

## **Philippine Agriculture and GATT Reforms**

Jacinto F. Fabiosa

Iowa State University  
*GATT Research Paper 94-GATT 15*  
March 1994

**Center for Agricultural and Rural Development  
Iowa State University  
Ames, Iowa 50011**

Jacinto F. Fabiosa is a graduate research assistant, Department of Economics, Iowa State University.

This material is based upon work supported by the Cooperative State Research Service, U.S. Department of Agriculture, under Agreement No. 89-38812-4480.

Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author and do not necessarily reflect the view of the U.S. Department of Agriculture.

---

**CONTENTS**

Tables .....	v
Abstract .....	vii
The Philippine Agricultural Sector .....	2
Population and Land Use .....	2
Agriculture and the Economy .....	2
Major Agricultural Commodities .....	6
The Structure of Agriculture .....	9
Government Intervention .....	14
Major Agricultural Commodities Traded .....	15
Current Agricultural and Trade Policies .....	20
Internal Support .....	20
Border Measures .....	29
Export Subsidies and Taxes .....	34
Possible Impact of GATT-Related Policy Changes .....	34
Reductions in Trade-Distorting Internal Support .....	34
Tariffication, Minimum Access, and Export Subsidies .....	37
Implications of Policy Changes on the Agricultural Sector and its Trade Position .....	38
Summary and Conclusions .....	39
References .....	40

## TABLES

1.	Philippine population, 1985-1989 . . . . .	3
2.	Philippine land resources and use, 1988 . . . . .	3
3.	Gross domestic product by sectoral origin, 1985-1989 . . . . .	4
4.	Structure of the manufacturing sector, 1987 . . . . .	4
5.	Structure of demand (GDP distribution), 1988 . . . . .	5
6.	Structure of private consumption, 1988 . . . . .	5
7.	Agricultural production by kind of crop, 1985-1989 . . . . .	7
8.	Total inventory of livestock and poultry 1985-1989 . . . . .	8
9.	Number of animals and chickens slaughtered, by kind, 1985-1989 . . . . .	8
10.	Fertilizer production, imports, and consumption, 1985-1989 . . . . .	9
11.	Gross value added in agriculture, fisheries, and forestry, by industry group, 1985-1989 . . . . .	11
12.	Access to irrigation and adoption of modern rice varieties, 1984-1988 . . . . .	12
13.	Government expenditures on agriculture, 1980-1984 . . . . .	15
14.	Distribution of national government expenditures on agriculture, by type of policy instrument . . . . .	15
15.	Total agricultural trade, 1985-1989 . . . . .	16
16.	Value of ten principal agricultural exports, 1985-1989 . . . . .	16
17.	Share of ten principal agricultural exports in domestic production and world trade, 1989 . . . . .	18

18.	Value of ten principal agricultural imports, 1985-1989 . . . . .	19
19.	Comparison of actual and equilibrium exchange rates in real terms, 1977-1982 . . . . .	21
20.	Fertilizer-to-rice and fertilizer-to-corn price ratios, 1980-1988 . . . . .	23
21.	Average ex-farm and retail prices of palay and milled rice relative to government support farm price and ceiling retail price, 1977-1987 . . . . .	24
22.	Procurement relative to production and buffer stock release as percentage of total consumption, 1980-1987 . . . . .	26
23.	Government-sponsored credit to rice farmers, 1980-1985 . . . . .	28
24.	Trends in nominal protection rates in Philippine agriculture, 1970-1984 . . . . .	32
25.	Nominal protection rates for rice and fertilizer, 1980-1988 . . . . .	33
26.	Estimates of effective tariff protection rates for processed agricultural commodities, 1985 . . . . .	35

### ABSTRACT

This paper examines the Philippine agricultural sector and the implications of General Agreement on Tariffs and Trade (GATT) reforms. The importance of agriculture to the Philippine economy includes providing the principal means of livelihood for the more than 60 percent of the population that live in rural areas and contributing between 27 percent and 29 percent of the Philippine gross domestic product (GDP).

Small-scale farmers dominate the agricultural sector. Farms of 5 hectares or fewer represent more than 50 percent of total cultivated area, whereas farms of 25 hectares or more represent only 11.7 percent of total cultivated area. Only exports such as bananas, pineapple, and sugar are produced on a semicommercial scale.

Crop production is the major agricultural subsector. Of the total agricultural contribution to the GDP, 59 percent is the value added from crops, whereas only 22 percent is the value added from livestock and poultry. Crop production is concentrated on a few food crops and export crops; palay (rice), corn, coconuts, sugarcane, and bananas account for 83 percent of total area planted to crops.

Agricultural trade has consistently produced a surplus, but this surplus has been declining over time. The Philippines captures a major share of the world trade in coconut-based products, with market shares of 56 percent for coconut oil, 55 percent for desiccated coconut, 47 percent for copra meal, and 28 percent for copra. Also, the Philippines captures market shares of 20 percent for pineapple and 7 percent for bananas. On the other hand, major Philippine imports represent less than 1 percent of world trade. Cereals represent 32 percent of all imports (of which 76 percent is wheat,

17 percent is rice, and 7 percent is corn), and dairy products represent 21 percent. Imports of agricultural inputs represent 27 percent (17 percent is feeds and 10 percent is fertilizer) of all agricultural imports.

The National Food Authority (NFA) is the sole importer of corn and rice. Import licenses are required for most products. Philippine domestic and trade policies imply moderate protection for food crops, high protection for semiprocessed agricultural products, and subsidies for agricultural exports.

This paper concludes that GATT reforms will have a mildly adverse impact on the Philippine agricultural sector in the short run. That is, imports of food crops, semiprocessed foods, and agricultural inputs will increase, and traditional exports will, at best, remain at present levels. Reductions in trade-distorting internal support will not be significant. Some input subsidies have been unilaterally reduced (e.g., the credit subsidy) or completely removed (e.g., the fertilizer subsidy) because of fiscal constraints. The irrigation subsidy, however, remains high (between 60 percent and 90 percent).

Moreover, transfer payments have not been substantial because the government procured only 6.2 percent of production and the government support price has exceeded the prevailing farm price in most years. Removing nontariff barriers and reducing tariff rates will seriously affect semiprocessed and processed agricultural products and inputs such as fertilizer, feeds, and meat preparations because these products are highly protected (as shown by their high effective tariff rates). Any improvement in world demand from GATT reforms in other importing countries cannot be immediately capitalized on by the Philippines because of the deteriorating productive infrastructure for major agricultural exports, particularly coconut and sugar.

## PHILIPPINE AGRICULTURE AND GATT REFORMS

Countries in different stages of economic growth intervene in many ways in their agricultural sectors to accomplish varied objectives. Developed countries with declining comparative advantages in agriculture use a collection of trade barriers, market controls, and production aids to protect agriculture. Less-developed and other countries depress prices of agricultural wage goods to encourage industrial development, subsidize exports to increase exports and/or tax agricultural exports to raise revenue for the government, and subsidize agricultural inputs to compensate for indirect taxation. It is because of this intervention that agricultural products have been effectively excluded from the application of General Agreement on Tariffs and Trade (GATT) principles and discipline.

However, several recommendations have been forwarded in the Uruguay Round to bring agriculture under the GATT, including removing nontariff barriers, reducing trade-distorting internal support, and reducing export subsidies. Although the specific outcome of the negotiations is still uncertain, understanding the characteristics of the agricultural sector and its domestic and trade regimes will allow informed conjectures on the likely impact of GATT-related reforms on a specific country. This paper examines Philippine agriculture and the implications of GATT reforms for the Philippine economy.

The first section presents characteristics of the agricultural sector, and the second section describes current domestic agricultural and trade policies. The third section analyzes the possible impacts of a GATT agreement on domestic and trade policies and the country's trade position. The final section provides a summary and conclusions.

## **The Philippine Agricultural Sector**

### **Population and Land Use**

As of 1989, the Philippine population was 61 million and growing at an average rate of 2.5 percent annually (Table 1). Total land area covers 29 million hectares, with forest and woodland accounting for the greatest share (36 percent), followed by arable and permanent cropland (27 percent) (Table 2).

### **Agriculture and the Economy**

By almost any commonly used measure, the relative importance of agriculture in the Philippine economy has declined over the last three decades; however, agriculture still directly contributes approximately 50 percent of total employment. This percentage may be even higher, considering that more than 60 percent of the population lives in rural areas where agriculture and related activities are the principal means of livelihood. Moreover, agriculture still contributes a significant share of between 27 percent and 29 percent of the gross domestic product (GDP), whereas the industrial and service sectors contribute 33 percent and 40 percent, respectively (Table 3).

The importance of agriculture is further revealed when its linkages to the manufacturing sector and final demand are considered. For example, in the structure of the manufacturing sector, food, beverages, and tobacco account for the greatest share (43 percent), implying a substantial dependence on raw materials from agriculture (Table 4). Moreover, the breakdown of GDP in terms of final demand shows that private consumption accounts for 73 percent of final demand (Table 5). And the greatest share (51 percent) of private consumption is food and cereals (Table 6).



Table 1. Philippine population, 1985-1989

Year	Population	Growth Rate
	(1,000)	(percent)
1985	55,120	2.81
1986	56,573	2.63
1987	58,039	2.59
1988	59,509	2.53
1989	60,970	2.45

SOURCE: FAO 1989a.

Table 2. Philippine land resources and use, 1988

Item	Area	Share of Total
	(1,000 ha)	(percent)
Total Area	30,000	--
Land Area	29,817	100
Arable and Permanent Crops	7,970	27
Arable	4,550	15
Permanent Crops	3,420	12
Permanent Pasture	1,220	4
Forest and Woodland	10,750	36
Other Land	9,877	33

SOURCE: FAO 1989a.

Table 3. Gross domestic product by sectoral origin, 1985-1989 (constant 1972 prices)

Year	Agriculture, Forestry, and Fisheries		Industry		Services		Total
	(million pesos)	(percent)	(million pesos)	(percent)	(million pesos)	(percent)	(million pesos)
1985	26,252	29	29,000	32	34,652	39	89,904
1986	27,110	30	28,396	28	35,674	39	91,180
1987	26,834	28	30,498	32	38,039	40	95,371
1988	27,793	27	33,235	33	40,422	40	101,450
1989	28,986	27	35,533	33	42,624	40	107,143

SOURCE: NEDA 1989.

Table 4. Structure of the manufacturing sector, 1987

Subindustries	Share of Value Added in Manufacturing (percent)
Food, Beverages, and Tobacco	43
Others	30
Chemicals	10
Textiles and Clothing	8
Machinery and Transport Materials	8
Total	100

SOURCE: The World Bank 1990.

Table 5. Structure of demand (GDP distribution), 1988

Demand Categories	Share of GDP
	(percent)
Private Consumption	73
Net Exports	-1
Export Goods and Nonfactor Services	25
Import of Goods and Services	-26
Gross Domestic Investment	19
Government Consumption	9
Total	100

SOURCE: IMF 1990d.

Table 6. Structure of private consumption, 1988

Item	Share of Household Consumption
	(percent)
Food (Cereals and Tubers, 23 percent)	51
Gross Rents, Fuel and Power	19
Clothing and Footwear	4
Transport and Communication	4
Education	4
Medical Care	2
Other Consumption	16
Total	100

SOURCE: The World Bank 1990.

### Major Agricultural Commodities

Crops. Rice, the staple crop of the Philippines, has very limited industrial use. Hence, annual rice consumption depends largely on population growth. The same holds true for most food crops. Per capita rice consumption is reported to range between 76 and 97 kilograms, with variations probably reflecting changes in relative prices and per capita income. Corn, on the other hand, is mostly consumed by 15 percent of the population, most of whom are concentrated in the Visayas Islands. However, the industrial use of corn, particularly as a feed ingredient, is becoming more important. Bread and biscuits made from wheat flour are generally consumed only for breakfast and snacks. Except for bananas, between 80 percent and 90 percent of exportable crops are consumed domestically.

Table 7 shows that 60 percent of total cultivated area is planted to nonexport crops, and rice and corn have a combined share of 55 percent. Export crops account for 31 percent, with coconut having the greatest share (24 percent).

Poultry and Livestock. Inventories of carabao and cattle have declined over the last five years (Table 8). Comparing 1989 data with 1985 data, the carabao inventory declined from 2.9 million to 2.8 million head and the cattle inventory declined from 1.7 million to 1.6 million head. On the other hand, goat, hog, and chicken inventories increased over the same period. The number of goats increased from 2.1 million to 2.2 million head, hogs increased from 7.3 million to 7.9 million head, and chickens increased from 52.4 million to 65.9 million head. Slaughter data (Table 9), however, show that the numbers of slaughtered carabaos, cattle, goats, and hogs have been very stable over the same period, whereas chicken slaughter showed a sharp increase.

Table 7. Agricultural production by kind of crop, 1985-1989 (harvest area)

Agricultural Crops	1985	1986	1987	1988	1989	1989 Share
	------(1,000 ha)-----					(percent)
Nonexport Crops	7,485	7,746	7,624	7,825	7,869	60
Cereals	6,817	7,059	6,938	7,137	7,186	55
Palay	3,306	3,464	3,255	3,392	3,497	27
Corn	3,510	3,595	3,682	3,745	3,689	28
Major Crops	668	687	686	688	681	5
Cassava	204	211	209	217	213	2
Sweet Potato	150	155	149	144	138	1
Other Crops <sup>a</sup>	314	321	328	327	330	2
Export Crops	4,302	4,257	4,206	4,094	4,038	31
Coconut	3,270	3,284	3,251	3,221	3,110	24
Sugarcane	368	300	269	215	261	2
Banana	289	292	298	287	293	2
Pineapple	58	60	63	60	61	-
Coffee	137	141	143	142	143	1
Tobacco	60	64	68	61	63	-
Abaca	120	116	114	108	107	1
Other Crops	1,241	1,293	1,151	1,197	1,235	9
Total	13,028	13,296	12,981	13,116	13,140	100

SOURCE: NEDA 1989.

<sup>a</sup>Mango, rubber, cacao, peanut, onion, garlic, tomato, eggplant, cabbage, and citrus.

Table 8. Total inventory of livestock and poultry, 1985-1989

Year	Livestock				Poultry	
	Carabao	Cattle	Goats	Hogs	Chickens	Ducks
			(1,000 head)			
1985	2,983	1,787	2,191	7,304	52,399	5,276
1986	2,984	1,814	2,177	7,275	53,006	5,208
1987	2,865	1,747	2,016	7,038	53,248	5,252
1988	2,890	1,700	2,120	7,581	60,322	5,873
1989	2,842	1,682	2,212	7,909	65,921	6,501

SOURCE: Trade Office, Philippine Embassy 1991.

Table 9. Number of animals and chickens slaughtered, by kind, 1985-1989

Year	Carabao	Cattle	Hogs	Horses	Goats	Chickens
			(1,000 head)			
1985	89	286	3,347	4	136	15,557
1986	139	471	4,267	6	187	73,062
1987	190	315	3,633	3	117	28,941
1988	210	342	4,215	3	104	64,048
1989	199	290	3,676	4	124	61,018

SOURCE: Trade Office, Philippine Embassy 1991.

Fertilizer. Fertilizer production has almost doubled from 499,700 metric tons (mt) in 1985 to 813,500 mt in 1989 (Table 10). However, production fell far short of domestic demand, which increased from 710,200 mt to 1.3 million mt over the same period. The substantial shortfall in domestic production is filled by imports, which represent an average of 83 percent of total consumption.

### **The Structure of Agriculture**

Subsectors. The relative importance of agricultural subsectors can be measured in terms of their contributions to the value added from agriculture. Of the 27 percent contributed by the agricultural sector to the GDP, 59 percent is the value added from crops, 17 percent from fisheries, 12 percent from poultry, 10 percent from livestock, and 2 percent from forestry (Table 11). Rice and corn are the most important crops; combined, they account for 24 percent of agricultural GDP.

Crops. Philippine agriculture is dominated by small farms, except for a few large plantations in the export sector. Approximately 50 percent of the total farm area is in farms of fewer than five hectares. Farms of 25 hectares or more accounted for only 11.7 percent of total farm area. Specifically, rice and corn are produced in all parts of the country by an estimated 2.6 million rural farmers with a total area of 6.3 million hectares. This implies that there is one farmer for every 24 persons, and the average land holding for each rural farm family is only 2.4 hectares. The majority of the farmers (55 percent) have access to irrigation, and 87 percent have adopted modern rice varieties (Table 12).

Farm size and tenure arrangements have been affected by government agrarian reform programs. In the previous regime, the Land Reform Program mandated in Presidential Decree (PD) 27 covered only rice and corn farms representing only 1.01 million hectares, or 11.9 percent of total

Table 10. Fertilizer production, imports, and consumption, 1985-1989

---

Year	Production	Imports	Consumption
		(1,000 metric tons)	
1985	499	557	710
1986	695	855	925
1987	374	948	1,151
1988	756	1,061	1,221
1989	813	981	1,318

---

SOURCE: Trade Office, Philippine Embassy 1991.



Table 11. Gross value added in agriculture, fisheries, and forestry, by industry group, 1985-1989 (constant 1972 prices)

Subsector	1985	1986	1987	1988	1989	1989 Share
	------(million pesos)-----					(percent)
Crops	16,434	17,075	16,374	16,549	17,051	59
Palay	4,665	4,899	4,513	4,741	4,913	17
Corn	1,698	1,798	1,872	1,938	1,950	7
Coconut	1,420	1,821	1,803	1,639	1,556	5
Sugarcane	829	775	701	799	890	3
Banana	931	935	878	853	886	3
Other Crops	6,891	6,847	6,607	6,579	6,715	23
Livestock	2,114	2,283	2,432	2,666	2,947	10
Poultry	2,576	2,547	2,742	3,055	3,340	12
Fisheries	4,422	4,551	4,638	4,834	5,041	17
Forestry	706	654	648	689	635	2
Total	26,252	27,110	26,834	27,793	28,985	100

SOURCE: NEDA 1989.

Table 12. Access to irrigation and adoption of modern rice varieties, 1984-1988

Year	Farms Irrigated	Planted with Modern Varieties
		(percent)
1984	53	85
1985	56	87
1986	56	87
1987	54	87
1988	58	87

SOURCE: International Rice Research Institute 1989.

farm area (24.4 percent of total rice and corn land). PD 27 stipulated that large-scale landowners could retain only a maximum of 7 hectares and that the rest of their land be distributed to farmer-beneficiaries who could own a maximum of 3 hectares for irrigated land or 5 hectares for nonirrigated land.

The Comprehensive Agrarian Reform Program (CARP) of the current administration includes both food and export crops, and both the retention limits for landowners and ownership limits for farmer-beneficiaries have been changed, depending on the crops. The implementation of CARP, however, has been stalled by many legal impediments. After almost 10 years of implementation, the result of the land reform program can be gleaned from the 1980 census, which showed that fully owned farms increased only slightly from 65.7 percent in 1971 to 68.1 percent in 1980. Moreover, a 1980 census in a Mindanao province revealed that most corn farms were less than 5 hectares, whereas sugar farms exceeded 25 hectares. This pattern is almost the same for the entire country—food crops are produced on small farms, whereas (except for coconuts) all other export crops (i.e., sugarcane, bananas, and pineapple) are produced on a commercial scale. Production of most export crops is concentrated in the southern island of Mindanao, where rainfall is evenly distributed throughout the year and tropical weather disturbance is minimal.

Poultry and Livestock. The livestock industry is largely dominated by small-scale producers. More recently, however, commercial and vertically integrated poultry producers are increasingly gaining control of the poultry industry.

Fertilizer. The fertilizer industry has been dominated by four corporations: Planters Products Incorporated, which captures 65 percent of the market; Atlas Fertilizer Corporation, 17 percent;

Maria Cristina Fertilizer Corporation, 13 percent; and Fertilizer Marketing Company of the Philippines, 5 percent. Total production from these four companies falls short of domestic demand.

### **Government Intervention**

Government intervention in the agricultural sector is rather pervasive, including price control, a state trading monopoly, supervised-subsidized credit, and research, infrastructure, extension, and production programs. This intervention is especially apparent in the rice subsector. Rice was covered by the Masagana 99 Program from the 1970s to the early 1980s, the Intensified Rice Production Program in the late 1980s, and the most recent Rice Action Program. Moreover, most of the important import-competing and export crops have government agencies assigned to develop and regulate them (e.g., Philippine Fiber Authority, Philippine Cotton Corporation, Philippine Coconut Authority, Philippine Sugar Commission, Philippine Tobacco Authority, National Food Authority, and National Livestock Development Council).

The expenditure by the national government for agriculture (Table 13) is declining—from a high of 1 billion pesos in 1981 to a low of 0.5 billion pesos in 1984. In 1980, agriculture represented 9.6 percent of total government spending. In 1984, agricultural expenditure was only 4.8 percent. In terms of the percentage of net value added from agriculture, the national government expenditure decreased from 5.2 percent in 1980 to 2.1 percent in 1984. Considering the fiscal problems faced by the government (e.g., government deficit of 2.8 percent of the GNP, trade deficit of U.S. \$0.7 billion, balance of payment deficit of U.S. \$2.2 billion, and outstanding debt of U.S. \$24.5 billion), it is reasonable to expect that agriculture spending has continued to decline since 1984 (IMF 1990a, 1990b, 1990c, 1990d).

Table 14 shows the distribution of national government expenditure on agriculture. Irrigation has consistently received a substantial share (23.4 percent in 1984) of the expenditure, followed by extension and social development (9 percent each). Pricing and marketing received only a 3.9 percent share. The surprisingly large share of 37.9 percent for environmental management and conservation may be attributable to a prearranged allocation demanded by external funding institutions.

### **Major Agricultural Commodities Traded**

Although the country's total balance of trade has consistently experienced a deficit, the agricultural sector has traditionally been a net exporter. However, the Philippine trade surplus (Table 15) has declined consistently over the last five years, from a high of U.S. \$847 million in 1986 to a low of U.S. \$462 million in 1989.

Principal Exports. The ten principal agricultural exports are shown in Table 16. In 1989, the total value of agricultural exports was U.S. \$1.03 billion. Coconut-based export commodities, namely coconut oil, copra meal, and copra, accounted for more than 50 percent of total export value (Table 17), followed by bananas, 14 percent; tuna, 11 percent; and pineapple and sugar, 9 percent each. The Philippines captures a major share of the world trade for coconut-based commodities (56 percent for coconut oil, 47 percent for copra meal, 55 percent for desiccated coconut, and 28 percent for copra). Also, the Philippines captures a 20 percent market share for pineapple and 7 percent for bananas. The rest of the exported agricultural commodities capture less than 1 percent of world trade.

Principal Imports. Total agricultural imports in 1989 amounted to U.S. \$1.04 billion. The ten principal agricultural imports are shown in Table 18. These imports are dominated by consumer food

Table 13. Government expenditures on agriculture, 1980-1984

Year	Expenditure (million pesos, 1972 prices)	Percentage of Net Value- Added Agriculture	Percentage of Total Government Expenditures
1980	1,241	5.2	9.6
1981	1,339	5.4	7.7
1982	1,149	4.5	6.5
1983	1,013	4.1	7.5
1984	522	2.1	4.8

SOURCE: David 1989.

Table 14. Distribution of national government expenditures on agriculture, by type of policy instrument (1972 prices)

Policy Instrument	1980	1981	1982	1983	1984	1984 Share
	------(million pesos)-----					(percent)
Environment and Conservation	167	236	242	218	242	37.9
Irrigation	634	573	380	280	150	23.4
Extension	157	205	197	180	97	15.2
Social Development	128	137	130	115	63	9.8
Research	134	148	158	172	62	9.7
Pricing and Marketing	21	40	39	48	25	3.9

SOURCE: David 1989.

Table 15. Total agricultural trade, 1985-1989

Year	Exports	Imports	Surplus
	(U.S. \$1,000)		
1985	1,588	833	755
1986	1,681	834	847
1987	1,794	988	806
1988	1,997	1,328	669
1989	2,009	1,547	462

SOURCE: FAO 1989a.

Table 16. Value of ten principal agricultural exports, 1985-1989

Agricultural Exports	1985	1986	1987	1988	1989
	(million FOB U.S. dollars)				
Sugar	169	87	60	60	89
Coconut Oil	347	333	381	408	377
Bananas	114	180	121	146	146
Pineapple, Canned	89	84	86	83	91
Copra Oil or Meal	36	75	73	63	54
Desiccated Coconut	76	44	75	78	76
Tuna	61	63	70	113	113
Coffee	69	119	33	50	42
Copra	0	18	32	28	25
Abaca	17	13	12	16	18

SOURCE: NEDA 1989.

Table 17. Share of ten principal agricultural exports in domestic production and world trade, 1989

Agricultural Exports	Share of Domestic Exports	Share of World Trade	Share of Production
		(percent)	
Sugar	9	0.76	13.23
Coconut Oil	37	56.00	10.33
Bananas	14	6.65	26.68
Pineapple, Canned	9	20.21	--
Copra Oil or Meal	5	47.10	4.34
Desiccated Coconut	7	54.74	--
Tuna	11	--	--
Coffee	4	0.43	16.12
Copra	2	27.87	--
Abaca	2	--	--
Total	100	--	--

SOURCES: NEDA 1989; FAO 1989a, 1989b.



Table 18. Value of ten principal agricultural imports, 1985-1989

Agricultural Import	1985	1986	1987	1988	1989	Share
	------(million FOB U.S. dollars)-----					(percent)
Cereals	278	168	134	223	337	32.49
Fertilizers	106	83	89	108	104	9.99
Dairy Products	72	98	149	161	217	20.88
Feeds	47	87	98	167	177	17.06
Tobacco	65	66	94	78	66	6.31
Coffee, Tea, Cocoa	9	4	5	8	14	1.31
Fish	6	19	31	35	37	3.51
Meat and Preparations	3	4	7	10	18	1.71
Vegetables and Fruits	8	16	18	37	51	4.91
Vegetable Oil	8	8	9	12	18	1.77

SOURCE: NEDA 1989.

commodities, with cereals contributing 32 percent (of which 76 percent is wheat, 17 percent is rice, and 7 percent corn) and dairy products contributing 21 percent. Imports for agricultural inputs represent 27 percent (17 percent is feeds and 10 percent is fertilizer). The Philippines is not a major buyer of any of these commodities. The value for each imported commodity represents less than 1 percent of world trade.

### **Current Agricultural and Trade Policies**

Some current agricultural and trade policies are remnants of past domestic and trade regimes. These historical trade regimes can be divided into three categories (Baldwin 1975). The first is the post-World War II free trade agreement with the United States (i.e., the Philippine Trade Act of 1946), which allowed free trade between the two countries for eight years. This act was replaced by import substitution strategies in the 1950s and 1960s, comprising the second historical category. Republic Act 426 of May 1950 instituted import licensing for all imported goods. Licenses were granted by the Import Control Board, based on the availability of foreign exchange as determined by the Monetary Board. The third and current trade regime focuses on export promotion. An Export Incentive Act was passed in 1970 to provide fiscal incentives (e.g., tax exemptions, deductions, and credit) as a means of promoting exports. It is implemented by the Board of Investment.

### **Internal Support**

Exchange Rate Policies. The major agricultural commodities in the Philippines are all tradables, either as import-competing (rice and corn), or export goods (coconut, bananas, sugar, and pineapple). As such, exchange rate policies significantly influence relative domestic prices, which in turn direct resource flows. The Philippine peso has long been overvalued. Its degree of overvaluation was estimated by Intal (David 1989) as shown in Table 19. Despite early attempts to

Table 19. Comparison of actual and equilibrium exchange rates in real terms, 1977-1982

Year	Real Exchange Rate (peso/U.S. \$)			Balance of Trade Deficit (billion U.S. \$)
	Actual (1)	Equilibrium (2)	2/1	
1977	6.06	7.83	1.29	--
1978	5.77	7.52	1.30	--
1979	5.44	7.04	1.29	--
1980	5.43	7.11	1.31	--
1981	5.30	7.04	1.33	--
1982	5.36	7.34	1.37	2.6
1983	--	--	--	2.4
1984	--	--	--	0.7
1985	--	--	--	0.5
1986	--	--	--	0.2
1987	--	--	--	1.0
1988	--	--	--	1.0
1989	--	--	--	2.6

SOURCES: IMF 1990a; David 1989.

float the peso in the free market and several official devaluations, the domestic currency retains an average value 1.37 times higher than its estimated equilibrium level. Although the data are somewhat dated, there is reason to believe that the currency overvaluation has continued, as suggested by the worsening trade deficit. The deficit increased from U.S. \$0.54 billion in 1985 to U.S. \$2.6 billion in 1989.

An overvalued domestic currency hurts the agricultural sector. It has been noted by Bautista (1987) that the overvalued currency has effectively lowered agricultural prices by 19 percent relative to the prices of nontradable goods and by 25 percent relative to the prices of nonagricultural products. This situation implies a substantial transfer of resources out of the agricultural sector.

Price Support. One of the major policy interventions in the agricultural sector is a state marketing monopoly. Initially, the Rice and Corn Administration (RCA) controlled domestic prices of rice and corn through its monopoly of import and export activities and through procurement and disbursement operations. In 1972, the RCA was replaced by the National Grains Authority (NGA), a corporation organized to tap other sources of private capital and to insulate its operation from political influences. In January 1981, by PD 1770, the NGA was reconstituted into a National Food Authority (NFA). Changes included expanding commodity coverage to nongrain foods such as fish, meat, fruits, and vegetables. But its primary task remained—to implement a direct procurement and distribution program to stabilize farm and consumer market prices of rice and corn.

Floor Price. A floor price program was instituted in 1973 to ensure remunerative prices for rice and corn and consequently encourage production for self-sufficiency. One of the goals of the price policy was to maintain a reasonable price ratio between fertilizer prices and farm prices for rice and corn. Table 20 shows the fertilizer-to-rice and fertilizer-to-corn price ratios. Except for 1983,

Table 20. Fertilizer-to-rice and fertilizer-to-corn ratios, 1980-1988

Year	Fertilizer/Rice	Fertilizer/Corn
1980	3.66	3.66
1981	3.53	3.72
1982	3.64	3.81
1983	4.08	3.92
1984	4.12	3.92
1985	3.78	3.81
1986	3.93	3.79
1987	2.34	2.70
1988	--	2.21

SOURCE: International Rice Research Institute 1989.

1987, and 1988, the fertilizer-to-rice price ratio fluctuated within the range of -8.25 percent to 3.96 percent, while the fertilizer-to-corn price ratio fluctuated between -2.8 percent and 2.88 percent. The high price ratio in 1983 was largely attributable to the sharp 38.68 percent increase in fertilizer price. On the other hand, the low price ratio in 1987 was caused by a decline in fertilizer price coupled with an increase in rice and corn prices.

However, Table 21 shows that, between 1977 and 1987, the prevailing farm price was lower than the government floor price during 8 of the 11 years. The probable reason for this trend is that the NFA's direct procurement program was too small—only an average of 6.2 percent of production (Table 22)—to significantly improve farm prices. In turn, this minimal participation may be attributable to budgetary constraints, facility limitations (e.g., storage and processing), and bureaucratic red tape in its transactions that drove away prospective sellers, particularly small-scale farmers. In effect, except for the 6.2 percent of production handled by the NFA, the government's support price program has not provided significant transfer payments to producers. The price support policies for rice and corn have been maintained by the new administration because of temporarily low world cereal prices.

Ceiling Price. A ceiling price policy was also put into place as an accompanying program to protect consumers from upward swings in retail prices attributable to supply instability. Table 21 also shows that the prevailing retail prices were lower than the set ceiling price in seven of nine years. This trend also implies that there was no substantial transfer payment from the government to the consumers. Moreover, buffer stock releases, which represent an average of 7.6 percent (Table 22) of consumption, might have been dictated more by inventory concerns (e.g., product deterioration) because they were made even when retail prices were lower than the ceiling price.

Table 21. Average ex-farm and retail prices of palay and milled rice relative to government support farm price and ceiling retail price, 1977-1987

Year	Prevailing Farm Price	Government Support Price	Prevailing Retail Price	Ceiling Price
	(pesos per metric ton)			
1977	1,130	1,100	2,090	2,100
1978	1,100	1,000	2,080	2,100
1979	1,160	1,250	2,260	2,350
1980	1,270	1,360	2,410	2,470
1981	1,480	1,500	2,650	2,730
1982	1,570	1,640	2,860	2,990
1983	1,710	1,750	3,060	3,200
1984	2,700	2,500	4,730	4,500
1985	3,500	3,440	6,380	5,900
1986	2,970	3,500	5,720	-
1987	3,190	3,500	5,850	-

SOURCE: FAO 1988.

Table 22. Procurement relative to production and buffer stock release as a percentage of total consumption, 1980-1987

Year	Procurement as Percent of Production	Buffer Stock Release as Percent of Consumption
1980	7.2	2
1981	7.3	8
1982	7.8	6
1983	7.3	8
1984	3.8	14
1985	4.6	--
1986	4.6	--
1987	7.2	--
Average	6.2	7.6

SOURCE: FAO 1988.



The differential between the farm price and floor price may also be explained by the initial high ceiling price and probable exclusion of some marketing costs (e.g., risk premiums) in deriving the farm support price. The ceiling price policy for rice and corn was lifted in October 1985 by Executive Order (EO) No. 1028 of May 31, 1985.

Input Subsidies. Most intervention in the input market is intended to compensate the policy-induced indirect taxation of the agricultural sector.

Irrigation. The National Irrigation Authority (NIA) was assigned to manage the irrigation system that supports the policy of self-sufficiency. Table 12 shows that 58 percent of the total area cultivated for rice had access to irrigation facilities in 1988. These areas are mostly farmed by lowland rice farmers. Because most rice farmers practice multiple cropping, however, other crops also benefit. David (1989) reported that, because of low collection rates, the effective subsidy rate on gravity irrigation is close to 90 percent, compared with the 60 percent subsidy implied by the official irrigation fee.

Credit. Almost every government production program is accompanied by a supervised/subsidized credit scheme. In the Masagana 99 Program, farmers were charged 12 percent interest, which was lower than the rate charged by commercial banks (between 12 percent and 18 percent). Noninstitutional sources charged 36 percent to 76 percent. In 1984, the Manila Reference Rate (MRR) raised the interest rate from 12 percent to 34 percent. In the Intensified Rice Production Program, however, the interest rate was reduced to 15 percent. The same is true for the most recent Rice Action Program.

If the high loan default rate is considered, the effective interest rate may be even lower than 12 percent, implying a much higher subsidy. However, credit program coverage has declined. Table 23

Table 23. Government-sponsored credit to rice farmers, 1980-1985

Year	Total Loans Granted	Number of Loans	Area Financed
	(1,000 pesos)	(1,000)	(1,000 ha)
1980	337	158	290
1981	271	126	217
1982	292	114	205
1983	269	93	175
1984	151	46	80
1985	117	30	56

SOURCE: FAO 1986.

shows that the total value of loans granted under the government-sponsored credit to rice farmers declined from a high of 337 million pesos in 1980 to 117 million pesos in 1985. Consequently, the number of farmer-beneficiaries decreased from 158,000 to 30,000 farmers. Correspondingly, the area covered by government financing declined from 290,000 hectares to 56,000 hectares. This decline may be largely attributed to the tight credit situation in the agricultural sector.

Contributing to this situation is the reserved attitude of formal lending institutions when it comes to lending to the agricultural sector because of the high risk associated with agricultural projects and the institutions' lack of expertise in dealing with this sector. This perception has significantly influenced the flow of funds; 82 percent of loanable funds for agriculture were channeled through commercial banks, 13 percent through rural banks, 4 percent through development banks, and only an insignificant amount through agricultural banks.

Fertilizer. The Fertilizer Pesticide Authority (FPA) set ex-warehouse and retail prices for fertilizer and control supply through import restrictions. The ex-warehouse prices set by the FPA reflected production costs, and retail prices were determined by adding trucking and handling costs and local taxes with a specified maximum mark-up.

As of 1985, the fertilizer market was fully liberalized and the monopoly position of the four fertilizer companies was eliminated. The new policy ensures that ex-warehouse price is linked to import price.

### **Border Measures**

Liberalization Policy. The new administration has adopted a general liberalization policy in the economy. Specifically, 1,232 import items were to be removed from various controls between 1986 and 1988. In 1986, only 303 products were still covered by the quantitative restrictions: 180

intermediate and capital goods, 101 raw materials, and 22 consumer goods. Tariff rates of up to 50 percent have been imposed on the 929 import items lifted from import restrictions. Such rates are to be adjusted to a uniform level over a five-year period.

Further sweeping Philippine tariff reforms were spelled out in EO 413, which was intended to overhaul the system. Under this order, duties on most imports would have been reduced to a maximum of 30 percent, with immediate effect. However, the current administration suspended this order in August 1990 in favor of a less effective version.

The new EO 470, signed on July 20, 1991, and effective on August 22, 1991, gave domestic industries four years to prepare for increased competition from foreign goods that will result from reduced rates. Under this new order, effective protection is to be reduced from 25 percent to 21 percent over a four-year period ending July 1995. EO 470 has a four-tier tariff structure: 3 percent imposed on raw materials not produced domestically, 10 percent on raw materials not available locally, 20 percent on all intermediate goods, and 30 percent on finished goods. In addition, a 50 percent tariff is imposed on 179 specific commodities. It is claimed that EO 470 rationalizes the tariff system and corrects the decades-old bias of trade policies against agriculture.

Import Restrictions. The NFA had sole control over imports and exports of commodities under its expanded coverage, which included most of the major commodities produced, consumed, and traded. However, the NFA could choose to allocate quotas to licensed importers.

For rice and corn, the NFA's objective is to have stocks equivalent to a 90-day consumption requirement, with one-third held by the NFA and two-thirds held by the private sector. The NFA's virtual control over rice exports and imports is related to this buffer stock management. The NFA has no specific policy on trade and no intention to promote rice exports, and exports have been lower

than the available exportable surplus. This situation is largely attributable to difficulties in finding a market for a rice product with a high percentage of brokens. In some instances, rice was exported at prices below domestic levels.

Because of these problems, rice exports were liberalized in 1985. Private traders were allowed, but the NFA still held a monopoly in rice imports. The decision to import is subject to the certification of the policymaking body of the NFA after consultation with the President's office, as provided for in Section 69 (xii) of PD No. 4.

From 1975 to 1985, the NFA imported wheat as originally requested by the Philippine Association of Flour Millers (PAFMIL), a private association, as a means of extending government assistance to their industry because of the rising world prices of wheat grains. Because the NFA is a government corporation, its imports are free of custom duties and taxes. However, by EO No. 1028 of 1985, wheat imports and distribution have been opened to all private traders.

In some cases, other government agencies also need to give permission before importing of agricultural commodities is allowed. For example, EO No. 109, Ministry of Agriculture Memo Circular No. 6, provides that the Bureau of Internal Revenue and National Tobacco Administration has to approve blending tobacco imports. Imports of seeds and other planting material is to be approved by the Bureau of Plant Industry. Imports of live animals and beef, pork, and poultry meat require approval of the Bureau of Animal Industry, which gives preferential treatment to five-star hotels and accredited meat processors.

Imports of other agricultural commodities are totally banned (e.g., coffee, fresh garlic, onions, potatoes, and cabbage). And imports of fresh fruits, vegetables, and plants are subject to plant quarantine requirements.

Tariff. The government charges an ad valorem import duty on all agricultural products. The USDA (1990) reports that duty rates range from 10 percent to 50 percent. For example, the duty for corn, frozen beef, and pork is 20 percent, and the duty for rice and poultry meat is 50 percent. Underlying most of this trade regime is the principle of charging higher rates on nonessential commodities such as fresh and processed fruits, nuts, wine, and snack foods, which are assessed a basic 50 percent ad valorem import duty.

David (1989) estimated the nominal protection rates of major agricultural commodities (Table 24). Comparing domestic and border prices, David reported that nominal rates of agricultural protection are relatively low. Moreover, because the NFA controls the international trade of most of these commodities, the protection rates are not fully realized because the NFA is exempt from government duties and taxes. The trend in the estimated nominal protection rate (NPR) has been consistent in the period studied. That is, traditional agricultural exports, such as sugar, bananas, pineapple, tobacco, abaca, and copra, have negative NPR values, implying that domestic prices of these commodities were lower than their border prices. On the other hand, import-competing agricultural commodities such as corn, poultry, and livestock have positive NPRs, implying some degree of protection. Although these values are relatively old, there is strong evidence that the trend in NPRs continues to follow the same pattern. For example, Krueger, Schiff, and Valdes (1988) selected representative export and import commodities in estimating the 1984 NPR. The NPRs for copra and corn were -26 and 26, respectively. And these are very close to the NPRs estimated by David.

Table 24. Trends in nominal protection rates in Philippine agriculture, 1970-1984

Commodity	1970-1974	1975-1979	1980-1982	1984
<b>Import-Competing</b>				
Rice	7	-5	-5	--
Corn	20	20	20	26
Beef	-32	17	57	--
Pork	18	-3	6	--
Chicken Meat	55	58	85	--
Eggs	18	11	37	--
Fertilizer	--	--	65	--
<b>Export</b>				
Sugar	36	-16	4	--
Copra	-12	-22	-30	-26
Bananas, Abaca	-4	-4	-4	--

SOURCES: David 1989; Krueger, Schiff, and Valdes 1988.

Rice may be an artificial case. Its negative NPR may have been caused by the massive production program coinciding with the period of negative NPRs. More recent data, however, show consistently positive NPRs in the range of 7 percent to 26 percent (Table 25). Nitrogen fertilizer also showed a consistently positive NPR over the same period, ranging from 11 percent to 179 percent.

On the other hand, Bautista (1987) estimated the effective tariff protection rates for some processed agricultural products (Table 26). Bautista noted that protected commodities have very high effective tariff protection rates intended to encourage domestic production as a substitute for the imported equivalent. Exported commodities show a negative effective protection rate.

Bautista also reported that effective agricultural protection is also lower than the average protection in manufacturing, consequently distorting the relative price in favor of the manufacturing sector. This problem is partially corrected by EO 470.

### **Export Subsidies and Taxes**

The previous administration was very aggressive in taxing agricultural exports, particularly coconut-based products. These taxes were justified as strategies to generate funds for stabilization and development purposes. The current administration, however, has abolished export taxes and dismantled the agricultural trade monopolies that collected the taxes.

## **Possible Impact of GATT-Related Policy Changes**

### **Reductions in Trade-Distorting Internal Support**

Reducing direct payments through the GATT agreement will not have a significant impact on Philippine agriculture. Direct payment programs are limited to rice and corn, and the prevailing farm price is lower than the government support price in most years, making transfer payments not very



Table 25. Nominal protection rates for rice and fertilizer, 1980-1988

Year	Rice NPR	Fertilizer NPR
1980	-27	11
1981	-22	26
1982	26	73
1983	7	76
1984	15	44
1985	64	108
1986	47	44
1987	24	34
1988	7	179

SOURCE: International Rice Research Institute 1989.

Table 26. Estimates of effective tariff protection rates for processed agricultural commodities, 1985

Commodity	Rate
Processed Fish and Other Seafood	215.9
Meat Products	178.4
Rice Milling	98.0
Other Grain Mill Products	74.9
Processed Fruit and Vegetables	72.4
Bakery Products	44.2
Other Manufactured Food	36.7
Other Oils and Fats	33.5
Dairy Products	30.4
Cocoa, Chocolate, and Sugar	30.1
Fertilizer and Lime	16.7
Tractors and Other Machinery	13.7
Coconut Oil	-0.6
Sugar Milling and Refining	-0.9
Desiccated Coconut Products	-2.6

SOURCE: Bautista 1988.

substantial. Moreover, the government procurement program handled only an average of 6.2 percent of production. Further evidence of limited government support is the fact that the allocation for price and marketing support programs represents only 3.5 percent of the total government expenditure in agriculture.

Even before any of the GATT-initiated reduction in trade-distorting internal support is implemented, the Philippine government has already unilaterally reduced input subsidies because of fiscal constraints. The fertilizer subsidy was abolished in the late 1970s. Coverage of supervised and subsidized credit has been declining, as shown in Table 23. And interest rates under this program have been adjusted upward several times to make them comparable to market rates. However, the irrigation subsidy may be affected by the GATT agreement. This subsidy has been continued by the government because it does not require a large direct cost after the initial phase of capital investment for infrastructure. The recurring cost is relatively small. Moreover, 30 percent of the effective subsidy is really attributable to farmer payment default. The government may hope to exempt this type of subsidy because farmers also use irrigation to produce essential food crops for home consumption. And compliance with any new irrigation policy may be difficult and costly.

#### **Tariffication, Minimum Access, and Export Subsidies**

The significant impact of a GATT agreement on tariffication and minimum access may be felt in the processed and semiprocessed agricultural commodities. The implied effective tariff rates of these commodities are rather high. Foremost on this list are meat and meat preparations, fertilizers, and feeds.

Only a few commodities may be affected by the minimum access provision, including coffee, fresh garlic, onions, potatoes, and cabbage, with total bans on imports. However, these are not major commodities whether by production, consumption, and/or trade consideration.

Changes in export policies (e.g., removal of subsidies) will not be an important issue in the Philippines. Agricultural exports (particularly sugar and coconut products) have traditionally been taxed, not subsidized. And these taxes have been removed by the current administration.

#### **Implications of Policy Changes on the Agricultural Sector and Trade Position**

In general, the effect of GATT-induced policy changes will have mixed impacts on the different agricultural subsectors. However, the overall distributional effects may be adverse. With a growing population, the demand for cereals (particularly rice) will increase, and the production capacity of the rice subsector may not be sufficient to meet this increased demand. Available land for expanded production is very limited, and yield increases from modern rice varieties marginal. With the removal of nontariff barriers and reduction of tariff rates over time, the Philippines may revert to being a regular rice importer. This situation will surely hurt small-scale rice farmers, especially when rice imports are substantial enough to significantly dampen the domestic price of rice. Moreover, the shift to wheat-based food items may be facilitated if wheat can be imported at lower tariff rates. Corn imports may be necessary to support a growing livestock industry. This will not seriously hurt subsistence farmers, however, because their corn is mostly for home consumption.

The livestock industry in the Philippines is undergoing major structural improvements. Shifts to commercial production and vertical integration are increasingly common. The fast pace of this transformation may have been initially attributable to the high degree of protection granted to this sector. Increased competition from imported commodities (from reduced rates) will increasingly

drive small-scale producers out of production. Feed imports may also increase if local production cannot keep pace with increasing demand from the poultry and livestock sectors.

The outlook for traditional agricultural exports (e.g., sugar and coconut-based products) is not very encouraging. World sugar prices have decreased and the productive infrastructure of the sugar industry collapsed in the late 1980s. It will take a significant amount of capital to renovate these facilities. The declining demand for coconut-based products will be the real problem for coconut producers. Also, replanting efforts have been a total failure. Current coconut production largely depends on the old trees, with no second-generation trees to replace them. Any improved demand for these traditional exports because of GATT reforms may not be capitalized on because of poor production capacity.

### **Summary and Conclusions**

Because of fiscal constraints, the Philippine government has been unilaterally reducing input subsidies to agriculture, including subsidized credit and fertilizer. For the remaining significant subsidy for irrigation, the country may hope to be exempted from GATT discipline because the same irrigation facilities are used by small-scale farmers to produce food crops primarily for home consumption. Moreover, the effective subsidy is largely caused by farmers defaulting on their payments. Any new policy to remedy this situation may be costly to implement and monitor.

Semiprocessed and processed agricultural inputs and goods (e.g., feeds, fertilizer, meat, and meat preparations) will be affected the most by the removal of nontariff barriers and reduction of tariff rates. These commodities are highly protected in the current trade regime.

Any improvement in world demand for traditional agricultural export products (e.g., sugar and coconut-based products) from GATT reforms in importing countries may not be fully captured by the Philippines because of the obsolete production infrastructure for these export commodities. Overall, the country may have greater imports than exports when GATT reforms are implemented.

## REFERENCES

- Baldwin, R.E. 1975. *Foreign Trade Regimes and Economic Development: The Philippines*. Vol 5, NBER.
- Baustista, R.M. 1987. "Production Incentives in Philippine Agriculture: Effects of Trade and Exchange Rate Policies." Research Report 59, International Food Policy Research Institute, May.
- \_\_\_\_\_. 1988. "Impediments to Trade Liberalization in the Philippines." Thames Series, Trade Policy Research Center.
- David, C.C. 1989. "Philippines: Price Policy in Transition." In *Food Price Policy in Asia*, T. Sicular, (ed.). Ithaca: Cornell University Press.
- Food and Agriculture Organization (FAO). 1986. "Rice Policy in the Philippines." Rome, Italy: FAO.
- \_\_\_\_\_. 1988. "Government Intervention in Foodgrain Distribution in the Philippines." Rome, Italy: FAO.
- \_\_\_\_\_. 1989a. *FAO Yearbook: Production*. FAO Statistics Series No. 94. Rome, Italy: FAO.
- \_\_\_\_\_. 1989b. *Trade Statistics*. Rome, Italy: FAO.
- International Monetary Fund (IMF). 1990a. *Balance Of Payments Statistics Yearbook*. Washington, DC: IMF.
- \_\_\_\_\_. 1990b. *Direction of Trade Statistics Yearbook*. Washington, DC: IMF.
- \_\_\_\_\_. 1990c. *Government Finance Statistics Yearbook*. Washington, DC: IMF.
- \_\_\_\_\_. 1990d. *International Financial Statistics Yearbook*. Washington, DC: IMF.
- International Rice Research Institute. 1989. Facsimile information received by the author from the Department of Agricultural Economics, Manila, Philippines.
- Krueger, A., O.M. Schiff, and A. Valdes. 1988. "Agricultural Incentives in Developing Countries: Measuring the Effect of Sectoral and Economywide Policies." *The World Bank Economic Review* 2(3).
- National Economic Development Authority (NEDA). 1989. *Philippine Statistical Yearbook*. Quezon City, Philippines: NEDA.

Trade Office, Philippine Embassy. 1991. Data sheets received by author.

U.S. Department of Agriculture (USDA). 1990. "Compilation of Emerging Countries' Methods to Protect Agriculture and Expand Overseas Markets." Washington, DC: U.S. Department of Agriculture, Foreign Agricultural Service.

The World Bank. 1990. *World Development Report*. 1990. London: Oxford University Press.