THE rice problem in the Philippines: trends, constraints, and policy imperatives

Balisacan, Arsenio M. and Ravago, Majah-Leah V.

Department of Agriculture, Philippines, University of the Philippines Diliman

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The Rice Problem in the Philippines: Trends, Constraints, and Policy Imperatives[1]

Arsenio M. Balisacan[2]
and
Majah-Leah V. Ravago[3]

1. Introduction

Every political dispensation in recent decades has taken the view that the country has to be able to feed itself. For the country's political leaders and the agriculture bureaucracy, this has meant that rice, the country's staple food, has to be locally produced at quantity sufficient to meet the rice requirement of the burgeoning population. Indeed, rice self-sufficiency has been an objective enshrined in all government programs for the agricultural sector since the early 1960s. To achieve the objective, the Government has intervened, albeit in varying degrees, in the marketplace to affect virtually all segments of the supply chain, including importation, and of the demand spectrum. Yet, self-sufficiency has remained elusive. The population is far from being more food-secure now than a decade or two ago. Over the years, rice has become more expensive in the Philippines than in most developing countries of Asia. This has caused reduction in the purchasing power of the incomes of the poor, including landless farmers and urban poor workers whose spending on rice constitutes about 22% of their total household expenditure. Arguably, this could partly explain for the much higher incidence of absolute poverty in the Philippines than in Indonesia, Thailand, and even Vietnam (Balisacan 2003). What has gone wrong?

In this paper, we examine the performance of the rice sector over the last three decades. Our aim is to identify policy imperatives and investment options for the sector in the wake of globalization and population pressure. While a number of observations found in the paper are not new and have already been pointed out elsewhere (see, e.g., David 2003, Roumasset 2000, Clarete 1999, Tolentino 1999, David and Balisacan 1995), we move beyond the usual description of past performance to include as well an ex-ante assessment of the effects of trade policy reforms on the rice economy in the short and medium terms.

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[2] Professor of Economics, University of the Philippines-Diliman. E-mail: arsenio.balisacan@up.edu.ph
[3] Research Associate, Agriculture Secretary's Technical Advisory Group, Department of Agriculture. E-mail: rmajah@yahoo.com

2. Performance of the Rice Sector

The rice sector has continued to account for about 20% of agriculture's gross value added (Figure 1). It is also the single most important source of livelihood among small farmers and landless agricultural workers who comprise the bulk of the agricultural labor force (who in turn represent 40% of the labor force nationwide). It is thus not surprising that the growth trend in rice production roughly mirrors that in agriculture (Figure 2).

With the introduction of modern rice technology in the second half of the 1960s, coupled with substantial investment in irrigation, rice production grew remarkably at an average annual rate of 5.9% in the 1970s (Table 1). The country turned from being a net importer to being self sufficient and even a marginal rice exporter towards the end of the 1970s until the early years of the 1980s (Table 2).

Production growth slowed down significantly in the 1980s. The average growth of 2.02% was in fact lower than the average population growth of 2.3%. The country once again imported rice to feed its growing population and continued to do so in the ensuing decade. Surprisingly, despite the slowdown in domestic production and the continued surge in population, the proportion of imports to total rice production was lower in the 1980s than in the previous decade (Table 2). This would suggest that average per capita demand for rice fell in the 1980s, which could be attributed partly to the significant decline in average per capita income during this period owing to a confluence of domestic and global factors (David and Balisacan, 1995).

Rice production picked up once more in the 1990s, growing at an average rate of about 2.8% a year. This performance was attributable to the rising real domestic rice price (despite falling world price) and falling real input prices, except wages (Figures 3 and 4). The onslaught of the El Niño phenomenon in 1998 caused rice production to fall sharply by 24.2%. However, an equally sharp rebound took place in the following year when output rose by 37.8%, effectively allowing a positive production growth for the decade. Nonetheless, imports during this period surged; the ratio of net imports to total production increased to an average of 8.4% (Table 2).

Yield increases accounted for much—about 80%—of the quite remarkable production growth in the 1970s. Area expansion constituted the balance. Yield growth accounted for an even greater share of output growth in the 1980s. But yield growth during this period (2.2%) was lower than in the previous period (5.0%), especially in irrigated areas, as increases in rice cropping intensity were not enough to offset the declines in rainfed lowland and upland areas planted to rice. In the 1990s, yield growth dropped even lower (to 1.0%), accounting for just about one-third of the production growth. Although production growth was higher than in the 1980s, the growth came not from increases in productivity but from expansion in hectarage planted to rice.

The trend in rice production followed quite closely the trends in technological change, irrigation development, price incentives, and the shifts in crop area planted to

rice between favorable and less-favorable production environment. In the 1970s, the accelerated growth of yield and crop area came from the expansion of irrigated area, extensive adoption of modern varieties, and high output and low input prices (Figures 4, 5, and 6).

In stark contrast, in the 1980s, the adoption of modern varieties started to plateau, the crop area expansion slowed down, real prices of rice dropped sharply, input prices increased, and credit granted to the palay sector declined (Figures 5 and 7). Rainfed and upland crop areas contracted substantially. All these factors could have caused the slowdown in rice production growth during this period.

Modest increases in government irrigation spending in the first half of 1990s led to the opening up of additional irrigated areas Figure 8. Output prices also continued to remain above world prices (though not enough to reverse the overall downward trend since the mid-1970s), while input prices other than wages declined up to the onset of the Asian financial crisis in late 1997 and 1998. These developments proved favorable for the growth of rice production. However, as discussed below, the government's effort to prop up rice prices through quantitative import restrictions hurt landless workers and small farmers who are net buyers of rice, as well as urban workers.

Incidentally, public expenditures in agriculture increased markedly in the 1990s and early 2000s, but these were not in areas where the gains in terms of improvement in long-term productivity are expected to be high (David 2003). Spending on R&D, basic transport infrastructure, and institutional development, for example, had low priorities vis-à-vis redistribution programs (e.g., NFA procurement, land reform).

3. Rice Policy Framework

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

Of these interventions, perhaps the most controversial ones have to do with the operations of the National Food Authority (NFA), the government's price and supply stabilization arm in the rice sector. NFA has the monopoly over international trade of rice, the discretion to issue import licenses, and the mandate to operate the marketing and price support operations of rice and corn. Its interventions have been justified on the grounds that the world rice price is highly volatile and that private traders extract monopoly profits from farmers during harvest season and from consumers when rice is scarce. Various studies, notably David (2003), Roumasset (1999), Tolentino (1999), and Balisacan, Clarete, and Cortez (1992) have shown that these interventions have in fact exacerbated market failures, increased the volatility of domestic prices, reduced the

welfare of both consumers and producers, discouraged the private sector from investing in efficiency-enhancing distribution and storage facilities, and bred corruption and institutional sclerosis.

Rather than gaining from NFA operations, taxpayers have in fact been losing. Roumasset (1999) estimated the total costs of price controls on rice in 1999 to the tune of 49 billion pesos: 3.7 billion pesos in terms of foregone tariff revenues, 18.5 billion pesos of foregone consumer tax revenue, 7.9 billion pesos of foregone producer tax revenue, 6.4 billion pesos of excess burden to consumers, and 3.3 billion pesos of excess burden to producers. In 1998, the financial subsidies to NFA amounted to over 6.3 billion pesos. This amount is far more than the amount (less than one billion pesos) provided to agricultural research and development in rice, which arguably yield far higher social rates of return.

Notwithstanding the enormous resources spent on NFA operations, domestic rice prices are far higher in the Philippines than in other Southeast Asian countries, especially since the mid-1990s (Figure 9). In the late 1990s, following the ascension of the country to the World Trade Organization (WTO), domestic prices soared, rising 86% and 40% higher than in Thailand and Indonesia, respectively. In the same year (1996), the Philippine nominal wholesale price was almost twice (91%) as much as the world price.

4. Policy and investment responses: two scenarios

Rice production and importation fluctuated in the past forty years. The production years between 1977 and 1983, wherein the country was even able to export rice at some point, was short lived. During most of the ensuing years, given low growth of productivity and rapidly growing population (see Figure 10), consumption increasingly outpaced production. Imports rose in tandem with population growth, especially in the second half of the 1990s when the country was also beset by the El Nino phenomenon (Table 2).

In 1996, in conformity with the country's accession to the WTO, Congress passed Republic Act 8178, which lifted all quantitative import restrictions in agriculture except rice. In lieu of these restrictions, their tariff equivalents were put in place. But because it is not a simple exercise to find the tariff equivalent of a QR, the process led to "dirty tariffication." Nearly all the commodities were given tariff rates of 100%, even though the nominal protection rates of these commodities, based on strict comparison of domestic price and world price, were much less than 100% (David 2003). In other words, the tariffs given were much more than the tariff equivalents of the protection regime existing before the accession to WTO. At the end of the 1990s, the overall tariff protection for agriculture (13.3%) was higher than that for industry.

For rice, the tariff equivalent of its present QR from 1995-2002 is 67.2%. This is measured as percentage difference between domestic price and comparable world price

(Table 3). Clearly this commodity has been highly protected in recent years. As noted earlier, protection is justified as a mechanism to shield the incomes of small farmers from erosion caused by competitive imports. However, this stance fails to address the root causes of the lack of farmers' capacity to ably compete with imports: the government's failure to provide the required public support services necessary to increase productivity.

The growing list of global and regional trade arrangements necessitates an examination on the protection being bestowed to rice producers. The exemption of tariffication of rice QRs in the WTO is due to expire in 2004. Any changes in tariffs will affect not only the commodity's output but the other industry's output as well that uses rice as input (i.e. rice milling sector).

In the long run, liberalizing rice trade enhances the welfare of the poor especially landless workers and urban consumers. However, there is a short term cost during the transition period from the old to the new regime. Farmers may not be able to quickly shift productive resources from rice to other activities. Because land is immobile, or because it would take time to tailor land for other crops or uses, there would likely be short-term adjustment cost for rice farmers (as well as those depending on rice for their productive activities). This may take the form of reduced incomes, labor displacement, or both.

To further examine the rice and agriculture problem, an enhanced multi-market simulation model of Philippine agriculture, the Agricultural Policy Simulation Model (APSM), was used to generate probable outcomes to a variety of "what if" questions. Two cases are shown here: a base scenario or the "business-as-usual" agenda and a strong reform agenda. In the base case, quantitative restrictions (QRs) equivalent to 50% tariff rates are maintained for the major sub-sectors of agriculture (rice included), while public investments in the sector continue at a slow pace, as in the 1980s and 1990s. The strong reform agenda, on the other hand, is characterized by gradual liberalization of agricultural trade – removal of QRs and reduction of tariffs over a five-year period – complemented by an increased public investment in support services, particularly irrigation, R&D, and extension.[1] The results are summarized in Figures 11 and 12.

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

On the other hand, the "strong-reform agenda" scenario suggests reduced domestic agricultural prices arising from the reduction in tariffs and removal of QRs. Farm household incomes rise despite the fall in farm prices owing to increases in agricultural productivity that are brought about by a more aggressive public investment in irrigation, R&D, and information generation and diffusion. Furthermore, the impact on

[1] For details on the exercise, see Antiporta, Balisacan, and Paris (2002).

poverty is high in the medium term: poverty incidence in this scenario is lower, on the average, by 10 percentage points than in the base case.

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

5. Concluding Remarks

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

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

Globalization has its downside risks, but it also offers potentially enormous benefits. Many developing-country globalizers have shown that those benefits more than outweigh the costs: the speed of poverty reduction is, for example, unprecedented in

China, Vietnam, and India. The challenge for the Philippines is to find the appropriate mix of policies and institutions needed to exploit the benefits, while being on guard for the downside risks. Fortuitously, for agriculture and the rural sector, the key policy and governance reforms—enhancing economic competition, investing in efficiency-enhancing infrastructure and support services, and enabling institutions to efficiently respond to changes in economic landscape—required for improved efficiency (increased productivity and income) are largely compatible with globalization as well.

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Table 1. Growth rates of palay production, area, and yield by production environment, Philippines 1970-2002.

	1970-1980	1980-1990	1990-2000	1995-2002
Total				
Production	5.92	2.02	2.66	2.79
Area	0.97	-0.18	1.67	0.98
	(16)	(-9)	(63)	(35)
Yield	4.96	2.21	0.99	1.81
	(84)	(109)	(37)	(65)
Irrigated areas				
Production	4.75	3.70	3.39	3.40
Area	1.18	2.45	2.77	2.09
	(25)	(66)	(82)	(62)
Yield	3.57	1.25	0.62	1.30
	(75)	(34)	(18)	(38)
Rainfed				
Production	3.08	-0.61	0.78	1.27
Area	1.33	-2.21	0.11	-0.86
	(43)	(362)	(14)	(-68)
Yield	1.73	1.60	0.68	2.14
	(56)	(-263)	(87)	(168)
Upland				
Production	-1.09	-7.76	-1.62	-1.89
Area	-2.22	-10.67	-3.25	-3.00
	(203)	(138)	(200)	(159)
Yield	1.14	2.91	1.45	1.04
	(-104)	(-37)	(-89)	(-55)

Source: BAS Selected Statistics on Agriculture, various years, updated from David and Balisacan, 1995.

Table 2. Trends in imports, ratio of imports to production, and ratio of exports to production of rice, 1960-2001.

Year	Rice Production 000 mt (a)	Rice Net imports 000 mt (b)	Net Availability 000 mt (a) + (b)	Rice net imports % of production (b) / (a)	Availability per capita (kg/cap)
1965	2,613	339	2,952	12.97	93
1966	2,653	108	2,761	4.07	86
1967	2,811	310	3,121	11.03	98
1968	2,893	-15	2,878	-0.52	83
1969	3,179	-1	3,178	-0.03	87
1970	3,459	-2	3,457	-0.06	91
1971	3,416	379	3,795	11.08	101
1972	3,324	451	3,775	13.57	98
1973	3,501	308	3,809	8.81	96
1974	3,607	165	3,772	4.58	91
1975	4,148	147	4,295	3.54	100
1976	4,253	55	4,308	1.29	99
1977	4,715	-15	4,700	-0.32	112
1978	4,688	-47	4,641	-1.01	111
1979	4,995	-127	4,868	-2.55	110
1980	4,970	-231	4,740	-4.64	95
1981	5,142	-83	5,059	-1.62	101
1982	5,417	0	5,417	0.00	109
1983	4,742	-40	4,702	-0.84	81
1984	5,089	190	5,279	3.74	97
1985	5,724	541	6,265	9.45	122
1986	6,010	0	6,010	0.00	110
1987	5,551	0	5,551	0.00	92
1988	5,831	95	5,926	1.63	101
1989	6,148	209	6,357	3.40	103
1990	6,058	593	6,651	9.79	113
1991	6,288	-10	6,278	-0.16	102
1992	5,934	-30	5,904	-0.51	88
1993	6,132	210	6,342	3.42	93
1994	6,850	0	6,850	0.00	99
1995	6,851	240	7,091	3.50	103
1996	7,334	893	8,227	12.17	118
1997	7,325	731	8,056	9.98	113
1998	5,561	2,126	7,686	38.23	102
1999	7,661	782	8,443	10.20	114
2000	8,053	617	8,670	7.66	115
2001	8,421	739	9,160	8.78	119

Source: BAS, NSO, and NFA, updated from David and Balisacan, 1995.

Table 3. Trends in domestic price, border price, and nominal protection rate of rice, Philippines. 1960-2000.

	Domestic	Border price ($/t)			
	Price[a]	World	World	World	
	$/t	price[b]	price[c]	price[d](+15%)	NPR
	(1)	(2)	(3)	(4)	
1975	250	269	363	309	-31.24
1976	257	213	255	245	1.08
1977	265	228	272	262	-2.74
1978	259	321	368	369	-29.41
1979	264	292	334	336	-21.10
1980	284	387	434	445	-34.63
1981	315	402	483	462	-34.66
1982	306	243	293	279	4.42
1983	257	239	277	275	-7.36
1984	268	233	252	268	6.17
1985	325	198	216	228	50.58
1986	265	180	211	207	25.81
1987	266	204	230	235	15.83
1988	288	272	301	313	-4.25
1989	345	291	320	335	7.81
1990	345	248	287	285	20.11
1991	310	241	314	277	-1.24
1992	349	233	287	268	21.39
1993	369	203	270	234	36.67
1994	427	347	268	399	59.57
1995	545	290	321	334	69.78
1996	605	276	339	317	78.52
1997	516	247	304	284	70.02
1998	386	250	304	287	26.89
1999	403	211	248	242	62.37
2000	367	167	202	192	81.68
2001	314	149	173	171	81.44
2002	320	171	192	196	66.94

Notes :

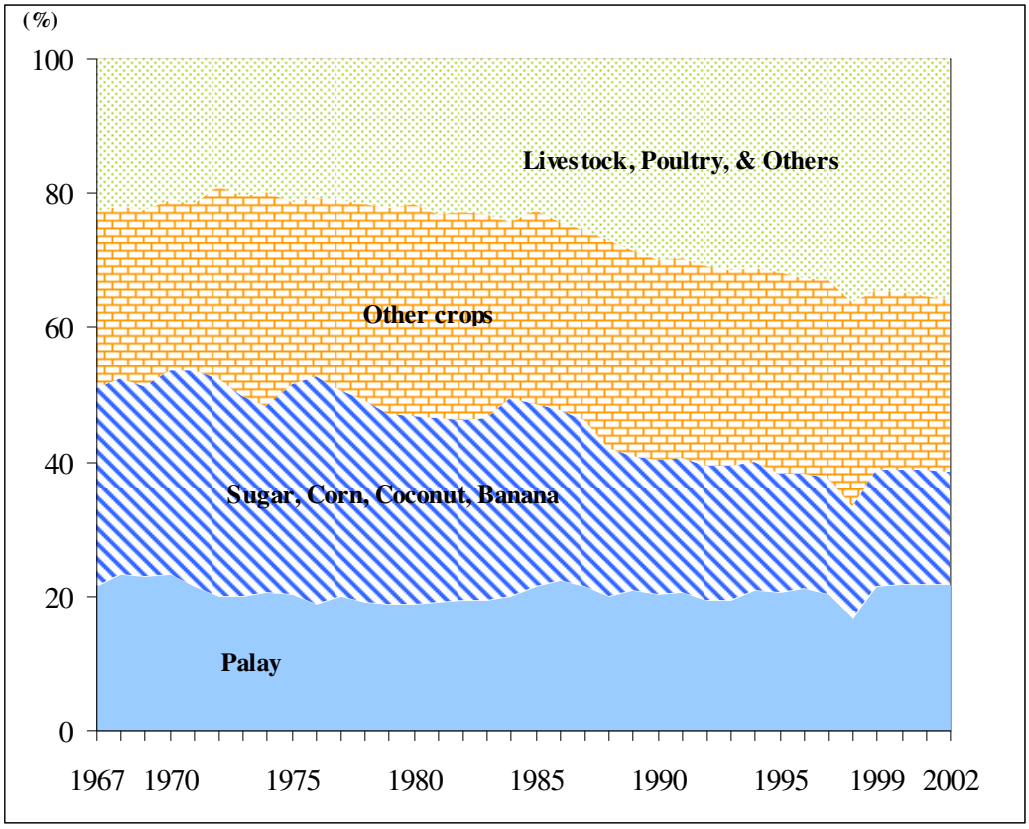
a - Refers to domestic wholesale price. Source: Bureau of Agricultural Statistics

b - Refers to 35% brokens, Source: World Bank/ADB.

c - Refers to 5% broken, fob Bangkok

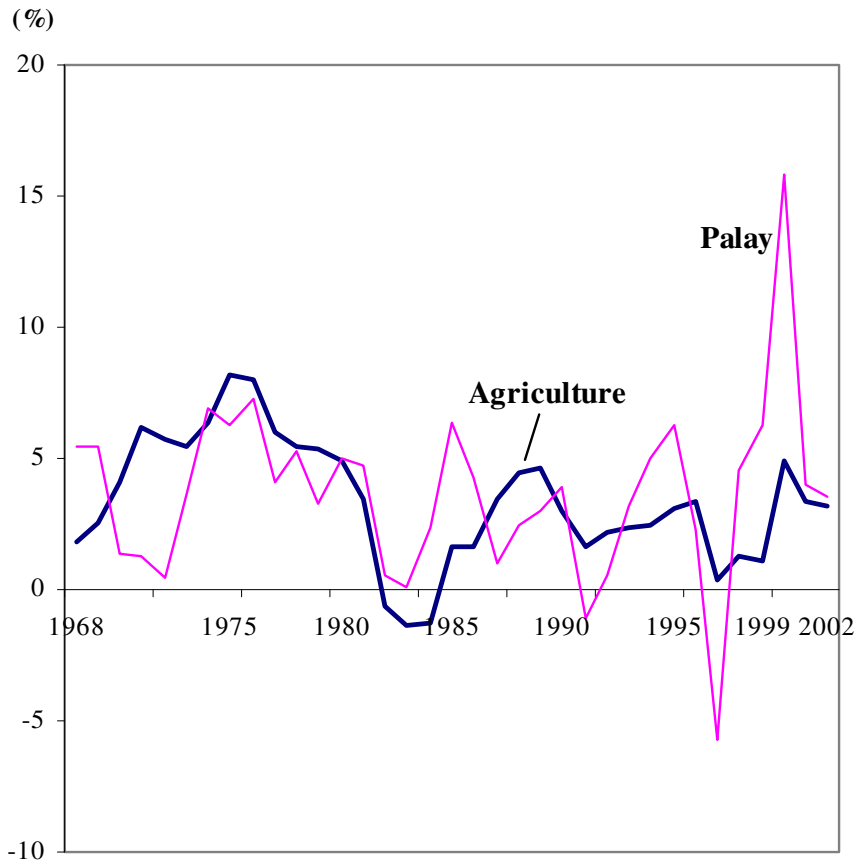
d - Refers to 35% brokens, fob Bangkok + 15% to convert to CIF Manila, Source: World Bank/ADB.

Figure 1. Percent share of major crops, livestock and poultry to agriculture GVA, 1967-2002, Philippines.



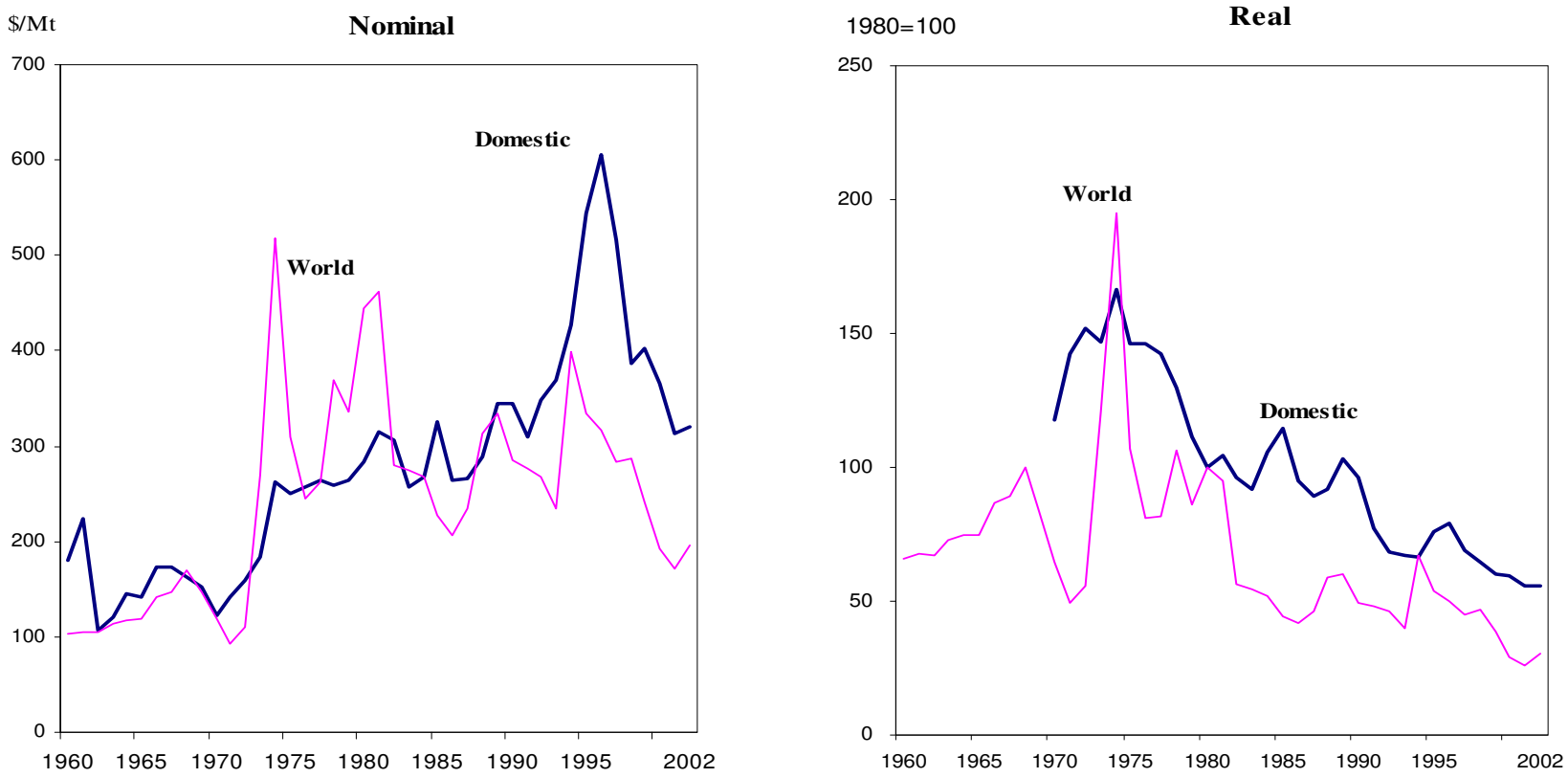
Source: NSCB

Figure 2. Growth rates of agriculture and palay GVA (3-year moving average).



Source: NSCB

Figure 3. Trends in nominal and real domestic and world price of rice, Philippines, 1960-2002.



Notes:

Domestic - Refers to domestic wholesale price. Source: Bureau of Agricultural Statistics

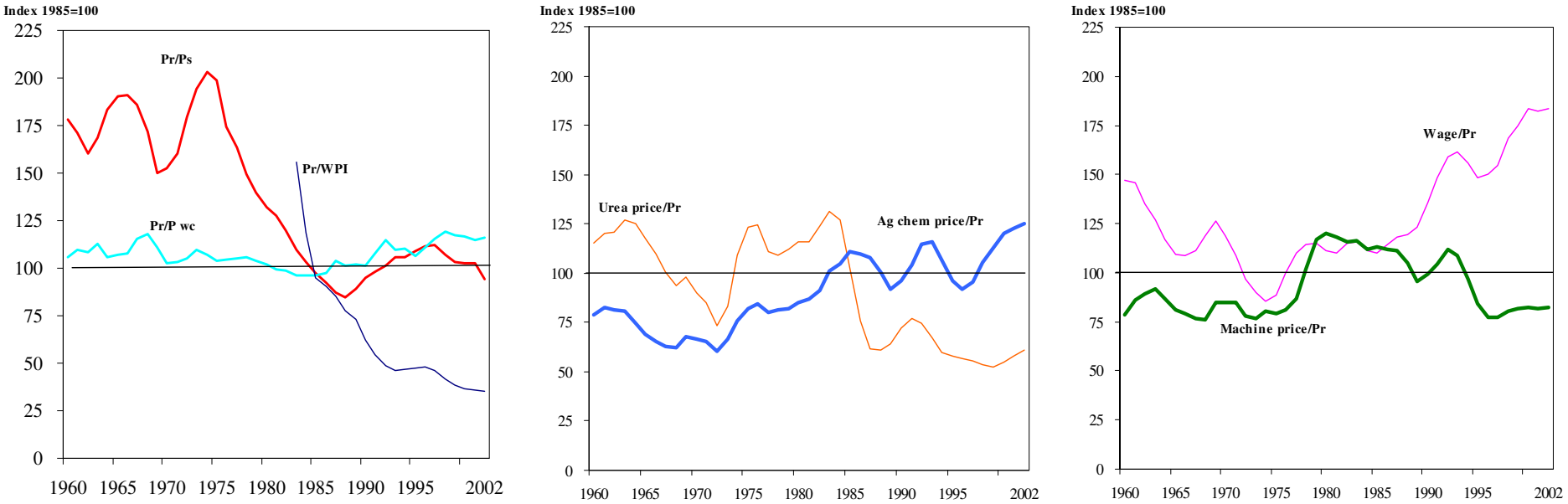
World price - Refers to 35% brokens, fob Bangkok + 15% to convert to CIF Manila Source: World Bank/ADB.

CPI all items is used to deflate domestic prices. Source: National Statistics Office

US PPI all items is used to deflate world prices. Source: US Bureau of Labor Statistics

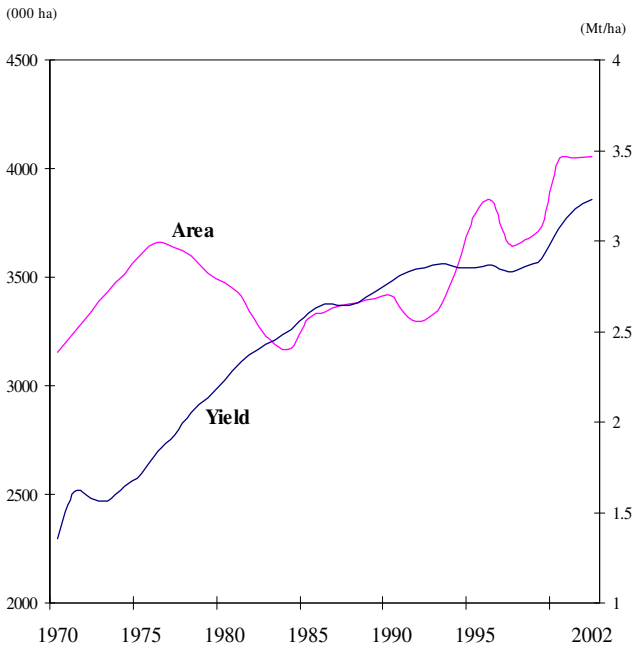
Figures updated from David and Balisacan, 1995.

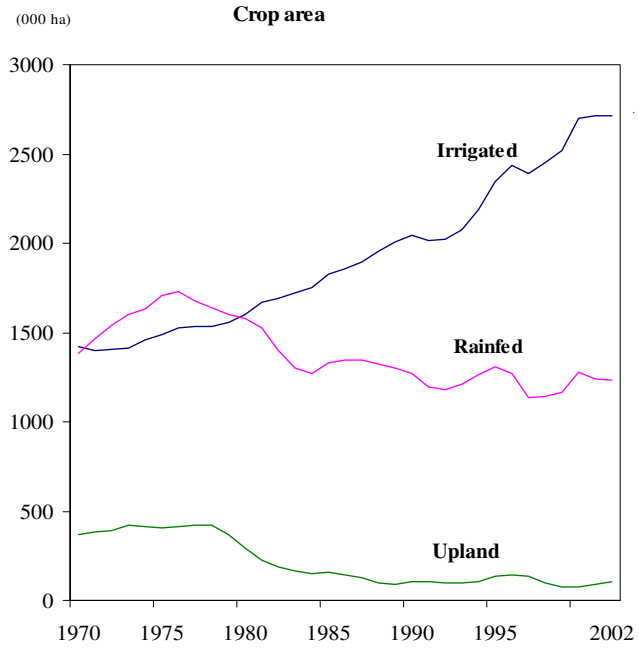
Figure 4. Trends in the relative price of rice (Pr) to the wholesale price index (WPI), corn (Pc), sugar (Ps), and relative prices of farm inputs to rice, Philippines, 1960-2002, (3-year moving average).



Sources: Wholesale ordinary price of rice, corn grain prices, urea, agricultural wages from BAS.
Price of sugar from SRA.
Retail prices for machinery, agricultural chemicals, and wholesale price index from NSO and SPEI-BSP.
GVA from NIA-NSCB
Figures updated from David and Balisacan, 1995.

Figure 5. Trends in palay area and yield, total and by production environment, Philippines, 1970-2002, (3-year moving average).





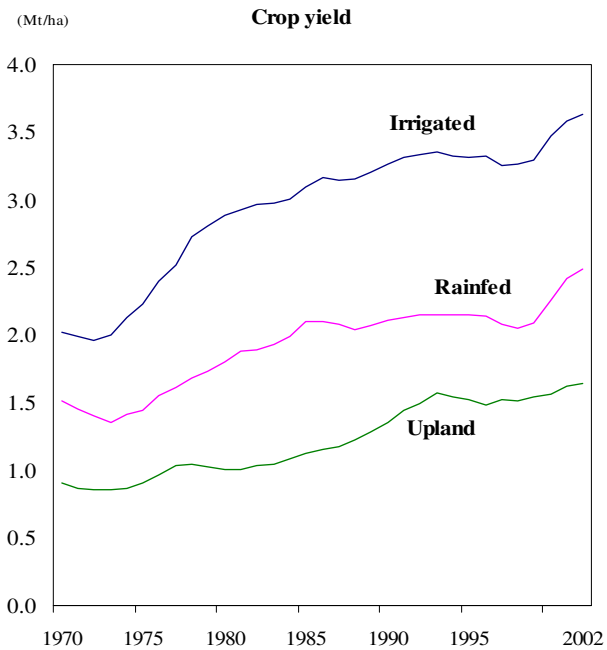
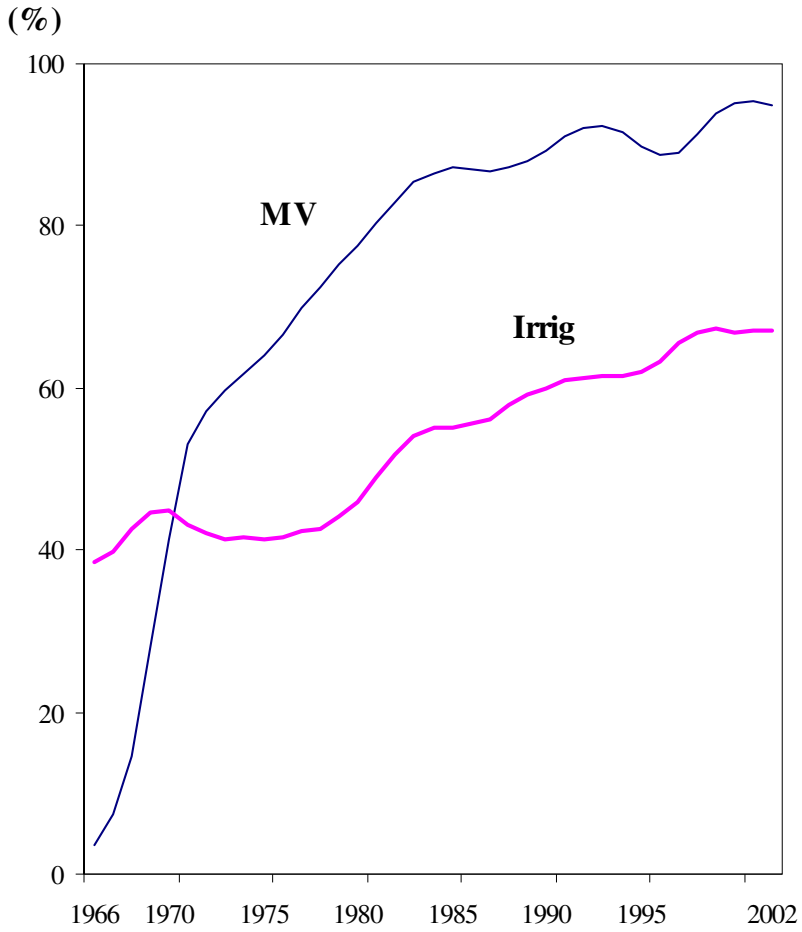
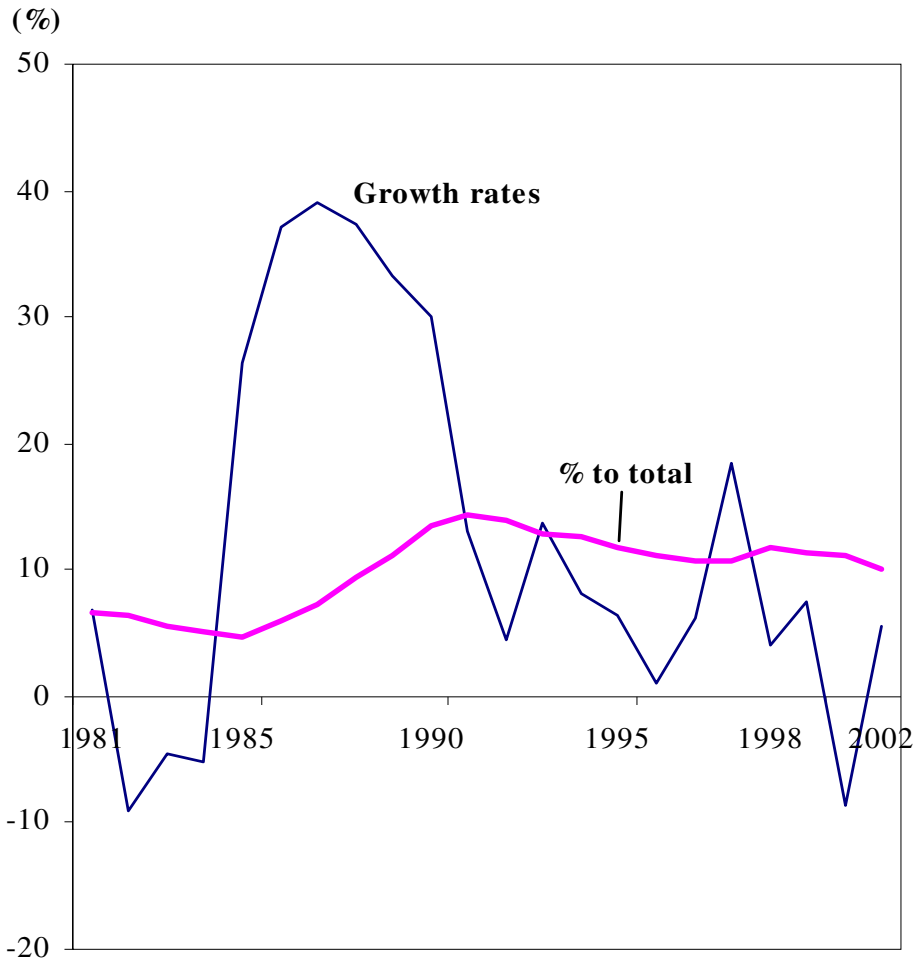


Figure 6. Trends in the adoption of modern varieties and rate of irrigated area, Philippines, 1966-2002, (3-year moving average).



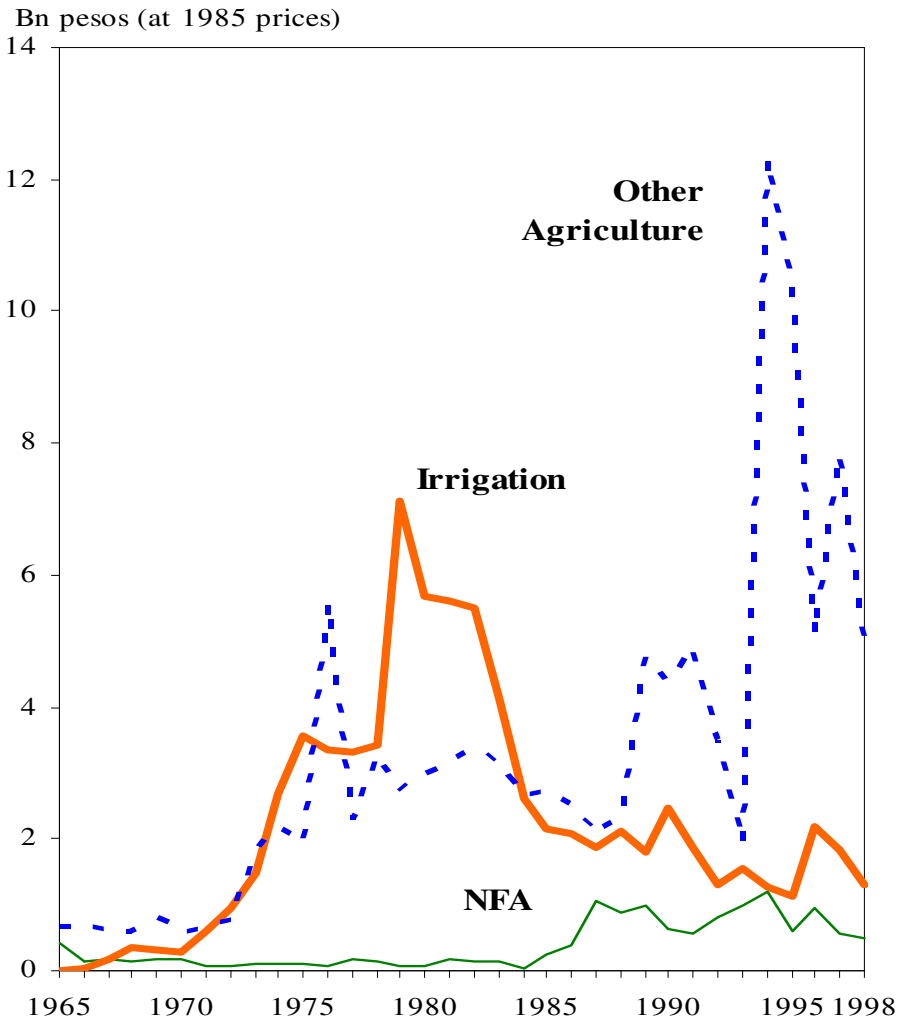
Source: BAS, updated from David and Balisacan, 1995.

Figure 7. Trends in the agricultural production loans granted to palay sector, 1980-2002, Philippines, (3-year moving average).



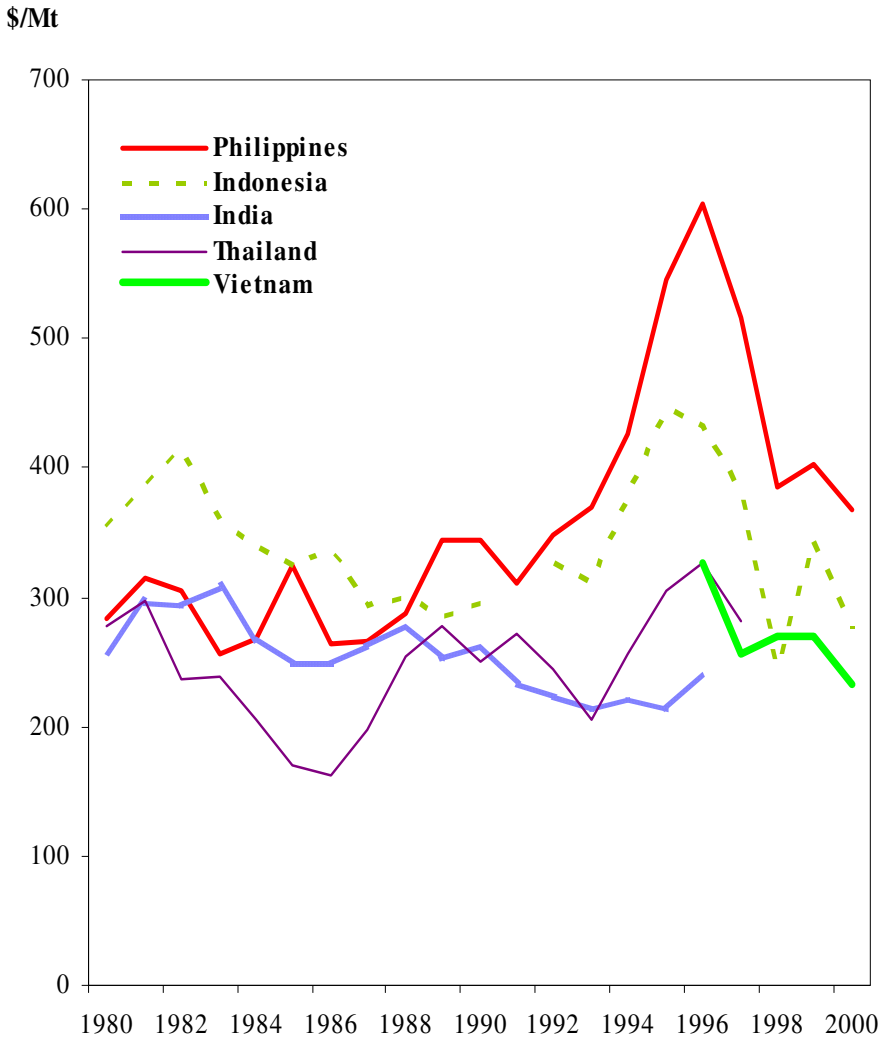
Source: BAS Selected Statistics.

Figure 8. Trends in real government expenditures in agriculture by policy instrument (1965-1998).



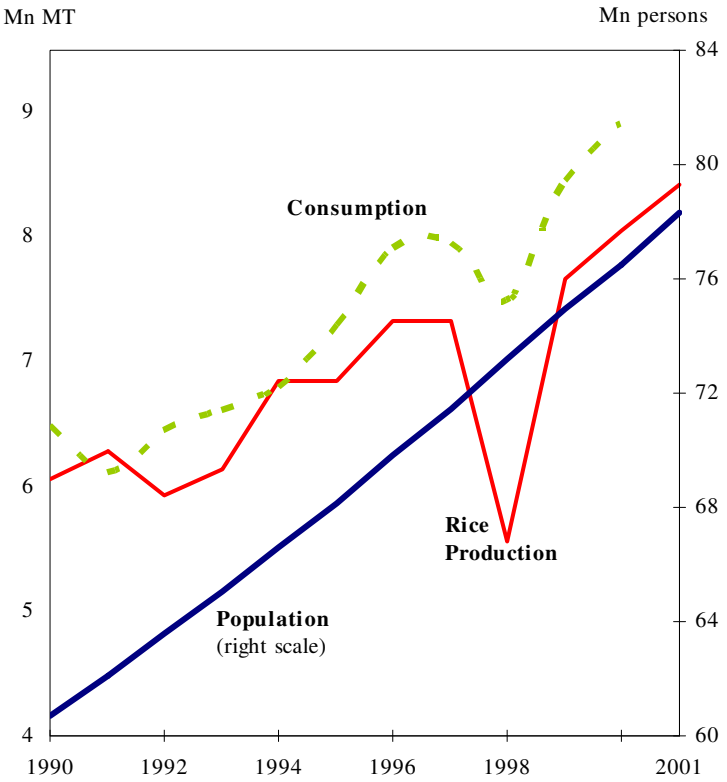
Source: David, 2002.

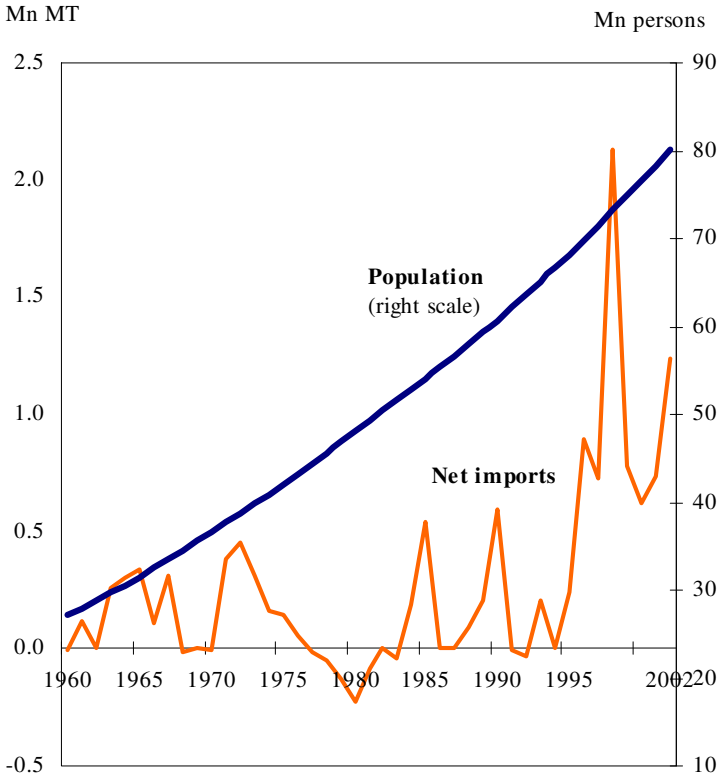
Figure 9. Trends in domestic wholesale prices of rice in selected Asian countries, 1980-2000.



Source of basic of data: IRRI World Rice Statistics and BAS.

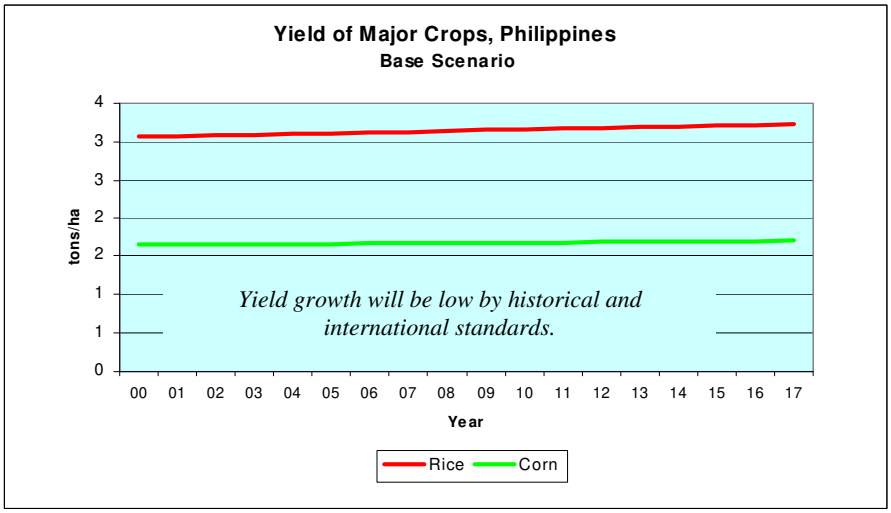
Figure 10. Consumption, rice production, and net imports vs. population, 1990-2001.

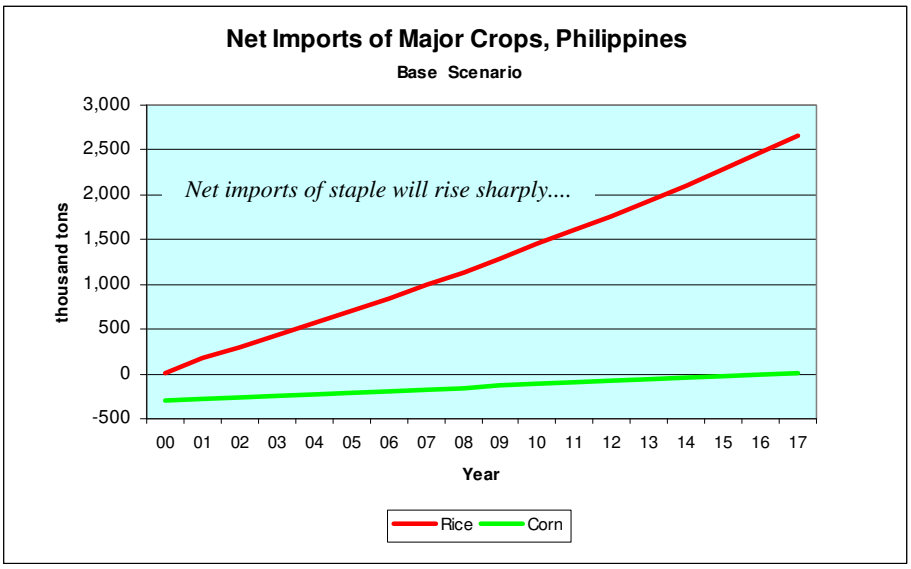




Source of basic data: NSO, NFA, and BAS.

Figure 11. Base scenario: "business-as-usual" agenda.





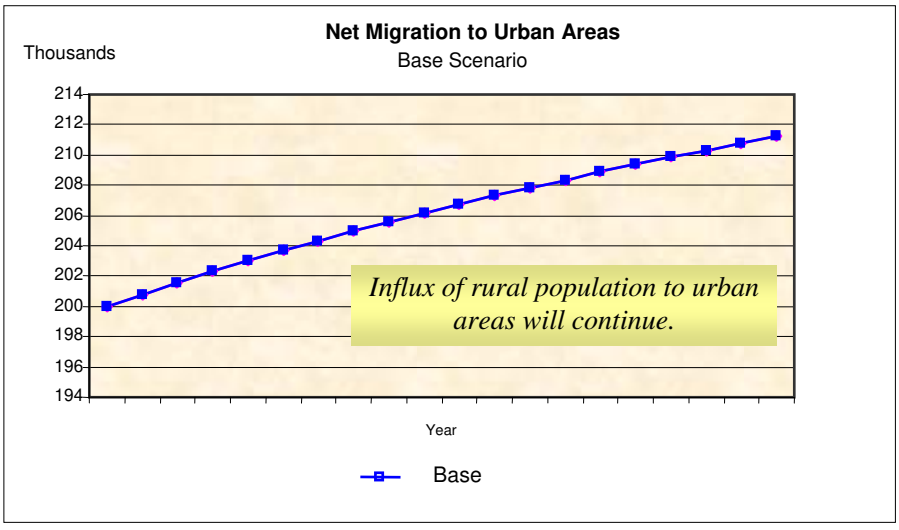
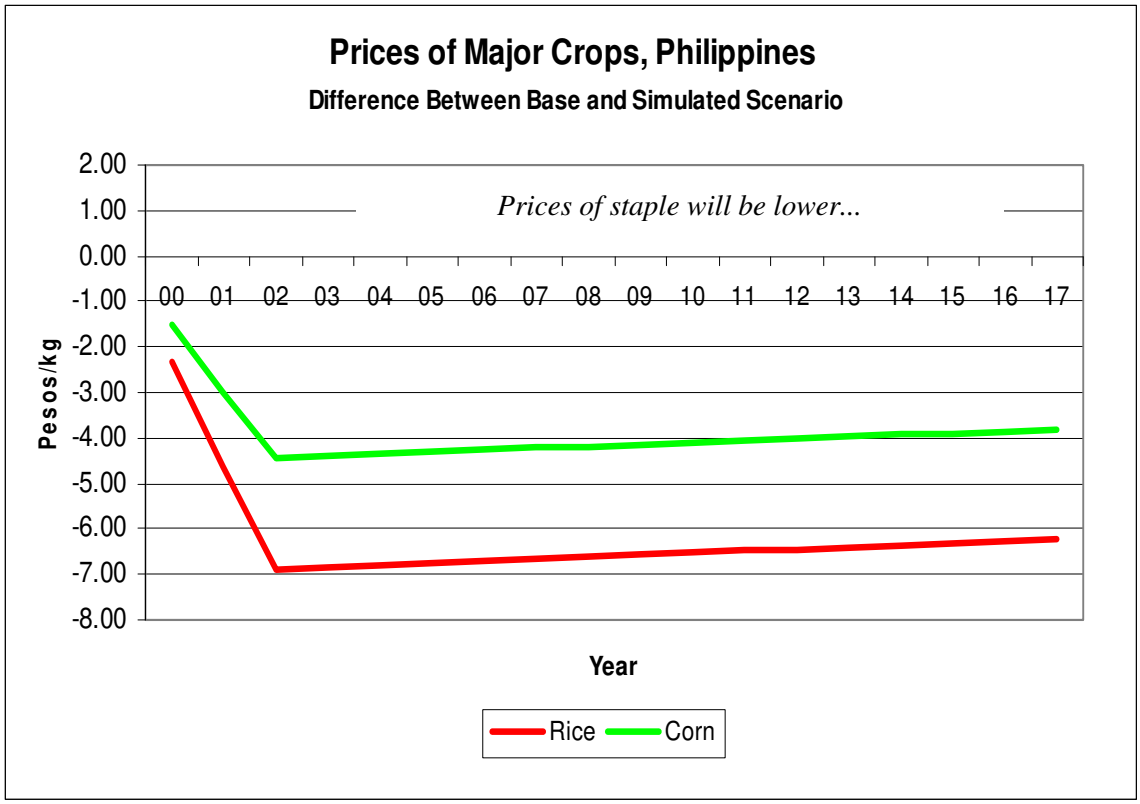


Figure 12. Alternative scenario: "strong reform" agenda.



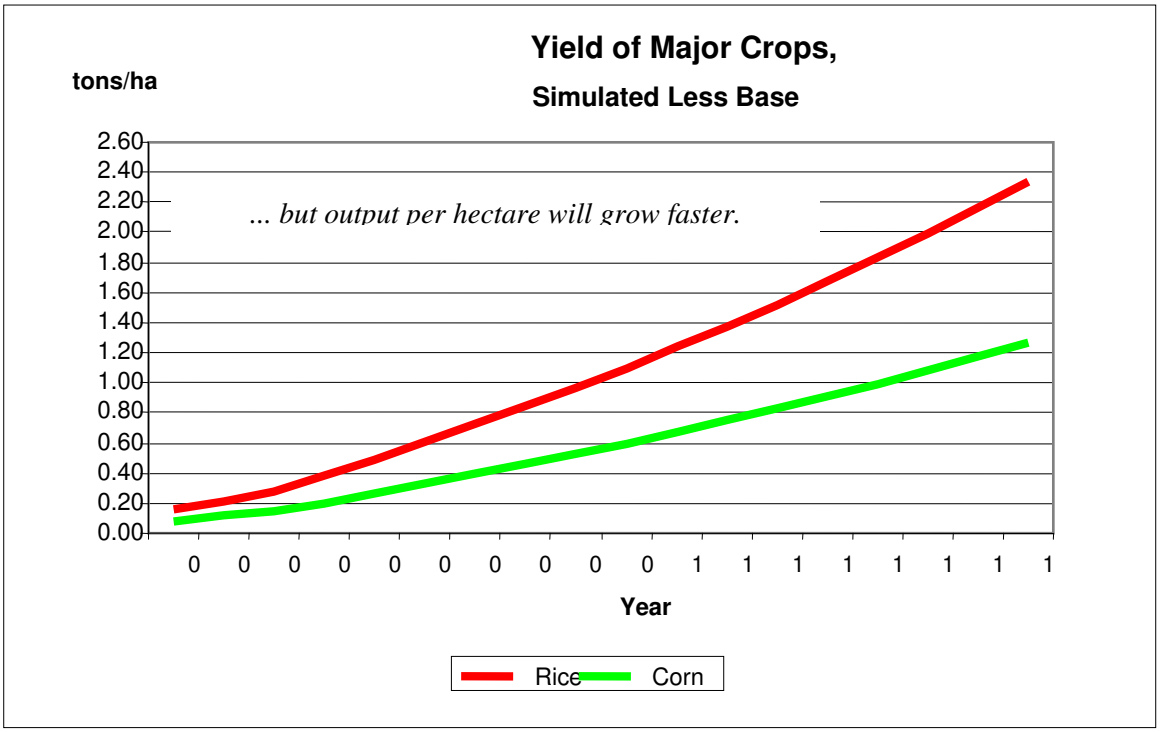


Figure 12 (cont'd.). Alternative Scenario:"Strong Reform"Agenda.