of foreign investment for the creation of rural enterprises ensured synergistic linkages of agricultural production with industry, of the rural with the urban economy. Employment-generating strategies were also given high priority.

Basic food self-sufficiency is considered vital by the State; thus the State's emphasis on maintaining a balance between grain and high value crop production, and between agricultural land use and commercial or industrial use. But unlike earlier periods when such balances depended on the mandatory State plan, today market forces are allowed greater leeway. This includes the global market, with China looking

[51] Johnstone, "Agriculture in China."

[52] US Embassy in Beijing, http://www.redfish.com/USEmbassy/China (inaccessible as of June 2020)

to expand its agricultural exports as well as committing to open up its market to foreign agricultural produce as part of WTO membership obligations.

Serious challenges remain: a worsening lack of arable land, the prospect of even more serious water shortages, uneven implementation of policies partly due to resistance by local officials in certain areas, and shortages in agricultural labor due to massive migration of able-bodied men to the towns and cities thus leaving women, the elderly, and children to tend to the fields. In the future, membership in WTO may moreover subject entire sectors in agriculture to foreign competition, with possible far-reaching consequences for food security.

Through a study of China's policy and process of agricultural modernization, we can draw lessons that are useful to the Philippine experience. Some will argue that the differences in economic and political structure of the Philippines and China are so great, and that the Chinese history of strong central planning has so colored their development process in ways that render the Chinese experience virtually inapplicable to more market-oriented societies. But in this case, it is precisely in understanding the differences where our opportunities for learning are embedded.

2

Philippine Agricultural Modernization and Food Security

ROMEO ROYANDOYAN

Introduction

Agriculture has long been a predominant part of Philippine life. For decades, it was agriculture that led other economic sectors in terms of population employed. It has also consistently contributed a significant proportion to the country's export earnings as well as to the gross domestic product (see Annex 1).

Yet today, the contours of Philippine agriculture have hardly been altered from how they were decades before. Farm production remains erratic and weather-dependent. Improved technologies suitable and sustainable for local farming are virtually unused or even unknown at the farm level. Capital or credit needed to improve production is still hard to come by for the average Filipino farmer. And more significantly, landlessness remains pervasive in the countryside, with roughly 55% of farmers still not full owners of the lands they till.[1]

Agriculture's marginal or near-nil levels of growth in productivity have severely limited the sector's capacity to fulfil its two traditional roles. First, its ability to supply sufficient food particularly rice and corn for domestic demand has, over the past decade, been markedly diminished. The country has been importing record volumes of both rice and corn, as well as other basic foodstuffs, in the past five years (see Annex 2). Second, agriculture's export revenue earnings have been declining, as other countries' crop exports have become more competitive and have eroded the Philippines' market share in once top exports such as sugar, abaca, coconut oil, and bananas.

Moreover, new issues have emerged over the past few years that further constrain the agricultural sector's prospects for broad-based growth. The drive for urbanization and industrialization has resulted in rampant and unregulated land conversions. Some 200,000 hectares of farmland have been converted into golf courses, real estate projects, or industrial zones thereby reducing the availability of arable land for food production. The Philippines' commitment to trade liberalization arrangements such as the GATT-WTO, APEC, and AFTA, on the other hand, compels the agricultural sector to compete with imports that are often cheaper and of higher quality. Weakened by decades of neglect, the local farming sector, as government itself admits, is largely unprepared to face off against its imported counterparts.

[1] Mark Cleary and Peter Eaton, *Tradition and Reform: Land Tenure and Rural Development in South-East Asia* (New York: Oxford University Press, 1996).

Globalization has also sparked an interest among government technocrats to shift farmlands from traditional crops to new high value crops (HVCs) expected to be in high demand in the world market. But small farmers and farm workers, the sector's majority stakeholders, have neither the means nor the support from government to diversify into other crops. More significantly, there are fears that a massive shift from traditional food crops to such HVCs as cutflowers or asparagus could imperil the country's capacity to produce enough food for its own needs.

Amid these challenges, and faced with successive years of poor agricultural performance, government belatedly recognized the need to focus on the farming sector. Near the end of his term, then President Fidel V. Ramos signed into law Republic Act No. (RA) 8435 or the Agriculture and Fisheries Modernization Act (AFMA). Ramos' successor, President Joseph E. Estrada, also began his term with the promise to place agriculture and food security in his priority agenda.

Under the administration of President Gloria Macapagal Arroyo, which began in January 2001, the policy framework for agriculture is embodied in the government's Medium Term Philippine Development Plan (2001–2004). In essence, the latest MTPDP merely seeks to implement the provisions of AFMA and makes no major policy breakthroughs.

The important question however is whether the MTPDP (2001–2004) agricultural plan and its programs can squarely hurdle the obstacles that have long hobbled the agricultural sector. How sufficiently do these programs address the problems that are at the root of the sector's stagnation?

Obstacles to agricultural productivity

Comparative assessments of agricultural productivity growth across Asian countries show the Philippines perpetually lagging behind one or another of its regional neighbors. Even an analysis of crop performance within the country shows marginal to no growth in the productivity of the country's traditional crops (see Tables 2.1 and 2.2 below).

TABLE 2.1 • Agricultural production for selected crops and countries, 1964–1999 (in mt/ha)

Crop/country	1964/65	1979-81	1991	1993	1994	1999
Rice						
Philippines	1.25	2.18	2.83	2.80	2.90	2.90
Taiwan	3.65	4.24	5.66	—	—	—
Thailand	1.61	1.89	2.00	2.20	2.40	2.30
Japan	5.15	5.59	5.86	4.59	6.77	6.40
Vietnam	1.02	2.12	3.09	3.50	3.60	4.10
Corn						
Philippines	0.68	0.97	1.30	1.43	1.72	1.71
Taiwan	2.10	3.04	4.56	—	—	—
Thailand	2.19	2.20	2.38	2.04	3.17	3.56
Indonesia	—	1.46	2.15	2.18	2.18	2.64

Sources: Congressional Commission on Agriculture (AGRICOM), *Modernizing Agriculture: Report and Recommendations of the Congressional Commission on Agricultural Modernization* (Manila: Congressional Commission on Agricultural Modernization, 1997); Food and Agriculture Organization (FAO)

TABLE 2.2 • Productivity growth rate of selected crops, 1970–1996

Crop	1970–75	1975–80	1980–85	1985–90	1990–96
Rice	–0.6	6.5	3.6	2.1	0.3
Corn	0.1	3.4	1.3	4.5	3.9
Coconut	0.0	–0.1	–0.1	–0.2	0.1
Sugar	–2.7	4.0	–1.6	3.1	–3.8

Source: AGRICOM, *Modernizing Agriculture: Report and Recommendations of the Congressional Commission on Agricultural Modernization* (Manila: Congressional Commission on Agricultural Modernization, 1997)

Agricultural economists from the University of the Philippines have pointed out that "the Philippines has fallen from the group of best performers to that of the worst performers in agricultural GVA and exports in Southeast Asia" and that "despite growth since 1985, [it] has been unable to achieve the peak performance of the 1976–81 period."[2]

TABLE 2.3 • Average growth rates (in %) of agricultural gross value added (GVA) and agricultural exports of selected countries, 1970–1997

Country	1970–1980		1980–1990		1990–1997	
	Agri GVA	Agri Exports	Agri GVA	Agri Exports	Agri GVA	Agri Exports
Philippines	4.9	14.6	1.0	–4.6	1.9	3.2
Indonesia	2.0	20.0	4.9	4.7	2.8	6.8
Malaysia	6.5	19.3	3.8	3.1	1.9	2.4
Thailand	4.2	21.2	3.9	4.9	3.5	3.6
Pakistan	3.0	13.8	4.3	3.2	1.7	–5.4
Bangladesh	1.4	2.6	1.9	–1.5	1.7	–1.9
China			5.9		4.4	
Vietnam			4.3		5.2	

Source: Tolentino et al., "Philippine Agriculture in Crisis," Action for Economic Reforms, June 2001.

In terms of overall food and agricultural production over the years, the Philippines also lags behind other Asian countries as shown in the table below.

TABLE 2.4 • Indices of food and agricultural production, 1985 and 1995 (1980=100)

Country	Food Production		Agricultural Production	
	1985	1995	1985	1995
Indonesia	112	128	112	129
Malaysia	103	120	111	151
Philippines	87	93	86	93
Thailand	107	107	106	103
Vietnam	118	143	117	141
China	109	128	107	128

Source: David 1998, reproduced in Tolentino et al., "Philippine Agriculture in Crisis" Action for Economic Reforms, June 2001.

[2] Bruce Tolentino, Arsenio Balisacan, Cristina David, and Ponciano Intal, "Philippine Agriculture in Crisis," Action for Economic Reforms, June 2001.

Other indicators of crisis include the high retail prices and high cost of production of rice and the fact that rice consumption since 1980 up to 2000 has been increasingly greater than production. In August 2001, the average retail price of regular rice in Manila was Php 16.73 per kilo.[3] In contrast, Vietnamese and Thai households pay only Php 6.06 and Php 7.64 respectively. Given that 80 percent of Filipinos use 50 percent to 60 percent of their household budget for food, the same group of UP agricultural economists contend that rice price increases function like virtual wage cuts.

Rice production costs in the Philippines are also higher compared with Vietnam and Thailand. In the mid-1990s, Filipino farmers were spending an average of Php 5.71 to produce a kilo of unhusked rice (*palay*) while their Vietnamese and Thai counterparts were spending only Php 2.33 and Php 4.30 respectively. Most recent 2001 data show that Philippine rice production costs have soared to Php 7.45 a kilo.

This bleak picture may be linked to a host of factors that have dampened Philippine agriculture's potential for growth.

Landlessness and ineffectual land reform programs

Despite the government's much publicized claim that it had already accomplished the distribution of 57% of the total lands covered by the Comprehensive Agrarian Reform Program (CARP), landlessness remains pervasive. Various peasant organizations across the regions claim that the actual land distribution is much lower than the official figures.

Based on the audit conducted by the Presidential Agrarian Reform Council (PARC), actual land transfer has only reached 35% of the Department of Agrarian Reform (DAR)'s target. The discrepancy can be traced largely to the DAR's practice of basing its reported accomplishments on the number of Certificates of Land Ownership (CLOAs) released rather than on the actual installation or transfer of land titles to farmer beneficiaries.[4] This system is prevalent even among agrarian reform communities.

DAR itself disclosed that, as of November 1997, there were 17,252 hectares with registered CLOAs but the certificates were not distributed. The common reasons cited by DAR on non-installation of farmer-beneficiaries are the following: the registration is under protest; the land has a pending application for retention or exemption; there is a pending disqualification case against the farmer-beneficiary; violations have been committed by the farmer-beneficiaries; or the technical descriptions of the property is defective. Since the issues cited by DAR are occurring practically in all the agricultural lands covered by CARP, the number of cases of non-installation of agrarian reform beneficiaries may be much higher than current estimates.

What is even more appalling is the snail-paced implementation of the program. CARP was supposed to be completed in 10 years starting from June 10, 1988. Originally, government started with a working scope of 10.3 million hectares of agricultural land. This figure was later narrowed down to 8.1 million hectares.[5]

Under the new working scope, 4.3 million hectares are to be distributed by DAR while 3.8 million hectares of public land are under the direct supervision of the Department of Environment and Natural Resources (DENR). The figures cited by government include lands covered by former President Ferdinand E. Marcos' Presidential Decree No. 27 or the distribution of rice and corn lands. Yet the cumulative

[3] Bruce Tolentino and Elcee Noveno, "Why is Rice so Expensive?," *Philippine Daily Inquirer*, December 9, 2001.

[4] *Common Agricultural Agenda: The Small Farmers' and Peasants' Immediate Demands for the New Government*, 1998.

[5] There was no satisfactory reason given by the previous administration why it was narrowed down.

accomplishment in land distribution from 1972 to 1997 only covered 4.6 million hectares in terms of "titled" lands. As a result, 3.4 million hectares of prime agricultural lands have yet to be distributed to qualified farmer beneficiaries.

TABLE 2.5 • Titled lands distributed by land type and mode of coverage (cumulative accomplishment as of 1992 and 1997)

Land type	Scope	1972–1992		1972–1997		Balance (hectares as of 1997)
		Hectares	%	Hectares	%	
Tenanted rice/corn	579,520	355,106	61%	493,349	85%	86,171
VOS	396,684	54,011	14%	297,851	75%	98,833
GFI-owned	229,796	31,582	14%	154,175	67%	75,621
VLT	287,742	20,737	7%	335,151	100%	
CA	1,469,728	13,482	1%	126,436	9%	
Over 50 has.	420,953	13,482				
24–50 has.	312,355					
Below 24 has.	736,420					
Deferred farms	35,635					35,635
Total: Private lands	2,999,105	474,918	16%	1,406,962	47%	1,592,143
Total: KKK+Sett+Landed Est.	1,294,348	404,728	31%	1,315,545	100%	
DAR: PAL+Non-PAL	4,293,453	879,646	20%	2,722,507	63%	1,592,143
Public A&D Lands	2,502,000	729,085	29%	1,198,683	48%	1,303,317
ISF Areas*	1,269,411	338,404	27%	698,067	55%	571,344
DENR: A&D+ISF	3,771,441	1,067,489	28%	1,896,750	50%	1,874,661
CARP: DAR+DENR	8,064,864	1,947,135	24%	4,619,257	57%	3,466,804

*Certificates of Stewardship Contract

Source: Ernesto D. Garilao, *The Ramos Legacy in Agrarian Reform: A Transition Report* (Quezon City: Department of Agrarian Reform, 1998)

The government's major accomplishment lay in the distribution of public lands. It failed miserably at breaking up the large private agricultural lands, which currently comprise 1.5 million hectares that have yet to be parcelled out. The distribution of these lands is considered as the most contentious and politically charged of all the distribution phases defined by CARP. Yet, as Professor Eduardo Tadem puts it, "private lands lie at the heart of agrarian reform because it is here where the highest incidence of social injustice occurs."[6] These lands are mostly situated in sugar lands, coconut lands, commercial farms, and some remaining rice and corn lands in the Cagayan Valley and Western Visayas regions.

TABLE 2.6 • Land distribution accomplishment, 1997 and 1998

January to November	1997		1998		% change
	Accomplished	Target	Accomplished	Target	
Total (in hectares)	129,714	230,535	98,545	201,594	24

Source: Department of Agrarian Reform

[6] Eduardo C. Tadem, "Agrarian Reform Implementation in the Philippines: Disabling a Centerpiece Program," in *Proceedings of the International Conference on Agrarian Reform* (Quezon City: ICAR, 1993).

By the end of 1999, or eleven years after the present program was signed into law, the government has redistributed only 4.84 million hectares of land or 47 percent of total agricultural lands representing 60 percent of the program's adjusted scope.[7] About 2.1 million farm families, or about 42 percent of the total agricultural population, have directly benefited from the land redistribution. As of December 1999, a total of 1.46 million hectares of private agricultural lands have been distributed to agrarian reform beneficiaries or only 30.13 percent of the program scope for privately-owned lands.

Among the excuses cited by government which delimited effective rural land titling are: the inherent limitations of the program; restrictions imposed on land rights resulting in the half-tenant, half-owner status; conflict of operational policies; ineptness of the bureaucracy; land speculation; and strong resistance from the land-owning class. These factors have caused a distortion in the efficient allocation of resources. Thus, it is only the small farmers with secured land rights who can effectively respond to open market financing mechanisms.

Also, while many farmers were able to obtain land certificates during the Ramos regime, the lands awarded to them are not exactly located in fertile lands. An IAST survey of CARP beneficiaries in 1997 indicated that "about 75% of the total hectarage planted to palay are located in rainfed and upland areas; and only about 33% are irrigated."[8] Some lands distributed under DENR are within the ecologically fragile agricultural lands. According to the Bureau of Soils and Water Management, these are lands within the critical watersheds/brackish and freshwater wetlands and pasture lands whose further development will adversely affect the productivity of the lowlands and the stability of the uplands ecosystem.

The inability of government to implement agrarian reform is a disincentive to many farmers. How can they possibly compete with their foreign brethren if they do not even own the land that they till. The farmers cannot find the incentive to produce when they do not possess the required inputs. This lack of access to productive resources is mainly to blame for their continued poverty.

Pervasive rural poverty

Poverty incidence is on the rise once again after experiencing a declining trend during the early and later part of the 1990s. During that period however, rural poverty declined at a much slower rate than urban poverty. The latest poverty figures from the National Statistical Coordination Board (NSCB) indicate that 72 percent of poor families reside in the rural areas (NSCB 2000). In addition, 47.4 percent of the total rural population have insufficient incomes to meet decent living standards, an increase from the 1997 rate of 44.4 percent. Additionally, 25.9 percent cannot even afford to buy sufficient food for their families, also an increase from the 1997 figure of 24.6 percent.

TABLE 2.7 • Philippine poverty incidence (in %)

	1991	1994	1997	2000
Philippines	39.2	35.5	32.1	34.2
Urban	31	24	18.5	20.4
Rural	47.2	47	44.4	47.4

Source: National Statistical Coordination Board (NSCB), *Family Income and Expenditure Survey Report* (various editions)

[7] Saturnino M. Borras Jr., "The Philippine Agrarian Reform: Relatively Vibrant Land Redistribution Amidst Less-Than-Dynamic Agricultural Transformation" (paper presented at the International Conference on Agrarian Reform and Rural Development (ICARRD), Tagaytay City, Philippines, December 5–8, 2000).

[8] Ernesto D. Garilao, *The Ramos Legacy in Agrarian Reform: A Transition Report* (Quezon City: Department of Agrarian Reform, 1998), 51.

TABLE 2.8 • Magnitude of poor families

	1991	1994	1997	2000
Philippines	4,780,865	4,531,170	4,553,387	5,200,000
Urban	1,847,579	1,539,087	1,263,378	1,500,000
Rural	2,933,286	3,019,887	3,317,814	3,700,000

Source: National Statistical Coordination Board (NSCB), *Family Income and Expenditure Survey Report* (various editions)

Low productivity in agriculture gives rise to much of the poverty in the rural areas. The families who rely directly on agriculture are the most impoverished in the country. A 1996 survey showed that many of the families who derive their income from agriculture earn a yearly income of only Php 20,000 to Php 30,000 or Php 68 daily. A recent survey done by an NGO in Batangas showed that this is still the case for 23 percent of the small rice farmers they interviewed. Another 23 percent claimed that they managed to earn only Php 10,000. The government, meanwhile, pegged the subsistence level, the income needed for a family of six to survive, at Php 11,000 in a year (or Php 30 a day). Other studies showed that a family of six needs to earn Php 107,840 in a year (or Php 295 daily) to live decently.[9]

According to UP School of Economics Professor Arsenio Balisacan, the small landless farmers are among the most impoverished. As farmworkers, they earn only Php 116 to Php 120 in daily wages at the large plantations (based on a 1997 NSO survey in Davao City). At the height of the El Niño-induced drought last year, the farmworkers had to make do with only Php 10 in daily wages for work done at the small farms (according to the Sarilaya Network of People's Organizations).

The women in the farms are worst off among the impoverished. Their work is often trivialized, and they receive almost no compensation for the work that they do. And when they do get to be paid, they receive much less than what the men are getting for the same type of work. In times of crises like the El Niño, it is also the women who get first billing among the farmhands who will be laid-off. Around 200,000 people were laid-off in Mindanao last year due to the El Niño.

The women are also discriminated against in the titling of lands. In 1992, women comprised only four percent of the beneficiaries who were given CLOAs. The CARP mandates that when the intended beneficiary is a married couple, both the names of the couple (i.e., the husband and the spouse) should be included in the CLOA they are going to receive. But the practice has been less than ideal; usually, only the name of the husband or the man is written in the CLOA (see Table 2.9 below).

TABLE 2.9 • Gender statistics in agriculture

Indicators	Women	Men	Year / Source
Land ownership according to gender of head of family (%)	51.2	44.0	1990 / National Statistics Office
Number of CLOA recipients	5,145	23,310	1992 / Department of Agrarian Reform
Unpaid wages (farm labor) (%)	53	17	1997 / National Statistics Office

Orlando Sacay, the former head of the National Anti-Poverty Commission (NAPC), once noted that while poverty incidence dropped, the income gap widened. He said that the richest 10 percent of the

[9] Ibon Foundation, *Ibon Facts and Figures*, 1998.

population is now 24 times richer compared with the poorest 10 percent. In 1994, the richest 10 percent had income levels 19 times larger than the poorest 10 percent.[10]

Among the reasons attributed to the widening income gap between the rich and the poor is the growing gap between the level of education and skills reached by the two. Those who are able to earn an education and develop new skills have more chances of raking in higher incomes than those who are not able to study or who lack the required skills.

Unfortunately, access to education is contingent on income earned. In the latest National Demographic Survey (done in 1993) on the size and status of the Philippine population, an average child living in the rural areas gets to stay in school for six years while a child in the urban areas manages to stay for eight years. Children living in Metro Manila stay in school the longest, for at least ten years. The survey also disclosed that 56.9 percent of rural male children interviewed were getting elementary education while nine percent were not even able to enter school. In contrast, 38.8 percent of urban male children interviewed in the urban areas were getting elementary level education while only six percent were not able to enter school. The survey found that the low level of educational attainment in the rural areas is not due to the lack of public schools but rather to the poor financial capacity of the families. Rural families have difficulty sending their children to school because of poverty.

The dominant cause underlying rural poverty is the lack of ownership of or access to either physical assets or human capital. For many of the small farmers, ownership of the land is often not enough to sustain productivity. They must also have access to financial capital that they could use to improve the land and sustain its productivity. But the sources of financial capital open to small, impoverished farmers are very limited.

Limited sources of credit and markets

Small farmers are often left with nil or insufficient capital for production and are forced to borrow from either formal or informal lenders. However, poor small farmers are usually denied access to capital in the formal financial sector because they lack acceptable collateral and cannot afford the lending costs required by formal lending institutions.

Moreover, the private commercial banks perceive agriculture in general as a high risk investment area. This is due to the inadequacy of rural infrastructure support and government policies that make agricultural lending a risky venture. As a result, the rural poor and the small farmers have no recourse but to borrow from informal sources whom, more often than not, charge exorbitant interest fees of credit.

Government tried to ensure the continued flow of credit in the agricultural sector with the passage of the Agri-Agra Law or Presidential Decree No. 717. This law mandates all banks to allocate 25 percent of net loanable funds for agricultural credit, i.e., 10 percent should go directly to agrarian reform beneficiaries and the remaining 15 percent to agriculture in general. But the same law grants banks the option to either lend to agriculture or to invest in government securities. The banks preferred the latter option because it is more profitable. Of the total loans granted by banks in 1992, only 11 percent or Php 126 billion went to the agricultural sector. The bulk of the credit went to agricultural processing and marketing, and was accessed mainly by the large farms and agri-businesses.

The small farmers, therefore, have no other option but to access informal lenders. Since these lenders are not constrained by legal impediments such as interest rate ceilings, terms of contract, and mode of payment, they usually charge usurious interest rates. One study showed that rural moneylenders impose

[10] *Business World*, October 9, 1998.

a minimum interest rate of 20 percent and a ceiling of 400 percent (e.g., a cavan of palay borrowed is paid back with five cavans!).

Despite the onerous terms, the small farmers find informal lenders more accessible. The lenders often provide loans at the farmer's place of business and collect payment at the farmgate. They also accept payments in kind, which makes it even more convenient to the farmers. But these lenders maintain interlocking economic activities, ranging from supplying agricultural inputs to providing postharvest requirements. They often make arrangements with the farmer, such as an "output-credit market tie-up," which allow them to manipulate the interest rates and prices of input and output according to desired profit margins. As a result, the poor small farmers often find themselves trapped in a debt cycle that embroils them in perpetual indebtedness and deeper poverty.

With the dearth of capital investments needed to spur the rural economy, opportunities for rural employment and increased income become restricted.

Limited public spending for agriculture

Insubstantial resources often crippled the effectiveness of productivity enhancement programs launched by the Department of Agriculture (DA). Agriculture has long been on the lowest rungs of government priority in terms of spending as well as incentives for investment. Several economists have attested to the policy bias that has long beleaguered the agricultural sector, be it in terms of trade and tariff policy, effective taxation, investment incentives, and actual public spending for the sector.

TABLE 2.10 • Budget allocation for agriculture

	1997 (Actual)	1998 (Actual)	1999 (Proposed)	1999 (New)
Department of Agriculture	Php 20,775,139	Php 15,730,932	Php 14,244,160	Php 14,062,405

Source: 1999 General Appropriations Act

The budget for agriculture registered some nominal increase from 1993 to 1997. However agricultural share over the total budget is smaller compared to previous years. From 1993 to 1997, percentage allocation for the sector ranged from 2 to 3.5%. This is very small considering that from 1983 to 1987, public expenditures for agriculture ranged from 9.6 to 7.4%. From 1997 to the 1999 appropriation, the DA has been actually receiving less funding. This is quite ironic given the administration's avowals of prioritizing agricultural development.

Under the Medium Term Philippine Development Plan (2001–2004), the government proposes to provide Php 20 billion yearly funding for the modernization of agriculture in implementation of AFMA.

In the approved 2002 budget, which has been described by Congressional leaders as identifying agriculture as one of its three thrusts, the DA has been allocated P4.194 billion while the Php 20 billion appropriation for AFMA implementation was increased by P380 million.[11] All told, the 2002 budget for agriculture could total approximately Php 24.5 billion, but this is a mere 3.1 percent of the total government budget of Php 780.8 billion. Additional expenditures could be factored in given that pork barrel funds (known as Priority Development Assistance Fund or PDAF) are supposed to be spent by legislators for agriculture. But even if this were to be the case (and there is much skepticism regarding this

[11] "Congress Okays More Pork," *Philippine Daily Inquirer*, December 23, 2001.

supposedly limited use of PDAF), this would mean an addition of only Php 5.67 billion for agricultural purposes.

The DA asserts that appropriation for rice production eats up a major part of their programmed budget. However, a comparative analysis of the agency's expenditure program for the last two years will reveal that the percentage increase in budget allocation for rice and corn was the lowest relative to high value crops, fisheries, and poultry and livestock.

TABLE 2.11 • Budget allocation for rice, corn, and HVCC

Government Program	1997 (% share)	1998 (% share)	1999 (% share)	President's budget
Rice and corn	59%	52%	41%	46%
High value commercial crops (HVCC)	13%	15%	8%	18%

Source: Department of Agriculture, Annual Report

Lack of support services and rural infrastructure

The government's failure to provide the basic support services to small farmers like irrigation, credit, and technology extension, among others has greatly undermined the country's capacity to produce food. For instance, irrigation, which can increase production by as much as 40%, is insufficient. At present, barely 30% of total agricultural lands are irrigated. Farmers' access to affordable loans and technology, which are vital inputs to production, is also very limited.

The lack of sufficient postharvest facilities results in wastage, which also translates into production loss. For lack of sufficient drying facilities, farmers resort to drying their palay on makeshift drying facilities. Usually, this means that palay is dried on cemented or asphalted highways or on the cemented barangay basketball court. A study conducted by the National Postharvest Institute for Research and Extension showed that about 30 percent of the entire palay harvest are lost when the palay is dried on highways.[12] Improper storage due to insufficient and dilapidated storage facilities also accounts for postharvest losses. Improper storage exposes the already dried palay to moisture or makes it susceptible to attacks by pests such as rats, resulting in damages.

The trend in government spending showed that a large chunk (especially ODA funds) went to infrastructure development. However, infrastructure development concentrated on the construction of industrial estates and ports development that benefit large corporations rather than on farm-to-market roads or irrigation, which would have benefited small farmers.

In Mindanao, where bulk of corn production is concentrated, around 90 percent of the total computed road length are unpaved. Truck hauling rates are high in areas traversed by relatively poor road conditions. In one study, hauling rates of agricultural products along gravel-surfaced roads were Php 16 per ton/km and only Php 1.73 per ton/km along cement/asphalt roads. These factors all add up to a high marketing cost.[13]

[12] *Manila Times*, February 5, 1994.

[13] Joseph Lim, "Issues Concerning the Three Major Agricultural Crops and GATT," in *The General Agreement on Tariffs and Trade: Philippine Issues and Perspectives*, ed. Judith Reyes (Quezon City: Philippine Peasant Institute, 1995).

Demand for its price and its availability relative to other sources of energy affect corn as feeds in both backyard and commercial feeding operations. Since other inexpensive energy sources are not yet widely available or are expensive, corn feed demand is assured. While there are a few big companies and integrators who have invested in yellow corn production, corn farming is basically subsistence farming. This partly accounts for the inability of corn production to meet demand.

The lack of support services has contributed to the marginalization of lands devoted to grains production. The past years have shown an increasing trend of crop and land conversions. Many farmers are forced out of rice farming by landowners or by economic circumstances to other enterprises.

As mentioned earlier, it is estimated that at least 200,000 hectares of prime agricultural lands, which have the potential of producing 560,000 metric tons of rice, have already been converted to other uses. To its credit, the previous Estrada administration declared a moratorium on the conversion of agricultural lands early this January. However, the impetus for the moratorium was more because it was becoming a source of graft among local government units rather than because government wanted to avert more productive farmlands from being destroyed.

President Macapagal Arroyo's MTPDP (2001–2004) affirms the AFMA mandate "that all suitable agricultural land within the alienable and disposable lands be identified, set aside, and protected against unreasonable conversion." The problem here is in defining what is "unreasonable."

Food security advocates are moving for the protection of agricultural lands to ensure that the lands devoted for food production are protected and preserved. However, while this advocacy is important as a stopgap measure against land conversion, in the long run, the most effective deterrent to conversion is to make farming an economically productive enterprise. This will encourage landowners and farmers to hold on to their lands instead of converting it for other uses.

Weak R&D support and extension for sustainable, farmer-friendly technologies

The only surge in rice and corn productivity was registered in the mid-seventies, at a time when Green Revolution technologies were widely propagated by the martial law regime. The unsustainable and ecologically damaging character of this technology, however, became evident in later years, as most soils became unresponsive to the massive doses of agro-chemicals that accompanied the high-yielding varieties (HYVs) pushed by the Green Revolution. The dipping productivity rates are reflective of the short-term gains that these technologies allowed. Moreover, many small farmers later complained that the high-input requirement of HYVs meant higher production costs and lower net returns from farming. This, in turn, led to the growing problem of farmer indebtedness be it on usurious informal sources of credit or on traders who dictated dirt-cheap farmgate prices in return for production loans.

Compared to American farmers, for instance, the Filipino grains farmers are using stone-age technology. The growing season for US rice ranges from 100 to 160 days; Asian rice, from 90 to 250 days. In most of Asia, peasants plant individual seedlings by hand on small plots; rice cultivation and harvest require more than 300 labor hours. In the US, where rice production is mechanized, only about seven (7) labor hours are required.[14]

The foregoing obstacles to agricultural productivity inevitably impinge on the country's ability to provide sufficient food for its population. It is understandable for government to import food for its people when it lacks the resources (e.g., land is infertile) by which it can produce food or when it is facing a crisis (e.g., El Niño). However, when food imports become the rule rather than the exception in

[14] Shida Rastegari-Henneberry, "The World Rice Market," Giannini Foundation Information Series No. 85-2 (August 1985).

countries that clearly have an edge in producing food, something is really amiss. Such is the case with the Philippines.

For the Philippines, the issue of food security has once more gained prominence because of recent food shortages. In 1995, Filipinos found themselves queuing for rice because of supply gaps. In 1998, the El Niña-induced crisis left many people penniless to the point that they could not afford to buy food. Most affected were the Lumad people who literary starved to death. These experiences impelled government to focus once more on the agricultural sector and find ways to ensure food security.

Rural constraints: Implications for food security

Analysts found out that the definition of supply alone is incomplete in terms of capturing the essence of food security for all. A country can have a sufficient supply of food, but its people, especially the poor, may have no access to the available supply. Thus, a country, a region, or a household's food security status can still be precarious despite the existence of enough food supplies. Access is therefore a key element in food security. Access, in this case, presupposes the capability or power to purchase. Purchasing power, in turn, is largely determined by asset entitlements.

National access to food can be ensured through domestic or local production and/or through the international market. Domestic production is the best policy option, but this is dependent on the so-called country's existing and potential resource endowments and related production advantages as well as state policy priorities on land use. Access through the international market is determined by foreign exchange capacity and global grain stocks availability. For a developing country like the Philippines, this option is also practicable but is quite risky due to global market volatility of food grain supplies.

Walter P. Falcon, Director of the International Studies Program at Stanford University, said that the issue of food security is now framed more correctly. From the question of "Can the world produce enough food?" the food security question is now framed as, "Can the world produce enough food at reasonable prices, provide access to food by the poor, and not destroy the environment in the process?"[15] Incidentally, there are 30 definitions of food security according to a literature survey. From simply referring to the availability of food supply vis-à-vis demand, the definition has been broadened to include access, security, sufficiency, and sustainability.[16]

Given the uncertainty in global rice prices, Falcon is bewildered by recent trends in Asian countries which are laying open their trade policies on rice. He observed that there seems to be a lack of concern about poor consumers or the demand side of the economy. He said that there are currently one billion underfed consumers who are greatly affected by real food prices. He also argued that, "2.5 billion people depend on rice and it is the commodity that supplies more calories on a worldwide basis than any other food." He added that, "from a trade and instability point of view, rice may not be all that different from white corn, sorghum, millet, and several root crops in other parts of the world." Director Falcon also laments that food and agriculture have dropped off the high-level international agendas. He said that this should distress people as it constitutes a breakdown on the critical importance of food for true world security.[17]

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[15] Walter P. Falcon, "Food Policy Analysis, 1975–1995: Reflections by a Practitioner" (lecture presented during the 20th Anniversary of International Food Policy Research Institute, Washington D.C., November 29, 1995).

[16] Daniel G. Maxwell, "Measuring Food Insecurity: The Frequency and Severity of 'Coping Strategies,'" *Food Policy* 21, no. 3 (July 1996), 291.

[17] Falcon, "Food Policy Analysis, 1975–1995."

Among the arguments of the neoliberals and market economists on the issue of food security is the contention that food security should no longer be equated with self-sufficiency in rice production. It is also claimed that as standard of living improves, more people turn to more meat, chicken, or vegetables. They contend that fast food noodles, sandwiches, pizzas, high-fibre bran, and cereals are also invading the dietary preserve of the millennia-old staple.

A diet based on meat and high protein is not conducive to the Philippine production environment. Livestock production requires large quantities of cereals (e.g., corn, soybean) as feed. But crop yields are low, thus necessitating importation. Health and nutrition aspects are also important such as the rise of lifestyle ailments (e.g., hypertension, heart disease, arthritis, etc.)

Moreover, the neoliberals fail to consider that most of those who make up the Asian population do not experience improved living standards despite much touted increases in GNP growth rates. And this is largely traceable to inequities in income distribution. A large bulk of the Asian population, therefore, can ill afford to re-structure their diet. Since rice still remains to be the most affordable source of nutrition, most Asians (who are impoverished in the first place) continue to depend on rice as their food staple. This is especially true for Filipinos.

Food grains, especially rice, continue to be the mainstay of the Filipino's diet. According to the 1991 Family Income and Expenditure Survey, the bulk of the average Filipino family's food budget is used to purchase cereals. Families living in the urban areas spend as much as 64.6 percent of their budget for food on cereals while families living in rural areas spend as much as 66.6 percent. Food consumption patterns, likewise, show that cereals (such as rice, corn, and wheat) continue to dominate the Filipino's diet. Rice consumption increased by nine percent between the early 1960s and the early 1970s, and by 6 percent in the 1980s. Consumption of corn grits virtually stagnated, but consumption increased dramatically in the 1970s owing to the 20 percent drop in rice production and the nearly three-fold increase in the world price of rice. Consumption of wheat, meanwhile, rose by 53 percent between the early 1960s and the late 1980s.[18]

Since the diet of the average family still predominantly consists of rice in combination with viands, measures or policies that decrease or impact negatively on grains production would therefore also place the country's food security at risk.

TABLE 2.12 • Per capita food consumption (in kilograms per year)

Food Item	1980–1982	1988–1989
Cereals	124.9	128.1
Rice	93.3	99
Corn	15.7	14.2
Wheat and other cereals	15.9	14.9
Roots and tubers	32.4	22.6
Sugar and syrups	9.1	9.5
Pulses, nuts, etc.	4.2	3.2
Vegetables	42.1	34.4
Fruits	59.2	68.7
Meat and meat products	20.4	22.7
Milk and Milk Products	27.5	23.5

[18] Ramon L. Clarete, *GATT, Food Security and Nutrition: The Philippine Case* (1994).

TABLE 2.12 • Per capita food consumption (in kilograms per year) *(continued)*

Food Item	1980–1982	1988–1989
Eggs	4.8	3.7
Fish and marine products	32.4	38.5
Fats and oils	5.5	5.4
Miscellaneous	50.8	34.7

Source: Ramon L. Clarete, *GATT, Food Security and Nutrition: The Philippine Case* (1994).

The figures on food production show that government faces a dilemma in providing adequate food to its population. While the Philippine population has been growing steadily at a rate of 2.3 percent a year during the past two decades and consumption has been growing at a rate of about three percent, grains production has not been keeping up with only an average growth of two percent a year. In 1993, for instance, rice production was only able to meet 75 percent of domestic demand.

Instead of instituting long-term measures that will address the problem, past administrations merely attempted to fill the demand gap by instituting short-term measures such as importing rice. To make matters worse, the government has been historically inept at determining when it should import grains and how to import the right quantity at the right time.[19]

In 1988–1989, for instance, the Philippines imported rice from the US, Australia, and China at a time when harvest was at its peak. The imports resulted in oversupply, which in turn led to depressed palay prices. The farmers, of course, were hit with lower incomes. In 1993, government imported rice from Thailand, claiming that the stored supply is only enough for 22 days. Ironically, it was even the National Food Authority's employees who debunked government's claim of lack of supplies. Apparently, there was enough supply that could last 110 days.

Statistics show that the Philippines had generally been a net importer of food grains (see Table 2.13 below). While rice yield displayed positive growth in the second half of the 1970s through the first half of the 1980s, when the country even managed to export rice, the production feat was not sustained. In fact, the figures even showed a declining trend. That the country was able to export rice from time to time is attributed mainly to the introduction of high-yielding varieties (HYVs) by the International Rice Research Institute (IRRI) in the early 1970s. While HYVs were initially a boon to the country, these same varieties became the bane of rice producers and were partly to blame for the decline in production.

TABLE 2.13 • Philippine rice imports and exports (in 1,000 metric tons)

Year	Imports	Exports
1987	—	111
1988	181	—
1989	220	16
1990	593	—
1991	—	10
1992	—	35
1993	202	—

[19] Aida Librero and Agnes C. Rola, eds., *Agricultural Policy in the Philippines: An Analysis of Issues in the Eighties* (Los Baños: University of the Philippines Los Baños, Philippine Council for Agriculture, Forestry and Natural Resources Research and Development, 1991).

TABLE 2.13 • Philippine rice imports and exports (in 1,000 metric tons) *(continued)*

Year	Imports	Exports
1994	—	—
1995	263	—
1996	862	—
1997	722	—
1998	2,171	—
1999	834	—
2000	617	—

Source: MTPDP 2001–2004

The government's motivation to import rice springs from the fact that it would really be cheaper for the government to buy milled rice from neighboring countries rather than procure the locally-grown palay. World Rice Statistics shows that the cost entailed in Philippine rice production is quite high when compared to that of its Asian neighbors (see above). Often, the result is that the price of imported rice is enormously cheaper than the prices of domestically produced grains. In 1993, for example, the government imported Thai milled rice, which costs only Php 4.86 per kilo when it reached Philippine ports. In contrast, the cheapest Philippine milled rice is priced at Php 9.50 a kilo.

The same situation goes for corn production. Historically, the domestic wholesale price of corn has been above world prices by an average of 50 percent. The prevailing landed cost of imported corn arriving at Manila's ports from Thailand is Php 3 per kilo. This amount is much cheaper than the price of corn that is shipped from Mindanao, which is Php 5.50 per kilo. It is quite clear that, even under the protection of quantitative restrictions and tariffs, corn production is already at a disadvantage.

The Philippines is currently among Asia's biggest rice producers in terms of annual production. But since domestic production has had difficulty meeting domestic demand, the country also ranks third among Asia's top importers of rice. And since trade liberalization promotes the notion of comparative advantage, where countries are being encouraged to concentrate their resources on relatively competitive products, then rice and corn farmers might as well shift from traditional crop farming to cutflower raising. Under the logic of comparative advantage, the government would opt to import rice rather than support its production.

TABLE 2.14 • Asia's top importers of rice (1989–1991 average)

Country	Value of imports (in million USD)
China	471
Malaysia	366
Philippines	293
India	210
Sri Lanka	193

Source: *Asiaweek*, May 26, 1993

The contention that government is going to be more inclined towards importing grains rather than producing it locally was bolstered when the Ramos administration came up with a grains program that was essentially designed to put a cap on grains production. The program aimed to reduce the five million hectares currently devoted to food grains to only 1.9 hectares, and planned to allocate the 3.1

million hectares of "freed" land for commercial crop and livestock raising. Instead of grains production enhancement, the program was actually an incentive program for commercial crop planting and livestock raising. This became more evident towards the end of the Ramos administration, when it referred to its various agricultural program as the Gintong Ani (roughly translated as Golden Harvest) program. There was a Gintong Ani Program for grain production but government resources and incentives were poured on high value and commercial crop production.

The Department of Agriculture defended the program by saying that they planned to maximize the yield potential of the remaining land devoted to grains. Currently, the Philippine rice harvests amount to only an average of 2.9 tons per hectare. The upper production threshold of the high-yielding varieties attained by the country's Asian neighbors is in the vicinity of 6.0 to 7.0 tons per hectare.

But since the inputs under the new program do not differ from previous rice production programs, it is unlikely that the farms would be producing more than the current yield per hectare. South Korea is almost fully irrigated, enabling it to produce optimum yields. In contrast, only 60 percent of Philippine rice lands are under irrigation. During times of drought (e.g., El Niño), this goes down to as low as 29%. Farms that lack irrigation can attain only one cropping in a year. For optimal results, ricelands need to be fully irrigated. If production depends to a large extent on the monsoon rains for irrigation, then production results would be unstable given that the monsoon rains are unstable.

TABLE 2.15 • Top rice producers in Asia

Country	Yield (tons/ha)	Rice lands (million ha)	Percent under irrigation
China	5.80	32.3	93
India	2.60	42.3	44
Indonesia	4.30	10.4	72
Bangladesh	2.70	10.3	22
Vietnam	3.20	6.1	53
Thailand	1.90	9.9	27
Burma	2.90	4.8	18
Japan	6.10	2.1	99
Philippines	2.80	3.4	61
South Korea	6.30	1.2	99
North Korea	7.80	0.7	67

Source: *Asiaweek*, May 26, 1993

Between 1951 and 1960, the Philippine rice production yield was 1.2 tons/hectare. With the introduction of the IRRI's High Yielding Varieties, rice production doubled to 2.4 tons/hectare. Today, the IRRI is seeking new varieties with 25 percent higher yield potential using minimal inputs such as fertilizer, irrigation, pesticides, and insecticides.

Dr. Ghurdev S. Khush, principal plant breeder of IRRI, says that rice production must increase by 70 percent in 10 years to feed the growing world population. "As population increases, so must rice production." And this additional output must be achieved while preserving the natural resource base for future generations. Dr. Khush said that increased production must be made with existing land resources, or rice farmers will start using hillsides and opening up mangrove swamps and tidal wetlands.[20]

[20] Ibid.

Government policies liberalizing rice imports and allocating more land for export crop production rather than for food production spells an ominous food future for Filipinos, especially since rice is a staple food of 80 percent of Filipinos. Rice is also a staple food for over half of the world's population, but it only ranks 14th in the volume of agricultural commodities traded. Only a small proportion of world rice production is traded each year because most major rice producing countries consume most or the entire crop. On average, only 6-7 percent of world rice production is traded.[21] Apart from being small, the marketable rice surplus in the world market is also declining. In fact, world rice imports are starting to outpace world exports. In 1986, world rice imports and exports were placed at 12,768,680 metric tons and 13,327,490 metric tons respectively. In 1996, rice imports of 20,426,970 overtook rice exports of 17,932,500.

This trend is magnified in the case of paddy and husked rice. In 1996, paddy rice imports were placed at 578,636 metric tons while exports were higher at 689,336 metric tons. Ten years later, paddy rice imports of 1,076,487 metric tons overshoot exports of 866,406 metric tons. In the same year, the volume of imports for husked rice at 2.1 million metric tons was almost double the volume of exports at 1.2 million metric tons. Japan currently imports 30 percent of total rice traded.[22]

In Asia, according to a study on the factors that will likely affect and determine future food security or insecurity,

> the annual rate of increase in rice yields has declined from 3% between the mid-70s and early 1980s to less than 2% in the 1980s. Since 1989, rice yields have stagnated at around 3.6 tons per hectare. Annual yield growth rates for wheat in Asia have slowed from 4.4% in the late 1970s to 2.7 tons per hectare.[23]

In addition, a decline in irrigation investment has been observed in Asia. In Southeast Asia, from as high as 4.1 in 1980–1985, the annual growth rate of irrigated agricultural area has declined to 1.5 from 1985–1988. The other important development in the Association of Southeast Asian Nations (ASEAN) region, which is the Philippines' source of imported rice, is the trend towards rapid industrialization and its corresponding impact, i.e., conversion of prime agricultural land at the rate of 200,000 hectares annually. These 200,000 hectares could have produced an equivalent rice harvest of 700,000 metric tons at 3.5 tons/hectare.

What is quite alarming is the growth of the demand side. For even if the supply side will accelerate at a rate of 5%, population growth is projected to grow by year 2050 at the following rates: 7.8 (low), 10 (medium), and 12 (high projection).[24] China alone, according to Brown's estimates, will require 207 million tons of food grain by the year 2030 to feed more than a billion growing population, which is "equivalent to the total volume of world grain exports in 1994 (approximately 200 million tons)."[25]

In a situation where marketable surplus is very low, any shortfall in the domestic production in any of the major rice consuming nations will pose serious access problems to small rice importing countries like the Philippines. At present, China, India, and Indonesia account for over 60% of global

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[21] Henneberry-Rastegari, "The World Rice Market."

[22] World Agri Statistics, 1998.

[23] Per Pinstrup-Andersen and Rajul Pandya-Lorch, "The Supply Side of Global Food Security," International Food Policy Research Institute Reprint No. 322 (1995), 20.

[24] Gunter Desrusse, "Perspective of World Food Supply and Demand Challenges and New Focuses," *Agriculture+Rural Development* 3, no. 2 (1996).

[25] Lester R. Brown, *Who Will Feed China: Wake-Up Call for a Small Planet* (New York/London: W. W. Norton & Company, Inc., 1995).

rice consumption. The top exporters are Vietnam, Thailand, and USA with over 50% global share. A decline in the level of rice production in these countries will surely result to the further tightening of the supply of tradable rice in the international market.

The low rice surplus leads to volatile prices. A mere 5% reduction in rice production in China would increase overall global demand by 27%.[26] It is normal for rice from Thailand to jump in price from USD 180 per metric ton to USD 220 metric ton in one month. In this regard, it is very important for the Philippines to ensure a steady and reliable source of rice by protecting and developing its local rice industry.

Should disaster strike the major exporters, only the rich grain importers may be able to corner the remaining rice supply. That would be disastrous to cash-strapped countries, such as the Philippines, which currently rely on food imports for sustenance.

While Philippine domestic food production is declining and rice importation is increasing, the alarming situation can still be rectified by maximizing the use of the remaining 4.5 million hectares of prime agricultural lands (both irrigated and irrigable lands). This can be achieved through intensified and rapid crop production, additional irrigation investment, and policy adjustments in rural credit support. But the costs for this are prohibitive, and existing watersheds may not contain enough water for irrigation purposes. But achieving *abundant food supplies* form but one side of the food security equation.

The other equally important side in the food equation is better access. Again, as already argued, *better access* (especially for the disadvantaged sectors) will depend on the improvement of the economic conditions of the poor and the willingness of the state to pursue asset entitlements.

AFMA and government agricultural programs analyzed: The policy environment

When then President Joseph Estrada announced in 1998 that he would put food security on top of his administration's agenda, food security advocates from the agrarian reform and rural development community were skeptical but hopeful. For years, farmers have had to contend with increasing rice imports alongside government's policy of withdrawing subsidies in rice production. They hoped that finally government would gear its economic, including its trade policies, towards food self-sufficiency, the cornerstone of peasants' advocacies on sustainable food security.

However, when President Joseph Estrada unveiled his ten-point program of government in his dialogue with the business community, many peasant groups and farmer-based non-government organizations expressed fears that instead of bringing the Philippines closer to food self-sufficiency, the new administration's proposed food security policy could further undermine the country's bid to ensure sustainable and long-term food security.

The agenda seeks to liberalize the rice industry by (1) removing the quantitative restrictions on the importation of the staple, and (2) removing the National Food Authority's sole authority to import the commodity, thereby allowing business and private sector to buy rice directly from abroad. In effect, the proposed food security agenda seeks to liberalize the rice industry at a rate much faster than what was originally negotiated for by the national government under the General Agreement on Tariffs and Trade (GATT). It also transgresses several laws which stipulate government's commitment toward self-sufficiency in rice.

[26] "Global Rice Situation," http://www.therice.org/rice/global.html (inaccessible as of June 2020).

Those who support the plan to liberalize the importation of the staple commodity rationalize their position on the ground that the entry of less-priced imports will provide consumers with more access to affordable rice. They argue that the availability of less-priced rice, whether it was produced here or abroad, will greatly improve the food security situation at the household level.

However, peasant groups maintain that, in view of the present state of development of the grains industry, the proposed liberalization of rice imports will have grave impacts on the economic sustainability of rice farming and consequently on food self-sufficiency and long-term food security.

After the 1995 rice crisis that sent commodity prices spiralling, former President Fidel Ramos acknowledged food security as an important national concern. However, beyond holding countless food security summits and incorporating the term food security in his speeches and general policy declarations, very little was done by way of helping small rice farmers improve their production. In fact, instead of increasing support to farmers, the Gintong Ani Program for Rice explicitly declared a policy of withdrawing subsidies extended to rice producers.

What is ironic is that the Philippine government's food security policy has an encompassing food security definition, which also mentions its aspiration to attain food self-sufficiency. Food security, according to the Philippine government definition, refers to the policy objective of meeting the food availability, accessibility, and affordability requirements of present and future generation of Filipinos in a sustainable manner, through local production or importation. But government also claims to pursue self-sufficient production of rice and white corn. It defines food self-sufficiency as the "policy objective of meeting the food requirements through intensive local food production in a sustainable manner, based on the country's existing and potential resource endowments and related production advantages." While the first definition considers food importation as major policy option, the second one puts primary emphasis on domestic production.

The above definitions reveal the ambivalence of the Philippine government or policy makers in addressing food security as a national state policy. While state policy is clear on the complementary nature of food security and food self-sufficiency, the practice indicates that it is inclined towards increasing food or rice importation.

President Macapagal Arroyo on the other hand has not issued any major pronouncement on agriculture almost a year into her administration. It is left therefore for observers to glean her agricultural policy by going over the section on agriculture in the MTPDP 2001–2004. The MTPDP's stated main goals are to "extend the opportunities of the new economy to the rural countryside …" and "create a modernized and socially equitable agricultural and fisheries sector." The engine for this strategy is the AFMA through the implementation of the Strategic Agriculture and Fisheries Development Zones (SAFDZs). Additionally targeted policies and programs are aimed at sheltering "the most vulnerable groups from the adjustment shocks attendant to development, especially safety nets for sectors affected by globalization." An annual allocation of Php 20 billion is projected to generate one million new jobs in the countryside.

While the Estrada government emphasized food security in its agricultural agenda, the Arroyo administration chose to focus on social equity as a policy framework with "sustained food security" as one of the aims of public sector interventions. Nevertheless, government planners recognize the issue of food security as central to agricultural development. Thus, the Ginintuang Masaganang Ani (GMA) programs have been launched for rice, corn, livestock, fisheries, and high value crops. Like the Estrada regime, the Arroyo administration could not resist the populist and opportunist lure of using acronyms (ERAP for the former, GMA for the latter) for government programs aimed at the masses.

The contradictions within the AFMA policy and program thrusts however remain. While recognizing the need to increase food production (i.e., rice and corn), the development of high value

crops is also promoted as well as an orientation towards the export market. The recognized need to fully utilize abundant labor resources is offset by the policy to "nurture" and not "crowd-out" private investments which historically have been known to be labor-displacing. Public investments are geared more towards attracting private investments. Credit subsidies for small farmers are eschewed in favor of a consolidated "market-driven Agro-Industry Modernization Credit and Financing Program." Nowhere is there any mention of cooperative forms of credit, production, and marketing. Despite the pronounced policy framework on social equity, no connection is made between agricultural modernization and the speedy completion of land distribution under the comprehensive agrarian reform program.

Today, the development path chosen by the Philippine government, as well as, disturbing emerging trends is impinging on the implementation of the state's policy on social equity and food security. Some are even of the opinion that because of these trends, the defined policies may remain a mere lip service for decades to come. Others find the situation outright confusing. First, the path to "industrialization" (an industrializing endeavor, which has yet to spawn actual industries,) resulted in unbridled land speculation and unabated conversion of prime and irrigated agricultural lands. Second, agriculture has remained stagnant and backward because of government indifference to the sector. Third, despite government efforts to lure capital to regional agro-industrial centers, investment is shifting away from agriculture and the rural areas. Fourth, big landowners are resisting agrarian reform and are therefore curtailing the distribution of wealth in the rural area. Fifth, government commitment to GATT/WTO agricultural trade liberalization regime undermined the economic gains of small farmers thus making farming a losing business proposition.

To its credit, the Ramos administration government undertook a review of government agricultural policies and the state of the sector. It created the Congressional Commission on Agricultural Development (Agricom) to look into the problems plaguing the sector and draft a plan that would correct the problems and enable Filipino farmers to become internationally competitive. The Agricom drafted the Agriculture and Fisheries Modernization Act (AFMA) which envisions the predominance of small owner-cultivated farms. Government policy further elaborated that the "way we teach agriculture and formulate our priorities in research and development, the manner by which we produce commodities, and the institutions we create for agricultural modernization will be governed after the imperatives of small farms."[27]

With its emphasis on small farm development, AFMA is definitely an improvement over past policies on agriculture that highlighted corporate and large farms. AFMA, at least on paper, attempts to address food security and poverty reduction. However, there are basic elements in the modernization drive that should be placed in its proper context.

The AFMA paradigm is patterned after the developed countries', particularly Europe's, basic model of modernizing small farms and small owner-cultivators. The Agricom Report states that,

> No longer will models or approaches culled from US farming experiences apply to the Philippine situation, since the former is founded on production based on large productive. On a per hectare basis, the smaller and intensively cultivated lands in Europe outproduce large American farms or plantations… European agriculture provides us with a model of the kind of modern agriculture that we should aspire to.[28]

[27] AGRICOM, *Modernizing Agriculture: Report and Recommendations of the Congressional Commission on Agricultural Modernization* (Manila: Congressional Commission on Agricultural Modernization, 1997), 33.

[28] Ibid.

Unfortunately, in drawing-up AFMA, the Philippine government committed the classic mistake of imitating models taken out of context. It seemed to have overlooked two basic elements that propelled the modernization of small farms in Europe making these farms viable and practicable: (1) the infusion of massive subsidies and high tariff rates that afforded more than sufficient protection; and (2) the introduction of appropriate but modern technologies. Besides, European farms average from 50 hectares to 100 hectares in size. Corn farms range in size from 400 to 1,000 hectares. Technology-wise, European farmers are far more advanced than Filipino farmers. In short, Europe may not necessarily be a good model for Philippine agriculture to emulate.

The Philippine government, on the other hand, is committed to liberalizing the economy and withdrawing the meager support and subsidies that it has been providing. And despite housing an internationally acclaimed agricultural research institution, IRRI, the Philippines has had a dismal record of disseminating technology to the agricultural sector. Moreover, the type of technology being promoted is often inappropriate or incompatible with the resource endowment and capabilities of Filipino farmers.

World War II reduced Europe into a food deficit region. To pursue its economic reconstruction program, Europe had to rely heavily on the support of the United States through the Marshall Plan. To develop its agricultural capability, European nations instituted a highly effective but protectionist policy—the Common Agricultural Policy or CAP, which was designed to protect small farms. Among the policy's aims was to ensure food sufficiency at affordable prices while guaranteeing "farmers a decent income and creating a stable market for agricultural products." To ensure the viability of small farms, the "European Community fixed guaranteed prices for many products within the European market and protected the internal market by erecting tariff walls at its border." Thus, by the seventies and eighties, Europe was already exporting agricultural products to third world countries and developed countries e.g., US, in sufficient quantities. Apparently, therefore, the key to modernization lies in governance—the European small farm model of modernizing agriculture entailed extensive government intervention. Unfortunately, this lesson is lost on the Philippine model of small farm modernizing agriculture. For while AFMA is patterned after the European model, it will entail withdrawal of government support.

To ostensibly give protection to remaining agricultural lands from conversions, AFMA's proponents came up with the concept of Strategic Agriculture and Fisheries Development Zones (SAFDZs). Government defines SAFDZs as "areas within the Network of Protected Areas for Agricultural and Agro-Industrial Development (NPAAAD) identified for production, agro-processing, and marketing activities to help develop and modernize, with the support of government, the agriculture and fisheries sectors in an environmentally and socio-culturally sound manner."[29] More importantly, these zones will serve as the focal point for countryside development. All forms of government support from the basic infrastructure down to credit facilities and even human resource development will be concentrated on these designated zones.

But the protection provided by SAFDZs is limited. The 5-year moratorium on land conversions is too short to effectively curb and protect remaining agricultural lands. The penalty of two to six years imprisonment is also inadequate in deterring illegal conversions. Government needs to impose stiffer penalties in order to ensure that the disadvantages of land conversions far outweigh the incentives it may bring about.

There are also fears that establishing model farms within SAFDZs might legalize rather than inhibit conversion. According to the law's Implementing Rules and Regulations (IRR), Agrarian Reform

[29] Highlights of RA 8435 and DA AO 6. Prepared under DA-ADB 2733-PHI, August 18, 1998.

[30] *Manila Times*, November 21, 1998.

Communities (ARCs) and other areas within SAFDZs can be designated as model farms. However, it must be stressed that, currently, only 35,000 hectares or seven out of 920 ARCs across the country are fully developed.[30] This means that protection from conversion is effectively limited to these seven model farms. As Rule 9.6 of AFMA's IRR states, "Agricultural lands located outside the SAFDZs may be converted upon compliance with existing laws, rules, regulations, executive and administrative orders and other issuances relating to land use conversion."

Furthermore, 5% out of all agricultural lands within the SAFDZs may still be converted provided DAR and DA had subjected them to strict review before any land conversion order could be issued. The provision for allowing conversion within the SAFDZs (despite the 5% ceiling) is already telling of how deceptive the law is. Given that the coverage of protected areas is very limited, most if not all agricultural lands are in serious danger of being converted.

It must be noted that the AFMA also lacks clear provisions on agrarian reform. Early in his term, then President Estrada extolled the agrarian reform model being proposed by Coco-magnate Eduardo "Danding" Cojuangco. The model purports to parcel Mr. Cojuangco's plantation and transfer land ownership to the farmworkers. But actual land transfer is in name only because control over the use of the land remains with the plantation's firm that is owned by Mr. Cojuangco. In short, the model is but a scheme to re-consolidate plantations and big commercial farms rather than break it up into small farms. If this is the case, government is virtually discarding the small-farm development that AFMA is mandated to pursue and reversing agrarian reform gains.

Summary and conclusion

To enable the small farmers to positively react to the market environment, the state needs to address long-standing rural constraints as well as market imperfections. Official policy pronouncements notwithstanding, it remains to be seen if government's actions and approaches toward food security and agricultural modernization match the urgency of small farmers' needs.

President Macapagal Arroyo made a grand show of holding office at the Department of Agriculture at the start of her term. Despite this, no major and innovative breakthroughs in policy have been made. Worse, there appears to be clear signs that she intends to emasculate the Department of Agriculture by taking away from it vital agencies such as the National Food Authority (NFA) and placing them under the Office of the President.

With "agrarian reform making much headway in breaking large estates into small farms," the adoption of the small farm holding approach as a development model becomes more relevant and urgent. But it must be emphasized that, securing lands without the corollary market support mechanisms will reduce farmers to bankruptcies. The Agricultural Commission's Report and Recommendations on the fundamentals of sustained agricultural growth, aptly stated that "*freeing* the market without properly equipping the farmers to take advantage of its opportunities will not lead to sustainable growth in agriculture." Thus, in the Philippine case, the small farm holding approach is both engaging and problematic.

In a world increasingly characterized by exponential increases in population and declining growth in food production, the attainment of food self-sufficiency, particularly in rice production, becomes imperative to ensuring long-term food security. Crucial to the attainment of food self-sufficiency are the extension of basic support services to help increase rice production and the adoption of trade policies that will help ensure the economic viability of rice farming.

For an administration that identifies social equity as an agricultural modernization formula,

the Macapagal Arroyo government must take an active role in agriculture from production to marketing and distribution. These are crucial aspects, and as such, should not be left entirely to the private sector.

In modernizing the agricultural sector, government would do well to heed the call of farmer groups. In particular, their organizations are advocating that government adopt the following recommendations:

- Provide the necessary basic support services—land, irrigation, credit, infrastructure, technology, and marketing and price support—to small farmers. Government must do more than pay lip service to its avowed objectives of food security and food self-sufficiency. It should invest in food self-sufficiency by providing local producers with the necessary support to help make staple crop production an economically viable enterprise.

- Maintain quantitative restrictions on rice importation. Importation must only be allowed during shortages. Government must adopt policies which encourage domestic production. By allowing private sector to import rice, government effectively abandons its official policy of sourcing rice domestically.

- Protect prime agricultural lands from conversion to other uses. Adopt a National Land Use Code to declare and uphold a Network of Protected Areas for Agriculture, Agrarian Reform and Rural Development. Areas within the NPAARRD shall be declared non-negotiable for conversion. The adoption of a national land use code will help protect lands devoted to food production from conversion.

- Promote crop diversification, instead of HVC monocropping. To help increase farmers income and consequently their capability to buy food, government must encourage farmer crop diversification instead of HVC monocropping. Because most HVCs are geared to the export market, any changes in the demand patterns in the world market will have serious repercussions in the livelihood of small farmers.

- Improve the National Food Authority's capability to intervene in the market. Government must review the design of NFA's marketing and distribution program to enable it to effectively carry out its mandate. The review must be undertaken with the participation of genuine farmers' and consumers' group. Government must also allocate sufficient resources for the agency's operations.

- Fast-track the implementation of agrarian reform. The ownership of the lands is one of the best incentives for farmers to increase their production.

Annexes

ANNEX 1 • Sectoral composition of gross domestic product and employment, 1955–1995

	1955	1965	1975	1985	1995	Average
GDP						
Agriculture	**33.22**	**30.22**	**26.92**	**28.64**	**21.6**	**28.12**
Industry	25.66	28.09	33.79	32.61	32.1	30.45
Services	41.12	41.69	39.29	38.75	46.3	41.43
Employment						
Agriculture	**60.04**	**57.57**	**54.28**	**49.52**	**44.1**	**53.10**
Industry	15.67	14.76	14.74	14.11	15.7	14.96
Services	24.29	27.67	30.98	36.37	40.3	39.24

Sources: Arsenio Balisacan, "Agricultural Growth and Rural Performance: A Philippine Perspective," *Journal of Philippine Development* 20, no. 2 (1993); 1995 data sourced from the NSCB 1997 Annual Report

ANNEX 2 • Philippine rice imports, 1988–1998

Year	Rice imports (in MT)
1988	181,167.16
1989	219,928.70
1990	620,794.57
1991	—
1992	—
1993	209,994.20
1994	—
1995	237,100.00
1996	873,944.48
1997	673,519.05
1998	1,624,475.62

Source: Bureau of Agricultural Statistics

3

Lessons from the Chinese and Philippine Experiences

EDUARDO C. TADEM

The agricultural experiences of China and the Philippines are characterized mainly by contrasts and a few similarities. A primary contrast is with respect to performance in achieving food self-sufficiency and consequently food security. A second major contrast is shown in the policy and implementation of asset reform, particularly land tenure reform. Thirdly, China appears to have established strong links between its agricultural and non-agricultural sectors while, in the Philippines, such linkages are weak if at all they exist. Fourthly, while both countries place agricultural development at the fulcrum of economic growth, it is only China that has been able to successfully translate this policy into practice in terms of agricultural growth and modernization.

On the side of the Philippines, however, a more democratic political atmosphere has given rise to a vibrant civil society composed of highly-organized and militant peasant and rural workers organizations as well as non-governmental groups (NGOs) that have continuously carried the cause of the rural poor for almost a century. China, due to a more restrictive political system, lags behind the Philippines in this respect.

There are, however, parallels between the two countries. One is in the reliance on high yielding variety seeds and the intensive application of chemical fertilizers and pesticides in increasing agricultural production, particularly of grains. The implications of this dependency impact not only on environmental and ecological concerns, but also insofar as the sustainability of maintaining increasing production figures is concerned.

Another similarity is the persistence of social unrest and rural disquiet. Even though in recent years, this has been manifested in different ways and in relation to different issues in the two countries.

Food security

China has succeeded in achieving basic food self-sufficiency for its 1.2 billion people despite grave limitations such as limited arable land and water resources. It has only seven percent of the world's arable land yet is able to feed 20 percent of the global population. China's average agricultural growth rate between 1978 and 1996 has been a high 6.1 percent.

In the Philippines, on the other hand, the two-percent annual average growth in agricultural production over the past twenty years has lagged behind the annual population growth of 2.3 percent and grains consumption growth of three percent. In the meantime, the rural labor force has been growing at three percent annually during the nineties.

A measure of food security is the per capita caloric supply of the population.[1] According to the United Nations Food and Agriculture Organization (UN FAO), China has increased its caloric supply per day from 2,683 in 1990 to 2,897 in 1997. In contrast, the Philippines has regressed from 2,418 calories in 1990 to only 2,366 calories in 1997. In fact, China in 1997 had already surpassed its 2000 goal of 2,691 calories while the Philippines was still way below its 2000 target of 2,555 calories.

Technologically, despite being the home of the famed International Rice Research Institute (IRRI), the Philippines fares way behind China. Philippine rice production only satisfies 75 percent of the country's demand. Rice productivity in the Philippines is only 2.8 tons per hectare, while China leads the rest of Asia in rice productivity with 5.8 tons per hectare.

Consequently, China is less dependent on rice imports than the Philippines. For example, according to UN FAO figures, in 1990, China (including Taiwan) imported only 62,500 tons of milled rice while exporting 405,400 tons. In the same year, the Philippines imported 592,700 tons. In 1998, China's rice imports rose to 246,900 tons but exports reached 3.8 million tons. The Philippines, on the other hand, registered record rice imports of 2.2 million tons in 1998, including 1.34 million tons (59 percent) coming from China alone. The last time the Philippines exported rice was in 1992.

In terms of relative shares to the national economy, both countries have comparable contributions. China's agriculture contributes 20 percent of its gross domestic product (GDP), 50 percent of employment, and 22 percent of export earnings. For the Philippines, agriculture shares 25 percent of GDP, 50 percent of employment, and 20 percent of export earnings.

Rural industrialization

Rural industrialization has been a remarkable feature of countryside development in China and would account for a shift from farming to off-farming economic activities. The township village enterprises (TVEs), with the 100 million jobs they have created, now account for 20 percent of total employment and 28 percent of the total rural labor force.[2] These enterprises also contribute to China's export earnings with a 33 percent share of the national foreign exchange incomes. More importantly, TVEs provide the link between agricultural and non-agricultural activities.

In the Philippines, what exists is merely a parody of rural industrialization. In many parts of the country, large areas of fertile land are taken away from food production and converted into "export processing zones" which exhibit no forward or backward linkages with the rural communities that physically host them. Many of these establishments are fly-by-night foreign operations that simply took advantage of overly generous tax and labor incentives to make quick profits and make no long-term investment plans in the country.

The Philippines has thus remained an exporter of primary or lightly processed agricultural products (i.e., copra, desiccated coconut, molasses, bananas, pineapples, mangoes, etc.). The finished products

[1] Social Watch, *Social Watch Annual Report 2001* (Montevideo, Uruguay: Instituto del Tercer Mundo, 2001).

[2] Amei Zhang, "Economic Growth and Human Development in China," United Nations Development Programme Occasional Paper No. 28 (June 1996).

imported are in turn the processed materials of the country's exports. In an interview, University of the Philippines Agronomy Professor Teodoro Mendoza points out that this "deprives the country of rural employment, value added due to processing, and increases dollar expenditures for imported finished products." He further noted that "underdevelopment and underemployment in rural areas propel rural out-migration to urban areas and overseas employment."

The Philippines has had a negative balance in its agricultural trade. Between 1992 and 2000, the country was a net exporter only in 1992 and 1993. Since then, it has been a net agricultural importer.

Philippines-China agricultural bilateral relations reflect the disparities in agricultural development between the two countries.[3] Three major agricultural collaborative projects are currently underway:

> These are (1) continued production and testing of improved Chinese rice varieties, (2) construction of the Philippines-Sino Center for Agricultural technology in Munoz, Nueva Ecija, and (3) a loan assistance from the China National Construction and Agricultural Machinery Import and Export Corporation (CAMC)…for the repair and construction of irrigation systems, provision of post-harvest facilities, and establishment of farmers' service centers.

In addition to these, two more projects are in the pipeline under a CAMC loan assistance program. These are the USD 35-million Banaoang Pump Irrigation Project in Ilocos Sur and the USD 30-million expansion of the General Santos Fish Port Complex.

On the part of the Philippines, all the country can offer China are bananas and mangoes as fresh fruit exports, and even in this regard, not much headway has been made in penetrating the Chinese market.

Rural poverty

The contrast in rural poverty incidences between the two countries is also striking. In the Philippines, rural poverty stood at a high 47.4 percent in 2000 according to the latest household survey conducted by the National Statistical Coordination Board (NSCB).[4] This rose from the 1997 level of 44.4 percent and could be attributed to the 1997–1998 financial crisis that affected most East and Southeast Asian economies. Most of the rural poor are in agriculture and are engaged in rice, corn, and coconut farming and fishing.

An irony in the Philippine situation is that agricultural growth has been accompanied by deteriorating conditions of the rural poor, especially peasants and farmworkers. For the first semester of 2001, agriculture grew by 3.1 percent yet farmgate prices fell drastically for corn, coconut, cacao, coffee, and bananas, resulting in Php 2 billion less revenue for farmers and a loss of 300,000 agricultural jobs.[5] Copra prices have dropped to their lowest in 50 years and way below production costs. Corn prices are down by 70 percent, bananas by 66 percent, cacao by 218 percent, and coffee by 92 percent.

In China, the reversal from a famine-stricken country in the late fifties and early seventies to a food secure rural population has reduced rural poverty incidence from 31 percent in the late 1970s to below 10 percent in the 1990s. The number of rural poor has drastically diminished from 250 million people in the 1970s to 80 million in the early 1990s. As of 1999, the number of rural poor has been reduced further

[3] Cesar M. Drilon, "Agricultural Bilateral Relations between the Philippines and China" (Speech delivered at the Symposium on Philippines-China Bilateral Relations, Asian Center, University of the Philippines, December 7, 2001).

[4] Raul C. Dancel, "Filipinos poorer due to crisis—NSCB," *Philippine Daily Inquirer*, August 4, 2001.

[5] Antonio Carpio, "The 'Growth' in Agriculture," *Philippine Daily Inquirer*, September 2, 2001.

to 32 million.[6] A strong point in China's favor is that it was not adversely affected by the 1997–1998 Asian financial crisis because it strictly enforced foreign exchange restrictions on inflow and outflow of capital.[7]

The Chinese government seems to be more supportive of its farming population at least in the area of price supports. While the grains market has been liberalized and rice farmers can now sell their produce to both state and private buyers, the government has been able to maintain adequate levels of grain procurement prices to the advantage of direct producers. For instance, procurement prices for household farm products were raised by as much as 66 percent for rice and wheat and by 85 percent for oilseed.[8] Rice procurement prices increased further by an average of 21 percent from 1992 to 1996. Thus, farmers' incomes have risen proportionately over the years.

In recent years, however, peasant incomes have been stagnating and may worsen as China prepares to enter the World Trade Organization (WTO) where subsidies for local producers are frowned upon and would invite sanctions from other countries.

In the Philippines, farmers (especially of rice, corn, and coconut) are often at the mercy of private traders and middlemen. The government rice-purchasing agency, the National Food Authority (NFA), is able to purchase less than ten percent of the produce and thus is unable to influence farm prices at all. The World Bank estimates that "only 10 percent of the farming population and less than 3 percent of rice consumers are estimated to have benefited from NFA subsidies."[9]

Earlier subsidies for credit, seeds, and chemical fertilizers have been dismantled due to pressure from the Philippines' trading partners and as a result of conditions attached to WTO membership. The net effect is that, combined with the higher costs of production, farm incomes have been deteriorating in real terms.

Land reform

It is in the arena of asset reform in agriculture that China has proven to be most dynamic. Six months after proclaiming the establishment of the People's Republic of China in October 1949, the new government led by Mao Zedong launched a land redistribution program that emancipated 300 million poor peasants, farm workers, and middle peasants. Utilizing the principle of "land to the tillers" and relying on village level peasant assemblies, the entire program was completed in only three years.

The Philippines, on the other hand, took 41 years after independence in 1946 before legislating a comprehensive agrarian reform program that covered all croplands and all tenurial arrangements. Previous land reform legislation had been piecemeal and extremely limited in scope. The 1987 Comprehensive Agrarian Reform Program (CARP) targeted 8 million hectares of all croplands and approximately four million tenants and farmworkers. Originally scheduled for completion within 10 years (or by 1998), the program as of December 1999 has managed to redistribute only 4.84 million hectares or 60 percent of the

[6] Asian Development Bank, *People's Republic of China: Country Assistance Plan (2000–2003)* (Mandaluyong City: Asian Development Bank, 2000).

[7] Paul Krugman, "Recovery? Don't Bet on It?" *Far Eastern Economic Review*, June 21, 1999.

[8] Robert L. Worden, Andrea Matles Savada, and Ronald E. Dolan, eds., *China: A Country Study* (Washington, D.C.: Federal Research Division, Library of Congress, 1987).

[9] World Bank, *Philippines: Promoting Equitable Rural Growth* (Washington, D.C.: Rural Development and Natural Resources Unit, East Asia and Pacific Division, World Bank Group, 1998).

target and 47 percent of total farmland.[10] Beneficiaries were about 2.1 million tenants and farmworkers or about 52 percent of the target.

Having missed its scheduled date for completion, the program had to be extended by another ten years by Congress. Most of the lands distributed however were public lands while privately-owned holdings totaling 1.4 million hectares, including large haciendas and commercial plantations, remained virtually untouched.

Why is land reform important and essential to agricultural development? The international and historical experience in many countries in Asia, Europe, and Latin America shows that a successful land redistribution program has a positive impact on agricultural productivity and rural equity.

A 1987 World Bank Mission to the Philippines pointed out that its "experience in its own programs and policies and the experience of its borrowing members is that investments and projects intended to increase agricultural productivity have brought few benefits to those not owning land—landless laborers and tenants."[11] Therefore, "the longer term effects of a land reform, then, lie in its restructuring of the ownership patterns of rural society so that a much larger proportion of the population can be reached by, and can benefit from, productivity-increasing projects and interventions in the agricultural sector."[12]

The Bank further observes that "a common feature of those economies, such as Japan and Korea which have experienced rapid economic growth associated with equity—such that the benefits from growth were not concentrated mainly among the wealthy—are those in which an effective and comprehensive land reform have been implemented."[13] The Bank concludes that "there is no reason for concern that a far-reaching land reform is likely to be inconsistent with economic growth."[14]

Thiesenhusen notes that "land or agrarian reforms … creates jobs or employment opportunities for its beneficiaries and obtaining land empowers and gives the new owner a real sense of security. At their best agrarian reforms aim at creating a more equitable and just society."[15]

Prosterman and Hanstad summarize the benefits from land reform programs:[16]

(1) Agricultural productivity gains result from smaller holdings outproducing larger ones, an owner-cultivator is more likely to make long-term capital and "sweat equity" investments and use improved technologies, and will rely more on labor and on-farm inputs.

(2) Land reform "generates increased overall economic activity, including creating non-agricultural jobs."

(3) Land reform beneficiaries achieve "dramatic improvements in status and dignity" with "significant consequences for effective political participation."

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[10] Saturnino M. Borras, Jr., "CARP in its 12th Year: A Closer Examination of the Agrarian Reform Performance," Institute for Popular Democracy (IPD) Political Brief 8, no. 6 (June 2000).

[11] World Bank, *Agrarian Issues in the Philippines: An Assessment of the Proposal for an Accelerated Land Reform Program* (Washington, D.C.: Projects Department, East Asia and Pacific Regional Office, World Bank Group, 1987), 11.

[12] Ibid.

[13] Ibid.

[14] Ibid.

[15] William C. Thiesenhusen, "Poverty Amidst Plenty" (Paper presented at the International Conference on Agrarian Reform and Rural Development, Tagaytay City, Philippines, December 5–8, 2000).

[16] Roy Prosterman and Tim Hanstad, "Land Reform: Neglected, Yet Essential," Rural Development Institute Reports on Foreign Aid and Development No. 87 (April 1995).

(4) Land reform also reduces "political instability by eliminating basic grievances arising from erstwhile landowner-peasant social relations."

(5) In some instances, land redistribution has positive environmental impact by preventing desperate landless peasants from encroaching on upland forestlands.

(6) Land reform helps in stemming massive and uncontrolled rural-urban migrations.

China has, of course, gone through several phases in its land reform history before settling for a mixed tenurial system. Starting from individual family-sized farms complemented by mutual aid teams, the countryside became reorganized into cooperatives and collectives in the fifties and then into giant multi-purpose "people's communes" in the sixties. After the 1979 reforms initiated by Deng Xiaoping, individual farming households have regained dominance through long-term usufructuary rights even as land remains under public ownership.

In one sense, the new system combines the benefits of both socialist and capitalist agrarian tenurial systems. The resumption of control by millions of households over agricultural production and marketing is generally regarded as the stimulus that led to higher farm incomes and greater prosperity in the Chinese countryside. At the same time, the government has not completely abandoned all forms of collectivization as shown by the introduction of the Shareholding Cooperative System in 1993 where household resources are pooled for, among others, irrigation work, chemical spraying by air, and purchase of farm tractors (see Chapter 1).

The most important achievement in the Chinese case is the thoroughgoing eradication of landlordism, whether of the feudal or capitalist type. While Chinese peasants are not exactly full owners of the land they till (the ideal land reform objective), they enjoy "owner-like tenure" and therefore are able to make the "investments that improve and conserve the land than will a cultivator with insecure tenure."[17]

The Philippines, however, is mired in an inequitable land tenure system and consequently has suffered through a long-running struggle between tenants and farmworkers on one hand and a powerful landowning elite on the other. The latter also constitute the political elite and use their control of the national and local governments as well as the judicial system to delay and block completion of the agrarian reform program.[18]

This is the main reason why Philippine agrarian reform has moved at a snail's pace and will continue to do so despite the tireless efforts of advocates from both the peasantry and civil society. The country's dismal record in land reform implementation is what has fueled agrarian unrest and armed rural rebellions as intense class conflicts continuously batter Philippine agrarian society.

In the Philippines, periods of high rural growth (five percent in the 1970s and early 1980s) did not benefit the rural economy "in terms of improved living standards for most of the rural poor."[19] The reason for this was that the "benefits of public investment in agricultural research, input and output subsidies, and infrastructure accrued disproportionately to the large-size farms"[20] and therefore to the rural landowning classes.

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[17] Ibid.

[18] Borras, "CARP in its 12th Year."

[19] World Bank, *Philippines: Promoting Equitable Rural Growth*, 9.

[20] Ibid., 10.

This is not to say that agrarian reform will solve all of the problems associated with agricultural underdevelopment. But it at least removes a huge stumbling block to agrarian peace and development by equalizing access to land and allowing rural capital to flourish.

Problem areas in China

Having pointed out the virtues of the Chinese system and comparing these with the various omissions in the Philippine case, let us now go into the problems and constraints that still characterize the former so as to be forewarned as to the limits that the Chinese model offers.[21]

Despite the technical superiority of China's agriculture, much remains to be done. Rural infrastructure is still thought to be underdeveloped in terms of irrigation and use of farm machinery. Irrigated fields constitute only half of total cultivated land. For the Philippines, irrigated areas cover 60 percent of farmland.

The township and village enterprises are still hampered by poor facilities and equipment, backward technologies, and management problems. They have to grow faster in order to absorb an estimated surplus rural labor force of 200 million.

Access to rural credit is said to be still poor with the rural financial markets segmented due to proliferation of locally-based intermediaries. While a measure of diversification of the agricultural base has taken place, concentration of grains production is still predominant. At the aggregate level, agricultural productivity is still below optimal levels due to increased input costs and failure to mitigate the impact of natural disasters.

Disparities continue to exist among regions and between rural and urban areas in China. Growth in rural incomes has lagged behind the urban areas by as much as 300 percent and as one moves further inland from the Eastern regions to the Western areas.

Environmental degradation

Both China and the Philippines suffer from severe environmental problems due to poor land resource management and overuse of chemical inputs. In the Philippines, environmental destruction is characterized by "denuded mountains, cultivated and eroded hillsides and slopes, dry streambeds in headstream areas, lowering of the watertable, increasing occurrence of flashfloods, floodwaters with high amount of suspended load, prolonged duration of floods and heavy siltation of water reservoirs and low-lying areas including farmlands, irrigation systems, lakes and offshore areas."[22]

A major problem is that "there are no regulations controlling the development and utilization of agricultural lands."[23] For many years, a bill to enact a national land use code has been sitting in the Philippine legislature that is dominated by landed elites.

In China, environmental degradation has been increasing in agricultural areas due to the limited amount of arable land and overuse of chemical inputs. The country has lost one third of its mature forests from 1982 to 1989, and arable land is diminishing by 0.5 percent per year.

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[21] These problems are summarized from the Asian Development Bank, *China: Country Operational Strategy* (Mandaluyong City: Asian Development Bank, 1995).

[22] Nicanor Fernandez, Roberto Ranola, and Rodrigo Badayos, "Land Resources Management for Food Security," in *Food Security in the Philippines*, eds. Liborio Cabanilla and Merlyn Paunlagui (Quezon City: UP Institute of Strategic Planning and Policy Studies and UP Center for Integrative and Development Studies, 1999).

[23] Ibid.

The "break-up of people's communes and the resulting movement of large numbers of farmers off the land" has also impacted negatively on the environment.[24] The highest levels of pollution are to be found in TVE areas. According to the ADB, "it will take another 30–40 years beyond the turn of the century to reverse the trend in environmental degradation and to improve the country's environment."

Civil society

If there is one area where the Philippines could be said to have an advantage over China, this is in having a more open and liberal polity and a more vibrant civil society. Militant popular organizations of the rural poor and non-governmental support groups at both local and national levels have used the democratic spaces opened after the 1986 overthrow of the Marcos dictatorship to expand their presence and influence and to advocate for more meaningful rural changes.

Peasant unrest in the years immediately after independence pressured the government to enact tenancy regulation laws and limit land redistribution programs in the sixties and seventies. After the overthrow of Marcos in 1986, peasant organizations and their NGO allies spearheaded the campaign for the passage of the comprehensive agrarian reform law (CARL). Thereafter, these same groups have closely monitored the program's implementation and frequently called the government to task for its slow progress.

China, on the other hand, is just beginning to sense the value of non-governmental institutions and pressure groups. Although cases of peasant unrest have erupted after the 1979 reforms (see below), these are largely spontaneous and sporadic and far from organized and coordinated at the national level and across regions and provinces. China does not have an official national farmers' organization even as there exist a national women's federation, a students' organization, and nationwide organizations for writers, youth, consumers, and journalists.[25]

The clamor for a national farmers' federation, or *nonghui*, however has been growing despite indifference on the part of Chinese authorities. In fact, "more than 100,000 local farming groups already exist in the country"[26] and are organized according to product lines, e.g., orchid-growers' and grape-growers' associations. Some academics see the establishment of such an organization as a way of stemming widespread rural insurrection, pockets of which have already erupted (see below). The main function of the group would be to facilitate access to government and to channel peasant discontent to legal activities such as petitions rather than riots.

If a *nonghui* is finally established, it will be a formidable organization and even with official sanction may prove to be more independent than other existing national groups. It would represent 330 million farmers or 70 percent of the rural labor force that also financially supports 70 percent of the 870 million rural dwellers of China.

Rural unrest

A little known feature of the Chinese countryside is the prevalence of agrarian unrest in the years after the 1979 reforms. This has taken the forms of pilferage, confrontations with authorities, riots, petitions,

[24] Amei Zhang, "Economic Growth and Human Development in China."

[25] "China: A Plot for the Farmers," *Far Eastern Economic Review*, August 2, 2001.

[26] Ibid.

and demonstrations. In the late 1980s, rising prices of inputs and shortages drove peasants in some regions to pilfer large volumes of fertilizer stocks.[27]

In 1987, farmers who were encouraged to shift to garlic in Heilongjiang rose in protest when offered low prices for their produce despite a bountiful crop. In late 1992, cotton-growing peasants in Hubei and Hunan provinces protested the use of IOUs instead of cash in payment for their crops.

Excessive taxation and abusive rural officials are often the target of peasant ire. In 1992, peasants from Lezhi County in Sichuan province sued local officials and "won a decision for the return of excessive taxes." In June 1993, 15,000 peasants in Sichuan province protested a newly imposed highway tax by "confronting police forces, holding government officials hostage, setting fire to police vehicles, and burning down the house of the deputy chief of Fujia district." About 10,000 student demonstrators in the provincial capital of Chengdu lent moral support to the peasants. These June events were preceded by peasant riots in January and May of the same year over the same highway tariff. Those unable to pay "had their foodstuff, furniture or pigs confiscated by the local authorities." Other mass actions involving taxation issues were reported in Anhui and Henan provinces in 1993.

Even the relatively well off Southern regions have witnessed incidents of unrest, such as in Guangdong province in 1993 when 4,000 peasants protested over the "inadequate compensation" for their farm lands acquired by the local state authorities. Peasant protests against pollution of rivers also took place in Guangdong in 1993.

Agrarian unrest in the Philippines has continued uninterrupted since the Spanish colonial years in the 18th and 19th centuries. It reached its height during the anti-colonial revolution of the late 1890s and flared up again during the depression years of the 1930s. Major resurgences took place immediately after the Second World War in the late 1940s and early 1950s and then again in the seventies up to the late eighties. The nineties have seen peasant organizations and their middle class and NGO support groups taking to the streets and staging long-running protest camp-ins to demand the faster implementation of land reform.

Unlike the post-war and post-colonial Chinese experiences, however, Philippine outbreaks of agrarian rebellions were more organized and coordinated, having been led by left-wing political parties and mass groups. Another dissimilarity is that the Philippine outbreaks were dominated by the strategy of armed struggle led by the communist party's military wing, the New People's Army. Ironically, the 1970s to 1980s version (known as "people's war") was inspired and guided by China's own experience in agrarian revolution during the thirties and forties.

Taxation and rebellion

One factor that has fueled agrarian unrest in China in recent years is the stagnation in incomes that farmers have been experiencing since 1996. This has been due to decreasing prices for grain and cash crops as well as the numerous taxes, levies, and fees imposed by the national and local governments that eat up as much as 20 percent of farmers' earnings.[28] *The Economist* reports that "growing numbers of peasants are petitioning higher authorities or taking part in mass protests against the levies." A typical Chinese farmer pays the following:

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[27] The accounts of rural unrest in China in the 1980s and 1990s are drawn largely from Lau Kin Chi, "Reform and Resistance in China," *Asian Exchange* 10, no. 2 (1994).

[28] "China's Tax Overhaul for Farmers Has Stalled," *Asian Wall Street Journal*, August 19, 2001; "Quick March, Slow March (Reform in China)," *The Economist*, June 16, 2001.

(1) "Tax and surcharge on crop production; tax for specialty crops"

(2) "Tax for slaughtering animals"

(3) "Township levies for schools, road building, militia, family planning, veterans' welfare"

(4) "Village levies for local investments, officials salaries, welfare"

(5) "10–20 days compulsory labor"

A proposal for sweeping reform of the tax system was announced by Premier Zhu Rongji in March 2001. This would effectively replace the myriad taxes with a single tax based on income from crop production alone. In addition, the requirement for compulsory labor would be phased out over three years. Unfortunately, this proposal has been shelved due to "resistance from cash-strapped local governments and some peasants themselves."

The stagnation in peasant incomes indicates that agricultural growth in China has reached a plateau. This means that the strategies for rural development pursued since the late 1970s have probably outgrown their usefulness and that drastic revisions are in order. These changes are in the combined and interrelated arenas of economic, political, and social reforms.

TABLE 3.1 • Selected comparative indicators in agricultural and rural development in China and the Philippines

Indicators	China	Philippines
Agricultural growth	6.1% (1978–1996)	2.0% (1980–2000)
Population growth	0.9% (2000)	2.2% (2000)
Per capita caloric supply	2,683 (1990); 2,897 (1997)	2,418 (1990); 2,366 (1997)
Rice productivity	6.1 tons/hectare (1998)	2.7 tons/hectare (1998)
Coconut yields	9.51 tons/hectare (1998–2000)	3.57 tons/hectare (1998–2000)
Corn productivity	5.2 tons/hectare (1998)	1.6 tons/hectare (1998)
Annual per capita cereal consumption	256 kilos (1992)	180 kilos (1992)
Rice imports	246,000 tons (1998)	2.2 million tons (1998)
Share of agriculture to economy	20% of GDP	25% of GDP
Share of agricultural employment to economy	50%	50%
Agriculture's share of government budget	9.89% (1991–1995)	6.0% (1992–1995)
Agriculture's share of exports	22%	25%
Rural poverty	31% (1970s); below 10% (1990s)	57% (1970s); 44.7% (1997); 47.4% (2000)
Land reform	Completed (1950–1952)	Ongoing, 60% accomplished (1972–1999)
Rural civil society	Highly restricted	Freewheeling

Learning from each other

This study started from the assumption that it is the Philippines that has to learn from the Chinese experience in rural development and agricultural modernization. While this is generally true for

most aspects of agricultural development and food security, it would seem that China too can learn from the Philippine experience in civil society participation in rural policy formulation and program implementation.

The Chinese experience shows that a thoroughgoing land redistribution program had set the stage for the technological breakthroughs that modernized agriculture, assured food security, and improved the living standards of the rural population. Market-oriented reforms further advanced Chinese agriculture and brought about higher growth rates and incomes for farming households. Rural industrialization complemented this development and increased the value-added contribution of the rural areas to the national economy.

The Chinese government, however, has realized that over-reliance on the market and technological inputs results in stagnation as growth plateaus are reached and diversification becomes constricted. Thus, there has been a revival of collectivist forms and an increase in state-led initiatives. Furthermore, environmental damage is exacerbated thus jeopardizing the sustainability of the agricultural modernization thrusts.

The Philippines could do well to learn from China's experience in agricultural modernization while at the same time avoiding the pitfalls that could be the outgrowth from over-reliance on market forces and the overuse of modern technologies. The *sine qua non*, however, is the equalization of access to land and its produce, the attainment of social justice, and the empowerment of the direct rural producers—the peasants and farmworkers.

APPENDIX
Township and Village Enterprises

Economic indicators point to the growing share of township enterprises, generating the income of some 20% of the rural work force. In some areas, where township enterprises are more developed, the figure is 50%. The creation of township enterprises is also credited with jump-starting China's rural industrialization. They have become the leading index in China's rapid industrial growth. The industrial output value of township enterprises in 1978 was 9.1% of China's gross national industrial output value, 16.3 % in 1984, 23.8 % in 1989, 30.8% in 1991, and 36.8% in 1992.[1]

Township enterprises have also played significant roles in China's export earnings. In 1995, there were about 120,000 export-oriented firms with 539.7 billion yuan worth of foreign trade earnings, about 33% of China's overall foreign exchange earnings. To boost the competitiveness of these firms further in the international marketplace, the central government issued import and export licenses to some 396 township enterprises of joint ventures, foreign cooperatives, and wholly foreign-owned firms. Many of the products that are produced by township enterprises for exports include silk and other textiles, light industrial goods, home appliances, arts and crafts, chemical products, foodstuffs, and machinery.

According to official statistics, the number of township enterprises in 1995 totaled 22 million, employing some 128 million workers. They accounted for 28% of the total employed labor in the rural areas. The value added of township enterprises was 25% of China's gross domestic product during that year and 50% of the value added of rural social products. In 1996, China's township enterprises employed some 135 million workers, generated a total business income of about 6.8 trillion yuan.[2]

In China, the traditional function of the small town was to distribute agricultural and sideline products. But since the mid-1980s, the small town in China has become a center of production, service, entertainment, education, and information as well. Thus, the farmers no longer depend on large and medium-sized cities as much as before. The development of small towns is expected to bring urban civilization to the rural areas and modernize the lifestyle of the rural inhabitants.[3]

Another similarity is the persistence of social unrest and rural disquiet. Even though in recent years, this has been manifested in different ways and in relation to different issues in the two countries.

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[1] Gao Shangguan and Chi Fulin, eds., *Studies on the Chinese Market Economy Series: The Reform and Development of China's Rural Economy* (Beijing: Foreign Languages Press, 1997), 174.

[2] Liu Jun, "An Introduction to China's Township Enterprises," *China Currents*, July–September 1997, 17.

[3] Gao and Chi, *Studies on the Chinese Market Economy Series*, 178.

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