WORKING PAPER 37

Effects of Trade Liberalization on Agriculture in the Philippines: Institutional and Structural Aspects

Minda C. Mangabat

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Abbreviations

AF	-	The Asia Foundation
AFTA-CEPT	-	ASEAN Free Trade Area-Common Effective Preferential Tariff
APEC	-	Asia Pacific Economic Cooperation
APRAAP	-	Agricultural Policy Research and Advocacy Assistance Program
ASEAN	-	Association of South East Asian Nations
BAI	-	Bureau of Animal Industry
BAS	-	Bureau of Agricultural Statistics
BFAD	-	Bureau of Food and Drugs
BFAR	-	Bureau of Fisheries and Aquatic Resources
BPI	-	Bureau of Plant Industry
BPRE	-	Bureau of Postharvest Research
CB	-	Central Bank
CEF	-	Competitiveness Enchancement Fund
DA	-	Department of Agriculture
DOH	-	Department of Health
DOLE	-	Department of Labor and Employment
DPWH	-	Department of Public Works and Highway
DTI	-	Department of Trade and Industry
EO	-	Executive Order
FAO	-	Food and Agricultural Organization
FDC	-	Food Development Center
f.o.b.	-	Free on board
GATT-UR/WTO	-	General Agreement on Tariffs and Trade-Uruguay Round/World Trade organization
GDP	-	Gross Domestic Product
GVA	-	Gross Value Added
HVCC	-	High Value Commercial Crops
IAP	-	Individual Action Plan
ILP	-	Import Liberalization Program
ISO	-	International Standards Organization
MAV	-	Minimum Access Volume
MO	-	Memorandum Order
NFA	-	National Food Authority
NMIC	-	National Meat Inspection Commission
NSCB	-	National Statistical Coordination Board
NSO	-	National Statistics Office
ODE	-	Office of International des Epizootes
OIE	-	International des Epizootes
PCA	-	Philippine Coconut Authority
PECC	-	Pacific Economic Cooperation
PEZA	-	Philippine Economic Zone Authority
PhilRice	-	Philippine Rice Research Institute
PIDS	-	Philippine Institute of Development Studies
QR	-	Quantitative restriction

RA	-	Republic Act
SPS	-	Sanitary and Phytosanitary Standards
TRP	-	Tariff Reform Program
VQC	-	Veterinary Quarantine Clearance

Foreword

Responding to the growing concern for the effects of trade liberalization on regional agriculture, the CGPRT Centre started a research project "Effects of Trade Liberalization on Agriculture in Selected Asian Countries with Special Focus on CGPRT Crops (TradeLib)" in March 1997, in collaboration with partners from ten countries: China, India, Indonesia, Japan, Malaysia, Pakistan, the Philippines, the Republic of Korea, Thailand and Vietnam. In all these countries, important issues regarding trade liberalization were investigated with an identical research framework by national experts.

The investigation covers major crops which might receive either favorable or unfavorable effects of trade liberalization both in export and import. I believe that readers of the reports can obtain broad and practical knowledge on institutional aspects of the effects of trade liberalization; moreover, the information will be useful for researchers and policy planners in other countries in the region. A volume which includes more commodity and location-oriented study on the same subject will follow. I would like to note that, since this project was conceived and started before the current currency and economic crisis began in the middle of 1997, the analysis handles basically the period before the crisis with possible current information.

I am pleased to publish **Effects of Trade Liberalization on Agriculture in the Philippines: Institutional and Structural Aspects** as one of the fruits of the project. I certainly hope this report will be fully utilized for the improvement of agricultural trade and the encouragement of regional agriculture.

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Executive Summary

The share of Philippine agriculture sector to national output or GDP has been declining, from 30% on average from 1966 to the mid-1970s down to 20% in 1997. Nonetheless, the sector's contribution to the country's economy remains significant, accounting for 9.3% to total export earnings, 8.6% to import expenditures and 42% to total employment.

The Philippines underwent a long history of protective trade policies which resulted in the country's limited participation in international trade in the past. Import and exchange controls were employed in light of recurrent disequilibrium in the country's balance of payments and were used increasingly to promote industrialization through import substitution. It should be noted that import substitution policies, exchange rate and import controls also contributed to the declining share of the agriculture sector to GDP. Attempts towards unilateral trade reforms in the country took place initially in the 1960s and resumed in the 1980s. Partial trade liberalization continued on in the 1990s and intensified at the onset of regional trading agreements such as the ASEAN, AFTA-CEPT and the multilateral trading agreement under the GATT-UR/WTO.

The present study provides an overview of the trade regime in the Philippines including related exchange rate, monetary, and fiscal policy information; infrastructure development; agricultural trade; production situation and important issues on agricultural trade liberalization on selected CGPRT crops (rice, maize, soybean, cassava, potato) and other major agricultural commodities (coconut, chicken, hogs, beef).

Since the economic reconstruction (1910-1938) and colonial (1946-1949) periods, exchange rate and import controls were increasingly utilized in addressing recurrent balance of payment (BOP) crises. A fixed exchange rate of 2 pesos per US dollar prevailed until the early 1960s and resulted in an overvaluation of the Philippine peso, adversely affecting agricultural exports which dominated the country's exports at that time. With import controls, on the other hand, foreign exchange was allocated based on the essentiality of goods rather than comparative advantage. The exchange rate and import controls are traced to the Bell Trade Act which required US approval of a change in Philippine exchange rate, prohibited import taxes, and ruled out tariff increases since the bulk of the country's imports came from the US. Upon expiration of the Bell Trade Act in 1955, tariffs replaced exchange control in regulating imports and protecting domestic industries.

The first attempt in trade reform took place in the early 1960s. Under a decontrol program, imports and export licenses were no longer required. In late 1965 the peso was formally devalued from the fixed exchange rate of 2 pesos to 3.90 pesos per US dollar, which became the official parity rate. In the mid-1960s, expansionary monetary and fiscal policies resulted in the deterioration and worsening of the BOP which necessitated the restoration of exchange rate and import controls.

Trade policy continued to protect domestic industries in the 1970s. Import controls became more restrictive as the number of regulated commodity lines increased from 1,307 lines in 1970 to 1,820 lines in 1980. Instead of tariff reforms, export promotion compensated for the continued bias against exports.

Due to major flaws and limitations of past protective policies, a second attempt at trade reform began in 1981 amidst a worsening trade deficit due to an expansionary fiscal policy. As part of the country's industrial structural adjustment program, a Tariff Reform Program (TRP) and an Import Liberalization Program (ILP) were implemented. The TRP provided for a uniform level of protection among and within sectors of the economy, reduced effective production rates (EPR) and reduced tariff rates from 100 to within the range 10 to 50%. The

initial schedule of the ILP included the removal from the list of restricted items – 263 lines in 1981 and 617 lines in 1982, reducing the number of restricted items, respectively, by 24% and 20% from the previous year's levels. Due to a BOP crisis which began in 1983, the ILP was postponed for three years and exchange and import controls were re-imposed. In order to discourage imports, the peso was devalued three times from mid-1983 to mid-1984 and floated in late 1984. Import liberalization resumed in 1986 with more items liberalized but mostly manufactured goods; agricultural export taxes were abolished; fertilizer and wheat imports were liberalized but maize imports were banned temporarily.

After the completion of the TRP in 1985, a new round of unilateral tariff reductions followed. Executive Order (EO) 470 in mid-1991 reduced the number of high tariff commodity lines and increased the number of low tariff commodity lines. EO 8 issued in mid-1992 replaced QRs by tariffs but was later reversed by the Magna Carta for Farmers which required the imposition of QRs as a means of protecting agricultural products in sufficient supply. In early 1993, Memorandum (MO) 95 restored the QRs on certain commodities including maize, pork and poultry meat.

Trade reforms intensified with recent multilateral and regional trading agreements. Under the GATT-UR/WTO, the Philippines is committed to two of the four major areas of concern of the UR Agreement on Agriculture: market access and sanitary and phytosanitary (SPS) measures. There are no export subsidies in the country and the value of agricultural subsidies are less than the 10% ceiling level for developing countries, hence, the country made no commitments on these areas. Under market access, the tariffication of quantitative restrictions (QRs) is legislated through the Republic Act (RA) 8178. The tariffs for sensitive agricultural products are mostly 100% in 1995 and 1996 which are generally above the nominal protective rates under the QRs. These rates will be reduced to within the range of 10 to 50% by the years 2003 and 2004. The Philippines sought the postponement of rice tariffication.

Tariff reduction is also the major feature of the ASEAN Free Trade Association (AFTA) which aims to transform the ASEAN region into a free trade area by the year 2003. For the Philippines a total of 391 primary agricultural products are included in the Common Effective Preferential Tariff (CEPT) scheme of the AFTA. By the year 2003, lower tariff rates will be imposed on these products, although highly sensitive imports may still be allowed higher tariffs. The Philippines suggested exclusion of rice in the AFTA-CEPT scheme as it is deemed that Filipino rice farmers are not yet prepared to face competition from its neighboring ASEAN partners.

Under the Asia Pacific Economic Cooperation (APEC), the Philippine tariff reductions under the UR bound tariffs, APEC Bogor and individual action plan (IAP) follow a downward trend but lower rates for the IAP.

Infrastructure such as land, water and air transport facilities are important support to international trade directly and indirectly. Investment in infrastructure in the Philippines intensified in the late 1960s until the late 1970s. After this period, due to fiscal constraints infrastructure investment continued but at a reduced pace and most of the infrastructure was completion of existing projects. In the early 1990s public infrastructure investment accounted for only 2% of GDP compared with a 5% share in the late 1970s to the early 1980s. Large infrastructure programs were financed mostly from external credit.

The above situation is illustrated by the status in road development, the largest component of infrastructure investment. In a span of three decades from 1965 to 1997, the total length of road in the Philippines almost tripled from 56 thousand to 161 thousand kilometers. Road construction grew on average, at an annual compounded rate of 7% from 1965 to 1980, but it slowed down to 1.3% in 1981 to 1985, with minimal growth of only 0.03% from 1996 to 1997.

In 1997, more than two-thirds of the total length of roads in the country is made of gravel, asphalt and concrete portions 18% and earth road, 5%. Rural roads comprised more than

one-half of the total road length. This sector, however, receives the smallest share of investment allocation. In recognition of the importance of rural road development to the competitiveness of agricultural products especially with the current trend in trade liberalization, an agricultural Competitiveness Enhancement Fund (CEF) is formed from the tariff proceeds of the Minimum Access Volumes (MAV) of the Department of Agriculture (DA) part of which is earmarked for the development of farm to market roads.

Due to physically dispersed islands in the Philippines, ports and water vessels and airports are equally important with road facilities. The number of ports has increased by 9% over the period 1994 to 1996. Seven of the government airports are international airports. A greater volume of traded goods is carried by sea relative to air transport due to higher costs of the latter.

In the agriculture sector, the development of production and post-harvest facilities is carried out by the DA through its various sectoral programs. Under its grain program, the DA has embarked on irrigation projects such as water impounding, shallow tube-well and deep tube-well irrigation. Support in postharvest facilities is provided through the construction of multipurpose drying pavements, distribution of small mechanical dryers aimed at improving timeliness in grain drying operations and moisture meters to be used in monitoring moisture content of maize for the prevention and control of aflatoxin. Facilities for rice milling, grain storage (warehouses) and transport have also improved although these are mostly within the private sector.

One-third of existing livestock auctions are below the standards of the National Meat Inspection Commission (NMIC). Thirty abattoirs are for rehabilitation and new construction. Only 1% of abbatoirs conform to international standards. These concerns are being addressed under the DA's livestock program.

Institutional services, primarily sanitary and phytosanitary (SPS) measures, complement physical infrastructure supporting international trade. Several studies have shown that, in general, the Philippines has yet to establish its own standards for most plant and plant products, meat and meat products, and fisheries and marine products for adoption or submission to Codex Alimentarius Commission of the Food and Agricultural Organization (FAO). These inadequacies are attributed to laboratory facility and personnel constraints. Most of the Philippine standards for product export, for example, are adjusted or based on the Codex for requirements of importing countries.

The value of exports and imports increased beginning in 1987 but imports have outpaced exports, which resulted in large trade deficits. The trade deficit-GDP ratio in 1997 doubled the ratio in 1980. The proportion of total export value to GDP was increasing but the level of export earnings was not sufficient to cover the import needs of the other sectors of the economy.

Consistent with the declining relative importance of the agriculture sector to GDP is a corresponding decline of agricultural foreign trade. In the early 1980s, agricultural exports which include processed agricultural products (e.g. coconut oil and pineapple juice) and agro-industrial products (e.g. agricultural machinery) contributed about a third to total export value. This share dropped to 9% in 1997 in view of the increasing non-agricultural manufactured exports especially electronics. Also, the share of agricultural imports to total imports declined from 11% in the early 1980s to about 9% in 1997.

The Tariff Reform Program (TRP) and Import Liberalization Program (ILP) resulted in increased agricultural trade beginning in 1988. However, agricultural imports exceeded exports, which gradually eroded the agricultural trade balance such that deficits incurred beginning 1994 and increased further with trade liberalization.

"Food and Live Animals Chiefly for Food" captured, on average, 90% of total agricultural imports in the period 1980-1997. Under this classification, the three major exports and their contributions are vegetables and fruits (50%), fish and fish preparations (17%), sugar and sugar preparations and honey (12%).

Over the reference period of 1980-1997, seven commodities have been consistently in the top ten exports: coconut oil, desiccated coconut, copra oil cake/meal, sugar, fresh banana, pineapple and pineapple products, and tuna in fresh, frozen and chilled forms. Shrimps and prawns, fresh, frozen and chilled, were also in the top ten exports except in 1980 and 1982. Coconut oil remains as the largest contributor to agricultural exports. The value of exports in 1997 reached US$ 673 million, 18% above the 1996 level. Export proceeds from dessicated coconut ranked among the top five from 1980-1987 but went down to number eight mostly after this period. Value of exports in 1996 to 1997 averaged US$ 86 million. Copra oil cake/meal and copra exports have declined in importance especially copra due to a shift from raw to processed coconut product exports.

Earnings from centrifugal sugar exports were second to coconut oil from 1980 to 1985 but declined to lower rankings, sixth in 1996 and ninth in 1997. The volume of annual exports has declined substantially from an average of 963 thousand tons in the first half of the 1980s to 198 thousand tons in 1987. This has been attributed to the removal of preferential treatment of Philippine sugar in the U.S., emergence of sugar substitutes and declining productivity.

Pineapple and pineapple product exports were stable, mostly either as the number four or number five agricultural export earner. Annual export values in 1996 and 1997 averaged US$153 million. Fresh banana was the second largest agricultural export from 1995 to 1997, contributing on average US $226 million annually.

Fishery export is dominated by tuna, shrimps and prawns, seaweed and carageenan. Shrimps and prawns accounted for the second largest share of agricultural export earnings from 1987 to 1992 and 1994 with a yearly average of US$ 225 million. It ranked sixth in 1996 and 1997 with annual earnings of US$ 140 million. Seaweed and carageenan were in the leading ten agricultural exports beginning in 1995, contributing US$ 83 million or the seventh largest. Annual export receipts in 1996 and 1997 were US$ 94 million.

Between 1998 and 1997, the annual average value of manufactured fertilizer exports was mostly the seventh largest, US$ 94 million. As a non-traditional export crop, green bean coffee shipments outside the country earned substantially from 1984 to 1986 with peak of US$ 119 million in 1986 resulting from the coffee frost in Brazil. Exports dwindled, and starting in 1990 the value of exports was no longer in the top ten. As for traditional export crops, unmanufactured tobacco was last included in the top ten exports in 1994 and abaca registered in the top ten only in 1983 and 1984 in the whole period of 1980-1997.

The U.S. is the major trading partner of the Philippines for its coconut oil, dessicated coconut, sugar, coffee, unmanufactured tobacco, abaca, pineapple and pineapple products, tuna and seaweed and carageenan in more recent years. Japan is the biggest market for fresh banana, shrimps and prawn; also a major destination for tuna and pineapple and pineapple products. Copra oil cake/meal, seaweed and carageenan are shipped largely to the European markets. In 1996 and 1997, Vietnam was the biggest buyer of manufactured fertilizer.

A consistent pattern between trade reform and share of agricultural imports to GDP is observed. When import controls were re-instituted in the mid-1980s, the share of agricultural imports to GDP decreased. It increased during the trade reforms in the late 1980. This pattern became more apparent in 1995 to 1997. The impact of reforms in import policies is more indicative in foodcrops and livestock imports. The percentage share to agricultural GDP in 1997 was more than twice the share in 1980 and almost doubled in the case of foodcrops.

Food and live animals chiefly for food constitute the bulk of agricultural imports. It accounted for about two-thirds, on average, of the annual total agricultural import value from 1990 onwards. In the first year of the GATT-UR in 1995, import values increased by 38% from

the 1991 levels. The second and third largest groups of agricultural imports during the 1980-1997 period were, respectively, inedible crude materials and manufactured fertilizer. The values of imports of other commodity groups such as animal and vegetable oils, agricultural chemicals and materials, agricultural machinery and manufactured fertilizer have increased from 1994 to 1997.

From 1980 to 1997, six commodities were consistently in the top ten imports: wheat and meslin, milk and cream products, urea, soyabean oil/cake and other residue, cotton and unmanufactured tobacco. Flour, meals and pellets of fish, meat and crustaceans were in the leading ten imports except in 1983. Whole and ground malt were in the top ten list until 1993. Unmilled maize, rice, meat of bovine animals and agricultural machinery were in the top list for several years. Soybean and manufactured tobacco were in the top ten, respectively, only in 1991 and in 1993.

The three leading imports are wheat and meslin, milk and cream products and soybean oil cake/residue. Wheat is used both as food substitute for rice and as a feed substitute for maize. As a result of the lower tariff for wheat used for food compared to a higher tariff for wheat as feed, part of wheat imports for food were diverted to feed. Wheat and meslin imports have been increasing. In 1997, the value of imports was US$ 423 million which was 13% more than its 1996 level and 21% above 1995 imports. The U.S. is the largest supplier of wheat with an average value of US$ 245 million from 1991 to 1997.

About 90% of the country's dairy products are imported. Milk and cream products ranked as the second largest imports in most years from 1990 to 1997. Imports in 1996 amounted to US$ 329 million but decreased to US$ 303 million in 1997. Australia is the largest source of dairy products, accounting for 48% and 43% of total value of imports in 1996 and 1997, respectively.

Most soybean product imports are in the form of oil cake and other residue. From 1991 to 1997, average annual imports were US$ 142 million. In more recent years the U.S. has captured the Philippine market for soybean. In 1996 and 1997, annual imports from the U.S. averaged US 64 million representing 46% of total annual imports in the two year period.

Rice imports accounted were the third largest in 1996 and 1997. The value of imports peaked in 1996 at US$ 294 million. Another large shipment occurred in 1997 valued at US$ 211 million, as a hedge against expected production shortfalls in the first quarter of 1997 due to the El Niño. Imports from Vietnam comprised 41% of the total value of imports in 1996 and 47% in 1997. Thailand was the second largest source, accounting for 18% of total import expenditures in 1996 and 29% in 1997.

Paddy production is increasing but at a decreasing rate. The gap between annual paddy production and total use is widening. The deficit years, which were associated with adverse weather conditions, outnumbered self-sufficiency periods. On grounds of food security and lack of competitiveness of small rice farmers, the tariffication of rice has been postponed under the GATT-UR/WTO until the year 2004. Also, initial high tariff rates for rice have been sought under the AFTA-CEPT. Even with the tariffication of rice in the year 2004, the level of protection to farmers is not lessened, because the government can always intervene in domestic pricing. Domestic prices of rice are kept above international prices. According to a study by the Department of Agriculture (DA), trade liberalization would have a neutral effect on rice.

Maize plays an important role in Philippines agriculture both as food and particularly as feed to the rapidly growing livestock and poultry industries. More than 60% of maize demand is for animal feed, which is mainly yellow maize. Over the period 1980-1997 the share of feed in the total usage of maize has followed an increasing trend due to proportionate increases in swine and chicken inventories especially the latter. In spite of productivity gains in yellow maize production resulting from the government's yellow maize programs and R&D activities in open pollinated varieties, adverse weather conditions, particularly droughts have affected productivity. Total domestic maize production net of stocks has not been sufficient to meet

total maize requirements, making the country a net importer of maize except in 1988 and 1990 when maize surpluses were noted. Maize imports in the last 18 years up to 1997 depended on the adequacy of stocks. Under the GATT-UR/WTO, previous quantitative restrictions on maize imports were replaced with out-quota tariffs of 100% which will be gradually reduced to 50% by 2004. Under the AFTA-CEPT, maize is included in the list of 25 sensitive farm products whose tariffs would be reduced to 5% in 2009. Similar to rice, domestic maize prices are above international prices, which is traced to the high distribution and marketing costs, due to the long distances from the maize producers to the maize millers and feedmillers. Previous studies show that marketing and distribution costs from the farmgate to the users are more than twice the costs in Thailand. Domestic transport costs account for one-third to one-half of marketing costs for grains such as maize, compared to a share of one-fourth in other ASEAN countries. The conditions of the rural roads and shipping contribute the highest cost effect. The system of arrastre and stevedoring in the Philippines makes cargo handling costs the highest in the ASEAN region. Moreover, domestic fuel costs exceed the costs in other ASEAN countries. High distribution and marketing costs and lower yields due to adverse weather conditions make the Filipino maize farmers, especially the small farmers, less competitive than their counterparts in the larger maize producing countries. If these conditions are not addressed, trade liberalization will place the marginal and subsistence maize farmers in the Philippines at risk. Reliance on the domestic maize supply will also make the livestock industry, especially chicken and pork, uncompetitive due to high cost of maize as feed. It has been suggested in some studies to further lower the maize tariff or at the extreme allow importation of maize free of duty. It has been argued that while this would displace the marginal and subsistence maize farmers, the resources could flow to smallholder livestock. The displaced maize farmers can still shift to high value commercial crops (HVCC).

In the livestock sector, chicken is the fastest growing component. Domestic chicken meat production is generally sufficient for domestic requirements, resulting in minimal imports of poultry meat. This is due primarily to the highly commercialized nature of chicken production systems which are left largely to the private sector. Partial trade liberalization under Executive Orders 470 and 8 supported the industry in the form of lower tariffs on import of purebred live chickens, which are good parent stock. The GATT-UR/WTO tariff rate for purebred breeders is a 10% base rate and a 10 to 15% ceiling rate. Domestic poultry meat production including offal is protected currently with a tariff rate of 100% to be reduced to 40% by the year 2000.

Pork accounts for about one-half of the total domestic supply of meat in the Philippines. The pork supply has been relatively stable because of improved domestic production and imports of breeder stocks. The supply availability has ensured stable prices except in 1990 when pork prices went up due to high feed cost. Pork meat export has been declining while imports of breeder stocks are increasing. Tariff rates for swine carcass meat and offal under the GATT-UR/WTO are 100% to 40% from 1995 to 2000, which is above the duties imposed on bovine animals. This did not, however, discourage imports. As the maize and livestock industries are highly dependent, high costs of maize feeds will put at risk the livestock small holders.

As an result of the Import Liberalization Program in 1990-1993, lower tariffs were imposed on live animal importation especially cattle for fattening and for breeding. As a result beef production grew by 9% yearly from 1993 to 1997. Under the GATT-UR/WTO, the initial tariff rate in 1995 was 10% to be reduced to 5% in the year 2000, compared to a 3% duty before the GATT-UR/WTO. Feeder cattle have tariff rates of 20 to 10% in the period 1995-2000. The Philippines made an error in computing the minimum access volume (MAV) of beef submitted to the GATT-UR/WTO. The quantity of beef imports under the MAV was overestimated by 1.8 to 1.9 thousand metric tons. Although this has already been rectified, this had implications for the protection of domestic producers.

The Philippines continues to be the largest supplier of coconut products in the world market contributing more than half to total world supply of coconut oil and copra. The country is, however, a price taker in the world market for coconut oil since this product comprises only 5% of the total world market for vegetable oils. Under the GATT-UR/WTO, the initial bound rate for coconut product exports in 1995 was 70% to be reduced at the old rate of 50% for coconut oil and desiccated coconut, and 60% for copra. Since the country is a net exporter of coconut products, there are no MAVs for these products. The main concern in the coconut industry with trade liberalization is the lower tariff rate on competing vegetable oils such as soybean oil, palm oil and margarine and shortening, and soybean itself. It has been argued by coconut industry groups that the low tariff of 3% on soybean will encourage large imports. Although soybean is imported mainly for soymeal as feed for livestock, its by-product soybean oil will compete with coconut edible oil, thereby prejudicing the domestic coconut industry. The coconut industry groups have lobbied for a higher tariff for soybean, to be equivalent with the tariffs of other vegetable oils.

Domestic production of cassava is generally sufficient for the country's needs. Under the GATT-UR/WTO, the initial bound tariff of cassava in 1995 was 50% to be reduced to 40% in the year 2004. Since the country exports cassava products, the country did not make any minimum access volume commitments.

Domestic production of potato is used mainly for the table and partly for seed. Imports are mostly in small quantities although french fries potato imports have gained importance with the advent of fast food chains in the country. The Republic Act 8178 lifted the seed potato import ban due to the seed requirements of domestic producers. The initial tariff for fresh potato under the WTO was set at 100% in 1995 to be reduced to 40% in 2004. Potato imports account, on average, for only 20% of its minimum access volume.

Trade liberalization has its advantages as well as disadvantages. The long term goal is to make domestic producers more competitive in the world market through exposure and access to better technology, improved production efficiency and higher product standards. But the preconditions to the achievement of these in the domestic situation rest upon the resources of farmers, especially small farmers, and the so called safety net measures in the form of infrastructure and institutional support from the government that would facilitate farmers' access to these free trade opportunities. It is also dependent indirectly on macroeconomic (i.e. monetary) policies. Also, as the country's major trading partners will be adopting an open market policy, the Philippines can derive some compensatory concessions in terms of lower tariffs for the country's exports. On the other hand, structural changes that go with trade liberalization have some de-stabilizing effects on the domestic agriculture sector and the other sectors of the economy. What is important is to put the safety net measures securely in place during the adjustment or transition period which is not far beyond. This requires a vigorous effort and may take a longer period of transition than the time set under the recent multilateral and regional trading agreements.

1. Introduction

1.1 The Philippine economy and the agricultural sector

Growth of the Philippine economy, as represented by its gross domestic product (GDP) in real terms, accelerated towards the mid 1970s and augured well into the early 1980s (Table 1.1). Growth during the period resulted from increased economic activities. This period was also characterized by a heavy infusion of external financing. In 1984 and 1985, GDP fell sharply by 7% from the previous years' levels (Appendix Table 1), which explains the negative annual growth rate during the first half of the 1980s. During this period, the Philippines went through both economic and political crises. The economic crisis was attributed to several factors: the second world oil crisis, a decline in world prices, growing trade deficits and external debt. Also, the agricultural sector suffered a setback due to a prolonged drought from late 1983 to early 1985. From 1987 onwards, the economy recovered, as reflected in improved annual growth rates in GDP from 1986 to 1990. A deceleration in annual economic performance in the mid 1990s was followed by higher growth rates in 1996 and 1997, although it slightly narrowed in 1997 as a result of the financial crisis in the Asian region, which started during the last quarter of 1997.

Table 1.1 Compounded annual growth rates in real GDP, the Philippines, 1966-1997.

Period	Annual Growth of Real GDP (%)
1966-1970	4.7
1971-1975	5.8
1976-1980	5.4
1981-1985	-2.4
1986-1990	5.1
1991-1995	2.9
1995-1996	5.7
1996-1997	5.1

Source: Based on data of GDP at constant 1985 prices from the National Statistical Coordination Board (NSCB).

The contribution of agriculture to national output or GDP has been declining (Table 1.2). Until the mid 1970s agriculture shared, on average, 30% annually in the total GDP. The contribution of agriculture to the economy is even greater if gross value added from processing of agricultural products, from marketing and exporting of processed and unprocessed agricultural products is considered. These activities are attributed to other sectors of the economy in the national income accounts (Intal and Power 1990). This share went down to a little over 20% after the first half of the 1990s. Although a declining output share of agriculture is a natural outcome of industrialization in most developing countries, promoting industrialization through import substitution has hastened this decline. In the case of the Philippines, quantitative restrictions, exchange controls, and high tariff rates that were used to protect import competing domestic industries have distorted price incentives against agriculture and inhibited efficient resource allocation, resulting in lower agricultural output (Bautista and Valdez 1990.

Table 1.2 Gross domestic product (GDP) by sector, the Philippines, 1966-1997.

Period	GDP (US $ M* in current prices)	% Share in GDP		
		Agriculture**	Industry	Services
1966-1970	7,250	28.7	31.0	40.3
1971-1975	11,340	30.4	34.2	35.4
1976-1980	23,879	27.4	37.4	35.2
1981-1985	33,517	24.0	38.2	37.8
1986-1990	38,308	23.4	34.7	41.9
1991-1995	58,330	22.5	32.7	44.8
1996	83,789	21.4	31.7	46.8
1997	83,208	19.8	31.7	48.5

Source: National Statistical Coordination Board (NSCB).
* Annual average exchange rates were used in converting pesos to dollar values.
** Including forestry.

In spite of its declining share in national GDP, agriculture continues to play a significant role in the Philippine economy. In addition to its share in the national output, in 1997 agriculture contributed 9.3% to total export earnings, 8.6% of import expenditures, and 42% to total employment (Table 1.3). The decreasing share of agricultural employment reflects the declining share of agriculture in the national GDP.

Table 1.3 Employed persons by sector and employment rate, the Philippines, 1980-1997.

Year	Employed persons	Employment Rate	% Share in Employed	
	(No.)	(%)	Agriculture	Non-agriculture
1980	16,434	95.0	51.4	48.6
1985	19,801	92.9	49.0	51.0
1990	22,979	91.9	44.9	55.1
1995	22,212	91.6	43.4	56.6
1996	27,186	92.6	42.8	57.2
1997	27,715	92.1	40.8	59.2

Source: Department of Labor and Employment (DOLE).

The Philippines has undergone a long history of trade policies characterized by varying degrees of protection. This inward looking approach to trade constrained participation of the Philippines in international trade (Sicat and Power 1971; Baldwin 1975). Initial efforts in Philippine trade reforms took place in the 1960s, regaining strength in the 1980s, and continuing in the 1990s as part of a global trend for trade liberalization. The opening up of the Philippine market became urgent with the signing of the Uruguay Round of the Generalized Agreement on Tariff and Trade (GATT-UR) in late 1994 which was replaced by the World Trade Organization (WTO) in early 1995. Trade liberalization is also pursued further in the Asian region with the formation of the Asian Free Trade Association (AFTA) and Asia Pacific Economic Cooperation (APEC). As a result of trade reforms introduced unilaterally or by multilateral agreements, the Philippines has become more trade oriented in recent years. The shares of exports and imports to GNP during the second half of the 1960s to the 1970s have improved by more than 50% and 90%, respectively, in the 1990s (Table 1.4).

An important aspect of the GATT-UR is the Agreement on Agriculture, which sought to rectify impediments to agricultural trade. Prior to this Agreement, the conditions for international agricultural trade were deteriorating due to increasing use of subsidies, stockpiling, declining world prices, and costs of support to the agriculture sector (Tanner 1990). With some adjustments that have to be made with trade liberalization, it is generally perceived that a more open environment in international trade will improve conditions in the agriculture sector. There are some apprehensions, however, as to its effect on small farm producers in developing countries such as the Philippines.

Table 1.4 Gross national product (GNP) and foreign trade, the Philippines, 1966-1997.

Period	GNP*	% Share to GNP	
	(US $ M in current prices)	Exports	Imports
Average			
1966-1970	7,172	13.5	15.2
1971-1975	11,299	16.3	19.1
1976-1980	23,740	16.4	22.0
1981-1985	39,829	12.9	17.2
1986-1990	37,541	17.9	22.7
1991-1995	59,827	20.4	30.8
1996	87,084	23.6	37.3
1997	87,038	29.0	41.4

Sources: National Statistical Coordination Board (NSCB) and National Statistical Office (NSO).
* Annual average exchange rates were used in converting pesos to dollar values.

1.2 Objectives and scope of this study

This study is the first of two series on agricultural trade liberalization in the Philippines focusing on CGPRT crops and other selected commodities. This study is a descriptive analysis of Philippine agricultural trade liberalization. It serves as background to the second study which is a quantitative analysis of the likely effects of an open market policy for Philippine agriculture.

The specific objectives of this study are as follows:

- to provide an overview of the trade regime in the country;
- to provide information on the infrastructure development affecting international trade;
- to characterize the international trade of agricultural products, with special attention on the trade and production of selected commodities;
- to discuss the general situation of agricultural trade liberalization; and
- to provide information for future policy making decisions.

In this study, special attention is given to nine selected agricultural commodities. Maize, soybean, cassava and white potato fall under the domain of CGPRT. The other five commodities are rice, coconut, hogs, chicken and beef. The selection of the commodities is based on their importance to the Philippine economy and the agricultural sector in particular. Rice is the staple crop in the country; maize is used both as food and as a major source of feed for the domestic livestock industry. Soybean is a source of protein for feeds and a substitute for maize; cassava is used as food and as input to the industrial sector; white potato is one of the high value commercial crops. Coconut products remain one of the largest sources of foreign exchange for the Philippines. Beef, hogs and chicken are the major sources of meat. The hog and chicken industries are highly integrated with the maize industry.

This study is organized into six chapters. Chapter 2 provides a review of the trade regime in the Philippines. The infrastructure development support to international trade is described in the third chapter. The fourth chapter is devoted to a discussion of the general trends in agricultural trade. The fifth chapter characterizes the general situation of agricultural trade liberalization on the selected commodities. Chapter six summarizes and concludes the study.

2. Overview of Trade and Related Policies

This chapter summarizes the transition of Philippine trade from a restrictive to a more liberalized atmosphere until the multilateral trading agreements such as APEC, AFTA and GATT-UR or WTO. The discussion focuses on domestic trade policy and reforms, exchange rate, monetary and fiscal policies, and also, whenever relevant, developments in the international scene and the domestic agriculture sector. For purposes of discussion, the country's trade regime is divided into several periods in a historical and economic context.

2.1 History of trade regimen in the Philippines

Philippine trade policies and reforms have been well documented in the literature. A comprehensive analysis to the early 1970s is given by Sicat and Power (1971) and Baldwin (1975). Later studies extend the analysis to the 1980s as in Bautista and Valdez (1990), Intal and Powers (1990) and Lamberte et al. (1990). The study of Tan (1994) concentrates on the 1990s before the APEC, AFTA and GATT-UR. In this chapter, the sections reviewing trade and related policies prior to the recent multilateral trading agreements draw heavily from the above studies.

2.1.1 Pre-1950 period: free trade, reconstruction period, import controls

A history of Philippine trade is not complete without mention of related events during the periods of American rule (1910-1938) and economic reconstruction (1946-1949). As an offshoot of the political dependence of the Philippines on the US, a reciprocal free trade agreement existed between the two countries. This agreement had two repercussions on Philippine trade. First, there was heavy reliance on the US market for Philippine primary exports such as sugar, coconut products, banana and forest products, and second, a continued dependence on primary exports, which retarded trade diversification because of the free entry of American manufactured goods.

Shortly before Philippine political independence from the US in July 1946, the Bell Trade Act or Philippine Trade Act extended the free trade agreement for another eight years until July 1954. For the rest of 1954, the Philippines and the US were to tax imports at 5% of the full rate and 10% of the full rate beginning 1955, to be raised by 5 percentage points per year until full duties would have been applied in January 1973 (Baldwin 1975). This Act permeated continued American influence on Philippine economic policies: it prohibited the imposition of export taxes, and it required the approval of the US President to change the established exchange rate of 2 pesos per US dollar (Table 2.1), in the peso inconvertibility with the dollar, and in capital transfers. Currency devaluation and imposition of exchange controls were allowed only in the event of a severe balance of payment crisis. Also, the free trade agreement ruled out tariff increases as a means of reducing imports, since at that time four-fifths of Philippine imports were supplied by the US.

During the economic reconstruction period (1946-1949) following the Second World War, imports were high on consumption goods (68% of all imports in 1947) relative to capital goods, which averaged 10% of imports (Baldwin 1975). Additional imports of capital goods were deemed necessary to hasten export-oriented and import-replacing production as part of the adjustment associated with the gradual phaseout of the free trade agreement between the Philippines and the US. This concern was heightened by recurring trade deficits and a severe balance of payment crisis in late 1949. The Philippine Trade Act, however, inhibited the achievement of import substitution goals and the addressing of the balance of payment problem.

In order to cope with the economic situation, the government launched comprehensive import and exchange control programs. An Import Control Act was enacted in 1948 to impose import quotas on non-essential and luxury imports. Alternative means of controlling imports were adopted: increased domestic sales tax on imported luxury items from 20 to 30% and imported semi-luxury items from 10 to 15%; import quotas on "non-essential" and luxury goods; and imposition of 80% margin requirement on all letters of credit covering luxury goods and non-essential imports.

When import controls became ineffective in regulating imports, exchange control was administered by the Central Bank in late 1949 during the balance of payment crisis. The annual discount rate also doubled from 1.5% to 3%.

Although import control measures were not intended to promote domestic industrial development, import substitution became apparent with the granting of special privileges to "new and necessary" industries, such as special tax financing, external tax exemptions, and easy access to industrial credit.

2.1.2 The 1950s: exchange controls, import substitution

The initial import and exchange control program was successful in terms of reducing imports by 37% from 1949 to 1950 (Table 2.1). As a result, exchange controls continued to be employed. However, instead of using it for balance of payment purposes, exchange controls were used to promote industrialization through import substitution. The import substitution efforts, which began in 1950, led to a shift in import composition from consumption goods to raw materials and capital goods (Baldwin 1975). The allocation of foreign exchange was based on the "essentiality" of a good instead of its comparative advantage (Intal and Power 1990). Capital flows tended to flow to non-essential consumption (NEC) goods. As the imports of NEC goods were restricted, their domestic prices increased which made their domestic production more profitable.

The pegged exchange rate (2 pesos per US dollar) and incentives that favored import substitution increased the dependence on primary exports and discouraged export growth. New exports that were efficient earners of foreign exchange were disadvantaged and import substitutes that were efficient savers of foreign exchange were underprotected (Lamberte et al. 1990).

A study by Bautista (1990) demonstrated the extent to which trade and exchange rate policies discriminated in favor of, or against, various classes of export and import-competing products during the 1950-1959 period by means of the average effective exchange rates (EERs) in Table 2.2. EER is defined as the number of units of domestic currency actually paid by importers or received by exporters per unit of foreign exchange, including trade-related taxes and subsidies. The higher values of EER for non-essential consumer goods, i.e. imports of most industrial consumer goods, show a bias towards industrial import substitution. The less than one values of the ratio between traditional agricultural exports (coconut and sugar) and non-essential imports, between new industrial exports (manufactured goods), and between essential consumer good imports (rice and maize) indicate discrimination against these three product categories.

With the expiration of the 1951 Import Control Act in mid-1953, the Central Bank (C.B.) took over from Congress the exchange control mechanism, which it administered to maintain monetary stability and preserve the international value of the peso. The C.B. alternately pursued liberal and tight monetary measures depending upon the situation. For example, it eased down exchange controls and credit policies in 1953 by repealing the 80% cash-deposit requirement for luxury and non-essential imports. The margin requirements on letter of credit were re-introduced in 1957 to avert inflationary effects of the expansionary monetary policy.

Table 2.1 Foreign trade, balance of trade and exchange rate, the Philippines, 1900-1997.

Year	Average Exchange Rate Peso/$	Exports	Imports (f.o.b. value in million US $)	Balance of Trade
1900	2.00	22.99	24.26	-1.87
1945	2.00	0.67	28.93	-28.26
1946	2.00	67.19	295.86	-231.67
1947	2.00	265.55	511.35	-245.80
1948	2.00	319.21	568.20	-248.99
1949	2.00	255.85	568.69	-321.84
1950	2.00	332.70	356.18	-23.48
1951	2.00	415.74	479.52	-63.78
1952	2.00	352.41	426.11	-73.70
1953	2.00	400.61	447.34	-46.73
1954	2.00	412.09	451.64	-39.55
1955	2.00	419.26	536.34	-117.08
1956	2.00	472.68	509.61	-36.93
1957	2.00	430.66	621.39	-190.73
1958	2.00	459.81	553.28	-93.47
1959	2.00	505.54	520.96	-15.42
1960	2.00	535.44	624.52	-89.08
1961	2.00	540.75	622.17	-81.42
1962	3.62	580.28	590.23	-9.95
1963	3.78	770.57	645.36	-125.21
1964	3.89	779.38	802.04	-22.66
1965	3.89	795.74	835.25	-39.51
1966	3.90	877.41	873.61	+3.80
1967	3.90	891.50	1,060.95	-169.45
1968	3.91	962.11	1,195.14	-233.03
1969	3.91	983.17	1,181.78	-198.61
1970	5.75	1,142.19	1,159.30	-17.11
1971	6.35	1,189.25	1,260.83	-71.58
1972	6.64	1,168.43	1,333.60	-165.17
1973	6.75	1,837.19	1,596.62	+240.57
1974	6.78	2,724.99	3,143.26	-418.27
1975	6.25	2,294.47	3,459.18	-1,164.71
1976	7.44	2,573.68	3,633.48	-1,059.80
1977	7.40	3,150.89	3,914.76	-763.87
1978	7.37	3,424.29	4.732.20	-1,307.91
1979	7.38	4,601.19	6.141.73	-1,540.43
1980	7.51	5,750.88	7,726.91	-1,976.03
1981	7.90	5,720.40	7,945.68	-2,225.28
1982	8.54	5,020.59	7,666.92	-2,646.33
1983	11.11	5,005.29	7,486.63	-2,481.34
1984	16.70	5,390.65	6,069.61	-678.96
1985	18.61	4,628.95	5,110.67	-481.72
1986	20.39	4,841.78	5,043.60	-201.82
1987	20.57	5,720.24	6,736.97	-1,016.73
1988	21.09	7,074.19	8,159.38	-1,085.19
1989	21.74	7,820.71	10,418.32	-2,597.61
1990	22.44	8,186.03	12,206.16	-4,020.13
1991	27.48	8,839.50	12,051.36	-3,211.85
1992	25.51	9,824.31	14,518.93	-4,694.62
1993	25.45	11,374.80	17,597.40	-6,222.60
1994	26.42	13,482.90	21,332.57	-7,849.67
1995	25.51	17,447.19	26,537.63	-9,090.44
1996	26.22	20,542.55	32,426.93	-11,884.39
1997	29.47	25,227.70	35,933.82	-10,706.12

Source: National Statistics Office (NSO) and Central Bank (C.B.) for foreign exchange rate data from 1980.

Table 2.2 Average effective exchange rates (EERs), 1950-1959 (pesos per US $).

Product Category	1950-1959
Traditional exports	2.000
	(0.549)
New exports	2.294
	(0.629)
Essential consumer good (EC) imports	2.064
	(0.566)
Non-essential consumer good (NEC) imports	3.645

Source: Bautista 1990.
Note: The numbers in parentheses are ratios of the EER for a given product category to the EER for NEC imports.

When the Philippine Trade Act expired in 1955, exchange controls were replaced by tariffs to regulate imports and protect domestic industries (Table 2.3). Import taxes at the rate of 5% in 1955 to be increased by 5% every year until 1973, when tariffs on imports were to have been 100%, were accelerated with a new tariff code in 1957 under a revised trade agreement, the Laurel Langley Agreement. The percentage rate of duties for each country's imports are shown in Table 2.3 (Baldwin 1975).

Table 2.3 Duties (%) for Philippine imports from the US and vice versa.

	Philippine Imports from the US	US Imports from the Philippines
1956-58	25	5
1959-61	50	10
1962-64	75	20
1965-67	90	40
1968-70	90	60
1971-73	90	80
After 1973	100	100

Source: Tan 1994; Medalla 1998.

2.1.3 The 1960s: decontrol, devaluation, expansionary monetary and fiscal policies

The removal of exchange controls was precipitated by several factors: first, failure of the foreign exchange controls in the 1950s to solve the balance of payment problems, and second, continuing pressure from exporters for a favorable exchange rate. Another factor was dissatisfaction with the way exchange controls were being administered.

Formal decontrol and liberalization started in April 1960 with the introduction of multiple exchange rates by the C.B. Full exchange control was decreed in January 1962 wherein licenses were no longer required for imports, exports or invisibles. In addition, instead of immediate devaluation the C.B. floated the peso and all import transactions took place at the free market rate. Several anti-inflationary measures were taken to prevent inflation that would deter a more realistic exchange rate. Special time deposit requirements were imposed on imports. Exporters were required to surrender 20% of their foreign exchange receipts to the C.B. at the official rate of 2 pesos per dollar. The rediscount rate for commercial banks was increased from 3% to 6%, and for the reserve requirement from 15 to 19%. In November 1965 the peso was formally devalued from 2 pesos per dollar to 3.90 pesos per dollar which became the official parity rate (Table 2.1). The liberalization of the exchange rate was not, however, accompanied by reforms in tariff and non-tariff measures that would have made trade reform complete.

It has been observed that of all the devaluations that occurred in the Philippines until 1990, the 1962 devaluation had the best effects (Lim 1990). It resulted in (i) increased exports in 1962, growing by about 30% in 1963; (ii) increased inflation in 1963 and 1964, but remaining single-digit; and (iii) substantial increases in agricultural and non-agricultural outputs. One major reason given for the good results was that the 1962 devaluation was used both to cushion deteriorating the balance of payments and to liberalize imports from a previously protectionist industrialization strategy.

It must be noted that the lifting of exchange controls substituted tariff protection for the protection provided by the exchange control. The tariff system in 1957 that replaced import controls in the 1950s had the same protective structure as the import controls it replaced. Thus, despite the policy reforms, the tariff system continued to favor import-substituting consumer goods industries at the expense of agriculture and exports. This, together with expansionary monetary and fiscal policies from 1966 to mid-1967, resulted in a balance of payment crisis in late 1969 and early 1970.

The Marcos administration (mid-1965 - February 1986) pursued a monetary policy that eased down credit extensively in terms of lower basic rediscount rates, reserve requirements against savings, and time deposits and special time deposits, but raised rediscount ceilings on commercial banks. In support of the government's program to increase rice production, the C.B. allowed commercial banks to rediscount a larger proportion of the commercial paper issued by the then Rice and Corn Administration, the central marketing agency for grains. The easy monetary policy continued through mid-1967. The new administration also embarked upon large-scale rural infrastructure programs, which were financed intensively from internal and external loans.

The expansionary monetary and fiscal policies gave rise to increased prices and deterioration of the balance of trade prompting the C.B. to reverse its easy credit policies. The continued deficit spending activities of the government resulted in a severe balance of payment problem in late 1969, which necessitated the restoration of the import controls.

During the second half of the 1960s, emphasis was placed on export expansion especially of industrial products. An Investment Incentives Act of 1967 was enacted, which sought to stimulate production in major domestic industries and export activities. This Act also created a Board of Investment (BOI) which determined the industries that qualified for special investment assistance. One of the fiscal incentives granted to qualified firms was a seven-year exemption from import duties of capital goods.

2.1.4 The 1970s: import controls, export promotion, extensive government intervention

Trade policy in the 1970s continued to be oriented towards protecting domestic industries despite the initial attempt at reform in the 1960s. Import controls became more extensive. High tariff rates were imposed under a simplified Tariff Code which was in effect from 1973 to 1980. Non-tariff policy became more restrictive by increasing the categories under the commodity classification of essential goods. C.B. Circular 289 required C.B. approval for imports of commodities under the categories Unclassified Consumer, Semi-Unclassified Consumer, and Non-Essential Consumer. More C.B. circulars affecting more imports ensued (Lamberte et al. 1990). The system of import restriction became more complex with the creation of additional government agencies to implement import licensing. Export taxes on coconut and sugar were imposed. The number of commodities that were regulated increased from 1,307 lines in 1970 to 1,820 in 1980 (Tan 1994).

The bias against exports, nevertheless, remained. Instead of instituting tariff reforms, the government adopted export promotion, that partly compensated for this bias. Following the de facto devaluation of the peso in early 1970, the Export Incentives Act of 1970 was enacted which increased fiscal assistance to export firms in addition to the fiscal incentives to export

producers under the Investment Incentives Act of 1967. According to Tan (1994), the fiscal subsidy for BOI-registered firms as a proportion of the value of inputs in the mid 1970s was about 15%.

Export producers also received other forms of financing and infrastructure support such as export processing zones and marketing services, which simplified export procedures and documentation.

In response to the foreign exchange crisis in late 1969, the government floated the peso in February 1970. By the end of the year the peso-dollar exchange rate rose to P6.80. Some exchange controls in effect since 1967 were also removed but exporters were required to convert 80% of their leading export products, mainly traditional exports, to the C.B. at the old rate of P3.90 per dollar. This was replaced in May 1970 by a special stabilization tax on exports at rates that ranged from 4 to 10% ad valorem. This measure was incorporated in the customs and tariff code in 1973 (Bautista 1990). In addition, as part of its stabilization program the government adopted monetary and fiscal restraints. In May 1970, reserve requirements were raised by another 2%. Rediscounting privileges were also reduced. In 1971, the C.B. also raised preferred discount rates to all rural banks.

The currency depreciation in 1970 resulted in export increases. Export value in 1970 rose by 24% while volume went up by 14% from their 1969 levels. Coconut products showed high export performance over the 1970/71 period. Bananas became one of the ten leading exports, and sugar exports improved. The value of manufactured goods imports also increased by 26% (Baldwin 1975).

Between the period 1970 (floating rate of the peso) and 1983 (foreign exchange crisis), a flexible exchange rate was maintained, and the peso depreciated nominally. In spite of large deficits in the current account, the currency depreciated slightly annually, exceeding 5% only in 1972, 1975 and 1982 (Bautista 1990). The large international reserves that were sourced from foreign loans in the 1970s prevented an immediate devaluation of the peso. The world oil crisis in 1973-1974 resulted in current account deficits in the 1970s, which were addressed by large foreign borrowings. Expansionary fiscal and monetary policies were pursued, which helped sustain growth in the Philippine economy in the early 1970s. Government expenditures increased by 22% and the money supply by 5% (Bautista 1990).

Moreover, during the 1970s government intervention intensified. It had the monopoly over foreign trade in rice and maize, and adopted direct price controls in reducing domestic price instability of major food crops. It created commodity specialized agencies, the Philippine Coconut Administration and the Philippine Sugar Institute which took over the domestic and foreign marketing of coconut and sugar. Each agency imposed export taxes, premium duties and export quotas on its respective commodity.

2.1.5 The 1980s: economic crisis and recovery, devaluation, partial trade liberalization

In the first three years, 1980 to 1982, the expansionary fiscal policy continued, trade deficits worsened and external borrowing expanded further. At the end of 1982, the trade deficit was 61% more than its level by the end of the 1970s; external debt increased by about 84% in the same reference period. In the international scene, world prices were fluctuating and on the downtrend.

The unfavorable effects of past protective policies paved the way for a second attempt at trade reform beginning in 1981 as part of the country's World Bank Structural Adjustment Loan (SAL) program. The SAL was aimed at modernizing several manufacturing industries such as textiles, which would be affected by trade reforms. It was expected that the modernization programs in parallel with trade reforms would enhance the competitiveness of industrial exports (Alburo 1993). The trade reform had two components, the 1981-1985 Tariff Reform Program (TRP) and the Import Liberalization Plan (ILP). The TRP provided for a

uniform level of protection among and within sectors of the economy, the reduction of effective protection rates (EPRs), and tariff reduction from 100 to within the range 10 to 50%. The TRP included the lowering of tariffs on 177 non-essential consumer goods (NEC) and unclassified consumer item from 100 to 50%. In addition to the TRP, quantitative restrictions on imports were lifted, export taxes were abolished except those on logs, sales tax on imports and import substitutes were unified through a series of tax reforms between 1983 and 1985 (Tan 1994).

The initial schedule of the Import Liberalization Plan (ILP) in 1981 included the liberalization of 263 lines from the list of restricted items in 1981 and 617 items in 1982, reducing the restricted lines by 24% and 20%, respectively from the previous year's levels (Table 2.4). The ILP was postponed however for 3 years because of the balance of payment crisis which started in August 1983 (Lamberte et al. 1990). Immediately following, foreign exchange and import controls were imposed which temporarily restrained trade liberalization efforts. Although these controls made tariff reforms redundant, their effects were however, insignificant. To limit import and capital outflow, ad valorem taxes on imports and luxury imports were raised.

Table 2.4 Import liberalization program, the Philippines, 1980-1989.

Year	No. of Restricted Lines
1980	1,820
1981	1,559
1982	1,247
1983	1,825
1984	1,872
1985	1,798
1986	823
1987	651
1988	605
1989	477

The peso was devalued three times between June 1983 and June 1994, and floated in October 1984. These measures increased the average exchange rates from 8.54 pesos per dollar in 1982 to 11.13 pesos in 1983 and 16.70 pesos in 1984 (Table 2.1). The foreign exchange crisis took its toll in 1984-1985 when real GNP posted a 7% decline. The economic crisis was exacerbated by the lowering of world prices for most of the country's exports, resulting in budgetary cutbacks. A comprehensive program for agriculture was launched in 1984, which was expected to improve the balance of payments through export expansion and import substitution.

Some improvements in the tariff protection structure as a result of the TRP and indirect tax reform have been shown in a study by Tan (1994). For the whole economy, the average effective protective rate with duty drawback was reduced from 50% in 1983 to 46% in 1985, and without duty drawback from 53% to 49%. The protection with duty drawback received by all tradables in agriculture, fishing and forestry in 1983 was reduced by 12% in 1988, and without duty drawback by 8% (Table 2.5).

Trade reforms were pursued further in the Aquino administration (1986-1992). Under the ILP more banned items were lifted during the 1986-1988 period, the greater number in 1986 reducing the number of restricted imports by 54% from the list in 1985 (Table 2.5). Import liberalization slowed down from 1989 to 1993 due to constraints imposed by increased oil prices, political unrest in late 1989, and a series of natural disasters.

In the agriculture sector, there was increasing domestic pressure for policy reforms. Eventually, the sugar and coconut sectors were freed from monopolies. Also, export taxes on agriculture exports were abolished. While fertilizer and wheat imports were liberalized, imports for maize were banned temporarily.

Table 2.5 Weighted average effective protection rate (EPR) of TRP by major sector in percentage, the Philippines, 1983 and 1985.

Sector	1983		1995	
	With Duty Drawback	With Duty Drawback	With Duty Drawback	With Duty Drawback
All sectors	49.8	352.8	46.3	49.3
Importable	103.6	103.6	97.4	97.4
Exportable	-10.5	-4.0	-10.7	-4.5
Agriculture	9.1	10.3	8.0	9.2
Importable	85.5	85.5	76.5	76.5
Exportable	-10.1	-8.7	-7.2	-7.8
Mining	-0.3	7.2	-1.3	6.1
Importable	27.7	27.7	23.6	23.6
Exportable	-9.9	0.1	-9.9	0.1
Manufacturing	75.3	79.2	70.5	74.1
Importable	108.0	108.0	102.1	103.1
Exportable	-11.2	3.1	-13.4	-0.1

Source: Tan 1994.

2.1.6 The 1990s: tariff reform, import liberalization, GATT-WTO, AFTA, APEC

Reforms in trade policies intensified during the second half of the 1990s, when the economy was characterized by persistent trade deficits and higher levels of external debt. The Philippine currency declined further in 1990 to 24.311 pesos to the US dollar compared to 21.737 pesos in 1989. The peso stabilized at higher rates from 1991 to 1996.

Unilateral tariff reforms

Executive Order (EO) 470 issued on July 20, 1991 provided further tariff cuts over a five-year period ending in 1995. A new round of reforms was instituted in the Ramos administration (1992 -1997) designed to sustain previous trade reforms. At the same time that tariffs were being reduced under EO 470, EO 8 was issued in July 1992 which provided for the removal of quantitative restrictions (QRs) and their replacement by tariffs. Non-tariff measures (NTM) of several products, including sugar and maize, were converted into ordinary tariff duties. EO 8 was however reversed in 1993 by the Magna Carta for Small Farmers which required the imposition of QRs on agricultural products grown domestically in sufficient quantities. Memorandum Order (MO) No. 95, which was issued in February 1993, restored the QRS on certain products including maize, pork and poultry meat, but excluding sugar and beef.

One of the key features of EO 470 was to lessen the number of high tariff commodity lines and increase the number of low tariff commodity lines (Table 2.6). The majority of commodity lines fell within the range from 10 to 30% rates. Under the 40% rate, 544 lines were to be gradually reduced to zero by 1995.

The tariffication of QRs under EO 8 has the advantage of transparency and transfers private rent to the government in the form of revenue. It also related domestic prices with international prices making domestic producers sensitive to price competitiveness. Under EO 8, most commodities fell under the 10% and 30% tariff rates. The average tariff rates under EO 8 were, on average, more than 50% of those provided by EO 470. In 1992 a total of 113 commodities were liberalized by EO 470 but tariffied by EO 8; a total of 81 commodities liberalized by EO 470 but regulated by Memorandum Order 95 (Tan 1994).

Table 2.6 Distribution of tariff commodity lines, 1981-1985 TRP, EO 470 and EO 8 (number of lines).

Tariff Rate Level	Pre Post 1981-1985 TRP		Pre Post EO 470		Pre Post EO 8	
(%)	1981	1985	1991	1995	1992	1994
0	3	3	33	43	43	43
3	0	0	0	285	279	306
5	14	14	42	16	11	16
10	380	334	1,635	1,957	4,953	1,959
15	0	0	0	26	3	32
20	282	335	1,273	1,036	743	915
25	0	0	0	19	30	133
30	194	284	1,226	1,971	769	927
35	0	3	7	0	101	578
40	87	100	544	0	381	95
45	0	3	2	0	580	14
50	151	331	1,431	208	526	514
55	0	0	0	0	0	2
60	59	0	0	0	80	72
65	0	0	0	0	0	0
70	139	0	0	0	0	0
75	2	0	0	0	7	0
80	58	0	0	0	12	0
90	29	0	0	0	0	0
100	2	0	0	0	68	0
Total	1,402	1,403	6,193	5,561	5,606	5,606

Source: Tan (1994) for EO 8 and Medalla (1998) for 1981-85 TRP and EO 470.

The bias towards import-competing rather than export-producing industries continued as shown by higher EPRs received by the manufacturing sector (Table 2.7). The reason for this is the very nature of tariffs and QRs; these measures are designed to protect import-substituting activities. Hence, EO 470 which provided for tariff change had limited effect in removing trade bias. Also, the effect of EO 8 on EPR is very minimal since it affected only 20 lines from a total of 5,606 lines (Tan 1994).

On the other hand, during the early 1990s the ILP progressed minimally from 1990 to 1991 and from 1993 to 1995.

Trade reforms in the Philippines are reinforced by three trade agreements. On a worldwide scale, the General Agreement on Tariffs and Trade-Uruguay Round (GATT-UR) was signed in December 1994 and implemented by the World Trade Organization (WTO) beginning in January 1995. On a regional perspective the Asia Pacific Economic Cooperation (APEC) started in 1989 and the ASEAN Free Trade Area (AFTA) in 1990. Similar to the previous trade reforms in the Philippines, the trade liberalization program pursued under the three agreements is expected to result in improved global competitiveness as well as in a more efficient allocation of resources.

Table 2.7 Weighted average EPR using book rates and price comparisons, EO 470, the Philippines, 1991 and 1995, in percentage.

	1991		1995	
Sector	Book Rates	Price Comparison	Book Rates	Price Comparison
All sectors	27.3	33.9	21.8	29.0
Importable	57.8	70.2	66.6	66.6
Exportable	-6.8	-6.8	-6.4	-6.4
Agriculture	15.0	15.0	9.1	11.7
Importable	49.8	49.8	30.4	39.0
Exportable	-0.5	-0.5	-0.4	-0.4
Mining	0.5	0.5	0.5	0.5
Importable	23.0	23.0	23.0	23.0
Exportable	-7.0	-7.3	-7.2	-7.2
Manufacturing	41.0	51.5	34.3	45.1
Importable	59.5	74.1	50.0	64.9
Exportable	-8.2	-8.2	-7.1	-7.1

Source: Tan 1994.
Note: EPRs were calculated without duty drawback.

General Agreement on Tariff and Trade (GATT)-Uruguay Round (UR)/World Trade Organization (WTO)

Under the GATT-UR/WTO Philippine tariff commitments for agricultural commodities have the highest rates of protection followed by textiles and metals (Table 2.8). The initial and bound tariffs for most of the sensitive agricultural products fall within the range of 95 to 100% in 1995 and 1996. By 2003 and 2004 all of the sensitive agricultural products will be within the range of 10-50% (Table 2.9).

Table 2.8 Tariff rates (%) under the WTO, by commodity group, the Philippines, 1997-2000.

Commodity Group	1997	1998	1999	2000
Overall	12.47	9.73	9.51	8.20
Agriculture	19.62	14.5	14.33	13.26
Chemical	6.77	5.25	5.15	4.64
Textiles	14.43	12.56	12.52	8.89
Metals	14.85	10.37	9.62	9.02
Machinery	10.63	8.34	8.11	7.47
Mining	5.34	4.69	4.69	3.91
Manufacturing	11.48	9.09	8.84	7.48

Source: Philippine Grains Development Program Project Main Report, 1998. Vol. 1. Draft final report.

Table 2.9 Frequency distribution of tariff rates on sensitive agricultural products, the Philippines, 1995-2004.

Tariff Rates	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
10 to 30	1	1	1	1	1	1	1	1	1	1
35 to 50	23	23	36	36	44	44	44	44	90	90
55 to 70	14	14	9	9	51	5	1	51	0	0
75 to 90	8	8	50	50	0	0	0	0	0	0
95 to 100	50	50	0	0	0	0	0	0	0	0

Source: Philippine Grains Development Program Project Main Report, 1998. Vol. 1. Draft final report.

Of the four major areas of concern of the GATT-UR Agreement on Agriculture (enhancement of market access, domestic subsidies, export subsidies, sanitary and phytosanitary or SPS measures), the Philippines is committed mainly to the provisions of market access and SPS measures. There are no export subsidies in the Philippines and, therefore, provisions on this concern do not apply. The Philippines made no commitment for the reduction of domestic

subsidies. The computed subsidies or aggregate measures of support (AMS) for government expenditures on fertilizer subsidy, certified seeds and planting materials, and price support for rice, maize, coconut and sugar fall below the maximum level for developing countries of 10% of value of total production.

In line with market access, the Philippines has agreed to the removal of import quotas and other restrictions and replacement with tariffs. The move to tariffy the quantitative restrictions was effected through Republic Act 8178 in the second half of 1995. This Act also provided for the establishment of the agricultural minimum access volume (MAV) and the creation of an Agricultural Competitiveness Enhancement Fund (CEF) for the development of agricultural infrastructure such as irrigation and farm to market roads. The MAV specifies the agricultural commodity requirement of each GATT member country that would be imported with lower tariff rates. The schedule of Philippine commitments to the MAV is given in Table 2.10.

The Philippines, together with Japan and Korea, sought exemption from the lifting of the QR for only one staple crop. Thus, tariffication of Philippine rice is postponed for ten years. For maize, poultry, hogs, meat products, coffee and coffee products, onion, potato, garlic and cabbage, the QRs will be replaced with higher tariffs equivalent to at least double the final rates applied in 1995 (Table 2.11).

Also, the Philippines committed to bind tariffs on 744 agricultural lines. For agricultural products not enjoying QRs, the initial bound rate is 10% higher than existing tariff rates. These bound rates will be reduced by the minimum requirement of 10% by the year 2000. For agricultural commodities that have bound rates under the GATT Tokyo Round Agreement, the initial bound rates will be maintained. These tariff reductions will enable the Philippines to comply with tariff reductions of 24% for all tariff lines within 1995-2004.

Under the revised import duties of the tariff reduction program provided by EO 465, live fish, lobster, hard wheat and potatoes are some of the agricultural products which have lower tariffs (Table 2.12).

ASEAN Free Trade Area (AFTA) agreement

The creation of the North American Free Trade Area (NAFTA) and the European Economic Area (EEA) have made ASEAN countries increasingly aware of the need to organize a similar regional trade agreement. Thus, the ASEAN Free Trade Area (AFTA) was formed in 1990 in order to address the possible trade effects from the other regional trade agreements. Under AFTA, the ASEAN region will be transformed into a free trade area in the year 2003. Except for sensitive products, mostly agricultural, a zero tariff protection will be imposed on infra-trade within the member countries. However, each member country's tariff policies for trade outside ASEAN will be maintained. The free trade mechanism is governed by the Common Effective Preferential Tariff (CEPT). Under the CEPT, each member country will set its preferential tariff on commodities coming from member countries at rates not higher than those under the Most Favored Nation (MFN) rates. These CEPT tariff rates will be reduced on an equal yearly rate up to the end of 2003, until the agreed rate of 5% or lower is reached.

Under the AFTA-CEPT scheme, products are classified into several categories. For the Philippines, the number of product levels under each category is shown in Table 2.13. Lower tariff rates will be imposed on the products under the temporary exclusion list (TEL) and inclusion list (IL) by the year 2003. TEL products are scheduled to be included into the CEPT beginning in 1998. Highly sensitive imports (HSL) may still have higher duties; these products are excluded officially from the AFTA scheme. IL products were included in the AFTA-CEPT through Presidential Executive Order No. 289 in 1995.

Unprocessed agricultural products such as rice were excluded originally in the CEPT scheme but were considered later in consonance with trade liberalization under the GATT-UR/WTO.

Table 2.10 Minimum access volume, the Philippines, 1995-2005.

		1 January										
Description (HS Heading)	Unit	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Live Bovine Animals (0102)	Head	6,100	12,652	13,556	14,460	15,364	16,268	17,172	18,076	18,980	19,884	9,942
Live Swine (0103)	Head	1,285	2,570	2,570	2,570	2,570	2,570	2,570	2,570	2,570	2,570	1285
Live Sheep and Goats (0104)	Head	24,685	51,234	54,892	58,515	62,173	65,831	69,690	73,871	78,494	81,627	40,814
Live Poultry, that is say, fowls of the species Gallus domesticus, ducks, geese, turkeys, and guinea fowls (0105)	'000 Head	2,569	5,634	6,342	6,765	7,188	7,611	8,034	8,456	8,879	9,302	4,651
Meat of bovine animals, fresh or chilled	MT	2,000	4,087	4,267	4,435	4,609	4,783	4,957	5,131	5,305	5,481	2,741
Meat of bovine animal, frozen (0202)	MT	0	21,131	57,054	71,317	85,581	98,418	108,259	119,085	130,994	114,093	72,047
Meat of swine fresh, chilled or frozen (0203)	MT	16,260	33,725	36,135	38,545	40,955	43,365	45,775	48,185	50,595	53,005	26,503
Meat of sheep or goats fresh, chilled or frozen (0204)	MT	335	685	745	795	845	895	945	995	1,045	1,095	548
Meat and edible offal of poultry, fresh, chilled, or frozen (0207)	MT	7,345	15,180	16,160	17,140	18,120	19,100	20,080	21,060	22,040	23,010	11,505
Potatoes, fresh or chilled (0701)	MT	465	965	1,035	1,105	1,175	1,245	1,315	1,385	1,455	1,520	760
Coffee, whether or not roasted or decaffeinated: coffee husks and ski; coffee substitutes containing coffee in any proportion (0901)	MT	5	927	993	1,060	1,126	1,192	1,258	1,324	1,391	1,457	745
Maize (Corn) (1005)	MT	65,080	132,981	144,623	154,265	163,907	173,549	183,191	192,833	202,475	212,118	106,059
Rice (1006)	MT	29,865	61,513	6,5079	68,645	94,944	131,408	155,304	179,200	203,096	226,992	113,495
Sugar (1701)	MT	19,215	39,854	4,2701	45,548	48,395	51,242	54,089	56,936	59,783	62,628	31,314
Extracts, essences and concentrates of coffee; tea or mate and preparations w/o basis of coffee, tea, or mate; roasted chicory and other roasted coffee substitutes, and extracts, essences, and concentrates there of (2101)	MT	0	20	20	20	20	20	20	20	20	20	10

Source: Department of Agriculture 1996.

Table 2.11 Philippine commitments to the GATT-UR/WTO agreement on agriculture.

Commodity	Current Bound Rate (%)						
	Rate of Duty (%) 1995	Initial 1995	Final 2004	Qty (mt) 1995	Tariff (%)	Qty (mt) 2004	Tariff (%)
Rice	50	NC	NC	29,865	50	226,992	50
Maize	20	100	50	65,080	35	212,118	35
Coconut	50*	70	40-60	NC		NC	
Sugar	50	70-100	50	19,215		62,628	50
Coffee	30-50*	100	40-50	5		1,457	
Banana	50*	70	50	NC		NC	
Mango	50	50	40	NC		NC	
Cassava	30*	50	40	NC		NC	
Potato	30	50-100	40	465		1,520	
Garlic	30	100	40	NC		NC	
Onion	30	50-100	40	1,610	30	2,683	40
Cabbage	30	100	40	2,105.52	30	3,509.20	40
Cotton	5	10-20	5-10	NC		NC	
Abaca	10*	NC	NC	NC		NC	
Tobacco	20-50	40-70	30-50	NC		NC	
Cattle**	3-30	10-40	5-36	52,600		87,667	3-30
Beef	30	60-100	35-40	15,000		32,000	
Dairy	10-30	30-50	20-40	NC		NC	
Pork	3-30	10-100	5-40	16,260		53,005	
Poultry	30	80-100	40	14,090		23,490.35	
Meat							
Seaweed	10-20*	30-40	20-30	NC		NC	
Shrimps/Prawns	30*	NC	NC	NC		NC	
Tuna	10-30*	NC	NC	NC		NC	

Source: Balisacan 1994; Department of Agriculture 1994,1996.
NC = No commitment.
* Tariff is redundant since commodity is exportable.
** For cattle, quantity is no. of head.

While tariff reductions are the major highlight of AFTA, other complementary policies deserve attention in the agreement such as the removal of non-tariff barriers and exchange rate considerations (Kumar 1992). Under AFTA, the removal of quantitative restrictions is planned within five years of the inclusion of the commodity for tariff reduction. In the Philippines, the percentage share of imports covered by non-tariff barriers was reduced to 3% in 1995 as a result of unilateral removal of import licensing and quantitative import restrictions including those on agricultural commodities (PEC, PIDS and AF 1996).

Kumar (1992) rationalizes the importance of exchange rate considerations in light of tariff redundancies that may exist within the ASEAN region. Accordingly, a depreciation of ASEAN currencies against a regional anchor currency would increase tariff redundancy and reduce the impact of tariff reductions. The uncertainties associated with tariff reductions given the different rates of inflation and currency depreciation among ASEAN member countries warrant a coordination of monetary policies of the member countries. This may have some relevance in the current currency crisis in the Asian region.

Table 2.12 Tariff reduction program, selected commodities, the Philippines, 1998-2000.*

Heading	Description	Rate of Duty (%) 1998	1999	2000
01-92	Live bovine animals	30	20	10
	Meat of bovine animals, Fresh or chilled; frozen			
02-10	Meat and edible meat offal, Salted, in brine, dried or smoked	20	20	20
	Freeze dried chicken dice			
	Others:			
	In-quota	30	30	30
	Out-quota	80	60	60
03.01	Live fish	10	10	7
03.05	Fish, dried, sauteed or in brine	20	20	15
00.06	Crustaceans			
	Frozen/not frozen lobster	10	10	7
	Frozen/not frozen shrimps/prawns	20	20	15
08.01	Coconut, Brazil nuts, cashew nuts	20	20	15
	Desiccated coconuts, other than			
08.03	Bananas including plantain	20	20	15
08.04	Citrus fruits, fresh or dried	20	15	10
	Mandarins, lemons, grapefruit			
08.05	Grapes			
	Fresh	20	15	10
	Dried	3	3	3
08.06	Melons	20	20	15
08.07	Apples, pears and quince	20	15	10
11.03	Cereal froats, meal and pellets	10	10	7
	Durum or hard wheat Semolina			
11.08	Starches, inulin			
	Maize starch	20	15	10
	Manioc (cassava) starch	20	15	10
20.04	Other vegetables prepared or preserved			
	Potatoes	10	10	7

Source: Tariff Commission.

* This table is only a partial list of the revised import duties for agricultural products under EO 465 dated January 13, 1998. "Modifying the Nomenclature and the Rates of Import Duty on Certain Imported Articles under Section 104 of the Tariff and Custom Code of 1978 (Presidential Decree no. 1464 as amended).

Table 2.13 Number of product lines in the AFTA-CEPT program, the Philippines.

Product Category	Primary Agriculture	Other Products	All Products
Total	391	5,125	5,516
Inclusion List (IL)	159	4,380	4,539
Temporary Exclusion List (TEL)	203	717	920
Sensitive List (SL)	25		25
Highly Sensitive List (HSL)	4		4
General Exception (GE)		28	28

Source: Philippine Grain Sector Development Program Project, 1998, Vol. II, Main Report, Draft final report.

Asia Pacific Economic Cooperation (APEC)

APEC supports liberalization that is consistent with the WTO in the Asia Pacific community. It encourages unilateral liberalization and at the same time undertakes joint cooperation in achieving its three major goals: trade and investment liberalization, investment facilitation, and economic and technical cooperation. The latter supplements investment facilitation, trade and investment liberalization through structural and institutional support.

A unique feature of APEC is its diverse country membership comprising high-income economies and developing economies (Appendix Table 2) engaged in intra-APEC interaction.

This diversity in itself provides complementarity that strengthens the relationships between member countries.

The trade and investment liberalization taking place in many APEC member countries is largely the result of unilateral liberalization efforts and commitments in the WTO, AFTA and NAFTA among others. An assessment of the tariffication efforts from the Individual Action Plan (IAP) of APEC members conducted by PECC, PIDS and AF (1996) indicates that the Philippines has reduced considerably its average tariff level. In 1988, the unweighted average tariff in the Philippines was 27.9%, declining to 23.5% in 1993 and 15.6% in 1996. A decline in non-tariff barriers from unilateral reforms was also noted as a result of the removal of import licensing and QRs including on agricultural products. Tariff reductions of APEC members are on schedules based on their goals set forth at the APEC meeting in Bogor, Indonesia. A comparison of tariff reduction commitments and goals for the Philippines is shown in Figure 2.1. The Philippines' Uruguay Round bound tariffs, Individual Action Plan (IAP) and Bogor tariff commitments all follow downward trends but IAP is lowest resulting from the country's extensive tariff reductions including unilateral reforms, Osaka downpayments and IAP commitments. The Bogor tariff trend line for the Philippines is an indicative line starting at the applied tariff rate in 1996 until a zero target by year 2020. Other highlights of liberalization under the Manila Action Plan (MAPA) for APEC are indicated in Table 2.14.

Figure 2.1 Philippine tariff reductions under APEC, Bogor and GATT-UR round.

Source: Perspective on the Manila Action Plan for APEC (PECC, PIDS and AF, 1996).

Table 2.14 Trade and investment liberalization highlights of MAPA, the Philippines, 1996.

1. Time-bound schedules: As part of unilateral reforms, tariffs will be reduced to a uniform rate of 5% by 2004 (excluding agriculture).
2. WTO plus removal of NTBs the individual action plan: Lifting of quantitative restrictions on some automotive products.
3. Market operating measures:
   a. Management of multi-model operations and auxiliary services to shipping will be opened up.
   b. Liberalization of finance companies, underwriting of securities and management of mutual plans will be considered between 1997 and 2000.
4. Investment liberalization initiatives: Review to liberalization (2000), with a view to:
   a. Liberalize retail trade and real estate.
   b. Relax requirements and improve benefits accorded to foreign entities setting up regional headquarters.

Source: Perspective on the Manila Action Plan for APEC (PECC, PIDS and AF 1996).

3. Infrastructure and Institutional Services Affecting International Trade

This chapter provides information on the major physical facilities and institutional services in the country that support international trade either directly or indirectly. In most of the sections, these facilities and services are discussed in relation to agriculture.

3.1 Physical infrastructure

The Philippines is composed of physically dispersed islands (Figure 3.1), which makes the development of infrastructure all the more important. Needless to say, adequate and improved roads, bridges, ports, inter-island shipping and bulk handling facilitate the distribution of goods and services in the domestic market, their outflow to and inflow from international markets.

The Philippines invested heavily in its infrastructure in the late 1960s until the 1970s; however, this could not be sustained due to fiscal constraints. In 1992, public sector infrastructure expenditures accounted for only 2% of GDP which is less than half of its 5% share in 1979 to 1983 (Rafloski 1993). It was noted further that since 1984 more than 80% of yearly infrastructure investment represent the completion of ongoing projects, with less than 20% of total investment for new infrastructure projects.

Also, as discussed in Chapter 2 the large infrastructure investment by the government until the 1970s was financed mostly from external debt. External debt servicing for infrastructure has continued in the 1990s. Rafloski (1993) estimated that in 1992 about 77% of public sector investment depended heavily on external financing, while the remaining 27% was funded from domestic sources.

3.1.1 Roads

In a span of three decades, 1965 to 1997, the total length of roads in the Philippines nearly tripled from 56 thousand to 161 thousand kilometers (Appendix Table 3). Road construction accelerated during the 1970s as part of the massive infrastructure program of the government. Over this period, the annual growth of road length was about 7% (Table 3.1). One notable road development during the 1970s is the national road that spans from the Ilocos region (Region I), the northernmost part in the Philippines, to the Bicol region (Region V), in the southern part. Together with improved port facilities, connection to Visayas islands became easier. This national road network also serves as a link to the Mindanao islands where road development also increased. In the next two decades, 1980s and 1990s, road construction continued but at a slower pace, with less than 1% annual increases in the total length of roads.

Most of the roads comprise *barangay* or village (rural) roads. From 1985 to 1997, the length of barangay roads accounted for 55% of the total length of roads in the country (Table 3.2). Barangay roads were one of the priorities in road development in the mid-1970s. The length of barangay roads more than doubled from 18.8 thousand kilometers in 1974 to 44.4 thousand kilometers in 1975 (Appendix Table 3). For the other road classifications, in more recent years provincial roads comprise about 18% of total roads; national roads, 17%; municipal roads, less than 10%; and city roads, less than 5%.

Figure 3.1 Map of the Philippines and its regional composition.

Table 3.1 Compounded annual growth in road length, the Philippines, 1965-1997.

Period	Annual Growth (%)
1965-1970	6.9
1970-1975	6.0
1975-1980	7.8
1981-1985	1.3
1986-1990	0.3
1991-1995	0.06
1996-1997	0.03

Source: Based on data from the Department of Public Works and Highways (DPWH).

Table 3.2 Existing roads by system classification, the Philippines, 1970-1997.

	Total Length of	% Share				
Year	Roads (kilometers)	National	Provincial	City	Municipal	Barangay (Village)
1970	779,50	25	32	8	22	13
1975	104,430	21	27	2	7	43
1980	151,919	16	20	2	8	54
1985	161,867	16	18	3	8	55
1990	160,560	16	18	3	8	55
1995	160,970	16	18	3	8	55
1996	161,264	17	18	2	8	55
1997	161,313	17	18	2	8	55

Source: Based on data from the Department of Public Works and Highways (DPWH).

Although more than half of the total road length in the Philippines is accounted for by barangay or rural roads, this road classification receives the smallest share of roadwork investment. A study by Intal and Power (1990) indicates that the share of rural roads (including bridges) decreased from 15% in 1970 to 4% in 1982 (Appendix Table 4). During the period, while 40% of total public investment went into road and road transport development, Metro Manila and other urban sectors received the biggest share of infrastructure allocation, which shows the bias against the rural sector (Bautista 1993).

Barangay roads are mostly made of gravel and earth. Roads with gravel surface accounted for half of the total length of roads in 1980 (Table 3.3). Its share increased to 81% in 1985 due to improvements of earth roads. The percentage share of earth roads to total roads declined from 34% in 1980 to 5% in the 1990s. Concrete and asphalt road classifications each comprise less than 10% of the total length of roads. In 1997, the lengths of concrete and asphalt roads increased by 450 kilometers and 88 kilometers, respectively, from their 1996 levels, with corresponding decreases in the length of gravel and earth roads (Appendix Table 5).

Table 3.3 Distribution of roads by surface type, the Philippines, 1970-1997.

	% Share				
Year	Concrete	Asphalt	Gravel	Earth	Total
1970	4	14	56	26	100
1975	4	10	50	36	100
1980	6	8	52	34	100
1985	6	8	81	6	100
1990	6	8	81	5	100
1995	9	8	78	5	100
1996	9	8	78	5	100
1997	9	9	77	5	100

Source: Based on data from the Department of Public Works and Highways (DPWH).

3.1.2 Bridges

Bridges are an important infrastructure in road development. In 1997, the total length of bridges connecting national roads was 262 thousand lineal meters, a minimal increase of less

than 0.5% from 1996 (Table 3.4). Almost 90% of the total length of bridges was of permanent structure, the remainder made up of temporary material. The length of permanent bridges increased by 2% from 1996 to 1997 due to improvements of some temporary bridges and newly constructed bridges of permanent material. Southern Tagalog region (Region IV) has the greatest length of bridges, followed by Eastern Visayas region (Region VIII) (Appendix 6). Parts of Region IV are island provinces.

Table 3.4 Bridges along national roads, the Philippines, 1996-1997.

	1996		1997	
Type of Bridge	Length (m)	%	Length (m)	%
Total	261,015	100	261,969	100
1. Permanent	227,455	87	232,206	89
2. Temporary	33,560	13	29,673	11

Source: Department of Public Works and Highways (DPWH).

3.1.3 Ports

Due to physically dispersed islands in the Philippines, ports are important in terms of domestic trading as well as for the inflow and outflow of goods to and from international markets. Based on available data, from 1994 to 1996, the number of operational ports increased by 9% (Table 3.5). This indicates to some extent the increase in trading activities in addition to population mobility. More than half of total ports in the country in 1996 are government ports, 30% fishing ports, and the rest are feeder ports.

Southern Tagalog region (Region IV), which is composed of some island provinces, has the most ports (Appendix Table 7). The region's operational ports in 1996 accounted for about 18% of total ports in the country. The other regions with more ports are the island regions of Regions VI to VIII in the Visayas island, and Region X in Mindanao island.

Table 3.5 Port inventory, the Philippines, 1994-1996.

Year	Type of Port	No.
1994		1,312
1995		1,422
1996		1,428
	Fishing	429
	Feeder	175
	Private	490
	Public	331
	Operational	1,342
	Non-operational	83

Source: Philippine Statistical Yearbook, 1996. Published by the National Statistical Coordination Board (NSCB).

3.1.4 Sea vessels

Cargo ships and barges are major means of transporting traded goods, especially cargo ships which also ply international routes. In 1990, the total number of 429 registered cargo ships in the Philippines was more than twice their number in 1984 (Appendix Table 8). Their number, however, decreased to 302 vessels in 1993. Over the period 1984 to 1993, gross tonnage of all registered cargo ships was highest in 1987, even with a lower number of cargo ships. The number of registered light barges, which are confined to inter-island transport of goods in the country, fluctuated almost every year from 1984 to 1993, the lowest number of 37 vessels in 1984 and the highest number of 83 vessels in 1988.

Between water and air transport, the greater volume of traded goods is distributed through the latter mode of transport. Between 1990 and 1995, on average, the value of all

commodities carried by aircraft constituted only 2.5% of that handled by water transport (Table 3.6).

Table 3.6 Commodity flow via water and air modes of transport, the Philippines, 1990-1996.

Year	All Commodities			
	Water		Air	
	Qty '000 mt	Value US $ M	Qty '000 mt	Value US $ M
1990	18,892	6,310	46	185
1991	23,209	7,950	47	210
1992	22,574	8,994	50	243
1993	26,591	9,044	54	265
1994	21,186	8,113	59	156
1995	23,939	10,951	64	177
1996	n.a.	n.a.	74	203

Source: Philippines Statistical Yearbook, 1996. Published by National Statistical Coordination Board (NSCB).
n.a. - not available.

3.1.5 Airports

Privately owned airports comprised 68% of the total number of 180 airports in the country in 1996 (Appendix Table 9). The number of private airports increased continuously from 1976 to 1987 with an abrupt decline to 94 airports in 1988. The highest number of private airports was reported in 1994 with a total of 214. National airports, on the other hand, increased minimally. In 1996, there were 86 registered airports managed by the national government, an increment of 3 airports from a total of 79 national airports in 1976. A regional distribution of airports in 1996, however, indicated a total of 89 national airports in the country (Table 3.7); the discrepancy in reporting may be due to the inclusion of non-operational airports. Seven of these are classified as international airports, including the airports in Subic, Central Luzon region (Region III) and in General Santos City, Southern Mindanao region (Region XI). These airports were upgraded recently into international airports. Subic was once an American naval station which was developed into an industrial processing zone in the 1990s.

3.1.6 Agricultural production and post-harvest facilities

The government's commitment to irrigation and post-harvest handling (storage and warehousing) is indicated in the past distribution of government expenditure in agriculture as shown in Appendix Table 4. The combined investment in irrigation, storage and warehousing accounted for more than half of the total agricultural expenditure, compared to less than 5% for rural roads and bridges (Intal and Power 1990). The focus on irrigation facilities can be attributed to its importance in achieving higher yield, especially in the two major grains – rice and maize. Due to the limited capital expenditure of the National Irrigation Administration (NIA), investment in irrigation dwindled in 1994 and 1995. This is indicated by the reduction in serviced area under the communal irrigation system. Communal irrigation serviced areas in 1994 and 1995 were, respectively, 442 thousand hectares and 474 thousand hectares, about 40% less than the 700 thousand hectares in 1992 and in 1993 (Appendix Table 10).

The number and capacity of warehouses particularly in the grain industry have increased. In 1995, there were a total of 11.7 thousand warehouses in the country with a capacity of 4.9 million tons of rice, 16% and 28% respectively, more than the number and capacity in 1990 (Appendix Table 11). The inventory of warehouses includes those of private traders and the National Food Authority (NFA), the government's marketing agency for grains. Of the different types of warehouses, conventional warehouses outnumbered storage and silos. The number and capacity of warehouses are influenced by the volume of grains produced and traded.

Table 3.7 Existing government airports, the Philippines, 1996.

Region	Airport	Class	Region	Airport	Class
NCR	NAIAA (MIA)	I	VII	Dumaguete	T
I	Laoag	I	VII	Lahug	S
I	Lingayen	F	VII	Mactan	I
I	Rosales	F	VII	Siquijor	F
I	San Fernando	S	VII	Tagbilaran	S
I	Vigan	S	VII	Ubay	F
II	Aparri	F	VIII	Biliran	F
II	Bagabag	F	VIII	Borongan	F
II	Basco	F	VIII	Calbayog	S
II	Cauayan	F	VIII	Catarman	S
II	Itbayat	F	VIII	Catbalogan	F
II	Palawan	F	VIII	Dolores	F
II	Tuguegarao	F	VIII	Guiuan	F
III	Castillejos	F	VIII	Hilongos	F
III	Iba	F	VIII	Masin	F
III	Plaridel	S	VIII	Ormoc	S
III	Subic*	I	VIII	Tacloban	T
IV	Alabat	F	IX	Cag. De Sulu	F
IV	Baler	F	IX	Dipolog	S
IV	Busuanga	F	IX	Ipil	F
IV	Calapan	S	IX	Jolo	S
IV	Corregidor	F	IX	Liloy	F
IV	Cuyo	F	IX	Pagadian	S
IV	Jomalig	F	IX	Sanga sanga	S
IV	Lubang	S	IX	Siococn	F
IV	Lucena	F	IX	Zamboanga	I
IV	Mamburao	S	X	Butuan	S
IV	Marinduque	S	X	Cag. De Oro	T
IV	Pt. Princesa	T	X	Camiguin	F
IV	Romblon	S	X	Malay balay	F
IV	San Jose (MDO)	T	X	Mati	S
IV	Wasig	F	X	Ozamis	S
V	Bulan	F	X	Stargao	F
V	Daet	S	X	Surigao	S
V	Legaspi	T	XI	Allah Valey	S
V	Masbate	S	XI	Bislig	S
V	Naga	S	XI	Davao	I
V	Sorsogon/Bacon	S	XI	Gen. Santos a/	I
V	Virac	S	XI	Tandag	S
V	Antique	S	XII	Barobo	F
VI	Bacolon	T	XII	Cotabato	T
VI	Caticlan	F	XII	Iligan	S
VI	Iloilo	T	XII	Malabang	S
VI	Kalibo	S	CAR	Baguio	T
VI	Roxas	T			

Source: Department of transportation and Communications (DTC).
* Recently upgraded to an international airport.
NCR - National Capital Region; NAIA - Ninoy Aquino International Airport formely Manila International Airport (MIA).
I= international; F= feeder; S= secondary; T= trunkline.

The other major agricultural post-harvest facilities are rice mills, mechanical dryers, threshers and transportation. The efficiency of rice milling equipment affects rice competitiveness or quality in terms of lower proportion of broken rice, higher head and milling recovery rates. Rubber roll-mills produce better quality rice compared to *kiskisan* and *cono*

mills. In 1995, rubber roll-mills were reported at 6.4 thousand units compared to 4.8 thousand units in 1990 (Philrice and BAS 1997). The number of rice mills of all types, however, has been decreasing due to a decline in the number of *kiskisan* and *cono* types of mills (Table 3.8).

Table 3.8 Growth in grain post-harvest facilities, the Philippines, 1993-1995.

	% Change	
	1993-1994	1994-1995
Rice mill	-2.4	-1.1
Mechanical dryer	66.2	39.6
Thresher	-7.0	12.3
Warehouse	11.2	5.6
Transportation *	-9.9	-3.1

Source: Philippine Rice Statistics, 1970-1996. A publication of the Philippine Rice Institute (PhilRice) and the Bureau of Agricultural Statistics (BAS).

* Includes trucks, jeeps, weapon carrier, other land and water facilities used in transporting grains.

Mechanical dryers have received increasing attention in recent years in an effort to improve the timeliness in rice drying operations, reduce handling and breakage losses, thus increasing rice yield of paddy when milled. There were 327 mechanical dryers in 1995, more than twice their number in 1990 (Appendix Table 11). Most of the increments occurred in 1994 (Table 3.8).

The number of mechanical threshers is on the downtrend from 3.1 thousand units in 1980 to 1.8 thousand units in 1995. Also, the number of vehicles for land and water transport decreased from 12.7 thousand units in 1980 to almost 10 thousand units in 1995. However, transport capacity increased tremendously beginning in 1990. In 1995, the capacity of all modes of grain transport was 182 million metric tons compared to about 6 million tons in the early 1980s. This may be attributed to the replacement of smaller vehicles by bigger vehicles such as trucks that are used in marketing grains.

In recognition of the inadequate infrastructure relative to the needs of the agriculture sector, the development of production and post-production facilities is being pursued under different sectoral programs of the Medium Term Development Program (MTDP) of the Department of Agriculture (DA). This policy is also consistent with the aim of improving agricultural product competitiveness given the current trend of agricultural trade liberalization under the GATT-UR/WTO, AFTA and other regional free trade agreements. Infrastructure development in the agriculture sector includes the provision of farm-to-market roads, irrigation systems, and post-harvest facilities. Part of the Competitiveness Enhancement Fund (CEF) established from the proceeds of the Minimum Access Volume (MAV) of agricultural imports is earmarked for infrastructure in the agriculture sector.

The construction and rehabilitation of farm-to-market roads in major grain producing areas will be a joint undertaking between the DA, Department of Public Works and Highways (DPWH) and local government units (LGUs). The development of irrigation facilities is being carried out through a small water impounding project (SWIP) by the Bureau of Soils and Water Management (BSWM) and, more importantly, a shallow tube-well project. Under the latter project the National Irrigation Administration (NIA) will also establish shallow-well pumps covering about 3.1 thousand hectares. In addition, the regional field units (RFUs) will establish shallow tube-wells covering 3.9 thousand hectares in 21 grain program provinces. From 1995 to 1997 there were already a total of 13.8 thousand shallow tube-wells installed in the various regions of the country (Appendix Table 12). Under the Corn Program several post-harvest facilities have been targeted for distribution to farmers such as: multipurpose drying pavements, in-store dryers, outdoor storage, and moisture meters. The latter will be used in monitoring the moisture content of maize for the prevention and control of aflatoxin and other mycotoxins. The BPRE estimates that about 79% of maize stocks in both private and government warehouses is contaminated with aflatoxin due to high moisture content (Department of Agriculture 1997).

In the livestock sector, through the Livestock Program the major livestock agencies of the DA will upgrade livestock auction markets, set up an additional 34 abattoirs, 8 dressing plants and 98 meat processing plants (Table 3.9). About two-thirds of existing auction markets are accredited and operational. One-third are not operational, as these are not accredited by the National Meat Inspection Commission (NMIC) because their facilities are below standards. At present, only 1% of current abattoirs and 21% of the total number of dressing plants are classified as Class AAA, that is, conforming to international standards. Livestock slaughtered in Class AAA abattoirs are exportable, similarly with dressed chickens from Class AAA dressing plants. Slaughtered animals and poultry dressed in non-AAA units can meet only domestic market standards. The regional distribution of livestock post-harvest facilities is given in Appendix Table 13. Auction markets predominate in Region VI (28%) and abattoirs in Region IV (14%).

Table 3.9 Livestock post-production facilities, the Philippines, 1997.

Type of Facility	Total No.
1. Livestock auction market	
a. Existing	137
a.1 Operational	98
a.2 Non-operational	39
b. Target	34
2. Livestock auction market	
a. Existing	1,039
a.1 Class AAA	11
a.2 Non-AAA	1,028
b. Target	98
3. Livestock auction market	
a. Existing	81
a.1 Class AAA	17
a.2 Non-AAA	64
b. Target	8

Source: Gintong Ani for Livestock (Department of Agriculture 1997).
Class AAA - Produces export quality meat.
Non-AAA - Produces meat for domestic consumption.

3.2 Institutional support services

Complementary to the various physical structures are the institutional supports such as sanitary and phytosanitary measures.

3.2.1 Sanitary and phytosanitary measures

Under the GATT-UR/WTO, the Philippines has committed itself to harmonize its sanitary and phytosanitary measures (SPS) with those of international standards. Several studies on SPS such as those by Manuel (1996), Azanza (1996), Guerrero III (1996) and De Leon (1996) have been commissioned by the Department of Agriculture under the APRAAP policy project. These studies reveal that the Philippines has yet to established its own standards for most plant and plant products, meat and meat products, and fisheries and marine products for adoption or submission to Codex Alimentarius Commission of the Food and Agricultural Organization (FAO). This lack or inadequacy in turn is attributed partly to personnel and laboratory facility constraints. Most Philippine standards are adopted or based on Codex or requirements of importing countries.

SPS for plants and plant products

In compliance with the International Plant Protection Agreement, the Philippines is committed to complying with the phytosanitary requirements of plants and plant products for export to ensure acceptability in the country of destination. This is enforced by the Plant Quarantine Law of 1978, which was revised by the Administrative Code of 1987. The Plant Quarantine Office of the Bureau of Plant Industry (BPI) is tasked with export inspection using random sampling of 10% of exports. It follows the requirements of importing countries in the inspection process.

In addition to export inspection, the Plant Quarantine Office is also responsible for inspecting imports of plants and plant products with the aim of preventing the entry of foreign pests and their spread in the country. It also conducts inspections of international vessels and aircraft at domestic seaports and airports of the country. Inter-island domestic flow of specific plants and plant products is also subject to quarantine regulations. Plant quarantine rules for entry and outflow of selected commodities are listed in Table 3.10. While clearance for most plants and plant products is given by the BPI, other agencies grant clearance for specific commodities. Clearance for grains and grain products is issued by the National Food Authority (NFA), and mature coconuts and seedlings by the Philippine Coconut Authority (PCA).

In general, Philippine SPS measures for plants and plant products are more restrictive compared to international standards, consistent with specific principles of international standards for some specific plants, and less defined for some plant classification (Appendix Table 14).

SPS for meat and meat products

In compliance with international phytosanitary requirements, meat and meat product imports into the Philippines require an authority to import/veterinary quarantine clearance (VQC), and undergo mandatory inspection and examination. The importation of ruminants for breeding is also subject to specific quarantine rules and regulations. The authority to import/VQC is issued by the DA upon recommendation of the Bureau of Animal Industry (BAI) as to source and health aspects.[1] With the advent of the GATT-WTO, Minimum Access Volume (MAV) imports are required to be covered by a MAV Import Certificate (MAVIC) issued and approved by the MAV Management Committee before the issuance of VQC. The BAI Veterinary Quarantine Inspection Unit assigned at ports of entry inspects, examines and issues clearance to the imports before these are released by the Bureau of Customs. Meat and meat product imports are subject to veterinary inspection and examination by National Meat and Inspection Commission (NMIC) personnel at the importer's cold and storage warehouse. The sampling and testing methods used in determining the levels of essential components, additives, contaminants and other acceptable mycotoxin or aflatoxin levels are based on the International Organization for Standards (ISO). The standards used and recommendation are shown in Table 3.11. Ruminant imports on the other hand are inspected and examined by the BAI. The methods of diagnostic tests and vaccine control are in accordance with the world organization for animal health, Office International des Epizootes (OIE) as advocated by the WTO Agreement on the application of sanitary and phytosanitary measures.

[1] As per DA Memorandum of January 10, 1997, the Director of the BAI has been authorized to approve the VQC in the absence of the DA's Assistant Secretary for Livestock, Fisheries and Foreign Assisted Projects. Prior to DA Administrative Order No. 9-A of July 8, 1996, the NMIC certified the quality/standards before the VQC wass approved.

Table 3.10 Plant quarantine rules for selected agricultural commodities, the Philippines, 1997.

Plant	Import Quarantine Requirement	Export Quarantine Requirement
Rice (*Oryza sativa*)	Importation of rice for planting purposes is PROHIBITED from all countries, except for very small quantities for experimental purposes only. At present only IRRI & PHILRICE are allowed to import	For planting: 1. IP from country of destination 2. PC from BPI
Maize (*Zea mays*)	For seed purposes: 1. IP from BPI 2. PC from country of origin For feed purposes: 1. Inspection upon arrival NOTE: Consult NFA for big quantities	For planting: 1. IP from country of destination 2. PC from BPI For feed purposes: 1. IP if required by the importing country 2. PC from BPI
Coconut (*Cocos nucifera*)	Import of plants and parts thereof including seeds, and other parts capable of propagation are prohibited	Japan/ UK/N. Ireland/ Netherlands 1. Should be clean and free from pests
White Potato	For seeds/ tubers purposes: 1. IP from BPI 2. PC from country of origin 3. Food consumption: IP,PC	U.S.A. - Prohibited
Soybean (*Glycine max*)	Brazil/U.S.A. China For planting: 1. IP from BPI 2. PC from country of origin For feed/ consumption:	
Cassava (*Manihot esculenta*)	Cassava flour 1. Inspection upon arrival For planting materials: IP, PC	

IP – Import Permit PC – Phytosanitary Certificate
Source: Plant Quarantine Office, Bureau of Plant Industry (BPI).

A study of Manuel in 1996 shows that the Philippines does not have SPS standards for the essential components, additives, contaminants, mycotoxin or aflatoxin levels for meat of corned beef, luncheon meat, cooked cured ham, cooked cured pork, shoulder and chopped meat, bouillons and consommes, eggs and dairy products, pork and beef carcasses, and mycotoxin levels in food and feeds (Table 3.12). The study recommended adoption of the Codex standards or the standards of the United States Food and Drug Administration (USFDA). The Philippines, however, has established standards which are absent in the Codex for the following meat products: cold cuts and hotdogs, bacon and Canadian style bacon, cured ham, American and Chinese style ham, beef and pork longaniza, pork sausage and tocino. The same study recommends submission of the Philippine standards to the Codex.

Table 3.11 SPS sampling and testing methods for meat and meat products, the Philippines.

Meat and Meat Products	Philippine Standard	Recommendation
Code of practice in manufacturing, processing or holding of human food	Same as ISO	Adopt ISO
Sampling and preparation of test samples part 1 (sampling) and part 2 (preparation) of test samples for microbiological examination	Same as ISO	Adopt ISO
Microbiology-general guidance for the enumeration of coliforms-most probable number technique at 30 degrees centigrade	Same as ISO	Adopt ISO
Enumeration of micro-organism-colony count technique at 30 degrees centigrade	Same as ISO	Adopt ISO
Detection and enumeration of presumptive coliform bacterial and presumptive E. coli	Same as ISO	Adopt ISO
Detection of salmonella, fat, chloride, nitrate, starch, nitrogen and moisture contents	Same as ISO	Adopt ISO
	Same as ISO	Adopt ISO
Shelf-stable, chilled and frozen corned beef-specification	Same as ISO	Adopt ISO
Cold cuts and hotdogs specification	Same as ISO	Adopt ISO

Source: Manuel 1996. Sanitary and phytosanitary standards for meat and meat products.
A final report commissioned by the APRAAP Policy Research Group, Department of Agriculture (DA).

SPS measures in processed foods

The Bureau of Standards of the Department of Trade and Industry (DTI) is responsible for standards for fresh agricultural products while the Bureau of Food and Drug Administration (BFDA) of the Department of Health (DOH) takes the lead in processed foods. A study undertaken by De Leon (1996) found that the Philippine SPS on processed foods such as sugars, cocoa products and chocolate, coffee and tea, processed fruits and vegetables, vegetable oils, bottled water, and additives conform with the codes of practice and standards of the Codex Alimentarius. The codes of practice and standards for some processed foods however, have yet to be submitted to the Office International des Epizootes (OIE). Moreover, it was observed that while the central offices of the BFAD and the Department of Science and Technology (DOST) have sufficient laboratories and human resources to conduct the necessary SPS tests, the regional laboratories have limited capacities to test compliance to SPS. The study, therefore, recommends strengthening of government laboratories such as those of the Food Development Center (FDC) of the National Food Authority (NFA), the Bureau of Plant Industry (BPI), the National Meat Inspection Commission (NMIC), and the Bureau of Fisheries and Aquatic Resources (BFAR) to enable the government, particularly the Department of Agriculture (DA), to effectively implement its SPS requirements.

Table 3.12 Status of sanitary and phytosanitary standards for meat and meat products, the Philippines.

Meat and Meat Products	Philippine Standard	Recommendation
Corned beef	None	Adopt Codex
Luncheon meat	None	Adopt Codex
Cooked cured ham	None	Adopt Codex
Cooked cured pork shoulder	None	Adopt Codex
Cooked cured chopped meat	None	Adopt Codex
Bouillons and consommes	None	Adopt Codex
Cold cuts and hotdogs	Same as Codex	Submit standard
Bacon and Canadian style bacon	Same as Codex	Submit standard
Quick cured ham/quick cured cooked ham	Same as Codex	Submit standard
American style ham	Same as Codex	Submit standard
Chinese style ham	Same as Codex	Submit standard
Longaniza (beef)	Same as Codex	Submit standard
Longaniza (pork)	Same as Codex	Submit standard
Sausage (pork)	Same as Codex	Submit standard
Tocino	Same as Codex	Submit standard
Raw liquid milk	None	Submit standard
Condensed milk	None	Adopt Codex
Milk powder	None	Adopt Codex
Cream powder	None	Adopt Codex
Cheeses	None	Adopt Codex
Frozen eggs	None	Adopt USFDA standard
Liquid eggs	None	Submitted standard
Egg whites	None	Adopt USFDA standard
Dried eggs whites	None	Adopt USFDA standard
Frozen egg whites	None	Adopt USFDA standard
Egg yolks	None	Adopt USFDA standard
Dried egg yolks	None	Adopt USFDA standard
Frozen egg yolks	None	Adopt USFDA standard
Specification for pork carcasses	None	Adopt USFDA standard
Specification for beef carcasses	None	Adopt USFDA standard
Mycotoxin level in foods and feeds	None	Adopt USFDA standard

Source: Manuel 1996. Sanitary and phytosanitary standards for meat and meat products.
A final report commissioned by the APRAAP Policy Research Group, Department of Agriculture (DA).

SPS measures for fish and fishery products

Azanza (1996) reported that existing Philippine SPS measures for fresh, chilled or frozen fish and shrimp conform to the codes of practice and standards of FAO's Codex Alimentarius (Table 3.13). The country, however, still lacks codes of practice and standards for other edible fishery products such as shellfish, other crustaceans like crabs, cephalopods including octopus, cuttlefish and squid, and some algae like Caulerpa spp. which are exported as food commodities. In view of these findings, the study recommended the adoption of existing Codex measures for fish and fishery products and the formulation of Philippine standards for products without SPS measures, but these products will be prioritized based on export performance, export potential and import volume. The other recommendations of the study include a review and change of presentation formats of existing SPS measures for fresh, chilled and frozen fish and shrimp; standards for fish paste and sauce to conform with globally accepted SPS measures; removal of administrative, regulatory and statutory impediments to implementing national SPS measures; and transparency in SPS measures by translating into local languages and providing venues for discussion for local product applications.

Table 3.13 Philippine SPS measures for processed fish and fish products.

Food Item	Evaluation of Philippine Standard	Recommendation
Fresh and chilled fish	Code of Practice (CP) and standard (std) aligned with CODEX	Effective implementation
Frozen fish	CP and std are aligned with CODEX, local stds not species and style specific	Formulate species and style stds for frozen fishballs and whole, deboned milkfish
Canned and salted fish	International CP and std used for local products	Formulate local CP and set stds for commercially significant products
Smoked fish	International CP used for local products	Formulate CP and set stds for commercially significant products such as smoked salinas, tamban, tuna and bangus
Fresh and chilled shrimp, frozen and canned shrimp	Local CP and std are aligned with CODEX	Effective implementation
Fresh, chilled and frozen crab	Local CP and std not specific for crabs	Formulate local CP and stds
Canned crab	International std is used for local products	Formulate local CP and std
Fresh and chilled bivalves and univalves	Local CP and std are not specific for shellfishes	Formulate local CP and std
Frozen and canned bivalves and univalves	International CP is used for local products	Formulate CP and std
Fresh and chilled squid, cuttlefish and octopus, frozen cephalopods	Local CP and std are not specific	Formulate CP and std
Canned cephalopods	International CP for canned fish is used for local products	Formulate CP and std

Source: Azanza 1996. Sanitary and phytosanitary measures for processed fish and fishery products. A final report commissioned by the APRAAP Policy Research Group, Department of Agriculture (DA).

SPS for fisheries and marine quarantines

Regulations for fishery export and import fall under the responsibility of BFAR. Regulations for live fish exports are provided in Fisheries Administrative Order (AO) No. 147, Series of 1983. AO 147 however does not state specific scientific standards for inspection, quality control and technical services relating to quarantine, transport, disease diagnosis and packaging of live animals. The Philippine regulations for live fish importation are stated in Administrative Order No. 135, Series of 1981. Likewise, AO 135 does not have specific standards for inspection, quality control, prophylactic treatment and technical services necessary for ensuring safety of imported live aquatic animals.

A review by Guerrero (1996) of the existing sanitary and phytosanitary measures for fisheries and marine quarantine applied in the Philippines indicates that the country's SPS standards for export and import of live aquatic animals are grossly deficient in comparison with the Fish Code SPS Measures of the Office International des Epizooties (OIE). As such, the study recommended the adoption in the Philippines of most of the OIE SPS measures (Appendix Table 15). The same study also assessed the present capability of agencies in charge

of implementing SPS measures (i.e. BFAR) and found a lack of competent personnel and facilities for the proper implementation of such measures. In order to address these constraints, the following were recommended: establishment of fish quarantine facilities, upgrading of technical expertise, preparation of diagnostic and compliance manuals, and active participation of the Philippines in OIE programs for purposes of obtaining assistance and harmonizing standards.

3.2.2 Other international trade-related services

Through the Department of Trade and Industry (DTI), the government provides various assistance or services relating to international trade from both the importing and exporting sides, although more on processed and manufactured products. This assistance includes, from the import side, import facilitation, and from the export side, design and packaging, export facilitation, promotion and training, and shipping. These services fall under the responsibility of the different agencies comprising the DTI (Appendix Table 16). In addition, the DTI through its Philippine Economic Zone Authority (PEZA) is in charge of the operations of four government controlled economic zones, formerly export processing zones, located in the provinces of Bataan, Baguio City, Mactan and Cavite. Among others, PEZA assists in the recruitment and training of industry workers and in providing information concerning investment prospects in the zone.

4. Trends in Philippines Foreign Trade

A review of the various phases of Philippine trade regime from the pre-1950s to the mid-1990s was provided in Chapter 2. The review centered on the interrelationship of trade policies, exchange rate, and other monetary and fiscal policies. This chapter attempts to determine the effects of these policies on the trends in foreign trade with special consideration on agricultural commodities. The discussion focuses on the period 1980 to 1997.

4.1 Trends in total foreign trade

Over the entire 1980-1997 period, the value of combined exports and imports posted, on average, a yearly growth of 9% (Table 4.1). This can be subdivided into a yearly compounded rate of – 4% for 1980-1984; 17% for 1985-1989; 14% for 1990-1994; and 18% from 1995 to 1997. The negative growth in total trade in the first half of the 1980s may be attributed to a slowdown of the economy as it faced a foreign exchange crisis, severe balance of payment problems between mid-1983 and mid-1984, and low world prices. The peso devaluation and imposition of import controls substantially reduced imports from 1984-1986. The devaluation resulted in increased exports in 1984, but this was not sustained in 1985 and 1986. Although the balance of trade was still negative, the deficit was reduced from 1984 to 1986. The value of exports and imports improved in 1987 and continued on in the ensuring years but the increase in imports outpaced the growth in exports. As a result, the trade deficit worsened; the trade deficit-GDP ratio beginning 1994 was twice the ratio in 1980s (Table 4.2). On average, from 1990 to 1996 the value of imports comprised 60% of total trade and the value of exports, 40%. In 1997 the export share increased slightly by 1% and the import share decreased correspondingly. This brought down the trade deficit by about 10% in 1997 from its 1996 level. Although the proportion of total value of exports to GDP is increasing, the levels of export earnings are not sufficient to sustain the import requirements of the industrial sector.

Table 4.1 Total trade, exports, imports and balance of trade, the Philippines, 1980-1997 (f.o.b. value in million US $, at current prices).

Year	Total Trade	Exports		Imports		Balance of Trade
		Value	%	Value	%	
1980	13,478	5,751	42.67	7,727	57.33	-1,976
1981	13,658	5,712	41.82	7,946	58.18	-2,234
1982	12,679	5,012	39.53	7,667	60.47	-2,655
1983	12,458	4,971	39.91	7,487	60.09	-2,51
-1984	11,336	5,266	46.45	6,070	53.55	-804
1985	9,699	4,589	47.31	5,111	52.69	-522
1986	9,774	4,730	48.40	5,044	51.60	-31
1987	12,457	5,720	45.92	6,737	54.08	-1,017
1988	15,233	7,074	46.44	8,159	53.56	-1,085
1989	18,240	7,821	42.88	10,419	57.12	-2,598
1990	20,392	8,186	40.14	12,206	59.86	4,020
1991	20,892	8,840	42.31	12,052	57.69	-3,212
1992	24,343	9,824	40.36	14,519	59.64	-4,695
1993	28,972	11,375	39.26	17,597	60.74	-6,222
1994	34,815	13,483	38.73	21,332	61.27	-7,850
1995	43,985	17,447	39.67	26,538	60.33	-9,090
1996	52,969	20,542	38.78	32,427	61.22	-11,884
1997	61,162	25,228	41.25	35,934	58.75	-10,706

Source: National Statistics Office (NSO).

Table 4.2 Gross domestic product, balance of trade and total export, the Philippines, 1980-1997.

Year	GDP	% Share to GDP	
	US $ million	Deficit Balance of Trade	Total Export
1980	32,446	6.1	17.7
1981	35,646	6.3	16.0
1982	37,143	7.1	13.5
1983	33,213	7.6	15.0
1984	31,409	2.6	16.8
1985	30,767	1.7	14.9
1986	29,868	1.0	15.8
1987	33,197	3.1	16.8
1988	37,886	2.9	20.8
1989	42,572	6.1	18.4
1990	44,309	9.1	18.5
1991	45,416	7.1	19.5
1992	52,977	8.9	18.5
1993	54,369	11.4	20.9
1994	64,084	12.2	21.4
1995	74,132	12.3	23.5
1996	83,533	14.2	24.6
1997	83,210	12.9	30.3

Sources: National Statistical Coordination Board (NSCB) for GDP and National Statistics Office (NSO) for trade.

Total exports and imports are dominated by the non-agricultural sector. Its share in total exports and imports is also increasing (Table 4.3). In 1980, the value of non-agricultural exports accounted for 62% of total export value and this share scaled to almost 91% in 1997. The dominance of the non-agricultural sector in foreign trade is even greater in terms of total value of imports. Between 1980 and 1997, the share of non-agricultural imports ranged from 86% (1985 and 1988) to 91% (1997).

Table 4.3 Total exports and imports, agricultural exports and imports, the Philippines, 1980-1997.

Year	Total Exports	Exports % Share		Total Imports	Imports % Share	
	(million US $ f.o.b.)	Agricultural	Non-Agricultural	(million US $ f.o.b.)	Agricultural	Non-Agricultural
1980	5,751	37.7	62.3	7,727	10.6	89.4
1981	5,712	36.0	64.0	7,946	10.8	89.2
1982	5,012	34.8	65.2	7,667	12.5	87.5
1983	4,971	31.4	68.6	7,487	10.9	89.1
1984	5,266	31.0	69.0	6,070	10.8	89.2
1985	4,589	28.0	72.0	5,111	13.8	86.2
1986	4,730	30.0	70.0	5,044	13.0	87.0
1987	5,571	27.3	72.7	6,737	12.1	87.9
1988	7,874	21.8	78.2	8,159	13.6	86.4
1989	7,871	22.0	78.0	10,419	12.6	87.4
1990	8,186	20.8	79.2	12,206	12.7	87.3
1991	8,840	20.9	79.1	12,052	10.4	89.6
1992	9,824	18.9	81.1	14,519	10.7	89.3
1993	11,375	16.9	83.1	17,597	9.2	90.8
1994	13,483	15.4	84.6	21,333	9.9	90.1
1995	17,447	14.3	85.7	26,538	10.0	90.0
1996	20,543	11.2	88.8	32,427	9.5	90.5
1997	25,228	9.3	90.7	35,934	8.6	91.4

Source: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS) based on data from the National Statistics Office (NSO).

4.2 Agricultural foreign trade

The declining share of the agriculture sector in exports and imports as shown in Table 4.3 is consistent with the declining relative importance of this sector to national output as discussed in Chapter 1. In the early 1980s total agricultural exports, including processed agricultural products such as coconut oils and pineapple juice and agro-industrial products, such as agricultural machinery, contributed about a third to the total value of exports. On average, this share declined at an annual compounded rate of 8% until 1997 due to increasing manufactured product and electronics exports. Also, the share of agricultural imports to total imports decreased from 11% in the early 1980s to 9% from 1996 to 1997.

4.2.1 Agricultural balance of trade.

Relatively large agricultural trade surpluses from the late 1970s continued in 1980 at 62% of agricultural export value (Table 4.4). However, these surpluses decreased gradually beginning 1981 with a decline of 11%, as a result of the lowering of world prices that affected the value of Philippine agricultural exports. The agricultural trade balance dropped further by 34% in 1982 and another 9% in 1983. During this period the total trade deficit of the country worsened. In 1984 agricultural export value increased by 5%, this together with a 20% decrease of agricultural import value resulted in a 37% increase in the trade balance from the 1983 level. It is to be noted that the decline of agricultural import value in 1984 was the offshoot of peso devaluations that occurred between June 1983 and June 1984. These devaluations were meant to curb imports (refer to Chapter 2). The increase in agricultural export value in 1984, on the other hand, was due partly to a comprehensive program for agriculture designed to improve balance of payments through export expansion and import substitution.

Beginning in 1988 agricultural export and import values again improved. This time, imports kept pace with exports as a result of resumption of the Import Liberalization Program (ILP) and the continuing Tariff Reform Program (TRP), as discussed earlier in Chapter 2. The end result was a gradual erosion of the agricultural trade balance until a deficit was incurred in 1994. This situation was exacerbated by import liberalization under the GATT-WTO. It must be noted that while agricultural exports were increasing, the rate of increase in agricultural imports was even greater. This situation is also reflected in the decreasing share of agricultural exports to national GDP. In 1997, agricultural exports accounted for almost 3% of national GDP compared to its share of about 7% in 1980. On the other hand, in 1997 the agricultural imports share to GDP was nearly 4% compared to 2.5% in 1980 (Table 4.4).

4.2.2 Composition of agricultural exports

Based on SITC classification, the majority of Philippine agricultural exports comprise Food and Live Animals Chiefly for Food. Until 1990, it captured more than 90% of the total value of agricultural exports, but this level went down to 86% thereafter (Table 4.5). Under this classification, the three major exports and their contributions are vegetables and fruits (50%), fish and fish preparations (17%), and sugar and sugar preparations and honey (12%) (Appendix Table 17). The major fruit exports are fresh banana and pineapple and pineapple products. Sugar exports are declining partly due to the end of preferential treatment from the US, its major market.

Next to Food are the Crude Materials, Inedible Except Fuels exports where crude rubber is a major item. This classification contributed, on average, 7% to total agricultural exports from 1996 to 1997. The third largest group of agricultural exports is Manufactured Fertilizer contributing, on average, 5% to total agricultural exports during the period 1995 to 1997. Tobacco exports contributed less than 2% to total agricultural export value, animal and vegetable oils, less than 1%, and agricultural machinery, less than 0.5%. The value of

agricultural machinery is increasing.

Table 4.4 GDP, agricultural exports and imports, balance of agricultural trade, the Philippines, 1980-1997.

Year	Agric. Export (f.o.b. million US $)	Agric. Import	Agric. Trade Balance	% Share to National GDP		
				Agric. Exports	Agri. Imports	Agric. Trade Balance
1980	2,167	823	+1,344	6.7	2.5	4.1
1981	2,057	862	+1,195	5.8	2.4	3.4
1982	1,740	960	+ 784	4.7	2.6	2.1
1983	1,559	819	+ 710	4.7	2.5	2.2
1984	1,634	655	+ 979	5.2	2.1	3.1
1985	1,286	707	+ 579	4.2	2.3	1.9
1986	1,421	657	+ 764	4.8	2.2	2.6
1987	1,521	815	+ 706	4.6	2.5	2.1
1988	1,713	1,106	+ 607	4.5	2.9	1.6
1989	1,721	1,317	+ 404	4.0	3.1	0.9
1990	1,701	1,555	+ 146	3.8	3.5	0.3
1991	1,850	1,259	+ 586	4.1	2.8	1.3
1992	1,854	1,560	+ 294	3.5	2.9	0.5
1993	1,918	1,626	+ 292	3.5	3.0	0.5
1994	2,072	2,113	-41	3.2	3.3	0.6
1995	2,499	2,649	- 150	3.4	3.6	0.2
1996	2,307	3,096	- 789	2.8	3.7	0.9
1997	2,338	3,102	-764	2.8	3.7	0.9

Source: National Statistics Office (NSO).

Table 4.5 Agricultural exports by commodity classification, the Philippines, 1980-1997 (f.o.b. in million US $).

Commodity	1980	1985	1990	1995	1996	1997
Total Agricultural Exports	2,167	1,286	1,701	2,499	2,307	2,338
1. Food and live animals chiefly for food	2,016	1,172	1,456	2,178	1,964	2,006
2. Tobacco & tobacco manufactures	30.16	4.21	48.98	27.94	37.63	40.00
3. Crude materials, inedible except fuels	112.22	51.61	108.51	146.93	161.55	158.43
4. Animal and vegetable oils, fats waxes	6.52	24.12	14.71	18.33	18.17	21.63
5. Fertilizer, manufactured	0.52	33.42	71.93	119.92	114.54	99.00
6. Agricultural machinery	0.26	0.52	-	3.32	4.09	7.53

Source: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS) based on data from the National Statistics Office (NSO).

4.2.3 Top ten exports and major markets

The yearly top ten agricultural exports and their unit ranking from the period 1980 to 1997 are given in Table 4.6. During this period, there were 14 commodities which were identified in the top-ranking list. Only seven commodities, however, have been consistently in the top ten ranking – coconut oil, sugar, desiccated coconut, copra oil cake/meal, banana, pineapple and pineapple products, and tuna.

Table 4.6 Top ten Philippine agricultural exports ranked according to f.o.b. value, 1980-1997.

Commodity	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
Coconut oil	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sugar (centrifugal)	2	2	2	2	2	2	7	8	9	6	5	6	8	6	8	10	6	9
Desiccated coconut	3	5	6	5	5	5	10	5	6	8	8	8	7	8	7	8	9	8
Banana, fresh	4	3	3	3	3	4	2	3	3	3	3	3	3	2	3	2	2	2
Pineapple & pineapple products (fresh, dried, preserved, juice)	5	4	4	4	4	3	3	4	5	5	6	7	4	5	5	5	4	4
Tuna (fresh, chilled, frozen)	6	6	7	7	7	8	9	7	4	4	4	5	5	4	4	4	3	3
Copra oil cake/meal	7	7	5	6	8	9	8	6	8	9	9	9	9	9	9	9	10	10
Copra	8	9	9	-	-	-	-	10	-	-	10	-	-	-	-	-	-	-
Coffee, raw or green	9	8	8	8	6	6	4	9	10	10	-	-	-	-	-	-	-	-
Tobacco, unmanufactured	10	-	10	-	-	-	-	-	-	-	-	10	10	10	10	-	-	-
Shrimps/prawns (fresh, frozen, chilled)	-	10	-	9	9	7	6	2	2	2	2	2	2	3	2	3	5	5
Abaca (in bales)	-	-	-	10	10	-	-	-	-	-	-	-	-	-	-	-	-	-
Fertilizer, manufactured	-	-	-	-	-	10	5	-	7	7	7	4	6	7	6	6	7	6
Seaweed and carageenan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	8	7

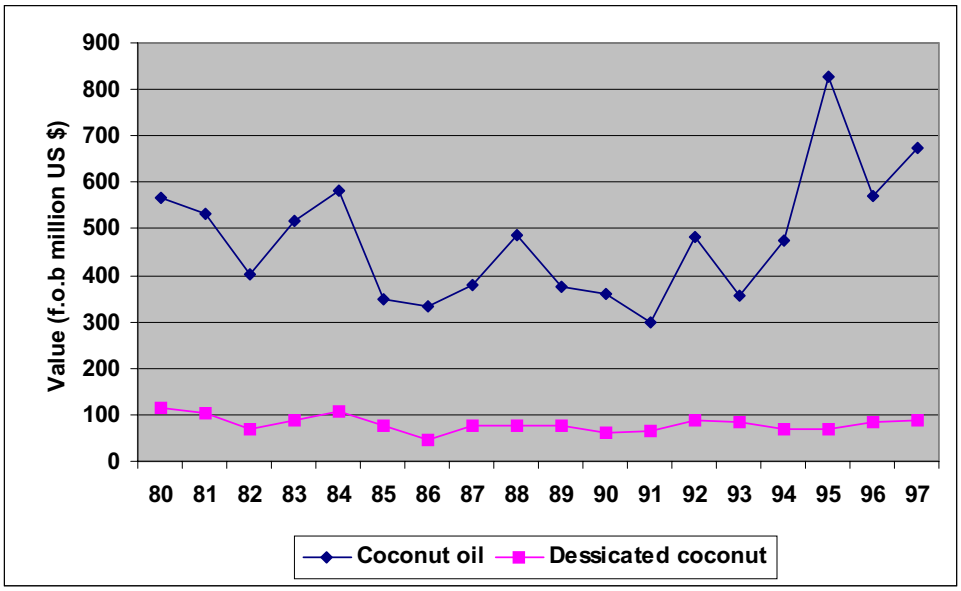
Sources: Based on data from the Bureau of Agricultural Statistics (BAS) and the National Statistics Office (NSO).
Note: A dash (-) in a particular year indicates that the commodity is not in the top ten ranking.

Coconut products

Coconut oil remains the leading export earner in the agriculture sector. Its export value fluctuated from 1980 to 1997; the troughs in Figure 4.1 in 1982, 1985, 1986 and 1991 can be attributed to low prices of coconut oil in the world market. A drop in export value in 1986 is due to reduced volume in spite of a higher price. On average, the annual export from 1980-1985 was US $491 million; this weakened to US $378 million in 1986 to 1990 but recovered to US $488 million from 1991-1995 (Appendix Table 18). The increased volume of exports in 1997 resulted in earnings of US $673 million, which is 18% above the US $571 million returns in 1996.

Desiccated coconut was in the top five export earners from 1980 to 1987 contributing, on average, US $84 million to total value of agricultural exports. In subsequent years it was ranked mostly in the eighth position with average annual export earnings of US $74 million from 1988 to 1995. In 1996 and 1997, respectively, its contribution to agricultural export value improved to US $85 million and US $86 million, about the same level as in the 1980 to 1987 period.

Figure 4.1 Philippine coconut oil and desiccated coconut exports, 1980-1997.



Exports of other traditional coconut products and by-products such as copra and copra oil cake/meal have also declined in importance. The average annual value of exports for copra oil cake/meal from 1980-1983 was US $76 million. It fell sharply by 50% to US $ 38 million on average in 1984 and 1985 (Figure 4.2) due to decreases in volume of exports (Appendix Table 18). This in turn resulted from low coconut yields caused by a prolonged drought. In 1984 the volume of coconut oil exports also dropped, but export value was high due to higher prices.

Copra export as a top ten earner has been intermittent and declining within the reference period. Copra export ranked number ten in 1982 and 1990 with export values of US $49 million and US $20 million, respectively. In the early 1980s, copra export was in the eighth or ninth position. There was a copra export ban in 1984 and 1985 due to a severe drought that affected coconut production. Beginning 1991 copra was no longer a top earner.

The US remains a traditional market for Philippine coconut oil. In the period 1991-1995 it absorbed, on average, 422 thousand metric tons or 45% of the annual volume of exports. In 1996 it took half of the volume and 44% in 1997 (Table 4.7). Next to the US is the Netherlands market with an annual average intake of US $306 million or 33% of yearly total tonnage in 1991-1995. In 1996 and 1997, shipments to the Netherlands were, respectively, 27% and 33%. Indonesia took 8% of total exports in 1996 and 6% in 1997.

The US is also a major trading partner for Philippine desiccated coconut with shipments comprising 48%, on average, of total tonnage in 1996 and 1997. The European market, principally Germany and the U.K., absorbed 14%, on average, of the yearly shipments in 1996 and 1997. Australia and Canada are emerging markets.

The majority of Philippine copra oil cake/meal is sold in the European market. The major buyer is the Netherlands which took 55% of the volume in 1996 and 33% in 1997. The combined markets of Germany and the U.K. bought a fifth of the total shipments in 1996 and a fourth in 1997. In the same period, shipments to South Korea were 14% and 29%.

Figure 4.2 Philippine copra oil cake/meal and copra exports, 1980-1997.

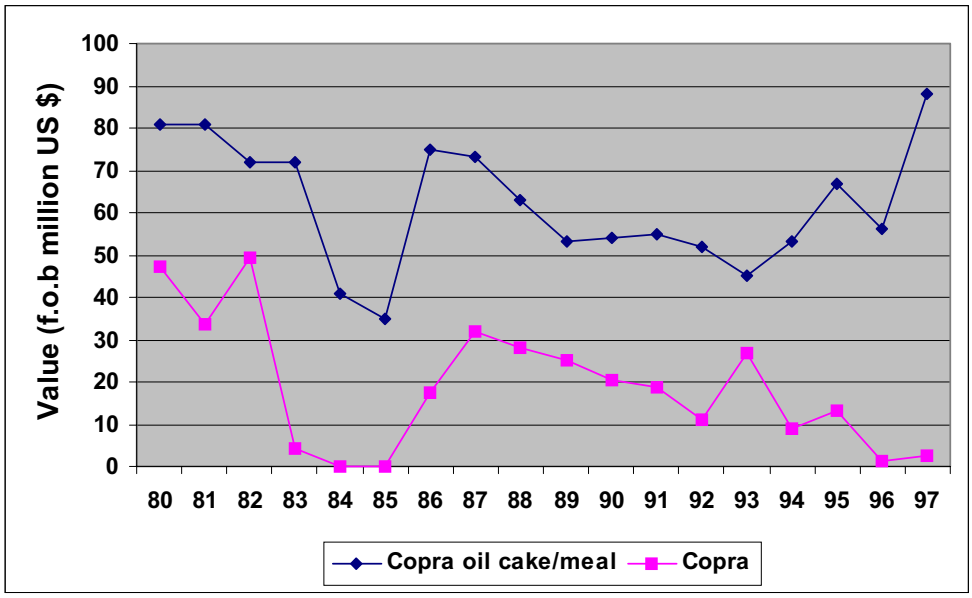


Table 4.7 Major markets of Philippine coconut products and by-products, 1996-1997.

Coconut Product Market	1996 Qty ('000 mt)	1996 f.o.b. Value (US $ million)	1997 Qty ('000 mt)	1997 f.o.b. Value (US $ million)
1. Coconut oil, crude and refined	792.65	570.64	1080.17	673.43
USA.	400.35	291.37	474.14	303.62
Netherlands	213.30	152.54	412.18	246.91
Indonesia	62.75	42.91	61.00	38.35
Japan	19.55	15.21	33.09	21.63
Others	96.70	68.61	99.76	62.92
2. Desiccated coconut	69.58	84.89	76.79	88.29
USA.	34.15	41.42	36.83	43.11
Germany	5.58	6.73	7.06	7.76
Australia	4.36	5.36	4.93	5.55
U.K.	5.14	6.37	3.85	4.59
Canada	3.63	4.48	4.62	5.16
Others	16.72	20.53	19.50	22.12
3. Copra oil cake/meal	474.55	56.31	571.00	52.51
Netherlands	262.49	31.31	189.03	18.17
South Korea	65.03	7.11	163.40	13.86
Germany	58.14	7.12	67.60	6.40
U.K.	38.94	4.33	81.68	7.66
Others	49.95	6.44	69.32	6.42
4. Copra	3.09	1.35	7.00	2.80
Europe	2.93	1.29	-	-
Bangladesh	-	-	4.00	1.61
Others	0.16	0.06	3	1.19

Sources: Foreign Trade Statistics, 1996 and 1997. National Statistics Office (NSO).

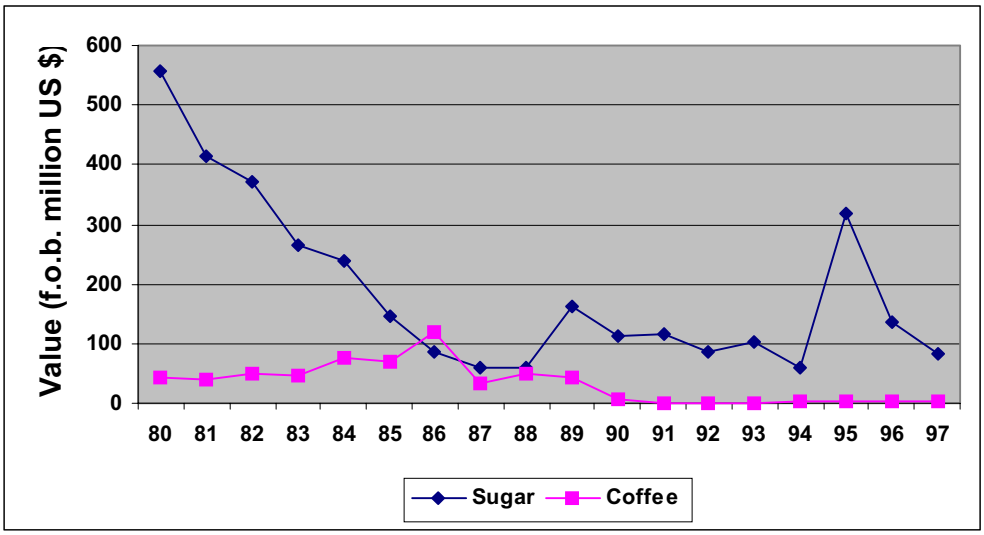
Sugar

The value of centrifugal and refined sugar exports is declining (Figure 4.3) and this can

be traced to several factors. First, is the removal of the preferential treatment in the US market. Second, the emergence of sugar substitutes in the world market has depressed sugar demand. Another factor is economic technical efficiency problems in domestic sugar production. The value of exports was second only to coconut oil from 1980 to 1985, but it slipped to seventh in 1986 and to number ten in 1995. It was in sixth ranking in 1996 but fell to ninth rank in 1997 (Table 4.6).

Yearly export volume of sugar in the first half of the 1980s was, on average, 963 thousand tons. This decreased to an annual average of 347 thousand from 1991 to 1995. It went down further to 318 thousand tons in 1996 and 198 thousand tons in 1997.

Figure 4.3 Philippine sugar and coffee exports, 1980-1997.



As a result of an export quota to the US, it continues to be a major destination of Philippine sugar. During the 1991-1995 period, the annual shipment to the US market was, on average, 178 thousand tons which accounted for 89% of the average total volume exported annually and it was the sole market in 1991-1992, 1995 and 1997. In 1996, 99% of total sugar exports were shipped to the US (Table 4.8). Although the US remains a major market, the Philippines has also diversified its market for sugar. In 1993 and 1994 annual shipments to Japan and South Korea were, respectively, 74 thousand and 38 thousand tons, and to Malaysia, 15 thousand tons in 1993.

Coffee

As a non-traditional export crop, coffee exports began to surge in the late 1970s until the late 1980s. As a result of the Philippines accession to the International Coffee Organization (ICO) an ICO-Certifying Agency was established at the Department of Trade and Industry which is responsible for the marketing and promotion of Philippine coffee exports and ensures compliance to ICO rules. In the 1980-1985 period, on average, the yearly export of coffee was US $54 million, which declined to US $50 million between 1986 and 1990. In 1986, as a result of frost in Brazil, Philippine coffee exports peaked at US $119 million (Figure 4.3). This placed coffee as the number four source of foreign exchange earnings in the agriculture sector. A downtrend in coffee production in subsequent years was reflected in weakening of coffee exports. The coffee export was in ninth ranking in 1987 and it dropped to number ten in 1988 and 1989. As exports dwindled further starting in 1990 the coffee export was no longer in the top ten. This is attributed partly the collapse of coffee prices under the International Coffee

Organization (ICO) pricing scheme.

The US is the major destination of Philippine coffee exports. Considering the period of significant coffee exports from 1980 to 1989, 55% of the annual average export volume of 26 thousand tons was absorbed by the US market. During this period the shipment to Singapore averaged, 5 thousand tons annually or 19% of total annual exports. The average annual absorption of other markets was: Japan 1.7 thousand tons from 1980-1981 and 1986-1989; Canada, 1.5 thousand tons from 1981-1986. From 1990 to 1995, volume exported to the US was 1.33 thousand tons annually and Japan, 810 tons; Australia, 538 tons; and Oman, 325 tons. In 1996 and in 1997, more than half of the yearly export volumes went to Oman (Table 4.8).

Table 4.8 Major markets for Philippine sugar and coffee, 1996-1997.

	1996		1997	
Commodity Market	Qty ('000 mt)	f.o.b. Value (US $ million)	Qty ('000 mt)	f.o.b. Value (US $ million)
Sugar (centrifugal & refined)	317.70	136.20	197.82	82.71
USA	315.45	135.21	197.82	82.71
Oman	2.25	0.99	-	-
Coffee (raw or green)	0.45	1.15	0.55	1.21
USA	0.17	0.42	0.01	0.01
Singapore	0.02	0.04	0.14	0.31
Oman	0.24	0.65	0.33	0.66
Others	0.02	0.04	0.07	0.23

Source: Foreign Trade Statistics, 1996, 1997. Published by the National Statistics Office (NSO).

Fruits

Pineapple and pineapple product exports consist of fresh fruits and other processed products such as syrup, juice and concentrates. As one of the top ten export earners in the agriculture sector, the export value of pineapple and pineapple products ranked mostly either as number four or number five over the 1980-1997 period. Exports suffered from 1987 to 1991 with an annual average of US $ 65, compared to US $117 million from 1980-1986 (Figure 4.4). It recovered in succeeding years with annual export earnings of US $146 million, on average, from 1992 to 1995; an increased level of US $156 million in 1996 which decreased to US $150 million in 1997.

The US and Japan are the two major trading partners of the Philippines for pineapple and pineapple products which come from the two large US owned pineapple companies in the Philippines – Del Monte and Dole. In more recent years, 1996-1997, the export volume to the US comprised, on average, 44% of total exports of pineapple and its products, while the intake of the Japanese market was 30%. The other minor markets are South Korea and Canada with 6% and 3% shares in the total volume of exports in the same period (Table 4.9).

Fresh banana became an export crop in 1960. It ranked as the fourth largest export earner in the agriculture sector in 1980. The value of exports was on the uptrend (Figure 4.4), so this commodity became the second largest source of export earnings in 1986, 1993, 1995-1997. From 1980 to 1985, fresh banana contributed US $ 121 million yearly, on average, to the agriculture sector's export earnings. From 1991 to 1995 yearly export proceeds were US $ 194 million, increasing further to US $ 236 million in 1996 and US $ 217 million in 1997.

Figure 4.4 Philippine fresh banana, pineapple and pineapple product exports, 1980-1997.

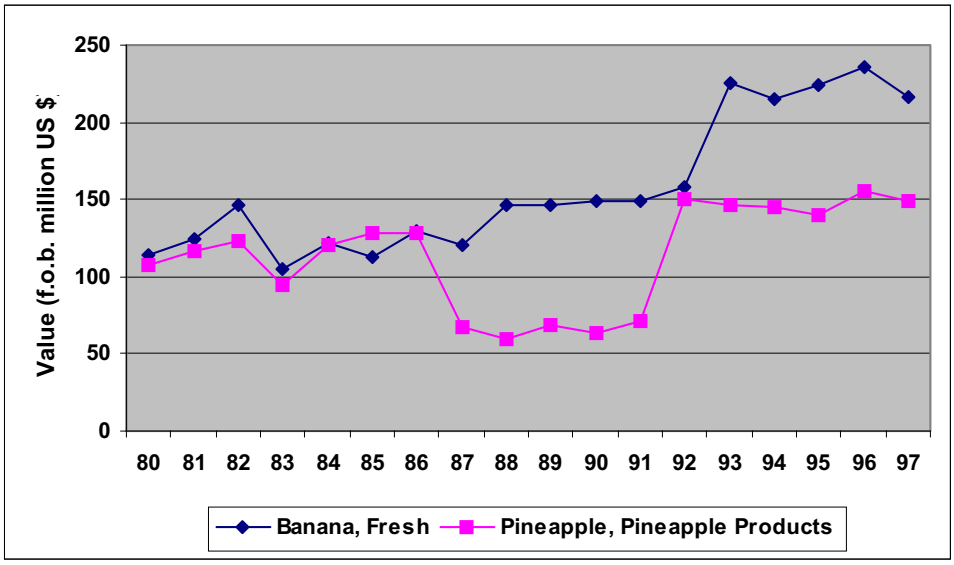


Table 4.9 Major markets for Philippine pineapple and pineapple products and banana, 1996-1997.

Commodity Market	1996 Qty ('000 mt)	1996 f.o.b. Value (US $ million)	1997 Qty ('000 mt)	1997 f.o.b. Value (US $ million)
Pineapple & pineapple products	439.08	156.27	410.70	149.55
USA	199.30	86.63	176.96	78.03
Japan	126.31	25.75	130.20	28.52
South Korea	25.01	6.10	21.08	5.19
Canada	14.07	6.05	14.74	6.58
Others	74.39	31.74	67.72	31.23
Banana (fresh)	1,253.17	236.42	1,143.34	216.56
Japan	692.10	135.10	726.42	140.44
China, People Rep. of	191.15	35.89	132.08	25.56
United Arab Emirates	81.97	13.75	123.27	22.20
South Korea	96.09	16.28	77.04	13.11
Others	79.06	15.33	84.53	15.25

Source: Foreign Trade Statistics, 1996, 1997. Published by the National Statistics Office (NSO).

Japan is the leading market for Philippine fresh banana. Shipments in 1996 and 1997 comprised 55% and 63% of the total volume of fresh banana export. In the same period, exports to the People's Republic of China were, on average, 14%; United Arab Emirates, 9%; and South Korea, 7% (Table 4.9).

Tobacco

As one of the traditional export crops, unmanufactured tobacco contributed significantly to agricultural exports in some years. Its export value ranked number ten in 1980, 1982 and 1991-1994. In 1994 when unmanufactured tobacco was last ranked in the number ten leading exports, Egypt was a major market of the commodity with export to this country valued at US $56 million. The other markets were Germany, USA and Hongkong with combined intake worth US $ 8 million.

Abaca

As a result of the emergence of raw fiber substitutes, the traditional abaca export has waned. During the period 1980-1997 abaca was last recorded as part of the top ten agricultural exports in 1983 and 1984. In these two years, abaca was in the number 10 rank with a total of, respectively, 243 thousand bales and 251 thousand bales, valued at US $18 million and US $ 30 million. On average, about 32% of the total volume of exports was sold to the US market, 28% to the U.K. and 18% to Japan.

Fertilizer, manufactured

Exports of manufactured fertilizer have been increasing. Ranked tenth in the top export earners in 1985, it went up to seventh rank in 1997. In 1985 the volume of exports was 192 thousand tons valued at US $ 33 million and in 1997, 493 thousand tons worth US $ 99 million. The 1997 the volume was, however, 18% less than the 1996 export of 588 thousand tons valued at US $114 million. In 1996 Vietnam was the major trading partner, absorbing more than two-thirds of the volume of exports but only 57% in 1997 (Table 4.10). South Korea, Indonesia and Thailand absorbed 19%, 11% and 12% in 1997 respectively.

Table 4.10 Major markets for Philippine fertilizer, 1996-1997.

	1996		1997	
Commodity Market	Qty ('000 mt)	f.o.b. Value (US $ million)	Qty ('000 mt)	f.o.b. Value (US $ million)
Fertilizer, manufactured	588.42	114.54	493.19	98.95
Vietnam	460.13	79.34	279.97	53.37
Indonesia	63.04	23.72	52.91	17.11
South Korea	10.00	1.98	94.13	17.45
Thailand	36.10	5.61	57.00	8.96
Malaysia	10.04	1.24	-	-
Japan	-	-	5.00	0.84
Others	9.11	2.62	4.18	1.22

Source: Foreign Trade Statistics, 1996, 1997. Published by the National Statistics Office (NSO).

Based on reports of fertilizer companies to the Fertilizer and Pesticide Authority (FPA), there are eight types of fertilizer shipped to external markets. Of these, 16-16-8 comprised the bulk of exports in more recent years. In 1994 this fertilizer type accounted for 48% of total fertilizer exports, two-thirds of total volume exported in 1995 and 1996, and 80% in 1997 (Table 4.11). In 1990, 38% of the total exports were of the 16-20-0 type, followed by 15-15-15 with a 35% share. In 1991 phosphoric acid comprised 22% of total exports; 15-15-15 exports accounted for one-third of total shipments and it was the largest export also in 1992 with a share of 34%. One-third of the total volume of fertilizer exports in 1993 was composed of the 16-16-8 type.

Fisheries

The increase in fishery exports in recent years was contributed largely by tuna, shrimps and prawns, and seaweed and carageenan. Proceeds from fresh, chilled and frozen tuna exports followed an upward trend (Figure 4.5), ranking number six in 1980-1981 and number three in 1996-1997. From the first half of the 1980s, annual export earnings were US $ 76 million, on average, and this increased to US $ 138 million in 1991-1995, US $ 163 million in 1996 and US $165 million in 1997. Shrimp and prawn exports in fresh, chilled and frozen forms remained among the top ten in agricultural exports in 1981 and 1983 through to 1997. In 1981 shrimp and prawn exports ranked number ten, climbed to the second rank from 1987 to 1992 with a yearly

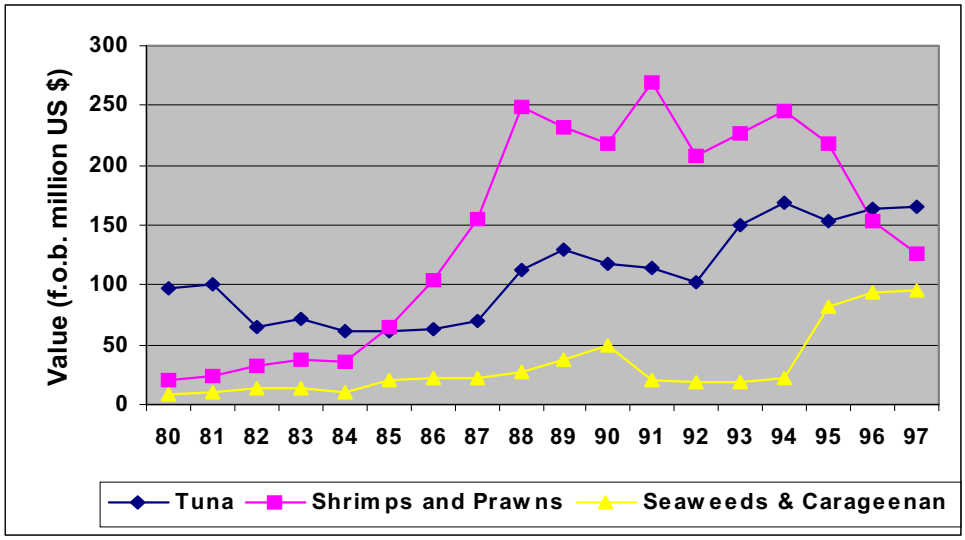
average earnings of US $239 million, and were number five in 1996-1997. From 1993 to 1995, yearly exports averaged, US $ 230 million, decreasing to US $ 135 million in 1996 and to US $ 126 million in 1997. Seaweed and carageenan were in the top ten exports in 1995 and 1996. In 1995 this commodity contributed US $ 83 million to total agricultural export earnings. This went up to US $ 94 million in 1996 or an increase of 13.5% with a slight increase to about US $95 million in 1997.

Table 4.11 Philippine fertilizer exports ('000 mt) by type, 1990-1997.

Type	1990	1991	1992	1993	1994	1995	1996	1997*
Total	448.7	792.3	511.4	549.5	697.7	717.6	528.1	291.9
21-0-0	-	-	-	-	-	-	21.0	-
16-20-0	169.3	122.5	134.6	180.2	158.0	92.0	36.0	17.1
18-46-0	58.0	81.9	71.8	74.7	94.7	93.7	84.5	42.2
14-14-14	1.0	152.5	30.0	-	20.0	-	-	
15-15-15	159.0	169.0	199.5	103.1	-	-	-	
16-16-8	61.5	84.7	75.5	191.4	335.2	511.7	386.7	232.6
Gypsum	-	10.0	-	-	52.2	-	-	
Phosphoric acid	-	171.7	-	-	57.5	20.1	-	

Source: Fertilizer and Pesticide Authority (FPA).
* As of September 1997.

Figure 4.5 Philippine exports of selected fisheries products, 1980-1997.



The two major markets for tuna are the US and Japan. In 1996 and 1997, on average, annual shipments to the US market were 18 thousand tons or 24% of total tonnage (Table 4.12). This volume is 28% less than the average annual sales of 25 thousand tons in 1980-1985 but more than the 12.5 thousand tons in 1986-1990. On the other hand, Japan imported about 16 thousand tons each in 1996 and 1997 accounting for 21% of the total volume in these years, compared to an annual average of 7 thousand tons in 1986-1990 and about 5 thousand tons in 1980-1985.

Japan is the biggest trading partner of the Philippines for shrimps and prawns. In the 1991-1995 period, average yearly exports were 18 thousand tons or 61% of the annual total exports. The US took 3 thousand tons annually, on average. In 1996 and 1997 shipments to Japan comprised about one-third of the total volume, South Korean imports accounted for 17% and the US about 8%.

The top market for Philippine seaweed and carageenan is Europe. The combined markets of France, U.K., Denmark and Germany accounted for 18 thousand tons or 48% of total volume exported in 1995. Of this, France shared more than 8 thousand tons representing 47% of total exports to Europe. The share of the US market was a little over 4 thousand tons or 11% of total tonnage. Of the total volume exported in 1996, 34% was shipped to Europe, 8% to US, and 4% to Australia. In 1997 the European market which was led by France absorbed only 34% of the total shipment. The US increased its intake to 12% and Australia decreased its to 3%.

Table 4.12 Major markets for Philippine fisheries, 1996-1997.

	1996		1997	
Commodity Market	Qty ('000 mt)	f.o.b. Value (US $ million)	Qty ('000 mt)	f.o.b. Value (US $ million)
Tuna (fresh, chilled & frozen)	74.35	162.64	78.20	164.61
USA	18.07	40.91	18.24	43.00
Japan	15.69	32.92	16.41	27.63
Singapore	8.23	17.38	-	-
Germany	7.18	14.87	10.53	24.60
Canada	6.74	16.73	5.15	12.87
U.K.	-	-	4.70	11.46
Others	18.44	39.83	23.17	45.05
Shrimps and prawns (fresh chilled and frozen)	13.51	153.35	10.26	126.43
Japan	9.98	120.73	7.20	93.32
USA	1.05	11,42	0.95	12.62
South Korea	1.59	13.91	1.06	10.48
Trust Territory of the Pacifics	-	-	0.22	2.15
Guam	0.17	11.79	0.19	2.11
Others	0.59	4.11	0.64	5.75
Seaweed and carageenan	36.78	94.07	40.35	94.72
USA	3.03	11.10	5.08	15.78
France	6.74	13.44	6.00	10.91
U.K.	4.47	17.93	3.95	13.43
Denmark	3.29	6.23	3.38	8.83
Australia	1.40	5.84	1.25	5.27
Others	17.85	39.53	20.19	40.50

Source: Foreign Trade Statistics, 1996, 1997. Published by the National Statistics Office (NSO).

4.2.4 Tariff reforms in the Philippines' major trading partners

Under the GATT-WTO, the tariff reforms in the Philippines' major trading partners will be favorable to the country's leading exports. For coconut oil the US will bind at 0% and Japan will reduce its tariff by more than 50% (Table 4.13). The European countries, however, are raising their tariffs.

Philippine sugar will enjoy lower tariff rates in Japan and the US. The reduction of export subsidy in the EU may also affect to some extent the competitiveness of Philippine sugar exports in that region.

One of the tariff reforms in Japan, the principal market for Philippine fresh banana, is the reduction of tariffs for fresh banana by 50%. Different rates are imposed depending upon the peak and lean seasons of domestic fruit production in Japan. The US and European markets are also reducing their tariff rates for dried bananas. Similarly, reduced tariff rates will be imposed on fresh mango exports to the Japanese and US markets while the EU will bind at 0%.

The major fisheries exports also have lower rates especially in Japan and in the US markets.

Table 4.13 GATT-WTO tariff reforms of Japan, US and European Union on Philippine major agricultural exports by year 2005.

Commodity	Japan	US	EU
Coconut oil	From 10 to 4.5%	Bind at 0%	From 3 to 20% to 2.5 to 9.6%
Sugar	From 35 to 25%	Tariff and reduce by 15% over 6 years	Reduce export subsidy
Bananas	From 40 to 20% * From 50 to 25% ** GSP at 10%	Bind at 0% From 3.5 to 0% for dried bananas	From 20 to 10% for for dried bananas
Mangoes	From 6 to 3% GSP*** at 0%	From 8.27 cents/kg to 6.6 cents for Fresh mangoes from 3.3 cents/kg to 1.5 cents/kg for dried mangos	From 6 to 0%
Prawns (fresh, chilled or frozen)	From 15 to 4.8%	Bind at 0%	Bind at 12%
Tuna (fresh, chilled or frozen)	From 5 to 3.5%	Bind at 0%	Bind at 22%
Carageenan	Bind at 0%	From 5 to 3.2%	Bind at 0%

Source: Department of Agriculture 1994; David 1994.
* August to September season; ** October to March season; *** GSP= Generalized System of Preferences.

4.2.5 Export prices

Export prices of the ten leading agricultural exports for the reference period 1980 to 1997 are shown in Table 4.14. In general, average prices for most of the commodities in the first half of the 1980s were higher compared to the second half; also, 1996 prices were higher than 1997 prices. An increasing trend of export prices can be observed from 1991 to 1996.

Of the four coconut products, desiccated coconut enjoyed the highest export prices and copra oil cake/meal the lowest. Coconut oil prices fluctuated the most. Over the reference period, the highest unit prices occurred in 1994 at US $ 0.99 per kilogram and in 1996, US $ 0.72. The lowest price of US $ 0.27 per kilogram was observed in 1986 (Appendix Table 19). Export prices of copra, copra oil cake/meal were relatively stable.

Export prices for pineapple and pineapple products and banana were relatively stable over the reference period. Prices for pineapple and products were higher from 1987 to 1990, on average, US $ 0.47 per kilogram. For sugar, export prices were higher from 1988 to 1992, and 1995 to 1997 at US $ 0.43 per kilogram, on average.

Export prices of tuna were relatively stable and prices were higher beginning in 1988. Except for a noticeable price decrease in 1984, prices of shrimps and prawns followed an increasing trend. The price of seaweed and carageenan increased from 1995 to 1997, the period when these fishery products ranked among the top ten agricultural exports.

Table 4.14 Export prices (f.o.b. US $/kg) of top ten Philippine agricultural exports, 1980-1997.

Commodity	1980-1985	1986-1990	1991-1995	1996	1997
Coconut oil (crude, refined)	0.60	0.41	0.50	0.72	0.62
Desiccated coconut	1.33	0.79	0.92	1.22	1.15
Copra oil cake/meal	0.12	0.10	0.09	0.12	0.09
Copra	0.32	0.25	0.31	0.44	0.37
Banana (fresh)	0.14	0.17	0.19	0.19	0.19
Pineapple and pineapple products (fresh, juice concentrates)	0.32	0.44	0.34	0.36	0.36
Sugar (centrifugal, refined)	0.34	0.41	0.38	0.43	0.42
Coffee (raw, green)	2.26	1.17	1.08	4.95	3.78
Tobacco (unmanufactured)	1.44	1.55	1.62	1.60	1.72
Abaca (in bales)	0.09	0.07	0.12	0.16	0.14
Fertilizer (manufactured)	0.16	0.18	0.17	0.19	0.20
Tuna (fresh, chilled, frozen)	1.77	2.09	2.15	2.19	2.10
Shrimps and prawn (fresh, chilled, frozen)	7.40	9.35	10.20	11.35	12.32
Seaweed & carageenan	0.74	0.89	2.20	2.56	2.35

Source: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS). Based on data from the National Statistics Office (NSO).

4.2.6 Agricultural imports and GDP

The ratio of agricultural imports to agricultural GDP followed an increasing trend over the period 1980-1997 (Table 4.15). This trend to some extent reflects gradual changes in the import policies that were adopted in the 1980s and 1990s as discussed in Chapter 2. The slight increase in GDP share of imports in the early 1980s is indicative of the trade reforms that were re-introduced in that period. When import controls were re-instituted towards the mid-1980s its GDP share also decreased. As trade reforms gained momentum towards late the 1980s, GDP share of agricultural imports also improved. This pattern between trade reform and agricultural import ratio to GDP continued in the 1990s and became more apparent beginning in 1995. The impact of reforms in import policies is more indicative in the foodcrops and livestock imports. The shares of these sectors to agricultural GDP in 1997 doubled in 1980. The share of feedgrain imports also increased although slightly, since most feedgrains which are vital to the domestic livestock industry are imported and pre-liberalization measures would have already allowed provision for sufficient quantities. The yearly shares of fishery imports to GDP were generally steady since major fishing products are exported more than imported.

4.2.7 Composition of imports

As in the case of exports, Food and Live Animals Chiefly for Food, as per SITC classification, constituted the bulk of agricultural imports from 1980 to 1997. From 1995 to 1997 this commodity classification accounted for 71%, on average, of the total value of agricultural imports compared to 63% in the period before (Table 4.16). The three major import products under the Food classification are, Cereal and Cereal Preparations which accounted for, on average, 32% annually, dairy products at 22%, and feed stuffs for animals at 18%. Several food commodities also registered relatively large increases from 1994 to 1997. Vegetable and fruit imports increased in value annually, on average, by 27%, meat and meat preparations by 31%, and miscellaneous edible products by 24% (Appendix Table 20).

Table 4.15 Agricultural GDP, agricultural exports and imports (f.o.b. million US $), the Philippines, 1980-1997.

Year	Agric. GDP million US $ current prices	% Share to GDP					
		Agric. Exports	Agri. Imports	Foodcrop Imports	Livestock Imports	Fishery Imports	Feedgrain Imports
1980	7,311	29.6	11.3	3.5	1.7	0.4	1.1
1981	7,864	26.2	11.0	3.8	2.0	0.4	1.0
1982	7,807	22.3	12.3	3.9	2.4	0.5	1.4
1983	6,615	23.6	12.4	4.4	2.2	0.1	1.2
1984	6,978	23.4	9.4	3.7	1.0	0.01	1.3
1985	7,054	18.2	10.0	4.2	1.1	0.02	0.7
1986	6,693	21.2	9.8	2.9	1.6	0.1	1.3
1987	7,325	20.8	11.1	2.3	2.2	0.2	1.3
1988	8,082	21.2	13.7	3.6	2.2	0.4	2.1
1989	9,152	18.8	14.4	4.5	2.7	0.3	1.9
1990	10,118	16.8	15.4	5.4	2.8	0.5	1.7
1991	9,264	19.9	13.6	3.2	2.6	0.7	1.6
1992	11,296	16.4	13.8	3.6	2.6	0.5	1.9
1993	12,298	15.6	13.2	3.8	2.7	0.4	1.4
1994	13,919	14.9	15.2	4.2	3.0	0.4	1.7
1995	15,330	16.3	17.3	5.6	3.6	0.4	1.7
1996	17,546	13.1	17.6	7.2	3.2	0.4	1.1
1997	16,475	14.2	18.8	6.4	3.8	0.4	1.9

Source: National Statistical Coordination Board (NSCB) for GDP and National Statistics Office for trade data.

Table 4.16 Agricultural imports (f.o.b. million US $) by commodity classification, the Philippines, 1980-1997.

Commodity	1980	1985	1990	1995	1996	1997
Total agricultural import	823.00	707.00	1,555.00	2,648.00	3,096.00	3,102.00
1. Food and live animals chiefly for food	491.85	426.36	1,073.00	1,851.00	2,237.00	2,227.00
2. Tobacco & tobacco manufactures	35.76	65.16	65.36	118.81	71.52	141.48
3. Crude materials, inedible except fuels	340.85	216.85	173.74	257.13	288.77	244.39
4. Animals and vegetable oils, fats waxes	18.52	13.32	24.50	38.35	56.71	57.21
5. Fertilizers, manufactured	139.40	105.59	134.07	194.53	194.62	213.96
6. Agricultural chemicals and materials	14.39	19.57	30.32	81.38	104.02	108.04
7. Agricultural machinery	51.84	9.50	54.41	107.90	142.96	107.77

Source: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS).

The second largest group of agricultural imports from 1980 to 1997 is Inedible Crude Materials, although its contribution to total agricultural imports was on the decline from 1986. From 1980 to 1986, this commodity group contributed 33% annually, on average, to total

import value but only 12% from 1987 to 1997.

Manufactured fertilizer comprised the third largest group of agricultural imports over the reference period, 1980-1997 with an annual average share of 13% of the total value of agricultural imports from 1980 to 1986, and 9% from 1987 to 1997.

The value of imports of other commodity groups surged from 1994 to 1997. Animal and vegetable oils increased by 15% annually, on average, expenditures on agricultural chemicals and materials by 8%, agricultural machinery, by 6%, and manufactured fertilizer by 8%. Although part of the increase in import values is caused by the higher exchange rate of the Philippine peso to the US dollar, the larger increase in value is attributed to increase in quantity.

4.2.8 Top ten imports and major suppliers

The ranking of the top ten agricultural imports for the reference period 1980-1997 is provided in Table 4.17, and the quantities and values appear in Appendix Table 21. During this period there were 14 commodities classified in the top-ranking list. As shown by their annual ranking, the three commodities with the largest import values are wheat and meslin, milk and cream products, and soybean oil cake/other residue from 1986 to 1994, cotton and rice in more recent years.

Wheat and meslin

Imports are rising as shown in Figure 4.6. Except in 1987, 1991 and 1995, wheat and meslin were the largest imports over the reference period. Relatively large decreases however, occurred in 1987 and 1991. In 1987 the value of imports of US $ 82 million decreased by 36% from its level of US $129 million in 1986 due to a corresponding large decrease in volume of 30% (Appendix Table 21). Reduction in quantity imported in 1991 by 4% resulted in a decrease in value of 22%. A relatively large increase in imports occurred in 1994, the value reached US $ 324 million or a 25% increase from 1994 as a result of an increase in volume by 19%. In 1995 the import value went up by 8% due to higher prices. In 1997 the value of imports was US $ 423 million, 13% higher than the level in 1996 and 21% above the 1995 import.

Wheat is used both for food as a substitute for rice and as feed. As a result of the lower tariff for wheat used for food compared to a higher tariff for wheat as feed, larger volumes were imported, and part of it was diverted to livestock feed. This situation was corrected later by the National Food Authority (NFA), the central marketing agency for grains in the Philippines.

Nearly two-thirds of the wheat and meslin imported into the Philippines is sourced from the US In the first half of the 1990s; the annual import from the US was 1.57 million tons, on average, representing 85% of the annual total imports during the period. About 8% amounting to 141 thousand tons was supplied by Canada, and another 5% or 89 thousand tons was shipped from Australia. In 1996, the market share of the US went up to 89% but dropped to 79% in 1997 (Table 4.18). The share of Canada was reduced to 6% in 1996; however, it increased to 17% in 1997. Australian wheat had the same share of 3% of the Philippine wheat market in 1996 and 1997. Argentina entered the Philippine market in 1997 with 22 thousand tons, less than 1% of the total imports.

Milk and cream and products

About 90% of the Philippines' supply of dairy products comes from external markets. This is reflected in the second ranking of milk and cream and products in most of the years from 1990 to 1997. These products were the leading agricultural imports in 1987, 1991 and 1995. From 1991 to 1995, the annual supply from outside sources was US $ 268 million, on average. It increased continuously to US $ 375 million in 1996 and US $ 423 million in 1997 (Figure 4.5).

Australia is the largest trading partner of the Philippines for milk and cream and products, contributing 30% of annual imports, on average, in 1991-1995 or 49 thousand tons. On average, 16% or 26 thousand tons was sourced each from New Zealand and Western Samoa combined, and the Netherlands. In 1996 Australia increased its shipment which accounted for 44% of total tonnage in that year (Table 4.18). Although Australian dairy shipments to the Philippine market increased by about a thousand tons in 1997, the share of the total volume of imports decreased to 38% from 48% in 1996. The Netherlands's share of the Philippine market decreased from 11% in 1996 to 8% in 1997. The US contributed 7% to the total imports of the products each in 1996 and 1997. France, which is not a regular source of milk and cream products, supplied about 7 thousand tons or 3% to the total volume imported in 1997.

Table 4.17 Top ten Philippine agricultural imports ranked according to f.o.b. value, 1980 – 1997.

Commodity	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
Wheat and meslin	1	1	1	1	1	1	1	3	1	1	1	2	1	1	1	2	1	1
Milk and cream products	2	2	2	2	3	4	2	1	2	2	2	1	2	2	2	1	2	2
Urea	3	4	4	6	4	3	5	5	4	7	6	6	5	4	5	5	6	8
Soybean oil cake/other residue	4	3	3	4	2	6	3	4	3	3	3	3	3	3	3	7	7	4
Soybean	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-
Cotton	5	8	10	8	9	8	6	6	6	4	5	4	5	5	4	4	4	6
Maize, unmilled	6	5	6	3	7	7	-	-	-	-	8	-	-	-	-	-	-	-
Agricultural machinery	7	7	7	9	-	-	9	9	10	10	-	-	9	-	8	8	5	9
Tobacco, unmanufactured	8	6	5	5	8	5	4	2	5	5	7	5	4	6	6	5	9	5
Tobacco, manufactured	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-
Flour, meals & pellets of fish, meat and crustaceans	9	10	8	-	10	10	7	8	8	9	10	8	7	9	10	10	10	10
Malt, whole/ground	10	9	9	7	6	9	8	7	9	8	9	7	8	10	-	-	-	-
Rice	-	-	-	-	5	2	-	-	7	6	4	-	-	8	9	7	3	3
Beef	-	-	-	10	-	-	10	10	-	-	-	10	10	-	7	9	8	7

Source: Based on data from the Bureau of Agricultural Statistics (BAS) and the National Statistics Office (NSO).
Note: A dash (-) indicates that the commodity is not in the top ten ranking that year.

Figure 4.6 Wheat and meslin, and milk and cream imports, 1980-1997.

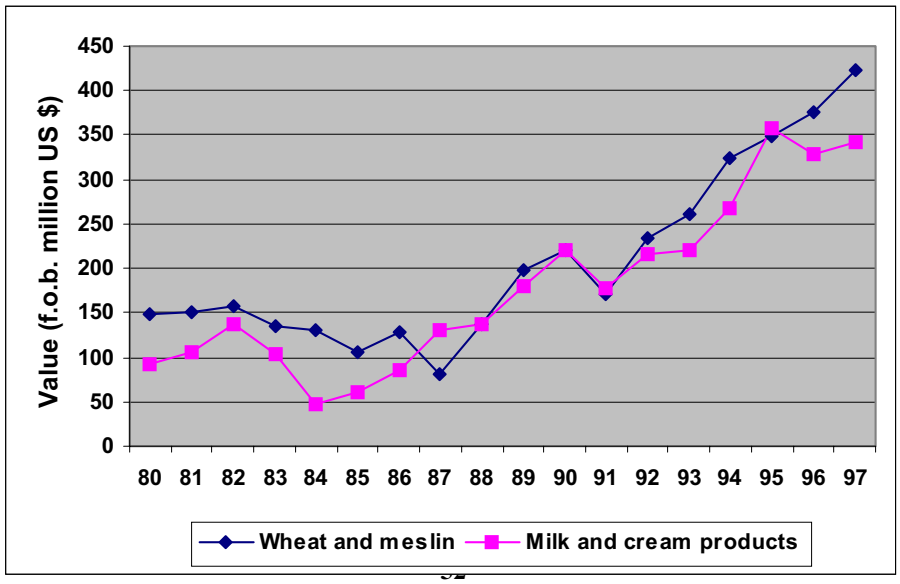


Table 4.18 Major sources of wheat and meslin, and milk and cream products, 1996-1997.

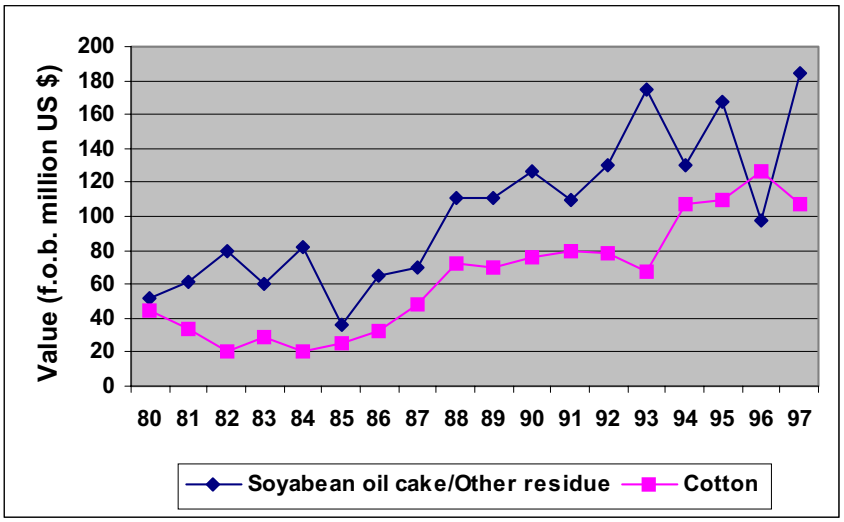
Commodity Source	1996 Qty ('000 mt)	1996 f.o.b. Value (US $ million)	1997 Qty ('000 mt)	1997 f.o.b. Value (US $ million)
Wheat and meslin	1,898.10	374.88	2,398.83	422.67
USA.	1,687.94	330.94	1,894.05	331.42
Canada	124.38	22.88	399.84	75.02
Australia	55.46	10.22	76.79	11.93
Argentina	-	-	22.00	3.33
Others	30.16	4.84	6.15	0.97
Milk and cream products	183.17	329.38	217.28	303.24
Australia	81.50	157.23	82.54	129.89
New Zealand and West Samoa	31.14	56.56	54.69	92.22
Netherlands	20.85	41.15	18.00	28.96
USA.	12.62	17.57	15.14	15.71
France	-	-	7.17	13.23
Others	7.06	56.87	39.20	63.23

Source: Foreign Trade Statistics, 1996, 1997. Published by the National Statistics Office (NSO).

Soybean oil cake/other residue

The Philippines is also a net importer of soybean and soybean products since domestic production of soybean is minimal despite soybean production enhancement programs (Lantican 1997). Most soybean imports are in the form of soybean oil cake/other residue. Soybean was ranked as one of the ten leading agricultural imports in 1991 only (Table 4.17). Soybean oil cake/residue, on the other hand, has been consistently the third largest agricultural import from 1990 to 1994, despite a drop in volume and value in 1994 (Figure 4.7). On average, the annual value of imports for this period is US $ 134 million. The import value in 1995 was US $ 168 million or an increase of 29% from 1994; it decreased to US $ 97 million in 1996, but recovered in 1997 to US $ 184 million.

Figure 4.7 Imports of soybean oil cake and cotton, 1980-1997.



In the period 1980-1985, Brazil was the major supplier of soybean oil cake/residue, providing a yearly average of 182 thousand ton, which was 53% of annual imports during that

period. From 1986-1990, the Philippine market was captured by the People's Republic of China supplying 47% or 231 thousand tons annually, on average. In 1991-1995, the US became the major source, bringing in 47% or 340 thousand tons, on average, of annual imports. In the same period, India supplied 30% or 220 thousand tons annually, on average. In 1996 India became the largest source with a 39% share of total imports. The US was the second biggest supplier, with 35%, followed by Brazil 14%. In 1997, however, the US took the lead capturing about one-half of the Philippine market, Brazil shared one-fourth of the total imports and a one-fifth share was held by India (Table 4.19).

Table 4.19 Major sources of soybean oil cake/other residue and cotton, 1996-1997.

Commodity Source	1996 Qty ('000 mt)	1996 f.o.b. Value (US $ million)	1997 Qty ('000 mt)	1997 f.o.b. Value (US $ million)
Soybean oil cake/ other residue	430.54	97.13	815.62	183.94
USA.	153.94	37.13	406.32	82.15
India	197.48	40.92	171.23	47.94
Brazil	62.52	14.73	203.71	44.70
China	11.40	3.30	-	-
Argentina	-	-	26.48	6.90
Others	5.12	1.05	7.88	2.25
Cotton	76.68	126.30	67.83	106.81
USA.	22.16	37.75	21.89	35.31
Pakistan	9.66	16.65	-	-
Australia	7.62	11.89	11.29	18.80
India	6.84	10.78	8.28	12.21
Argentina	6.80	10.45	-	-
Ivory Coast	-	-	4.89	7.75
Others	23.60	38.78	21.48	32.92

Source: Foreign Trade Statistics, 1996, 1997. Published by the National Statistics Office (NSO).

Cotton

In spite of cotton development programs since the early 1980s, domestic cotton production has been minimal. As such, domestic requirements are met by imports, which are increasing (Figure 4.7). From 1994 to 1996 the value of cotton imports was the fourth largest agricultural import expenditure and the sixth largest in 1997. In 1996 imports amounted to US $ 126 million, up by 15% from 1995 level, by 67% from the 1990 imports (fifth ranking) and by four times the 1985 imports (eighth ranking). In 1997 imports decreased to US $ 107 million or 15% below the 1996 import expenditure.

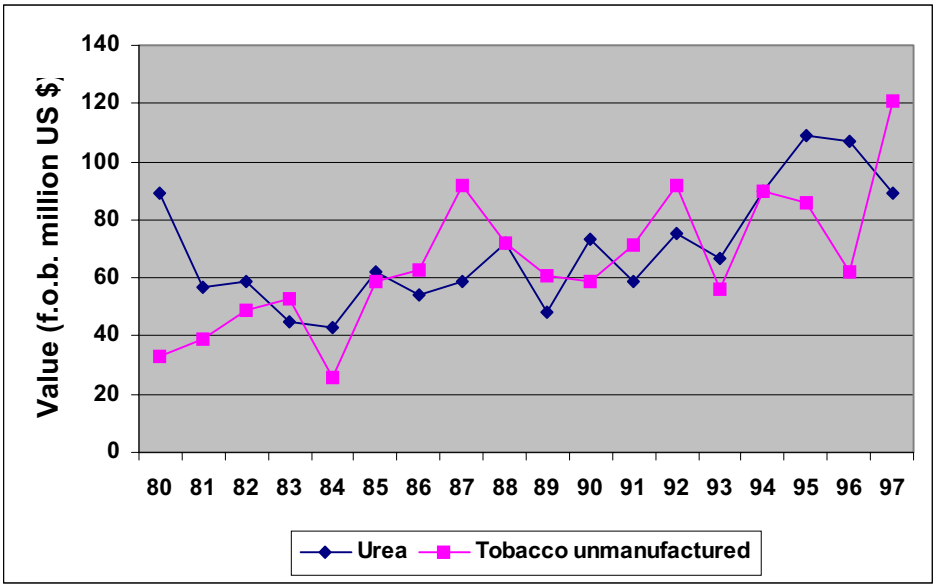
More than one-half of the annual total value of cotton imports or 36 thousand tons on average, came from the US during the period 1991-1995. In the same period, on average, the yearly import from Australia was 7 thousand tons or 11% of the total; the cotton import from Pakistan was 4 thousand tons annually which accounted for 6% of the total import volume. In 1996 and 1997 US cotton accounted for 29% and 32%, respectively, of the total import volume (Table 4.19). Pakistan supplied 12% in 1996; Australia shared 10% in 1996 and 17% in 1997; Indian cotton accounted for 9% in 1996 and 12% in 1997. Other significant suppliers were Argentina in 1996 and the Ivory Coast in 1997 with shipments of 9% and 7% in those years, respectively.

Urea

The value of urea fertilizer imports was on a downtrend from 1980 to 1984. It followed an uptrend, however, from 1985 to 1996 with a fall in 1997 (Figure 4.8). In terms of its contribution to total agricultural import value, it ranked third in 1980 and 1985, contributing US $ 89 million and US $ 62 million, respectively. In subsequent years its highest ranking was number four in 1988 (US $ 72 million). Although the quantity of imports in 1996 was higher

(0.65 million tons) compared with the 1995 level (0.63 million tons), import prices were lower in 1996, hence the lower value of imports in that year. In 1997 the import value dropped to US $ 89 million or by 17% from its 1996 level due to a decline in volume by 4% (Appendix Table 21).

Figure 4.8 Imports of urea and unmanufactured tobacco, 1980-1997.



The single largest source of urea for the Philippines is Indonesia, contributing an annual average of US $ 22 million or one-fourth of the annual total value of imports during the period 1991-1996. The combined Middle East countries – Saudi Arabia, Qatar, Kuwait – exported to the Philippines a yearly average of US $ 31 million. Imports from Bangladesh amounted to US $ 6 million, annually, on average. In 1997, imports from Indonesia comprised 26% of total imports, Saudi Arabia and Qatar, 33%, USSR, 5% and the US, 4% (Table 4.20).

Table 4.20 Major sources of urea and unmanufactured tobacco, 1996-1997.

Commodity Source	1996 Qty ('000 mt)	1996 f.o.b. Value (US $ million)	1997 Qty ('000 mt)	1997 f.o.b. Value (US $ million)
Urea	649.13	107.35	625.62	89.24
Indonesia	132.64	23.62	164.52	23.55
Saudi Arabia	117.72	20.86	135.68	17.45
Qatar	74.12	13.21	67.28	11.45
Kuwait	85.28	14.15	-	-
USA.	45.51	7.49	22.35	5.08
USSR	-	-	30.94	5.16
Others	193.86	28.02	204.85	26.33
Tobacco, unmanufactured	13.56	62.10	21.95	121.07
Zimbabwe	3.99	16.01	2.98	18.04
Brazil	3.61	16.24	7.31	39.14
USA.	2.63	18.58	3.51	27.43
Turkey	0.37	1.52	-	-
Malawi	-	-	2.25	12.44
China, People's Republic	1.83	5.71	2.66	10.99
Others	1.13	4.04	3.24	13.03

Source: Foreign Trade Statistics, 1996, 1997. Published by the National Statistics Office (NSO).

Urea is the major type of fertilizer import. Based on data from the Fertilizer and Pesticide Authority (FPA), over the period 1990 to 1997 yearly imports of urea comprised 61% or 581 thousand metric tons of total imports, on average (Table 4.21). Next to urea is 21-0-0 type with average annual shipments to the Philippines of 276 thousand tons or 28% of the total volume imported yearly. The third major import is 0-0-60 grade with a yearly inflow of 137 thousand tons, on average, or 14% of the total annual imports.

In support of the production program, the *Gintong Ani Program,* of the Department of Agriculture (DA), all fertilizer imports related to this program enjoy free prepayment of customs duties and other charges according to a DA Memorandum Order No. 3 issued in March 1997.

Unmanufactured tobacco

The Philippines imports more unmanufactured tobacco than the manufactured type. Over the period 1980 to 1997 only in 1993 was manufactured tobacco one of the ten major agricultural imports (Table 4.17).

Shipments into the country of unmanufactured tobacco have fluctuated (Figure 4.7). The value of shipments of US $ 33 million in 1980 and US $ 26 million in 1984 ranked number eight in the top ten agricultural imports. It was the number two import in 1987 with a value of US $ 92 million. Imports in 1996 ranked number nine with a value of US $ 62 million, down by 24% from the 1995 level (fifth ranking) but up by 6% from the 1990 level (seventh ranking). Imports in 1997 were worth US $ 121 million, which is almost twice the import value in 1996.

Zimbabwe was the largest source of unmanufactured tobacco from 1992 to 1996 supplying about 7 thousand tons annually, on average, representing nearly one-third of yearly total imports. In the same period the average annual import from Brazil was 4 thousand tons or one-fifth of the total annual import; 2 thousand tons or 12% were shipped from the US, on average. In 1997 Brazil became the largest supplier providing 33% of the total import (Table 4.20). The US was the second largest source with a 16% share of the Philippine market for unmanufactured tobacco; Zimbabwe and the People's Republic of China followed with provision of 14% and 12% respectively, of the total volume of imports.

Table 4.21 Fertilezer imports ('000 mt) by type, 1990-1997.

Type	1990	1991	1992	1993	1994	1995	1996	1997*
Total	1,118.40	1,102.20	1,163.30	1,099.30	1,168.30	1,237.60	1,202.20	790.80
Urea	607.76	436.04	567.34	638.12	672.00	651.89	660.07	412.96
21-0-0	289.73	410.78	388.96	239.12	272.88	282.07	166.31	160.24
25-0-0	0.54	5.27	4.10	14.14	35.78	35.92	15.00	27.39
27-0-0	0.30	0.20	0.20	0.26	1.10	0.20	0.30	5.62
15.5-0-0						1.57		
0-46-0			1.00					
0-18-0								4.97
16-20-0	21.70		1.10		28.12	6.23		2.20
18-46-0	20.11	64.23	60.32	83.14	78.77	78.50	143.44	43.35
20-20-0	4.50							
11-52-0			10.48	10.56				
16-16-16	6.50							6.04
14-14-14	25.70		6.30		2.02			
6-9-15	2.20		1.10					
20-20-20			0.02					
0-0-52	1.64	2.32	2.75	0.24	0.04	0.18		
0-0-60	127.70	176.31	111.49	110.16	70.47	179.50	205.54	118.05
17-0-17	8.80	5.12	5.50		5.50			
KNO_3							4.02	8.48
$ZnS0_4$	1.20	1.88	2.64	3.55	1.64	1.92	7.48	1.51

Source: Fertilizer and Pesticide Authority (FPA).
* As of September 1997.

Flour, meals and pellets of fish, meat and crustaceans

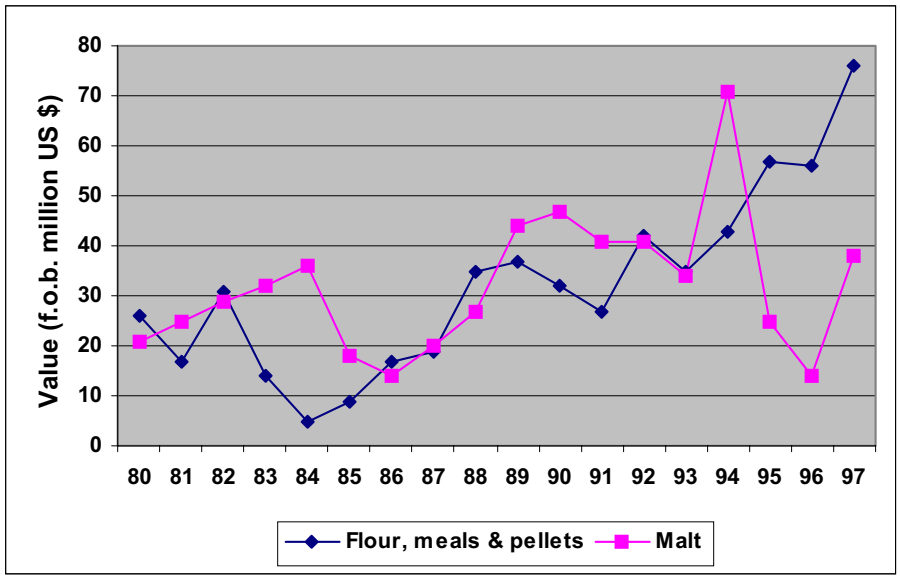
This commodity classification was the tenth largest agricultural import in most of the years during 1980-1997. It was the seventh largest agricultural import in 1986 and in 1992. The value of imports in these two years, was US $ 17 million and US $ 41 million, respectively. Imports in 1997 reached US $ 76 million, about one-third more than the annual imports in 1995 and 1996 (Figure 4.9).

In more recent years, 1991-1996, Peru has been the Philippine's major trading partner for flour, meals and pellets. The annual import from Peru was 68 thousand tons, on average, which is 62% of the total annual imports during that period. Australia is next to Peru, with annual sales to the Philippines of 12 thousand tons. The next most important sources were the US and Chile each contributing about 10 thousand tons or 9% annually to the total value of imports of the commodity. Peru remained as the major source of flour, meals and pellets in 1997 with a 63% market share. Australia came next with a 13% contribution, the US with 12% and Chile with 8% (Table 4.22).

Malt

Within the period 1980-1997 whole and ground malt was included in the top ten agricultural imports until 1993. In that year the import expenditure on malt was US $ 34 million (tenth ranking), 16% lower than the import value in 1995. Imports were highest in 1990 at US $ 47 million (ranking ninth). Imports have been on the decline since 1993; the volume and the value of imports were at low levels in 1996 at 49 thousand tons worth US $ 14 million (Figure 4.9).

Figure 4.9 Imports of fish flour, meals and pellets and malt, 1980-1997.



Australia is the major malt trading partner of the Philippines. In 1991-1995, on average, more than half or 69 thousand tons of total volume of malt imports annually were provided by Australia. About 25 thousand tons representing 20% of the average annual import was sourced from Belgium. In the same period, the US captured 7% of the Philippine market while the share of the U.K. was 6 %. Belgium was the largest source in 1996, providing more than one-third of the total malt volume of imports in that year. Australia came next with a 31% share of the Philippine market (Table 4.22). In 1997 Australia again took the lead supplying 61% of the total

import tonnage; France was the next largest supplier with a 17% share of volume of imports.

Table 4.22 Major sources of fish flour, meals and pellets and malt, 1996-1997.

Commodity Source	1996 Qty ('000 mt)	1996 f.o.b. Value (US $ million)	1997 Qty ('000 mt)	1997 f.o.b. Value (US $ million)
Flour, meals & pellets of fish and crustaceans	110.15	56.25	151.12	75.53
Peru	62.21	33.59	95.55	50.96
USA	15.12	7 61	17.54	8.34
Chile	12.74	7.64	12.13	6.52
Australia	12.42	3.96	19.84	6.70
Ecuador	1.23	0.64	-	-
U.K.	-	-	1.73	0.45
Others	6.03	2.86	4.33	2.56
Malts, whole/ground	49.05	14.28	116.28	33.94
Belgium	17.95	2.52	8.91	3.03
Australia	15.11	5.73	71.02	17.60
USA	4.70	1.59	6.72	2.87
France	4.71	1.51	19.74	6.97
U.K.	3.98	1.70	2.05	0.64
Others	3.00	1.17	7.84	2.83

Source: Foreign Trade Statistics, 1996, 1997. Published by the National Statistics Office (NSO).

Rice

The value of imports of rice and maize, the two major cereals in the Philippines, is illustrated in Figure 4.10. The rice import in 1996 was the highest over the period 1980-1997 with a value of US $ 294 million, the majority used for food and part for seed. This value is one and a half times more than the high import value of US $ 117 million in 1990 (ranking fourth) and by almost one and two-thirds more than the 1985 import of US $ 110 million (second ranking). Another large rice shipment from external sources worth US $ 211 million was recorded in 1997 due to the expected production shortfalls as a result of the onset of the El Niño in the last quarter of 1997. As discussed earlier in Chapter 2, the Philippines sought postponement for another ten years of the tariffication of rice import quotas and wishes to maintain the existing tariff rate of 50%. However, in times of deficiencies in domestic production, large imports are allowed for food security reasons.

In most of the periods of large rice imports, 1984-1985, 1988-1990, 1993, 1995-1997, Thailand has been a significant supplier of rice to the Philippines. Of the total imports of 190 thousand tons in 1984, Thailand shipped in 57%, while 42% was contributed by the People's Republic of China. In 1993 Thailand supplied 201.6 thousand tons which was 99% of total imports, with minimal supplies from Japan and Singapore. In 1995 Thailand also contributed 54% of the total volume of imports and Indonesia shared 26%. In 1996 and 1997, it was the second largest source providing 19% and 29%, respectively, to total imports (Table 4.23). The US was the biggest source of rice imports in 1985 with a contribution of 152 thousand tons or 28% of total volume. Indonesia followed closely with a share of slightly less than 28%. In more recent years Vietnam has come to be the top supplier; its shipments comprised 42% of the total imports in 1996 and 48% in 1997. In 1996 imports from India accounted for 17% of total volume and Burma, 14%.

Figure 4.10 Imports of maize and rice, 1980-1997.

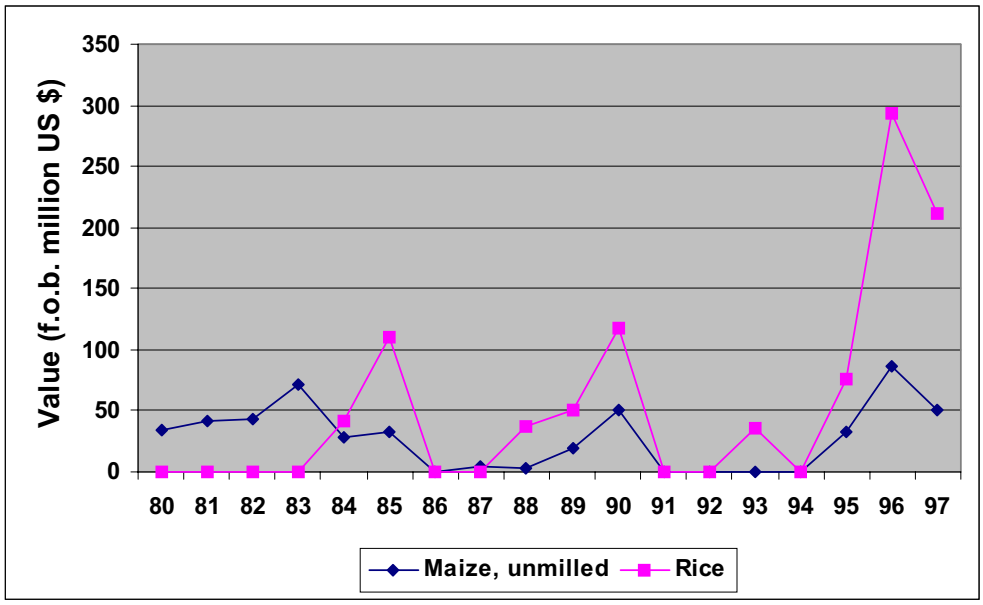


Table 4.23 Major sources of rice, 1996-1997.

Commodity Source	1996 Qty ('000 mt)	1996 f.o.b. Value (US $ million)	1997 Qty ('000 mt)	1997 f.o.b. Value (US $ million)
Rice	862.38	294.04	722.40	211.32
Thailand	160.40	54.62	208.20	61.76
Vietnam	358.98	121.81	343.18	98.93
India	148.93	51.29	-	-
Burma	122.57	41.62	-	-
Pakistan	68.45	23.28	-	-
USA.	-	-	12.87	4.49
Others	3.05	294.04	0.02	0.02

Source: Foreign Trade Statistics, 1996, 1997. Published by the National Statistics Office (NSO).

Maize

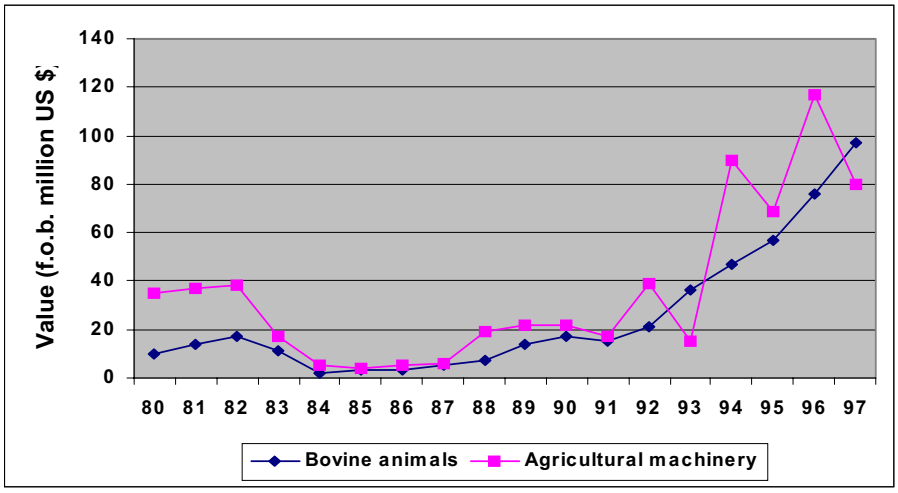
Maize or unmilled corn imports are used primarily as feed to the growing domestic livestock industry and partly for seed purposes. Under the GATT-UR/WTO maize imports have been tariffied (see Chapter 5). The National Food Authority (NFA) has the first right to import maize and rice under the minimum access volume (MVA) discussed in Chapter 2. The NFA keeps records of maize imports used as feed while the National Statistics Office (NSO) deals with total maize imports including volume and value of maize for feed, seeds and maize products for other purposes. Based on NSO figures, the Philippines imported 250 thousand tons of unmilled maize in 1980 with a value of US $ 35 million, the number six largest agricultural import in that year. This increased to 528 thousand tons and US $ 71 million (ranking third) in 1983 or twice the value in 1980. The import value was down in 1990 to US $ 50 million (ranking eighth) with a volume of 344 thousand tons. Beginning in 1991 maize was not among the ten leading agricultural exports.

Beef

The value of imports of beef was the tenth largest agricultural import in 1983, 1986-1987, 1991-1992 with an average annual value of import of US $ 11 million. It ranked number

seven in the partial import liberalization period of 1994 with a value of US $ 57 million. It increased to US $ 55 million in the GATT-WTO period in 1995 and increased further to US $ 76 million in 1996 and to US $ 91 million in 1997 (Figure 4.11).

Figure 4.11 Imports of bovine animals and agricultural machinery, 1980-1997.



Annual sales of beef to the Philippines from India and Australia for the period 1994-1996 were, respectively, 17 thousand tons and 14 thousand tons, annually or 40% and 35% of total annual imports. Next to these countries is the Netherlands with an annual average export to the Philippines of 4 thousand tons or 10% of the total annual import by the latter country. In 1997 of a total import of 65 million tons, the majority was supplied also by India (44 %) and Australia (35%). New Zealand and Western Samoa shared 7% (Table 4.24).

Agricultural machinery

This category consists of hand tractors, power threshers, plows, seeders, planters, fertilizer distributors, cultivators, disc harrows, machinery for milling, rice huller, parts of rice hullers and cono type rice mills, machinery parts used in bread grain milling industry, and other small agricultural machinery. From 1980 to 1982 agricultural machinery was the seventh largest agricultural import with an annual value of US $ 38 million, on average, as a result of the lowering of tariffs under the first Tariff Reform Program (TRP) in 1981. Under the TRP, Executive Order (EO) 632-A reduced the rate of a hand tractor by about 10%. Tariff rates on agricultural machinery inputs for the domestic industry, which were 30% at the start of the TRP, were reduced to 26% in 1983 until 1988. The high imports in 1980 to 1982 were largely attributed to low interest credit through the Central Bank - IBRD Credit Program (Trabajo 1994). In 1983, the value of imports decreased by 54% although the quantity increased by 12%. In that year, agricultural machinery import ranked ninth. The reduction in value of imports was due to the concentration of imports on smaller types of machines and their parts. Imports dropped further to only US $ 5 million or by 71% in value and by 79% in the number of machineries. This was traced to the increasing domestic production, which in turn resulted from the proliferating number of small-scale manufacturers, most of which are based in the rural areas (Trabajo 1994). Beginning in 1988 imports picked up (Figure 4.11) and accelerated in the trade liberalization years, in 1994 until 1996. The value of imports in 1996 reached US $ 117 million or 68% above the 1995 value of imports.

From 1994 to 1996, on average, the annual value of agricultural machinery imports was US $ 91 million. Nearly one-third of the value of imports or US $ 33 million originated from

the Netherlands; almost a fifth was from the US amounting to US $ 18 million. The average annual import values from other sources were: Germany, US $ 10 million or 11% of total imports; Japan, US $ 8 million or 9%. Italy shared 17% of the total value of machinery imports in 1996, which is next only to the US share of 23%. In 1997 US shipments contributed 21% of the total value of imports, the Netherlands 15%, and the U.K. 11% (Table 4.24).

Table 4.24 Major sources of beef and agricultural machinery, 1996-1997.

Commodity Source	1996 Qty ('000 mt)	1996 f.o.b. Value (US $ million)	1997 Qty ('000 mt)	1997 f.o.b. Value (US $ million)
Beef	55.44	75.85	68.49	96.98
India	23.83	31.03	30.15	41.54
Australia	20.32	28.53	24.66	36.59
New Zealand and Western Samoa	2.72	3.26	4.83	6.03
Netherlands	3.29	4.53	-	-
USA	1.13	2.33	1.10	2.57
Argentina	-	-	2.40	2.76
Others	4.15	6.17	5.35	7.49
Agricultural machinery (no. of units)	270,467*	116.61	130,874*	79.20
USA	9,734	26.62	10,229	17.04
Netherlands	16,460	8.28	5,501	11.61
Japan	-	-	4,713	7.31
Germany	647	17.23	613	6.28
U.K.	897	7.92	536	8.68
Italy	8,331	19.47	-	-
Others	234,467	116.61	109,282	28.28

Source: Foreign Trade Statistics, 1996, 1997. Published by the National Statistics Office (NSO).

Import prices

Import prices in current terms of the leading ten agricultural commodities are given in Table 4.25. Import prices of wheat and meslin, soybean oil cake/other residue and malt have been relatively stable. Prices of milk and cream, fish flour, meals and pellets followed an upward trend although decreased prices were observed from 1982 to 1988 and 1997. Over the 1980-1985 period higher prices were observed for wheat and meslin, urea, soybean oil cake/other residues, cotton, malt, rice and beef. The average import price of the latter commodity and unmanufactured tobacco fluctuated. Unit prices went up from 1994 to 1996 for the following commodities: wheat and meslin, cotton, tobacco unmanufactured, fish flour, meal and pellets and meat of bovine animals (Appendix Table 22).

Table 4.25 Import prices (f.o.b. US $/ kg) of top ten Philippine agricultural imports, 1980-1997.

Commodity	1980-1985	1986-1990	1991-1995	1996	1997
Wheat and meslin	0.18	0.14	0.14	0.20	0.18
Milk and cream products	1.08	1.22	1.51	1.80	1.58
Urea	0.18	0.11	0.14	0.17	0.14
Soybean oil cake/ other residue	0.22	0.20	0.20	0.23	0.22
Cotton	1.38	1.15	1.41	1.65	1.57
Maize, unmilled	0.14	0.18	0.34	0.21	0.18
Agricultural machinery*	-	-	-	-	-
Tobacco, unmanufactured	3.47	4.55	3.77	4.58	5.52
Flour, meals & pellets of fish, and crustaceans	0.28	0.37	0.39	0.51	0.50
Malt, whole/ground	0.26	0.20	0.27	0.29	0.29
Rice	0.83	0.25	0.39	0.34	0.29
Beef	2.28	1.37	1.42	1.37	1.42

Source: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics. (BAS). Based on data from the National Statistics Office (NSO).

* Price per unit of machinery is not shown here due to problems in averaging prices of large machineries and small parts of these.

5. Trade Liberalization and Prospects for Selected Commodities

This chapter is a situational analysis of the production trends and issues in agricultural trade liberalization on selected CGPRT crops and other commodities namely, rice, maize, soybean, white potato, cassava, coconut and livestock (chicken, swine, cattle). The reference period is 1980 to 1997, although part of the discussion on rice has also considered the 1970s.

5.1 Selected crops

Rice and maize are the two major grains in the Philippines. Rice is a staple food and maize a rice substitute in some regions in the country and more importantly a feed for the growing domestic livestock industry. From 1980 to 1995, paddy rice contributed the largest share of 25%, on average, to gross value added (GVA) of agricultural crops. This share rose to 29% in 1996 but declined to 27% in 1997 (Table 5.1). Maize had the third largest contribution, with an average share of 10%, but it decreased also to about 8% in 1996 and 1997.

Coconut is second to paddy in terms of its importance to GVA of agricultural crops. From 1980 to 1995, on average, its yearly contribution was 12%. However, its share dropped to less than 10% in 1996 and 10% in 1997. The GVA for cassava, white potato and soybeans is combined under Other Crops. The national accounts so far, have disaggregated only the GVA for the five major crops.

Table 5.1 Gross value added (GVA) in agricultural crops, Philippines, 1980-1997, in million US $.

	1980		1985		1990		1995		1996		1997	
	GVA	%	GVA	%	GVA	%	GVA	%	GVA	%	GVA	%
All crops	4,674	100	4,338	100	5,359	100	9,466	100	10,458	100	9,767	100
Paddy	920	19.7	1,208	27.8	1,498	28.0	2,485	26.3	3,070	29.4	2,625	26.9
Maize	402	8.6	510	11.8	677	12.6	846	8.9	868	8.3	774	7.9
Coconut	640	13.7	608	14.0	515	9.6	1,063	11.2	1,008	9.6	975	10.0
Sugarcane	344	7.4	204	4.7	286	5.3	466	4.9	585	5.6	389	4.0
Banana	187	4.2	190	4.4	228	4.3	425	4.5	401	3.8	413	4.2
Other crops	2,171	46.4	1,618	37.3	2,155	40.2	4,181	44.2	4,523	43.3	4,591	47.0

Source: National Statistical Coordination Board (NSCB).

5.2 Rice

5.2.1 Trends in paddy production

Paddy rice production has been increasing although at a decreasing rate (Table 5.2). Growth in output accelerated in the second half of the 1970s as a result of the intensified adoption of modern rice varieties, irrigation, and credit facilities under the Masagana 99 nationwide rice production program. ("Masagana" literally means "prosperous"; "99" is the target yield number of bags per hectare). In that period, four-fifths of the total paddy production was accounted for by modern varieties (Philrice-BAS 1994). Output growth was contributed largely by irrigated farms where production increase doubled the annual rate in the 1970-1975 period. Under the Masagana 99 program, a significant portion of paddy rainfed area was converted into irrigated land, which explains the negative growth of rainfed areas. During the 1970-75 period, productivity growth in both irrigated and rainfed farms was close to 5% annually.

Table 5.2 Compounded annual growth of paddy production, area harvested and yield by ecosystem, the Philippines, 1970-1997.

	1970-75	1976-80	1981-85	1986-90	1991-95	1996-97
Total						
Production	3.70	3.97	2.72	0.20	2.17	-0.2
Harvest Area	3.17	-1.26	-0.01	-1.07	2.35	-2.8
Yield	0.58	5.29	3.59	1.28	-0.20	2.4
Irrigated						
Production	3.14	6.10	5.00	2.52	2.70	2.9
Harvest Area	0.84	1.18	2.64	1.71	3.17	0.4
Yield	2.32	4.81	2.34	0.85	-0.4	2.4
Rainfed						
Production	4.37	1.26	-1.12	-4.52	0.87	-8.5
Harvest Area	5.02	-3.15	-4.46	-4.69	1.08	-8.3
Yield	-0.01	4.63	3.48	0.12	-0.001	0

Source: Bureau of Agricultural Statistics (BAS).

Between 1981 and 1990, drought, and typhoon and flood alternated in causing damage to agricultural crops (Appendix Table 23) which contributed to the decline in output and productivity growth. Growth in aggregate paddy production slowed down in 1981-1985 at an average annual rate of almost 3%, 26% less than the annual growth in the second half of the 1970s. Production increase was contributed mostly by expansion in area harvested in irrigated farms more than yield increase as was the case in the second half of the 1970s (Appendix Table 24). In the 1986-1990 period, annual output growth went down further to only 0.2% on average, due to the lower yields on both irrigated and non-irrigated farms. Average productivity growth on irrigated farms was only half the average rate in 1981-1985.

Output recovered during the 1991-1995 period. Aggregate paddy production increased by an annual rate of 2.2%, but this was only 80% of the annual growth in the second half of the 1980s and 55% of the annual growth in the latter half of the 1970s. Again, improvement in output resulted from expansion of harvest area in irrigated farms at an annual rate of 3.2%, the highest growth since 1970. In the early 1990s, another nationwide rice production program was launched – Gintong Ani Program or Grain Production Enhancement Program (GPEP). It is aimed at increasing and sustaining domestic grain production through productivity measures such as adequate irrigation systems, use of improved certified seed and postharvest equipment and facilities.

Due to the relatively good weather in 1996 paddy production rose by 12% from a drought-stricken output in 1995 (Appendix Table 24). The El Niño phenomenon which started in late 1997 took its toll on rainfed production which resulted in a slight decrease in total production from the 1996 output, in spite of a 3% gain in irrigated production.

5.2.2 Demand and supply for rice

Population growth is fast catching up with domestic production. Over the period 1980-1997 both population and rice output grew annually compounded by 2.3% (Table 5.3). Average per capita consumption posted an annual increase of 0.53%.

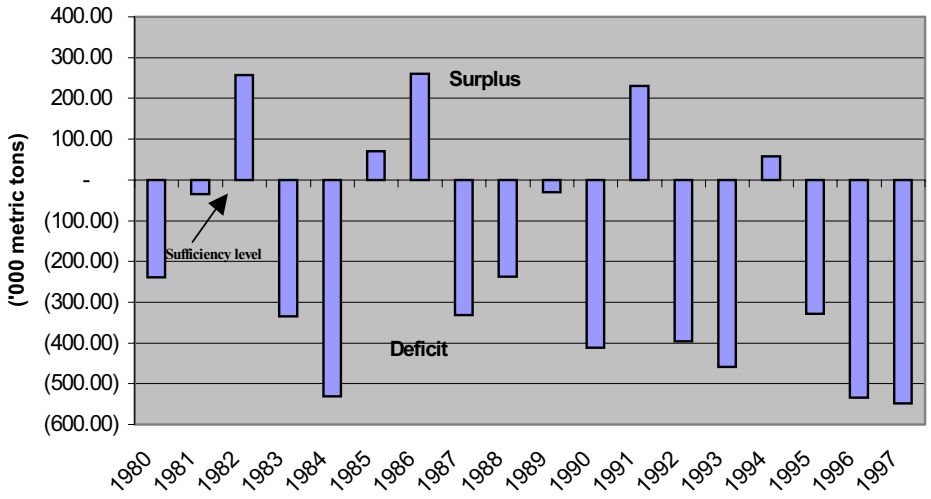
Table 5.3 Rice supply and uses in thousand metric tons, the Philippines, 1980-1997.

Year	Surplus (Deficit)	Population ('000 persons)	Supply				Utilization						
			Beginning Stocks	Production	Imports	Total Supply	Export	Seeds	Feed and Waste	Food	Per Capita (kg)	Total Use	Ending Stocks
1980	(238.6)	48,317	1,885.3	4,970.4	0.3	6,855.7	263.4	169.2	323.1	4,453.3	92.19	5,209.0	1,646.7
1981	(35.1))	49,435	1,646.7	5,142.2	0.3	6,789.2	94.8	166.7	337.2	4,581.6	92.68	5,177.3	1, 611.9
1982	(255.4)	50,583	1,611.9	5,417.2		7,030.1	1.5	163.4	352.1	4,644.8	91.82	5,161.8	1,868.3
1983	(374.9)	51,762	1,868.3	4,756.6		6,624.9	40.3	148.7	309.2	4,633.3	89.51	5,131.5	1,493.4
1984	(533.5)	52,973	1,493.4	5,120.3	191.0	3,804.7	1.9	155.1	332.8	5,164.0	97.48	5,653.8	1,150.9
1985	(69.5)	54,218	1,150.9	5,759.1	540.8	7,450.8	0.1	162.2	374.3	5,153.0	95.04	5,689.6	1,761.2
1986	(261)	55,491	1,761.2	6,047.7	6.0	7,814.9		169.6	393.1	5,224.0	94.14	5,786.7	2,028.2
1987	(443.3)	56,793	2,028.2	5,584.3		7,612.5	111.0	159.4	363.7	5,393.5	94.97	6,027.6	1,584.9
1988	(237.6)	58,150	1,584.9	5,868.0	181.2	7,634.1		166.1	381.4	558.1	95.58	6,105.6	1,528.5
1989	(46.6)	59,433	1,528.5	6,186.9	219.8	7,935.2	16.0	171.2	402.0	5,644.3	94.97	6,233.5	1,701.7
1990	(412.3)	61,910	1,701.7	6,094.7	622.0	8,418.4		162.6	396.2	5,948.2	97.66	6,507.0	1,911.4
1991	(218.7)	62,330	1,911.4	6,326.9	0.1	8,238.4	10.0	167.8	411.2	5,519.2	88.55	6,108.2	2,130.2
1992	(419.8)	63,783	2,130.2	5,970.7	0.6	8,101.5	29.6	156.7	388.1	5,822.1	91.13	6,396.5	1,705.0
1993	(459.5)	65,270	1,705.0	6,170.2	209.6	8,084.8		161.0	491.8	5,976.9	91.57	6,629.7	1,455.1
1994	(57.8)	66,792	1,455.1	6,892.1	0.2	8,347.4		182.3	448.0	6,204.0	92.89	6,834.3	1,513.1
1995	(327.7)	68,349	1,513.1	6,851.6	252.8	8,617.5		183.2	445.3	6,550.8	95.84	7,147.3	1,438.2
1996	(534.2)	69,946	1,438.2	7,334.5	906.0	9,678.7	0.03	192.6	476.7	7,199.4	102.93	7,868.7	1,810.0
1997	(548.2)	71,539	1,810.0	7,325.0	720.2	9,855.2		187.3	476.1	7,209.8	100.78	7,873.2	1,982.0

Source: Bureau of Agricultural Statistics (BAS).

In the last six years, 1992-1997, on average, 96% of yearly production went into food use. Considering the other non-food uses of rice such as rice flour, domestic production fell short of domestic requirements. The yearly domestic production and demand gap is illustrated in Figure 5.1. In the period 1980-1997, deficit years have outnumbered self-sufficiency years. The deficiency years are associated with the occurrence of severe droughts, typhoons and floods and conversely, the surplus years are related with periods of relatively good weather. The domestic rice supply and demand gaps are filled by rice imports. It is to be noted, however, that the country resorts to imports only when rice stocks are at low levels. Lower rice production results in decreased stocks with imports following in a year or two. This pattern can be observed in 1983, 1987 and 1992 when drought-affected production led to stock drawdowns followed by large imports in the following two years (Table 5.3).

Figure 5.1 Rice surplus/deficit, Philippines, 1980-1997



To some extent, deficiencies in domestic rice supply have been absorbed by the food sector. Per capita rice consumption dropped in 1983 and 1991 from their previous levels. A slight drop in rice output in 1995 did not result in lower rice consumption, as stocks were also sufficient to meet the demand for rice. It resulted, however, in a rice crisis due to the late arrival of imports, in turn causing large price increases at wholesale and retail levels. This situation was basically a rice supply management concern, which can be traced to the country's rice import policies. The 1995 rice crisis also introduced changes in the buffer stock policy of the Department of Agriculture (DA). At present, the government adopts 30-day and 15-day rice reserves in lieu of the previous 90-day stock requirement. A 30-day operational reserve is intended to address a lean month crisis that may occur. Another 15-day emergency rice reserve will be made available any time during the year as a measure against rice shortages caused by either natural or artificial forces. These reserves are sourced from domestic production or from imports in times of short supply.

Rice import policies

The government, through NFA, holds the monopoly for importing rice. An inter-agency committee at the DA monitors rice supply levels and recommends the required imports. The decision to import, however, has been on an ad hoc basis, resulting in early or late arrivals, but most of the time delayed (Philippine Grains Sector Development Project Report 1997). These untimely arrivals also cause either large stocks at the start of the major harvest causing depressed rice prices or in failure to address the wide gap between rice supply and demand resulting in increased prices. In 1985, 1989 and 1990, larger volumes of imported rice arrived during the latter part of the lean season in September (Table 5.4). In 1988, however, the bulk came at the beginning of the lean season in July. In 1990 although large volumes were shipped to the country at the start of July, the biggest volume was received in September. Large shipments arrived in July, September and October. During the 1995 rice crisis, relatively large shipments also came in July, August and September, but the bulk of the shipments that were intended for the latter part of 1995 arrived during the first quarter of 1996. In 1997 imports came in continuously from March to July with the greater amount during the dry season in April. Substantial imports in June and July assured the country of sufficient supply during the planting season in the second half of the year.

Table 5.4 Rice imports (in metric tons), the Philippines, 1985-1997.

Month	1985	1986	1988	1989	1990	1993	1995	1996**	1997
Total	540,827	5,979	181,168	219,765	621,958	209,594	252,852 *	906,045	730,711
January	34,962	-	-	-	48,883			104,025	-
February	19,758	-	-	-	3,616			120,295	-
March	41,071	-	-	-	-			286,058	91,634
April	6,000	-	-	-	46,869			209,476	215,307
May	40,380	-	-	-	78,421			112,826 ***	182,524
June	55,020	2,318	11,498	17,500	88,579	65,800	10,300	39,000	185,205
July	64,764	-	100,050	44,050	101,736	18,444	94,000	-	45,720
August	87,437	2,161	59,650	49,188	88,627	70,350	80,559	-	-
September	107,179	1,500	9,970	109,027	124,799	55,000	54,993	12,844	-
October	65,529	-	-	-	12,853	-	-	21,521	-
November	18,727	-	-	-	27,575	-	-	-	-
December	-	-	-	-	-	-	13,000	-	10,500

* Excludes 4,310 mt Australian donation.
** Revised as of 31 October 1997 based on NFA updated records.
*** Includes 26,100 mt December arrival which is part of the 1996 contract.
Source: National Food Authority (NFA).

5.2.3 Prices

Domestic prices

Domestic prices at the farmgate (for paddy), wholesale and retail (for rice) at current prices rose at a yearly average rate of 13% from 1980 to 1997 (Table 5.5). In examining the yearly changes in average prices, it is found that domestic prices are affected by supply conditions. In 1984 when stocks dwindled (Table 5.3), farmgate, wholesale and retail prices soared by 60% from their 1983 levels. In 1986 when supply conditions improved, average farm prices dropped by 13%, wholesale and retail prices by 11% and 9%, respectively. Average domestic prices soared by 24% during the rice crisis in 1995, which benefited farmers, traders and retailers, especially the traders, but at the expense of consumers who had to pay higher prices for rice. The escalation of prices continued in 1996 and eased down slightly in 1997 as a result of injections of imported rice in the domestic market. Average prices in 1997 were 3% below 1996 prices.

Table 5.5 Domestic prices of rice (in pesos per kilogram), the Philippines, 1980-1997.

Year	Farmgate	Wholesale*	Retail
1980	1.15	2.30	2.47
1981	1.30	2.65	2.72
1982	1.36	2.76	2.96
1983	1.52	2.99	3.19
1984	2.47	4.82	5.10
1985	3.24	6.51	7.00
1986	2.82	5.79	6.56
1987	2.99	5.84	6.61
1988	3.16	6.52	7.50
1989	4.01	7.82	8.41
1990	4.74	8.77	8.87
1991	4.77	9.08	9.97
1992	4.82	9.48	10.40
1993	5.40	10.78	11.88
1994	5.90	12.13	13.29
1995	7.24	15.04	16.47
1996	8.13	17.39	18.98
1997	7.97	16.89	18.53

Source: Bureau of Agricultural Statistics (BAS).
*Average wholesale prices in major trading areas in the country.

Domestic price vs. international price

The domestic wholesale prices of rice in the Philippine have been higher than international prices. Over the period 1980 to 1997, it was only in 1980, 1981 and 1982 when international prices were above Philippine domestic prices (Table 5.6). Domestic prices exceeded international prices within the range of 9% (in 1991) to 188% (in 1996). The protection to domestic rice producers in the Philippines continued even more during the WTO period. In 1995 and 1996, domestic wholesale prices were two-thirds more than international prices when the country imported large volumes of rice due to domestic shortages.

Table 5.6 Domestic and international prices of rice (US $ per metric ton), the Philippines, 1980-1997.

Year	Domestic Wholesale Price (1)	International Price* (2)	Ratio (1/2)
1980	306	434	0.71
1981	335	483	0.69
1982	323	293	1.10
1983	269	277	0.97
1984	289	255	1.13
1985	350	148	2.36
1986	284	186	1.53
1987	284	220	1.29
1988	324	284	1.14
1989	360	305	1.18
1990	361	278	1.30
1991	330	302	1.09
1992	372	278	1.34
1993	397	250	1.59
1994	459	290	1.59
1995	590	336	1.74
1996	663	352	1.88
1997	573	303	1.89

Source: Bureau of Agricultural Statistics for domestic wholesale prices. Wholesale Prices were converted into US dollars using the annual average exchange rates. International Rice Research Institute for international prices from 1980 to 1984; various issues of FAO Quarterly Bulletin of Statistics for prices from 1985 to 1996, and World Bank Commodity Price Data for 1997.
* International price is of Thai rice, 100%, 2nd grade white rice.

5.2.4 Trade liberalization of rice

Pre-liberalization period

As a net importer of rice, the Philippines, prior to the onset of the GATT-UR/WTO, AFTA-CEPT and APEC, imposed non-tariff or quantitative restrictions (QRs) as a mean of protecting domestic producers especially the small farmers. These QRs were mandated by Presidential Decree (PD) No. 4 and reinforced by the Magna Carta for Small Farmers in 1992. The latter prohibited the import of products that are produced by the country's small farmers. It allows imports only when these products are in short supply in the domestic market. Moreover, Department of Agriculture (DA) Administrative Order No. 23 issued in 1993 imposed QRs on products directly competing with local produce which included rice and rice products.

While the government recognizes the long run advantages that trade liberalization could offer in terms of improved production efficiency and access to technology and information, it has to safeguard against the short-run destabilizing effects of structural changes that accompany an open market policy. Thus, the delayed tariffication of rice under the WTO was sought along with initial high tariff rates for rice imports under the AFTA-CEPT.

Post-liberalization period GATT-WTO

Philippine compliance with its market access commitments for agricultural trade under the WTO is legally embodied under the 1996 Agricultural Tarification Law or Republic Act (RA) 8178. This law has two features. It replaced QRs with tariffs as high as 100% on agricultural imports, except rice. It allows limited or out-quota imports of agricultural products at the country's tariff bound rates. These tariffs are supposed to be reduced to 50% by 2004 in accordance with the WTO Agreement.

As mentioned earlier in Chapter 2, the Philippines is the only ASEAN country which invoked Annex 5 of the WTO Agreement allowing a member country the privilege of deferring the tariffication of the QRs of a politically sensitive staple food. Thus, the QR on rice will continue for 10 years until 2004 with no tariff binding for food security reasons. However, rice is allowed a minimum access volume (MAV) with an import quota that is equivalent to 1% of the average annual rice consumption from 1986 to 1988 in the initial year of implementation. The tariff bindings for rice under the MAV are given in Table 5.7. As a trade-off in the deferment of rice tariffication, the minimum import volumes under the MAV are less than what the Philippines would normally import.

The National Food Authority (NFA) has the first right to import the MAV for rice. The tariff for rice is authorized by Presidential Decree No. 4 and is specified at 50% under the Tariff Customs Code. For food security reasons, the NFA however, is allowed duty-free rice imports upon request from the executive power.

Table 5.7 Philippine commitments to WTO on rice imports.

Implementation Period	Initial Quota	Initial Tariff	Final Quota	Final Tariff
1995-1999	59,730 mt	50%	119,460 mt	50%
1995-2004	119,460 mt	50%	238,940 mt	50%

Source: Department of Agriculture (DA), 1997.

AFTA-CEPT

As a member of ASEAN, the Philippines is required to participate in the ASEAN Free Trade Area-Common Effective Preferential Tariff (AFTA-CEPT) Scheme. The country's program under the AFTA-CEPT is given in Table 5.8. As mentioned previously in Chapter 2, under this scheme the tariffs of ASEAN member countries will be lowered to 5% or less. Initially, the scheme excluded unprocessed agricultural products (UAPs) such as rice, which were later included upon proposal by other ASEAN members in line with the global

liberalization of trade. The Philippines suggested the exclusion of rice as it deemed that domestic rice farmers are not yet competitive enough compared to large ASEAN producers. The Philippines has, however, re-considered its position on the inclusion of rice in the AFTA-CEPT due to the request by other ASEAN members. The Philippines has been given flexibility in determining how it will treat rice in the CEPT. In 1997 the DA conducted a nationwide consultation with various sectors involved in the rice sector. From these consultations several options for the inclusion of rice in the CEPT were proposed (Table 5.9).

Table 5.8 Philippine program under the AFTA-CEPT.

Product Category	Tariff Lines	Beginning Year	Ending Year
1. CEPT Inclusion List (IL)	4,380	1,993	2,003
2. Temporary Inclusion List (TIL)	717	1,996	2,003
3. Unprocessed Agricultural Products (UAP)	391		
IL	159	1,996	2,003
TEL	203	1,997	2,003
Sensitive	25	2,001	2,010
Rice	4	?	?
4. General Exception	28		
Total	5,516		

Source: Department of Agriculture (DA) 1997.

Table 5.9 Options for inclusion of rice in CEPT.

	Option					
Item	A	B	C	D	E	F
CEPT Policy						
Time frame	2000-2005	2000-2010	2005-2010	2000-2005	2000-2000	2005-2010
Beginning and ending rates	100-50%	100-50%	100-50%	50% throughout	50% throughout	50% throughout
WTO Policy						
Beginning and Ending inventory	200-100%	200-100%	200-100%	100-50%	100-50%	100-50%

Source: Department of Agriculture (DA) 1997.

The options for the tariff rates can be classified according to the welfare effects that they provide rice producers and consumers. Options A, B and C offer higher protection to domestic producers at the expense of rice consumers, while options D, E and F would benefit more the rice consumers than the producers. On the other hand, the options for the time frame of the phase down of the tariffs is a choice between a longer adjustment period with a shorter preparation (options B, E) or a longer preparatory period with shorter adjustment period (options C, F). In terms of flexibility, under options A, B, D and E, commencing the tariff phase in the year 2000 would give more flexibility to the country since at that time the country has not yet started the tariffication of rice under the WTO. With the year 2005 as the starting year, the country would have less flexibility since the rice tariffication under the WTO could have started (options C, F). Among the several options, the DA have so far recommended the following treatment of rice in the AFTA-CEPT considering the present trends in rice and outlook, as well as developments in international rice trade: beginning year, 2005; beginning tariff rate, 100%; ending (completion) year, 2010; and ending tariff rate, 50%.

The effects of AFTA-CEPT on producer prices in the ASEAN member countries have been studied by De Rosa (in Bautista 1993). The first scenario assumed the removal of import barriers on all CEPT product categories. The second scenario assumed an alternative discriminatory policy instead of a preferential treatment in ASEAN trade liberalization. For the Philippines the first simulation shows that producer prices will increase by a minimal 0.11% for cereals (including maize), while the second simulation resulted in an increase in cereal prices by 1.65%.

Implications of proposed rice tariffication

Much policy debate has transpired with regard to the proposed tariffication of rice under the GATT/WTO and lowering of rice tariff under the AFTA-CEPT. There are opposing views as well as cautious acceptance of the move for rice tariffication under these multilateral trading agreements. Some of these are found in the literature such as in DA (1994) and David (1994). Other views were put forward by various participants of the rice sector in a nationwide consultation conducted by the DA in 1997.

One argument against tariffication is based on the grounds of non-competitiveness especially of small farms which are prevalent in rice, maize and coconut sectors. Accordingly, the liberalization of markets may result in some displacement of rice farmers causing them to shift to other more promising crops. This situation is in turn attributed to the inadequate infrastructure support such as irrigation, roads and bridges and postharvest facilities. Although this infrastructure is included in the Medium-Term Agricultural Development Plan (MTADP), it has not yet been put in place. A DA consultative study on the development of the grain sector found that the key rice producing regions in the Philippines lack international competitiveness based on their values of the competitive advantage index which range from 50 to 70%. This index is the ratio of the border price in local currency of a given imported commodity to the average cost of producing an import substitute. These results imply that to be able to compete, the domestic producers would have to be accorded trade protection rates as high as 100%. On the other hand, the proposed tariffication of rice does not reduce the level of protection accorded to rice farmers. David (1994) found that under the WTO the MAV binding tariff for rice was above the Net Protective Rate (NPR) in 1990-1992. The NPR measures the impact of government price intervention on domestic prices is the equivalent of a non-tariff barrier to trade.

The delay in tariffying rice imports under the GATT/WTO Agreement on Agriculture allows for the maintenance of current government policies and programs on production in support of small farmers. These programs serve as safeguards against any structural imbalance that may occur during the adjustment period of trade liberalization. In addition to an aggressive infrastructure development program, the following measures were emphasized in enhancing the competitiveness and efficiency of the rice industry: strengthening of market information services; access to credit; affordability of inputs especially fertilizer and machinery spare parts; improved extension services; development of farmers' organizations and cooperatives; and rationalization of NFAs into a service corporation that could support the development of farmers' cooperation (DA 1997). Except for the latter, all of these measures are consistent with the DA's safety net measures. It remains, therefore, when these safety net measures will be put in place before the tariffication of Philippine rice.

Another argument against trade liberalization for rice rests on self-sufficiency or food security reasons. An open-market policy for rice would make the country dependent on the external market for its rice requirements. Clarete (undated) observed that international trading in rice has been limited and this would put the Philippines at risk. The major exporters of rice in ASEAN are also vulnerable to adverse weather conditions. This situation and other economic factors may affect supply in the international market.

On the other hand, one consideration for opening up of the domestic rice market to external trade is the compensatory concessions that the Philippines may derive in other commodities covered by the multilateral trading agreements (David 1994).

Nevertheless, even if the quantitative restrictions for rice were maintained, the Philippines may have to import rice on a regular basis given the current trends in rice area, yields and overall output as shown earlier in Table 5.2 because of the natural and artificial forces that impede rice production programs. Rice imports during the first two years (1995 and 1996) of WTO implementation were substantial due to rice shortages. The DA forecasts that with no changes in the country's rice program, the Philippines is expected to remain a net rice importer over the next four years. Although, barring unforeseen weather conditions and with a

rice program that would increase present yields by 25% or 5 metric tons per hectare, it is also expected that a modest surplus will be achieved in the year 2000.

Both the positive and negative arguments are important to consider and require some balancing measures. Rice tariffication can go parallel with appropriate measures and incentives to rice producers. In order to protect farmers, it has been suggested that higher tariff rates can be imposed rendering imported rice more expensive than domestic rice. Also, the private sector should be allowed to participate in rice imports but through a quota system, since the NFA is allowed duty-free rice imports which it sells at lower prices to the disadvantage of local producers. In allowing the private sector to import, the economic rents through tariff proceeds can still go to the government, and can be used in the infrastructure support to farmers. The suggested strategy for higher rice tariffs and the corresponding domestic prices are provided in Table 5.10.

Table 5.10 Wholesale price of rice for suggested tariff levels in peso per kilogram.

Price of Rice *	Tariff Level (%)			
(US $ FOB/mt)	50	100	150	200
200	10.28	13.56	16.85	20.13
250	12.36	16.33	20.31	24.28
300	14.44	19.10	23.76	28.43
350	16.51	21.87	27.22	32.58
400	18.59	24.64	30.68	36.72

Source: Department of Agriculture (DA) 1997.
*Thailand at 35% brokens.

An assessment report of the DA on the overall impact of the WTO on rice farmers describes a neutral effect (Table 5.11).

Table 5.11 Assessment of WTO impact on producers of major agricultural commodities in the Philippines.

Commodity	WTO Impact
Rice	Neutral
Maize	At/Risk
Coconut	Favorable
Sugarcane	At/Risk
Banana	Favorable

Sources: Department of Agriculture, (DA) 1994 and Bacani, 1995.

5.3 Maize

5.3.1 Maize programs and trends in maize production

Maize is equally important as rice because of the vital role it plays in Philippine agriculture particularly as feed to the rapidly growing livestock and poultry industries.

Several government maize programs have been launched beginning with a project on Cooperative Rice and Maize and Seed Improvement, Multiplication and Distribution way back in 1953 and in the more recent period the Gintong Ani (literally, golden harvest) for Maize Program (for a review see Costales 1993). The initial maize program focused on attaining self-sufficiency in white maize for food. Succeeding programs have placed more emphasis on yellow maize feed sufficiency and exports of yellow maize surplus. The most notable of these programs was the Masaganang Maisan which began in 1974. It included packages of technology for a 5-ton hybrid and 3-ton high yielding open-pollinated variety (OPV), backed up by a supervised credit scheme, farmers' training, production input assistance on seeds, fertilizer and pesticide, and marketing services for maize.

The maize programs have been effective in increasing yields especially for yellow maize. At the national level annual growth in average yields was almost 4% during the period

1976-1980 (Table 5.12). In this period growth in maize production was induced largely by yield increases rather than by area expansion as was the situation in the first half of the 1970s. During this period area harvested expanded by more than 4% annually, while yield growth was only 0.2%. The success of government programs in yellow maize was sustained from 1981 to 1997, the highest growth in yield of more than 8% annually, on average, occurring in the first half of the 1980s. Yield increases of yellow maize slowed down in the second half of the 1980s to the first half of the 1990s. In the latter period area harvested declined drastically to less than 1% as a result of a dry spell in 1991 to 1993 and the shifting to other crops used as silage and forage, resulting in a drastic reduction in annual rates of growth of yellow maize production. This situation coupled with decreasing production and area harvested and static yield for white maize have depressed total maize output which decelerated by 3% yearly, on average.

In 1997 average yield for yellow maize reached 2.39 metric tons per hectare, the highest so far from 1980-1997, 10% improvement from the 1996 yield and 7% increase from the 1995 average yield (Appendix Table 25). For white maize, average yield in 1997 was 1.10 tons per hectare, 1% below the 1996 yield and 2% less than the yield in 1995.

Government maize programs in later years have focused on yellow maize sufficiency for feeds. Yield of white maize became stagnant from 1986 to 1997, its output decelerating from 1991 to 1997 and area harvested from 1991 to 1995.

Table 5.12 Compounded annual growth (%) of maize production, area harvested and yield, the Philippines, 1970-1997.

	1970-75	1976-80	1981-85	1986-90	1991-95	1996-97
Total						
Production	4.5	5.5	4.0	4.4	-3.0	4.4
Harvest Area	4.4	0.06	1.6	1.5	-6.9	-0.04
Yield	0.2	3.6	2.4	2.7	4.2	0
White						
Production	n.a.	n.a.	2.4	0	-6.0	-0.02
Harvest Area			1.6	0	-10.3	0.002
Yield			1.0	0	0	0
Yellow						
Production	n.a.	n.a.	10.9	12.8	1.5	8.1
Harvest Area			2.2	6.7	0.4	-1.3
Yield			8.5	5.7	6.3	9.6

Source: Bureau of Agricultural Statistics (BAS).
n.a. – Data not available by type of maize.
Note: Data from 1970 to 1980 are on crop year (July-June) basis while data from1981 onwards are on calendar (Jan.-Dec.) basis.

5.3.2 Supply and demand for maize

The domestic supply of maize comes largely from domestic production although the share has been declining in recent years. From 1980 to 1995 domestic maize output made up 85% of total supply, on average; 91% during the 1986-1990 period; 87% from 1991 to 1994; and 77% from 1995 to 1997 (Table 5.13). Imports comprised 18%, on average, from 1995 to 1997 and beginning stocks, 5%. Increased output resulting from the expanded maize programs reduced maize imports from 1986 to 1988, with the lowest import of 6 thousand tons in 1986. The Grains Enhancement Production Program (GPEP) brought a milestone in the maize industry. The highest output over the 1980-1997 period was recorded at 4.85 million tons in 1990. This resulted in large carryover stocks of 627 thousand tons in 1991, the highest also during the period. The country exported about 20 thousand tons in 1991, but this prospect was short-lived as the maize industry was not spared from the effects of drought from 1991 to 1993. Maize imports began to surge in 1993.

More than 60% of maize demand is for animal feed which is mainly yellow maize. On the other hand, maize for human food comprised from 18 to 20% of the total demand and the remaining 20% is for industrial uses, mainly white maize. Feed use accelerated at an annual rate

of about 5% in the last five years compared to 3% in 1980-1990. Aggregate maize usage reached 5.4 million metric tons in 1997, 4% greater than in 1996 and 12% more than the 1991 level.

The production and utilization data of maize in Table 5.13 clearly point out that domestic maize production net of stocks is not sufficient to meet total maize requirements of the country. That makes the country a net importer of maize except in 1988 and in 1990 when maize surpluses were recorded at 39 thousand metric tons and 115 thousand metric tons, respectively, (Figure 5.2). The lowest deficit which was 951 metric tons occurred in 1985. The country was still reaping the gains of the accelerated maize productivity programs which were sustained up to 1991. During the 1985-1990 period maize deficits were low, 147 thousand metric tons, on average, or 47% lower than the average deficit level of 319 thousand tons in 1980-1984. Ironically, however, the average deficit level during the GPEP (1991-1995) period rose tremendously to 496 thousand metric tons, which was more than three time the average deficit level in 1985-1990. The situation became worse in 1996 and 1997 with deficits reaching slightly above one million metric tons. Since the 1980s deficiencies in the maize domestic supply have been absorbed largely by the feed sector.

Maize importation is resorted to when either stocks or production are low and supply is insufficient to meet domestic requirements of the main users of maize - the feedmillers and livestock raisers. Maize imports in the last 18 years depended on the adequacy of stocks, the magnitude of the requirement, and the world price of maize. For instance, in 1985 when beginning stocks of maize were down by 36% from the 1984 stock level, imports of maize correspondingly rose by 37%. Ironically, domestic production of maize increased that same year by as much as 19%. The same situation can be observed in 1990 when stocks were critically low and in response maize imports increased by almost 100%, while production posted a 7% increment. In 1991 when stocks went up no import was recorded and the subsequent drawdown in stocks and declining output from 1994 to 1997 prompted an increase in imports. Although importation is a logical response when the buffer stock of maize is critical, the decision to import happens, however, when most of the maize output is yet to be harvested. When harvest time and imports start coming simultaneously, large buffer stocks for the following year are expected assuring sufficient supply to meet the total maize requirement for the year. Stock availability signals the necessity of importation, but determining how much and when will they be available remains a concern.

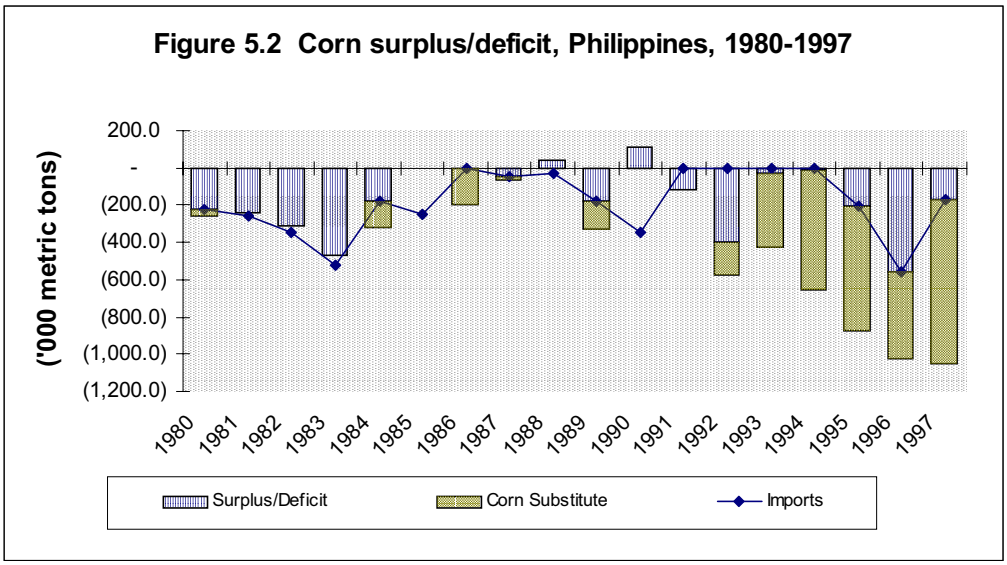
Maize, livestock industries

The demand for maize, in particular yellow maize, depends heavily on the needs of its main users – the swine and poultry industries. Over the period 1980-1997 the share of feeds in the total usage of maize followed an increasing trend. Swine and chicken inventories have also increased proportionally, especially chickens (Table 5.14).

Table 5.13 Maize supply and use, the Philippines, 1980-1997.

Year	Surplus (Deficit)	Population ('000 persons)	Supply ('000 mt)				Utilization ('000 mt)						
			Beginning Stocks	Production	Imports	Total Supply	Export	Seeds	Feed and Waste	Food	Per Capita (kg)	Total Use	Ending Stocks
1980	(257.9)	258.0	3,050.7	3,050.7	219.0	3,527.7		64.0	2,239.5	1,005.1	20.80	3,308.6	219.1
1981	(238.5)	219.1	3,296.3	3,296.3	256.0	3,771.4		65.9	2,480.4	988.5	80.00	3,534.8	236.6
1982	(312.1)	236.6	3,404.5	3,404.5	342.0	3,983.1		67.6	2,655.4	993.6	19.64	3,716.6	266.5
1983	(466.2)	266.5	3,134.6	3,134.6	521.0	3,922.1		62.6	2,586.6	951.6	18.38	3,600.8	321.3
1984	(320.1)	321.3	3,250.8	3,250.8	183.0	3,755.1		64.5	2,556.3	950.1	17.94	3,570.9	204.2
1985	(0.9)	204.2	3,863.3	3,863.3	251.0	4,318.5		70.2	2,794.0	1,000.1	18.44	3,864.2	454.3
1986	195.7)	254.3	4,091.2	4,091.2	6.0	4,551.5		71.9	3,364.2	850.8	15.33	4,286.9	264.6
1987	(60.7)	264.6	4,278.6	4,278.6	50.0	4,593.2		73.7	3,372.3	893.3	15.73	4,339.3	253.9
1988	38.7	253.9	4,428.4	4,428.4	25.0	4,707.3		74.9	3,457.4	857.4	14.74	4,389.7	317.6
1989	(330.9)	317.6	4,522.7	4,522.7	176.5	5,016.8		73.8	3,694.9	1,084.9	18.25	4,853.6	163.2
1990	115.5	163.2	4,854.4	4,854.4	348.3	5,365.9		76.4	3,814.6	847.9	13.92	4,738.9	627.0
1991	(138.7)	627.0	4,655.5	4,655.5	-	5,282.5	20.00	71.8	3,841.4	961.0	13.81	4,794.2	488.3
1992	(400.8)	488.3	4,619.3	4,619.3	174.0	5,281.6		66.6	3,982.2	971.3	15.23	5,020.1	261.5
1993	(428.3)	261.5	4,798.4	4,798.4	401.0	5,460.9		63.0	4,154.5	1008.9	15.46	5,226.4	234.5
1994	(634.3)	234.5	4,519.7	4,519.7	634.0	5,397.2		60.0	4,136.0	958.0	14.34	5,154.0	243.2
1995	(877.0)	243.2	4,129.0	4,129.0	851.0	5,223.2		54.0	4,217.0	735.0	10.76	5,006.0	217.2
1996	(1,027.2)	217.2	4,151.8	4,151.8	1,097.0	5,466.0		55.0	4,391.0	733.0	10.48	5,179.0	287.0
1997	(1,050.6)	287.0	4,332.4	4,332.4	1,112.0	5,731.4		55.0	4,570.0	758.0	10.60	5,383.0	348.4

Source: Production and stocks and utilization data from the Bureau of Agricultural Statistics (BAS). Trade data from the National Food Authority (NFA) from 1985-1990 and the National Statistics Office (NSO) from 1991-1997.



The interdependence of the maize, livestock and poultry industries is also indicated by their forward and backward linkage indices as computed in a study by Garrido in 1993 (Table 5.15). In 1983 the livestock and poultry industries had very strong linkages to their forward (food sector) and backward (feedmilling sector) markets. These linkages however weakened in 1988. The maize industry's forward linkage (feedmilling sector) decreased slightly from 1983 to 1988 but increased for its backward linkage (production inputs).

Table 5.14 Compounded growth of maize feed, and swine and chicken inventories (%), the Philippines, 1986-1997.

	1986-1990	1991-1995	1996-1997
Maize used as feeds (including)	3.19	2.36	4.08
Swine inventory	2.40	2.57	8.04
Chicken inventory	11.29	5.31	16.57

Source: Based on data from the Bureau of Agricultural Statistics (BAS).

Table 5.15 Linkage indices of maize and livestock and poultry, the Philippines.

Year	Forward Linkage Index	Backward Linkage Index
1983		
Maize	0.42	1.05
Livestock & poultry	0.73	1.22
1988		
Maize	0.37	1.08
Livestock & poultry	0.47	1.03

Source: Garrido 1993.

The reduction in the linkage index of the livestock and poultry industries in 1988 tends to support the claim that big livestock and poultry concerns may be substituting maize with other feed grains particularly wheat. Beginning 1998 wheat imports have increased substantially (Table 5.16). The incentive for substitution comes from the lower tariff on wheat (10%) vis-a-vis the 100% tariff on maize. Based on a simulated maize supply by the Grains Sector Development Program Project (1977), from 1992 to 1995 the average difference between maize supply and the requirements of the livestock industry was about 600 thousand metric tons. This

difference can be inferred as the estimated wheat diverted to feed purposes. In 1996 the amount of wheat diverted was found to be even higher at about 867 thousand metric tons.

Table 5.16 Volume of wheat imports, 1980-1997.

Year	Total Quantity ('000 mt) for Food or Feed
1980	785.72
1981	796.43
1982	924.10
1983	797.17
1984	766.10
1985	662.71
1986	959.68
1987	671.70
1988	1,074.80
1989	1,184.40
1990	1,449.70
1991	1,527.50
1992	1,705.50
1993	1,748.00
1994	2,088.60
1995	2,039.00
1996	1,891.90
1997	2,398.90

Source: National Food Authority (NFA).

5.3.3 Prices

Farmgate and wholesale prices of white maize increased at an average rate of 4% annually from 1987 to 1997 (Table 5.17). The growth of farmgate and wholesale prices of yellow maize was, respectively, 1% and 3% yearly, on average from 1989 to 1997 (Table 5.18). The annual change in domestic prices fluctuated as this was, in general, related with the domestic supply situation. The domestic prices of both white and yellow maize have been above international prices by as much as 257% for white maize in 1996 and 350% for yellow maize in 1994.

Table 5.17 Domestic and world prices of white maize (in US $ per metric ton), 1989-1997.

Year	Wholesale Price (1)	World Price (2)	Ratio (1/2)
1989	209.78	111.5	1.88
1990	193.32	109.3	1.77
1991	153.93	107.2	1.44
1992	207.34	102.1	2.03
1993	185.47	107.6	1.72
1994	225.23	123.5	1.82
1995	275.32	165.8	1.66
1996	300.96	117.1	2.57
1997	239.56	111.1	2.15

Source: World Bank Commodity Price Data.

Table 5.18 Domestic and world prices of yellow maize (in US $ per metric ton), 1989-1997.

Year	Farm Price (1)	Wholesale Price (2)	World Price (3)	Ratio (2/3)
1989	187.70	205.64	111.50	1.84
1990	184.28	197.85	109.30	1.81
1991	134.65	160.12	107.40	1.49
1992	195.19	234.78	104.20	2.25
1993	169.98	206.49	102.10	2.02
1994	183.59	377.66	107.60	3.51
1995	247.70	290.10	123.50	2.35
1996	230.77	292.95	165.80	1.77
1997	204.95	259.92	117.10	2.22

Source: The Asian Wall Street Journal.

5.3.4 Marketing and distribution costs

The higher domestic prices compared to international prices indicate to a large extent the high costs of marketing and distributing maize. According to a study by Rafloski (1993), in the Philippines transport costs comprise about one-third to one-half of grain marketing costs compared to a share of one-fourth in other ASEAN countries. A portion of this high cost is due to the long distance between the two major feedmilling areas and the maize production areas. For instance, white maize for food coming from the southern provinces of the country-Bukidnon, Maguindanao and Sultan Kudarat - major maize producing areas in Regions X and XII (Figure 3.1) are shipped to Cebu in Region VII, which has the largest milling capacity and distribution network for maize grits. On the other hand, yellow maize and white maize for feed from Northern Luzon and partly from Mindanao move to Manila-based feedmillers who are closer to livestock producing areas (Regions I, III and IV). The highest cost effect, however, is provided by rural roads and shipping. Due to inefficient shipping in 1989 the transport cost of bringing maize from Cagayan de Oro in Region X to Manila was more expensive per ton kilometer, than from Bangkok to Manila, US $ 0.0162.

The same study by Rafloski (1993) found that the system of arrastre and stevedoring in the Philippines makes the cost for cargo handling the highest in the ASEAN region – US $ 75.53 for a 20-ton equivalent unit container compared to US $ 63.38 for Thailand. Moreover, fuel costs in the Philippines are eight times higher than in the other ASEAN countries. Marketing and distribution costs of transporting maize from the farmgate to users in the Philippines are more than twice (US $ 74 per metric ton) the cost in Thailand (US $ 35 per metric ton).

5.3.5 Import policies and trade liberalization

Pre GATT-WTO policy environment

Similar to rice, maize was also subject to non-tariff import restrictions or quantitative restrictions (QRs) as a means of protecting domestic maize producers who total about 3 million farmers including tenants and landless workers in the maize sub-sector (DAI 1993). Quantitative restrictions on maize and maize products were defined in Presidential Decree (PD) 820 which was reinforced further by the Magna Carta for Small Farmers in 1992 and DA Administrative Order No. 23 issued in 1993. As discussed in Chapter 2, the resumption of the liberalization program of the government in the second half of the 1980s resulted in liberalizing 1,400 lines excluding maize, livestock and meat products which were still regulated then by the Department of Agriculture. However, Executive Orders (EO) 470 and EO 8 which were issued in 1991 and 1992, respectively, enforced the last phase of the import liberalization program. As provided in these two mandates the QRs on maize were lifted starting 1992. In order to cushion the impact of a sudden surge of imported substitutes, EO 8 provided for tariff equivalent rates (TES) which were transitory high tariff rates that had the same protective effect as the QRs. These rates were to be reduced following a specified schedule. However, due to severe criticism

from the private sector, especially the livestock producers, the implementation of tariffication was postponed to March 1993. During that period, the National Food Authority (NFA) was again empowered to grant import licenses for maize.

Post GATT-WTO policy environment

The maize import liberalization policy in accordance with the Philippine commitments to the GATT-WTO is legally embodied under the 1996 Agricultural Tariffication Law or Republic Act 8178. Through this Act, the previous QRs on maize imports were replaced with out-quota tariffs as high as 100%, which will be reduced to 50% in 2004. However, in accordance with the country's commitments under the AFTA-CEPT, maize is among the twenty-five sensitive farm products that will be integrated into CEPT. The maize tariff will be reduced to 5% in 2009, in contrast with 40% MFN tariff rates on imports from non-AFTA countries. Under the MAV tariff bindings, maize is allowed a MAV of 130,160 metric tons subject to 35% tariff starting 1995 and 216,940 metric tons subject to 35% in 2004. It was noted, however, that although maize imports have been liberalized, NFA imports the bulk of maize for feed without undergoing the consultation process with small farmers as provided for in the Magna Carta for Small Farmers.

Similarly with rice, one of the major concerns in the initial years of the WTO is that domestic maize producers are not yet prepared to face the emerging regional and global trade competition. In order to minimize the adjustment costs to farmers, an adjustment period has been provided whereby tariff rates are gradually reduced and government infrastructure support currently enforced, in the hope of enabling the sector to become globally competitive by year 2004. Moreover, under the high out-quota tariff protection for maize and the relatively low MAV, maize shortages may be addressed through the Minimum Access Plus Scheme. Through this scheme, expansion of volume of maize imports is allowed in order to meet expected shortages.

Another adjustment measure accorded to maize farmers as well as the whole agriculture sector is the creation of the Competitive Enhancement Fund or CEF. As mentioned earlier, tariff proceeds under the MAV will go to the CEF, which will be used for development activities such as improvement of farm infrastructure.

5.4 Livestock and poultry

5.4.1 Livestock and poultry in the agriculture sector

As major sectors in Philippine agriculture, the livestock and poultry sectors contributed 12% and 9%, respectively of the gross domestic product (GDP) in agriculture (Table 5.19) during the last seven years. The sector's major sources of growth are pork and chicken. In 1997, of the total farm value of agricultural production, the value of swine production accounted for 13%, chicken production 9% and cattle output shared 2% (Table 5.20).

Table 5.19 Gross domestic product in agriculture, share of livestock and poultry, the Philippines, 1980-1997.

Year	Gross Domestic Product (GDP) in Agriculture (million US $)	Share (%)	
		Livestock	Poultry
1980	7,311	8.0	
1981	7,864	8.5	6.1
1982	7,807	8.2	6.5
1983	6,625	8.2	6.0
1984	6,978	9.8	5.9
1985	7,070	8.3	5.1
1986	6,694	9.3	5.3
1987	7,326	9.6	5.4
1988	8,080	10.8	6.1
1989	9,149	11.8	6.3
1990	9,339	13.2	7.1
1991	9,292	13.4	8.1
1992	11,295	13.4	9.1
1993	11,540	12.6	8.7
1994	13,920	12.2	8.4
1995	15,923	11.8	6.9
1996	17,876	11.8	6.8
1997	16,475	12.5	7.6

Source: National Statistical Coordination Board (NSCB).

Table 5.20 Contribution of cattle, swine and chicken to the farm value of total agricultural production at current prices (thousand US $), 1987-1997.

Year	Total Agriculture	Cattle	Share (%)	Swine	Share (%)	Chicken	Share (%
1987	8,740	160	1.8	705	8.1	595	6.8
1988	9,817	186	1.9	786	8.0	665	6.8
1989	11,085	182	1.6	1,161	10.5	664	6.0
1990	11,234	192	1.7	1,254	11.1	821	7.3
1991	11,135	187	1.7	1,319	11.8	965	8.7
1992	13,173	244	1.8	1,604	12.1	1,351	10.2
1993	12,896	279	2.2	1,437	11.7	1,270	9.8
1994	15,135	338	2.2	1,817	12.0	1,481	9.8
1995	16,689	330	2.0	2,076	12.4	1,405	8.4
1996	18,092	386	2.1	2,347	13.0	1,529	8.4
1997	16,948	391	2.3	2,245	13.2	1,564	9.2

Source: Based on Performance Report in Agriculture for various years by the Bureau of Agricultural Statistics (BAS).

5.4.2 Chicken

Stock, production and trade

In the Philippines, chicken is the cheapest source of protein among animal meat. The standing stock of chicken as of January 1, 1997 was 135 million birds. These include broilers, 35%; commercial layers, 8%; and village chicken (native/improved breed), 57% (Table 5.21). For the period 1980-1997 stocks at the beginning of the year recorded an annual growth of 6%, accelerating to 12% annually in the last five years up to 1997. The number of day-old chick (DOC) imports increased by 60% in 1995 from imports in 1994. The increase was accounted for largely by increases in parent stock broilers (PSB). In the same year imports of parent stock layers (PSL) also increased but at a lower rate of 29%. Grand parent stock (GPS) imports decreased by 12% in 1995 but had the largest growth in imports by 48% in 1996 (Table 5.22). This resulted in a bumper broiler output in 1997. PSL imports also posted an increase of about 6% in 1996, while PSB imports declined by about 5%. Imports of all types of chicken breeders decreased in 1997 as a response of poultry integrators to the glut in chicken output in 1996 which dampened prices in that year.

Table 5.21 Chicken populations ('000 birds) , the Philippines, 1980-1997.

Year	Chicken Population* Total January 1	Broiler	Layer	Native and/ or Imported
1980	52,568			
1981	57,724			
1982	59,718			
1983	62,253			
1984	59,161			
1985	52,399			
1986	53,007			
1987	53,248			
1988	60,321			
1989	70,016			
1990	81,303	26,565	9,814	45,924
1991	78,240	24,529	9,330	45,391
1992	81,525	27,356	7,406	46,763
1993	87,157	31,173	8,601	47,783
1994	93,109	34,771	8,342	49,996
1995	96,215	27,885	9,364	58,966
1996	115,782	39,312	10,796	65,675
1997	134,963	46,558	11,466	76,939

* Broilers and layers are by-products of purebred grand parent stock (GPS) or parent stock (PS).
Source: Bureau of Agricultural Statistics (BAS).

Table 5.22 Live chicken imports for breeding, the Philippines, 1989-1997.

Year	Number of Day-Old Chicks (DOC)			
	Total	Parent Stock Layer	Parent Stock Broiler	Grand Parent Stock
1989	1,120,833	212,617	820,718	87,498
1990	852,596	171,402	531,161	150,033
1991	1,055,630	388,321	502,556	164,753
1992	1,383,375	307,334	905,862	160,179
1993	1,134,229	230,780	765,718	137,731
1994	1.323.372	250,231	879,579	193,562
1995	2,119,029	323,725	1,625,374	169,930
1996	2,142,953	344,823	1,546,096	252,134
1997	1,210,529	261,220	796,425	152,884

Source: Bureau of Animal Industry (BAI).

Chicken meat production was registered at about 497 thousand metric tons in 1997, which accounted for about 30% of the total domestic supply of meat, second only to pork. Chicken meat output grew rapidly a rate of 12% annually in the last seven years (1990-1997) compared to 1% from 1980-1989 (Table 5.23). Domestic production is nearly sufficient to meet domestic requirements. Thus, imports in the form of fresh meat, chilled or frozen, accounted for a negligible share in the total supply. Imports in 1997 were 970 metric tons, almost five times greater than imports in 1996. More than half of the frozen or chicken meat imports in 1996 was sourced from Singapore and 12% from the People's Republic of China. In 1997, about four-fifths came from the U.S.A.

Looking at the demand side of the balance sheet in Table 5.23, the per capita consumption of chicken meat is increasing. In 1997 per capita intake was about 7 kilograms about 7% above the 1996 level and one and one-third more than the 1991 per capita intake.

Table 5.23 Chicken demand and supply, the Philippines, 1982-1997.

Year	Production ('000 mt)	Import ('000 mt)	Consumption ('000 mt)	Exports ('000 mt)	Population (million)	Consumption (kg/capita)
1980	189.62	0.64	190.26	0.00	48.32	3.94
1981	211.96	0.40	212.36	0.00	49.54	4.29
1982	218.48	0.67	219.15	0.00	50.78	4.32
1983	222.12	0.87	222.99	0.00	52.86	4.28
1984	216.26	0.67	216.93	0.00	53.35	4.07
1985	192.39	0.05	192.44	0.00	54.67	3.52
1986	202.96	0.04	203.00	0.00	56.00	3.62
1987	214.00	5.69	219.69	0.00	57.36	3.83
1988	225.92	0.04	225.96	0.00	58.72	3.85
1989	208.46	0.07	208.65	0.00	61.10	3.47
1990	229.27	0.19	286.90	0.00	61.48	3.73
1991	286.87	0.03	250.46	0.87	62.87	3.98
1992	356.40	0.04	356.44	0.00	64.26	5.55
1993	364.48	0.11	364.59	0.00	65.43	5.57
1994	376.61	0.20	376.80	0.00	68.62	5.49
1995	399.55	0.19	399.74	0.00	68.61	5.83
1996	455.10	0.20	455.30	0.00	69.95	6.51
1997	496.70	0.97	497.60	0.00	71.49	6.96

Source: Bureau of Agricultural Statistics (BAS).

Table 5.24 Prices of broiler chickens in Metro Manila in pesos per kilogram, 1986-1997.

Year	Wholesale Price Liveweight	Retail Price Fully dressed
1986	24.76	35.13
1987	26.32	39.40
1988	27.32	42.46
1989	30.90	45.99
1990	33.13	51.50
1991	41.56	62.32
1992	42.37	68.73
1993	41.45	64.08
1994	43.84	70.12
1995	46.80	71.50
1996	43.96	69.50
1997	46.16	72.18

Source: Bureau of Agricultural Statistics (BAS).

Prices

Domestic prices fluctuated over the last seven years due to unstable supply especially of broiler meat. Average prices declined from 1995 to 1996, wholesale prices by 6% and retail prices by 3% due to the bumper broiler output. Prices in 1997 were about the same level as in 1995 (Table 5.24). There is no established pattern between production and average price. In 1996, while domestic production registered a 14% increase from 1995 levels average prices posted decreases. Similarly, in 1993 domestic output rose by 2% while wholesale prices went down by 2% and retail prices by 7%.

International trade perspective: constraints and prospects

The chicken industry has been one of the principal sources of growth in agriculture in the last seven years when the crop sector as a whole suffered production setbacks. The encouraging performance of the industry can be attributed to the highly commercialized nature of chicken and egg production systems. The industry's development is left largely to the private sector particularly in breeding, research, extension and veterinary care. The integrated production system is dominated by large producers (corporations such as San Miguel, Vitarich

Swift Foods, and others), known in the industry as poultry integrators. This system existed since the 1980s but growth and expansion accelerated in the 1990s. This type of production system in poultry tends to monopolize power in the supply of birds and feeds through contract production of broilers and eggs and in the processing and marketing facilities. Export quality dressing plants class "AAA" and "AA" with advanced technology are owned by these integrators. This rapid technological change can be attributed also to World Bank support in the hog and poultry sectors in the developing countries (Jarvis 1993) especially towards the latter years. The development occurred rapidly both in the broiler production and processing sector.

The country is zero-based in breeding technology for chickens and has to rely on imported stocks. Since the 1980s broiler meat production has come from imported breeder based grandparent stock (GPS) and parent stock (PS). The influx of imported day-old-chicks for breeding was carried out by the large domestic poultry integrators and the technology for grow-out and breeder to broiler meat conversion was developed on their own account. The support of the government, however, came in the form of lower tariffs on imported purebred live chicken under the provisions of Executive Order, (EO) 470 and EO 8.

Pre-GATT-UR policy environment

Under EO 470 of July 20, 1991 a 3% tariff was imposed on purebred chicks for breeding from 1991 to 1995. Live poultry for other purposes were subjected to a tariff of 40% in 1991, 35% in 1992 and 30% in 1993 up to 1995. Meat and edible offal were subjected to tariff rates of 50-45-35-30 from purebred chickens for breeding in 1991-1995. Likewise, poultry products such as dried egg yolk were subjected to the same tariff rates (Tariff and Customs Code of the Philippines 1991).

Trade controls in livestock and livestock products are in term of tariffs and non-tariff measures, primarily the sanitary and phytosanitary measures for both live animals and meat products. The tariff measures are implemented by the Bureau of Customs while the National Meat Inspection Commission (NMIC) is responsible for sanitary and phytosanitary measures for livestock. As mentioned earlier in Chapter 3, BAI imposes strict quarantine services and inspections for live animals in order to ensure safety of human life and animal health. A Veterinary Quarantine Certificate (VQC) is also a requirement for private individuals and entities that want to import live animals. The NMIC, on the other hand, imposes strict inspection procedures for all meat imports and classifies them according to quality so that appropriate services are duly paid. A safety net measure to small livestock producers is provided under Republic Act (RA) 7607 or the Magna Carta for Small Farmers where it stipulates that no agricultural imports should be made where the country has adequate quantities.

Post GATT-UR (WTO) policy environment

Under the GATT-UR/WTO the bound rates offered by the Philippines on live animals are generally higher than those prevailing during the pre-GATT-UR period. For purebred breeders the 3% pre-GATT rate was raised to a 10% base rate and 10 to 5% ceiling rate. For poultry meat and their edible offal including all preserved meat and meat preparations, the tariff ceilings imposed are on a decreasing scale from 100% to 40% in the period 1995-2000.

The GATT-UR (WTO) agreement allows member countries under the "Most Favoured-Nation Tariff" status a "minimum access volume" for the traded good with an initial equivalent of 3% and up to 5% of the average consumption levels during the period 1986-1988. For the Philippines the initial quota of 3% for poultry is 7,604 metric tons, which was believed to be over-estimated (Gonzales 1995). For live animal imports including chicken, there seems to be no guidelines stipulated in the agreement explaining the basis of the quotas for live animals.

5.4.3 Swine

Stock, production and trade

Nearly half of the total domestic supply of meat in the country is pork. The stability of the domestic supply of pork relies heavily on the stability of stocks which in turn depends on availability of breeder stocks. During the period 1980-97 stocks of live swine were stable, increasing at an annual rate of 1.2%. The last inventory count on January 1, 1997 registered a head count of almost 10 million. In the last three years, four-fifths of the swine population came from backyard farms and one-fifth from commercial farms (Table 5.25). The swine subsector has been considered as the trendsetter in the livestock sector for the last five years. Expansion of monogastric animals such as swine is likely to continue because they do not require a significant amount of pasture and forage, which are limited in the country.

Table 5.25 Swine population in thousand head, the Philippines, 1980-1997.

Year	Swine Population January 1 Total	Backyard	Commercial
1980	7,934	6,533	1,400
1981	7,758	6,153	1,605
1982	7,802	6,174	1,628
1983	7,984	6,486	1,498
1984	7,612	6,361	1,251
1985	7,304	5,998	1,306
1986	7,275	6,081	1,194
1987	7,039	5,921	1,118
1988	7,580	6,312	1,268
1989	7,908	6,677	1,231
1990	8,000	6,776	1,224
1991	8,079	6,621	1,458
1992	8,022	6,717	1,305
1993	7,954	6,663	1,290
1994	8,226	6,766	1,460
1995	8.941	7,181	1,760
1996	9,026	7,239	1,787
1997	9,752	7,788	1,964

Note: As defined by the Bureau of Agricultural Statistics (BAS) backyard farms refer to farms or operators having less than 20 head of swine regardless of age. Commercial farms/operators have at least 20 head of swine.

Domestic production of pork is on the uptrend, growing at a rate of 5% annually, on average, in the last eighteen years until 1997 (Table 5.26). Pork output reached slightly over a million metric tons in 1996 and 1997, double the output in the early 1980s. Imports of improved breeding stock have accounted partly for the growth in pork production.

Based on records of the Bureau of Animal Industry (BAI), swine imports for breeding in 1997 reached 2.6 thousand head (Table 5.27). Importation of live swine for breeding was the highest in 1994 at a level of 6.6 thousand head. The influx of imported breeders that year was a move to accelerate the industry's recovery from the Foot and Mouth Disease (FMD) crisis.

Table 5.26 Pork demand and supply in '000 mt carcass weight, the Philippines, 1980-1997.

Year	Production	Import	Consumption	Exports	Consumption (kg/capita)
1980	448.00	1.00	449.00	0.82	9.29
1981	548.00	6.00	553.35	0.65	11.17
1982	523.00	3.00	525,65	0.35	10.35
1983	564.00	2.00	565.92	0.08	10.71
1984	590.00	0.05	589.71	0.34	11.05
1985	508.00	1.00	508.85	0.15	9.31
1986	589.00	1.00	589.74	0.26	10.53
1987	641.00	1.00	642.00	0.00	11.19
1988	713.00	3.00	715.86	0.14	12.19
1989	804.00	4.00	807.79	0.21	13.22
1990	896.00	1.00	896.66	0.34	14.58
1991	845.19	0.73	845.61	0.31	13.45
1992	845.26	0.79	846.05	0.00	3.17
1993	880.94	0.42	881.36	0.00	13.47
1994	921.76	0.70	922.46	0.00	13.44
1995	969.86	2.18	972.04	0.00	14.17
1996	1,036.52	6.07	1,042.59	0.00	14.90
1997	1,085.50	10.37	1,095.91	0.00	15.32

Source: Bureau of Agricultural Statistics (BAS).

Imports of pork and pork products posted large increases during the initial years of implementation of the GATT-UR/WTO. In 1996, imports were slightly more than 6 thousand tons which is about the same level in 1981 but about thrice the imports in 1995. This increase was caused by large imports from Canada and the US, both accounting for about 53% of the total meat imports in 1996. Imports increased further to a record high of 10.4 thousand tons in 1997, which is two-thirds more than the 1996 import level. Improved domestic production and large imports assured sufficiency in domestic supply level and stable prices during the period, except in 1996 when prices of pork shot up partly due to high feed cost. (Table 5.28).

Pre-GATT UR policy environment

As can be gleaned from the supply-use data on pork in Table 5.25, from 1980 to 1981 the Philippines exported pork and pork products of 850 metric tons and 650 metric tons, respectively. However, in the last 4 years before the signing of the GATT-UR pork exports were nil. While total exports were declining, total importations of live swine for breeding and other meat and carcasses were increasing.

The pre-GATT UR tariffs on swine and pork products were also defined by EO 470 of July 20, 1991. Live purebred swine for breeding were subjected to a uniform 3% tariff rate as with purebred day old chicks. Live swine for other purposes are generally imposed a 30% tariff rate, similarly with meat of swine either in fresh chilled or carcasses. For other meat and edible offal of swine such as pig fat, bellies, hams, shoulder cuts with bone-in, tariff rates of 50-45-40-35-30% were in force from 1991 to 1995 (Gonzales 1995).

On the other hand, the non-tariff barriers imposed by the government on imports of livestock and poultry apply in general to live swine, meat products and edible offal. Veterinary Quarantine Certificates are required from individual importers to ensure safety and quality standards especially for pork carcasses and offal where manufacturing grades versus choice cuts are classified for sanitary/quality standards and tariff purposes.

Table 5.27 Live swine imports for breeding, the Philippines, 1989-1997.

Year	Quantity (No. of head)
1989	3,507
1990	1,968
1991	1,334
1992	3,011
1993	2,395
1994	6,636
1995	1.919
1996	2,206
1996	2,598

Source: Bureau of Animal Industry (BAI).

Table 5.28 Prices of swine, pork and pork products (pesos per kilogram), the Philippines, 1980-1997.

Year	Farm Price of Swine Liveweight	Wholesale Price of Pork	Retail Price of Pork
1980	7.92	8.46	18.08
1981	8.25	9.14	19.69
1982	8.68	9.94	21.28
1983	8.99	11.13	22.66
1984	16.57	20.19	38.11
1985	17.83	22.61	41.93
1986	18.30	22.54	44.35
1987	19.09	23.51	47.06
1988	19.87	29.88	48.62
1989	23.74	33.23	54.65
1990	28.45	33.37	58.23
1991	33.45	44.79	73.58
1992	36.69	47.39	79.96
1993	35.37	40.93	76.88
1994	40.66	52.15	86.41
1995	44.09	47.56	86.59
1996	47.79	58.39	96.76
1997	48.54	55.54	100.83

Source: Bureau of Agricultural Statistics (BAS).

Post-GATT-UR policy environment

Prior to the implementation of the GATT-UR trade policies, the entry of pork imports into the country was under debate especially during the deliberation of RA 4670 (Magna Carta of Small Farmers), because domestic producers were pushing zero imports on the basis of sufficiency of local supply. However, large processors' requirements were more for the manufacturing grades of pork cuts, which local producers cannot provide under the present post-production technology. In 1995 under GATT-UR policy, tariff rates imposed on swine carcasses, meat and meat cuts and offal were 100 to 40% within the period 1995-2000. These rates are higher compared with rates imposed on beef imports. Ironically, the high tariff rates did not restrict the quantity of imports of pork and meat cuts. Swine carcasses and meat cuts and edible offal posted large increases in 1996 and 1997. Imports of live swine for breeding likewise increased by about 18% in 1997 over 1996 level as shown in Table 5.27

5.4.4 Cattle

Stock, production and trade

Cattle are the largest ruminant species raised in the Philippines. Its high degree of commercialization of 23% of the total head count in 1980 has decreased gradually to 17% in 1986, 12% in 1990, down to 9% beginning 1992 onwards (Table 5.29). Large-scale operations such as ranching and large-scale feedlots are declining owing to a combination of factors

(Pempengco 1997) – law and order, Comprehensive Agrarian Land Conversion (CARL) and land conversion, marketing problems, high cost of investment and inputs. Some critics argue that policy changes for agriculture have discouraged investment in the beef industry, resulting in the closure of many commercial beef operations and a reduction in the stocks of cattle in commercial operations. Industry sources declared that the largest feedlot operations are dominated by large multinational companies which are vertically integrated with their retail outlets, slaughtering and processing facilities including by-products for feed such as pineapple pulp, copra meal and rice straw. About 90% of the cattle in feedlots are imported.

Table 5.29 Cattle population, the Philippines, 1980-1997.

Year	Cattle Population (January 1) Total'000 head	Backyard*	Commercial
1980	1,912	1,473	438
1981	1,940	1,477	463
1982	1,942	1,477	465
1983	1.937	1,507	431
1984	1,849	1,512	337
1985	1,789	1,493	294
1986	1,814	1,504	310
1987	1,747	1,496	251
1988	1,700	1,489	211
1989	1,682	1,503	179
1990	1,630	1,441	189
1991	1,677	1,485	192
1992	1,731	1,577	153
1993	1,915	1,755	160
1994	1,936	1,769	167
1995	2,021	1,835	186
1996	2,128	1,929	199
1997	2,266	2,056	210

Source: Bureau of Agricultural Statistics (BAS).
* Operators having less than 20 head.

From 1980 to 1992, stocks of cattle have been declining at an annual rate of almost 1%. Starting 1993, however, there was a sudden rise in stocks of cattle, which continuously increased at an annual rate of about 4% for the period 1993-1997. At the last head count on January 1, 1997, the cattle inventory stood at 2.3 million head which is about 31% above the 1992 level, so far the highest level in the period 1980-1997. This was partly an offshoot of the import liberalization program of the government, which ran through 1990-1993 wherein most of the commodities used for food were subjected to lower tariffs including live animal importation, specifically cattle for fattening and for breeding. From a low of 23 thousand head in 1990, the live cattle import rose to a level of 116 thousand in 1991, and 169 thousand in 1995. It decreased slightly in 1996 and 1997 (Table 5.30).

Increasing stocks correspondingly translate to increased meat production. Beef production grew by 5.4% annually from 1980-1997 (Table 5.31). It reached a level of 160.8 thousand metric tons in 1997, 10% above the 1996 level and 20% more than the 1995 output. The inflow of imported meat and meat preparations added up to domestic supply. The year 1994 saw a sudden rise of beef imports to a level of 36 thousand metric tons from about 18 thousand metric tons in 1993. Imports slowed by 28% in 1995 with a recovery in 1996 and 1997 to 33 thousand tons and 40 thousand tons, respectively. The per capita consumption of beef had also been increasing at an annual rate of 3.3% from 1980 to 1997. With stable supply, domestic beef prices both at the farm and market were generally stable during the period 1992-1993 (Table 5.32).

Table 5.30 Live cattle imports (no. of head), the Philippines, 1990-1997.

Year	Total	Breeder	Fattener
1990	23,022	1,709	21,313
1991	15.883	3,000	12.784
1992	49,237	15,875	33,362
1993	82,130	7,458	74,672
1994	115,916	6,430	109,486
1995	168,679	6,299	162,470
1996	167,235	2,645	164,590
1997	156,719	1,269	155,450

Source: Bureau of Animal Industry (BAI).

Table 5.31 Beef demand and supply, the Philippines, 1980-1997.

Year	Production ('000 mt)	Import ('000 mt)	Consumption ('000 mt)	Exports ('000 mt)	Population (Million)	Consumption (kg/person)
1980	72.00	5.00	77.00	0.00	48.32	1.59
1981	72.00	6.00	78.00	0.00	49.54	1.59
1982	70.00	7.00	77.00	0.00	50.78	1.52
1983	62.00	5.00	67.00	0.00	52.86	1.27
1984	67.00	1.00	68.00	0.00	53.35	1.27
1985	76.00	2.00	78.00	0.00	54.67	1.43
1986	85.00	3.00	88.00	0.00	56.00	1.57
1987	91.00	4.00	95.00	0.00	57.36	1.66
1988	92.00	5.00	97.00	0.00	58.72	1.65
1989	96.00	10.10	106.00	0.00	61.10	1.73
1990	103.00	0.05	103.00	0.00	61.48	1.67
1991	112.30	10.68	122.98	0.00	62.87	1.96
1992	115.58	14.86	130.44	0.00	64.26	2.03
1993	125.89	17.64	143.54	0.00	65.43	2.19
1994	135.51	36.14	162.48	0.00	68.62	2.37
1995	147.46	26.19	173.66	0.00	68.61	2.53
1996	160.83	32.66	193.49	0.00	69.95	2.77
1997	176.64	39.61	216.25	0.00	71.54	3.62

Source: Bureau of Agricultural Statistics (BAS).

Table 5.32 Prices of cattle and beef (pesos per kilogram), 1980-1997.

Year	Farm Price (Philippines liveweight)	Wholesale Price (Manila dressed weight)	Retail Price (Manila beef rump)
1980	8.47		31.52
1981	9.35		33.73
1982	9.84		35.80
1983	12.17		38.93
1984	19.76		51.22
1985	18.89		63.03
1986	17.46		65.29
1987	17.27	49.20	69.18
1988	20.06	57.60	74.05
1989	23.24	65.14	85.23
1990	32.49	72.18	98.28
1991	34.61	80.97	120.03
1992	39.07	87.92	135.98
1993	39.56	90.20	138.51
1994	45.87	90.55	134.79
1995	41.50	89.90	133.86
1996	43.89	92.01	133.53
1997	43.95	92.01	133.70

Source: Bureau of Agricultural Statistics (BAS).

Pre-GATT-UR policy environment

A notable event during the pre GATT-UR years (1992-1995) was the opening of the local beef industry to the world market. This occurred in 1992 when the quantitative restrictions were replaced by an open import policy. The government by virtue of Administrative Order No. 1 Series of 1996 allowed accredited feedlot operators to import feeder cattle for fattening. This policy however, imposed a restriction that 10% of the total imports were purebred purposely for breeding. During these years, the Philippines has become one of the most lucrative livestock markets in the region. As discussed previously, in the 1992–1994 period before the implementation of GATT-WTO, heavy importations of live cattle for fattening and breeding had already started. Similarly, brisk beef importation had been climbing since 1992.

Similar to chicken, tariff rates on both live cattle and meat imports are defined by EO 470, whereby purebred cattle purposely for breeding and feeder cattle weighing not more than 300 kilograms were subjected to 3% tariff from 1991 to 1995. Live bovines including cattle for purposes other than fattening and breeding were imposed a tariff of 30%. Also, sanitary and phytosanitary measures for both live animals and meat products are imposed by BAI and NMIC. A Veterinary Quarantine Certificate is necessary for live cattle and meat imports. It is worth noting that the provisions of RA No. 7607 or The Magna Carta for Small Farmers excludes beef in the quantitative restrictions of commodities where the country has adequate quantities. This was attributed to the expanding market for beef. Contrary to this, about 500 thousand head of slaughter cattle have been estimated annually by the Bureau of Agricultural Statistics (BAS), which is still insufficient to meet domestic demand.

Post-GATT (WTO) policy environment

With the country's participation in GATT-WTO, the beef industry is exposed to an environment of increasing competition from imported beef products. Based on data from the National Statistics Office, beef importation has been climbing since 1993. In more recent years, India has been a major source of boneless beef. Live cattle production on the other hand has been increasing as a result of a growing cattle inventory. It is largely brought about by heavy importation of breeder and feeder cattle since 1992. Ironically, however, the commercial raisers' share to total cattle stocks had fallen to about 9% from 22% in 1980. The data reflect the fact that although imports of cattle for fattening surged into the country, breeder imports slackened. The trend may imply that with reduction in breeding operations of commercial farms and feedlots cattle raising has shifted to small and medium-sized operations rather than to ranches or large-scale feedlot operations.

The post-GATT bound rates and tariff quotas on cattle and beef are covered by the Revised Customs and Tariff Code of 1997. Purebred cattle for breeding were charged a 10% base rate and 10 to 5% tariff ceiling (1995-2000) compared with the 3% pre-GATT tariff. Feeder cattle weighing not more than 300 kg were subjected to a base rate of 10% then a 20 to 10% tariff ceiling (1995-2000), while other live bovines were assessed a 10% base rate and 40-36% tariff ceiling (1995-2000). Imports of beef, edible offal and other beef meat preparations have a 20% base rate, while a bound rate of 60-40% or 60-35% is scheduled from 1995 up to year 2000.

The Philippines committed an error in computing the minimum access volume for beef imports. Based on an initial 3% and final 5% of the average annual consumption of beef, the minimum access volume computed for beef was 4,000 metric tons (initial) and 5,500 (final) which was over-estimated by 1.8-1.9 thousand metric tons. Such an error may have direct impact on the protection of local producers. Furthermore, the higher the tariff quotas, the slower it takes for the bound tariff rate to be enforced (Gonzales 1995).

5.5 Coconut

Coconut, its products and by-products that are internationally traded include coconut oil, copra, copra cake/meal, desiccated coconut, and fatty chemicals.

5.5.1 The coconut industry in the Philippine economy

The coconut industry is significant to the Philippine economy especially in terms of foreign exchange earnings and employment (Table 5.33). In spite of the declining share in the world trade for traditional coconut products (copra and coconut oil), the Philippines remains as the principal producer and the biggest source of these products in the world market. In 1997, the Philippines contributed 51% to total world exports for coconut oil and copra (UCAP 1998).

The Philippine Coconut Authority (PCA) is in charge of developing the industry. One of the functions of PCA is to set the rules and regulations governing standards and exports of coconut products and by-products.

Table 5.33 Selected statistics in the Philippine coconut industry.

Item	Amount	Percent
1. Area planted, 1997	3.3 million hectares	25 % of total agricultural use
2. Employment, 1985	1.5 million farmers, 1.9 million landless workers; 6,134 traders, processors, exporters	6.2% of total population
3. Gross value added (GVA), 1997	US $ 975 million	10% of total GVA for agricultural crops
4. Export earnings, 1997	US $ 835 million	3.3% of total merchandise export earnings

Sources: Bureau of Agricultural Statistics (BAS) for area and GVA; United Coconut Association of the Philippines (UCAP) for exports; and Habito (1985) for employment.

5.5.2 Trends in coconut production

Coconut area and production have been on the downtrend in the last one and a half decades. The decrease accelerated in 1986-1990. During this period, the annual drop in nut output, on average, doubled in rate in 1980-1985 (Table 5.34). This is traced also to accelerated declines in area planted, number of bearing trees, and yield. The drop in area planted is largely attributed to the indiscriminate cutting of trees for a thriving coconut lumber enterprise, in spite of a ban by the PCA. Republic Act No. 8048 issued in 1995, prohibits the cutting of coconut trees except those which are 60 years old, economically unproductive trees, disease infected or typhoon-damaged. The lower yields resulted from old and unproductive trees, and non-application of fertilizer on coconut farms. Another major contributory factor is the lower prices of coconut products in the world market due to increased supply of competing oil products as well as increased coconut product supplies in the world market from other large coconut producers such as Indonesia and Papua New Guinea.

In the first half of the 1990s, coconut production recovered although not significantly. Area planted continued to decrease but at a lower rate than in the second half of the 1980s. The reduction in bearing trees was less than 1% annually, on average. Average yield per bearing tree remained at 41 nuts (Appendix Table 26) in spite of a fertilization program undertaken by PCA under a World Bank development program in the first half of the 1990s. In 1996, nut output was reduced by 6% from the 1995 output in spite of an increase in the number of trees by 3%. In 1997, nut production recovered with continued increases in number of bearing trees, area planted and yield.

Table 5.34 Compounded annual growth of coconut production, area, bearing trees and yield (%), 1980-1997.

	19980-1985	1986-1990	1991-1995	1986-1997
Coconut production	-2.09	-4.47	1.92	6.02
Area	0.45	-1.60	-0.02	5.25
No. of bearing trees	-0.06	-1.98	-0.70	3.90
Yield per bearing tree	-2.44	-2.30	0	2.60

Source: Bureau of Agricultural Statistics (BAS).

In the coconut industry, output performance is measured in terms of copra production, which is estimated indirectly by the PCA using data of processed coconut products (Table 5.35). The data also indicate reduction in processed coconut products. The large drop in processed coconut products in 1984 was due to the severe drought in 1983. Processed coconut products also decreased in 1996 as a result of the decrease in nut production, these products recovered in 1997 which in turn resulted in a large ending stock.

The PCA performance measure contrasts with the focus of statistical reporting on the coconut industry performance by the Bureau of Agricultural Statistics (BAS) of the Department of Agriculture (DA). The BAS gathers primary data on nut production at the farm level, and the data generated are used in the agricultural performance report.

Table 5.35 Coconut production in copra terms (in '000 mt), the Philippines, 1980-1997.

		Local	Total	Inventory*			Total Coconut
Year	Exports	Consumption	Utilization	Beginning	Ending	Change	Production
1980	1,717	359	2,076	236	340	104	2,180
1981	1,913	403	2,316	340	370	30	2,346
1982	1,871	321	2,192	370	350	-20	2,172
1983	1,813	451	2,264	350	114	-236	2,028
1984	1,128	307	1,435	114	120	6	1,441
1985	1,254	379	1,633	120	538	418	2,051
1986	2,351	493	2,844	538	384	-154	2,690
1987	2,074	412	2,486	384	407	23	2,509
1988	1,621	380	2,001	407	300	-107	1,894
1989	1,554	347	1,901	300	275	-25	1,876
1990	2,146	443	2,589	275	315	40	2,629
1991	1,678	422	2,100	315	275	-40	2,060
1992	1,687	426	2,113	275	400	125	2,238
1993	1,886	467	2,353	400	230	-170	2,182
1994	1,598	497	2,096	230	420	190	2,286
1995	2,313	603	2,916	420	200	-220	2,696
1996	1,430	590	2,020	200	150	-50	1,970
1997	1,842	619	2,461	150	307	157	2,618

Source: United Coconut Association of the Philippines (UCAP 1997), based on industry report from the Philippine Coconut Authority (PCA).

* Trade estimate of commercially held stocks of copra, coconut oil, desiccated coconut and fatty chemicals in copra terms.

5.5.3 Coconut utilization

The multiple markets of coconut products

About 90% of coconut harvested in the Philippines is processed by farmers into copra, which is the dried meat of nature nuts. The other 10% of coconut is sold in various forms - green or mature and husked nuts. Husked nuts are processed by desiccators. About 5% of copra produced is utilized in the external market, while 95% is processed in the domestic market into CNO part of which is refined by a few mills to produce cooking oil and other industrial oils in the manufacture of coco-chemicals. Copra exports fell drastically beginning in 1980 due to the shift in focus of exports to higher value products such as oleo chemicals. About 75% of CNO of various types is exported. Edible oil is mainly for domestic use, while coco-chemicals are intended for both domestic and export markets. A by-product of processing copra into CNO is CM. About 90% of CM produced is exported as animal feed (Mangabat 1995; UCAP 1991).

5.5.4 Trends in coconut export

While coconut products continue to be the number one major agricultural export in the Philippines as discussed in Chapter 4, their share of total exports is declining. Prior to the 1980s, coconut product exports accounted for about one-fourth of the total export earnings of the Philippines. In 1985, however, the contribution of coconut product exports was down to one-tenth of total exports, and dipped further to 5% yearly, on average, from 1991-1995 (Table 5.36). In 1996 and 1997, coconut product export shares were 4% and 3%, respectively. The declining share of coconut product exports can be attributed to a combination of several factors: declining productivity in coconut farms as a result of old and unproductive trees and non-application of fertilizer, in turn attributed to lower prices of coconut products in the world market.

Nonetheless, the Philippines continues to be the number one supplier of coconut products in the world market, contributing more than 50% to total world supply of copra and coconut oil (Table 5.37). In 1984 and 1985, the PCA imposed a copra export ban as a result of low domestic supply caused by the lower output from a prolonged drought from 1982 to 1984. Priority was given to the domestic market where coconut oil mills were then suffering from very low capacity utilization.

Table 5.36 Share of major industry exports to merchandise exports, the Philippines, 1979-1997.

Year	Total Philippine Exports (f.o.b. US $M)	%	% Share					
			Coconut Products	Forest Products	Sugar Products	Mineral Products	Garments	Other Products
1979	4,601	100	22	11	5	13	9	40.0
1980	5,788	100	14	7	11	16	9	43.0
1985	4,629	100	10	4	4	5	13	64.0
1990	8,186	100	6	1	2	9	22	60.0
1991	8,839	100	5	0.8	2	6	21	65.2
1992	9,824	100	6	0.6	1	6	22	64.4
1993	11,375	100	5	0.4	1	6	20	67.6
1994	13,483	100	5	0.2	0.5	6	18	70.3
1995	17,447	100	6	0.2	0.4	5	15	73.4
1996	20,543	100	4	0.2	0.7	4	12	79.1
1997	25,228	100	3	0.2	0.4	3	9	84.4

Table 5.37 World exports of copra and coconut oil of selected major producing countries, 1980-1997.

Country	1980	1985	1990	1995	1996	1997 P
Total* ('000 mt)	1,511	1,486	1,902	1,846	1,533	2,041
			Percent Share			
Philippines	65	44	64	73	54	51
Indonesia	4	13	10	8	25	32
Malaysia	6	7	4	3	2	2
Papua New Guinea	6	7	4	4	8	6
Sri Lanka	0.2	5	0.9	0.8	0.3	0.6
Pacific Islands	7	7	3	3	4	3
Mozambique	0.7	0.5	0.4	2	2	2
Others	11.1	16.5	13.7	6.2	4.7	3.4

Source: United Coconut Association of the Philippines (1989, 1993, 1997, 1998) based on ISTA Oil World, Hamburg.

P - Preliminary

* Copra and CNO, oil basis.

Although the Philippines remains the largest supplier of coconut products, especially coconut oil, in the world market, the country is a price taker since coconut oil accounts only for an average of 5% of the total world market for vegetable oils (Table 5.38).

Of the traditional coconut product exports, coconut oil, desiccated coconut and copra meal, continue to be exported in large quantities. Beginning the 1980s, copra exports dwindled, as stated earlier due to a shift in policy from raw material imports to higher processed products (Table 5.39). The reduction in copra export beginning in the 1980s was matched by increases in exports of coconut oil and oleo-chemicals, a non-traditional coconut product.

In more recent years, copra has largely been exported to European countries and Korea, although in 1996 and 1997 no exports were recorded for Korea. Coconut oil has for its major destinations the U.S.A. and Europe. Significant volumes were also shipped to neighboring countries in Asia such as Malaysia, Indonesia, Japan and the People's Republic of China. Europe remains a captive market for Philippine copra meal due to its livestock industry. Korea is the next largest importer. Desiccated coconut has been absorbed for the most part by the U.S.A., Europe, Asia and the Pacific in that order, although Canada, the Middle East and Latin and Central American countries are becoming important markets.

Table 5.38 World exports of oils and fats (in '000 mt), 1992-1997.

Commodity	1992	1993	1994	1995	1996	1997
World total	23,150	23,578	27,561	29,575	27,802	2,645
Soybean	3,661	3,539	4,778	5,690	4,969	666
Sunflower seed	2,161	1,686	1,984	2,996	2,648	3,133
Palm	8,390	9,461	10,907	10,285	10,735	12,354
Rapeseed	1,391	1,229	1,852	1,895	1,750	1,808
Coconut	1,514	1,478	1,469	1,704	1,389	1,892
Groundnut	289	285	258	269	232	238
Other food oils *	1,845	2,000	2,111	2,046	2,096	2,496
Non-food oils **	319	280	311	467	400	360
Animal fats/oils ***	3,580	3,620	3,891	4,221	3.502	3,507

Source: United Coconut Association of the Philippines (UCAP, various years).
* Includes cottonseed, palm kernel, sesame seed, olive and corn oils.
** Includes castor and lipseed oils.
*** Includes butter, lard, tallow/grease and fish oil.

Table 5.39 Exports of major Philippine coconut products (in '000 mt), 1976-1997.

Year	Total*	Copra	Coconut Oil	Desiccated Coconut	Oleo-Chemicals*	Copra Meal
1976	2,344	897	851	81	-	504
1981	1,913	106	1,047	88	92	633
1986	2,351	136	1,238	68	146	818
1987	2,073	121	1,054	81	154	752
1988	1,621	79	793	88	146	559
1989	1,554	76	760	94	127	475
1990	2,146	91	1,158	75	102	631
1991	1,678	86	890	81	53	614
1992	1,687	39	904	85	82	599
1993	1,885	39	1,014	97	88	535
1994	1,602	24	573	76	75	586
1995	2,391	34	1,364	74	78	787
1996 R	1,497	3	829	70	69	493
1997 P	1,899	7	1,081	78	58	571

Sources: Philippine Coconut Authority (PCA) and United Coconut Association of the Philippines (UCAP).
R - Revised; P - Preliminary.
* In term of copra.

5.5.5 Prices

Average international prices of major vegetable oils fluctuated during the period 1985 to 1997 with an upward trend from 1995 to 1996 for coconut oil and palm kernel oil (Table 5.40). Average prices in 1997, however, decreased except for palm oil. The fluctuations depend upon the supply conditions of the world market. Coconut oil prices approximate palm kernel prices. In some years coconut oil enjoyed a premium price over palm kernel oil. Over the reference period, coconut oil prices were above palm oil prices. Following the trend in the world market, prices of Philippine coconut products also fluctuated (Table 5.41).

Table 5.40 Prices of selected oils (in US cents per lb), 1985-1997.

Year	Coconut Oil (c.i.f., NY)	Soybean Oil (f.o.b., U.S.A.)	Palm Oil (c.i.f., Europe)	Palm Kernel Oil (c.i.f., Europe)
1985	26.25	25.88	22.56	24.59
1986	13.46	16.49	11.52	13.00
1987	20.54	16.56	19.16	15.24
1988	28.17	24.00	19.58	24.25
1989	23.84	20.58	15.76	21.22
1990	15.82	22.32	13.00	16.20
1991	20.16	20.31	15.38	21.19
1992	26.55	11.59	18.00	25.82
1993	20.95	22.78	17.23	19.72
1994	27.90	27.32	24.15	28.44
1995	30.72	26.44	28.71	30.76
1996	34.44	24.72	24.13	33.09
1997	30.55	23.83	24.66	29.60

Source: Industry reports to the United Coconut Association of the Philippines (UCAP) and Reuters.

Table 5.41 Export prices of Philippine coconut products (f.o.b. US $ per mt), 1985-1997.

Year	Copra	Coconut Oil	Desiccated Coconut	Copra Cake/ Meal
1985	-*	537.0	1183.2	80.8
1986	139.4	270.5	661.8	89.9
1987	251.2	370.9	806.5	99.2
1988	349.0	538.5	886.5	120.2
1989	315.1	493.8	800.8	112.2
1990	211.6	317.6	805.6	84.8
1991	228.9	355.0	821.0	89.8
1992	326.1	544.4	1027.5	98.6
1993	272.3	416.8	898.1	93.2
1994	364.7	560.4	935.7	92.2
1995	381.6	616.0	933.9	88.8
1996	438.1	721.3	1221.6	119.2
1997	399.9	618.2	1,149.7	92.0

Source: UCAP 1994, 1997.

* Copra export was banned temporarily by Executive Order No. 828 dated September 11, 1982 which was lifted on March 19, 1986 per EO No. 8.

5.5.6 Trade liberalization and coconut products

Philippine commitments

At the onset of the WTO in 1995, the existing tariff on the three traditional coconut product exports, copra, CNO and DCN, was 50% (Table 5.42). Under the WTO, the initial bound rates were increased in 1995 to 70% to be reduced back to 50% for CNO and DCN, and 60% for copra. For fatty chemicals, a non-traditional coconut product export, the current rates are lower. Since the Philippines is a net exporter of coconut products, there are no minimum access volumes for these products.

Table 5.42 Philippine coconut tariff commitments (%) to the WTO.

H.S. Code	Commodity	Current Applied Rate of Duty 1995	Market Access Initial Bound Rate 1995	Commitments Final Bound Rate 2004
Coconut				
1293,00 00	Copra	50	70	60
1513,11 00	CNO oil and its fractions	50	70	50
1513,11 00	CNO oil and its fractions, refined but not chemically modified	50	70	50
0801.10 00	Desiccated coconut	50	70	50
1519.30 00	Industrial fatty alcohols	30	50	40

Source: Department of Agriculture (DA).

Safety net measures

The general safety net support to cushion the impact of trade liberalization on the coconut industry is also similar with that for rice and maize or in the agriculture sector as a whole – improvement of the infrastructure in agriculture. Specifically, the Philippine Coconut Authority had earlier embarked on two major development programs which were conceived to improve the unfavorable conditions especially on small coconut farms with or without trade liberalization. A World Bank supported Small Coconut Farms Development Project (SCFDP), which ended in 1995, covered replanting, rehabilitation by fertilization, and hybrid seednut production. Another program, the Philippine German Coconut Project, addressed quality improvement on coconut products especially copra through improved drying procedures. This project evolved from the requirements of EEC importing countries for a lower aflatoxin content of copra and copra cake/meal from 50 ppb to 20 ppb.

Coconut industry position on tariff rates

The private sector of the Philippine coconut industry comprises a coconut oil sector group in the United Coconut Associations of the Philippines (UCAP). These are the Philippine Coconut Oil Producers Association (PCOPA) and the Coconut Oil Refiners Association (CORA). In addition, the producer sector has been unified under the Philippine Coconut Producers Federation (COCOFED). The government's safety net measures and the PCA coconut program that would cushion the impact of trade liberalization are not yet in place and considering the long time gap before their effects will be realized, the different coconut private sector groups have proposed two alternatives to the Philippine Tariff Commission (UCAP 1997). First, is the freezing of tariff reductions on coconut oil and competing oil products and, alternatively, a slower rate of tariff decline than what has been proposed by the Commission (UCAP 1997).

The main concern of the coconut sector is the lower domestic tariffs on its competing vegetable oils particularly soybean oil, palm oil, and margarine and shortening, and soybean itself. Soybean and soybean oil have low preferential tariffs of 3% and 10%, respectively. It has been argued by these coconut sector groups that the extremely low tariff for soybean will encourage large imports of the product. The country's soybean and soybean product imports are given in Table 5.43. Although imported mainly for its processed product soymeal for livestock feed, when crushed soybean produces soybean oil which competes with coconut edible oil. The PCOPA, CORA and COCOFED are, therefore, lobbying for a higher tariff for soybean, to be

equivalent with the tariff schedule of the other vegetable oils (Table 5.44). Also, it should be noted that in the late 1980s the American Soybean Association (ASA) launched a health related smear campaign against coconut oil, alleging that coconut oil is high in triglycerides that are a health hazard. As such, coconut oil use in the US was almost completely eliminated in favor of homegrown vegetable oils such as soybean oil. The Philippine government through the PCA spent millions of dollars to counter the malicious attack on coconut oil.

Although palm oil is not as direct a substitute for coconut oil as palm kernel oil, it also poses a threat to the domestic market for local edible oil, which comes mostly from coconut oil. A low tariff rate may result in dumping of palm oil, which is produced in large amounts in Indonesia and Malaysia. These countries have allowed lower tariff rates for Philippine coconut oil since it does not pose a threat to palm oil produced in these countries, considering that Philippine production of coconut oil has been limited. A slower tariff rate reduction of palm oil tariff from 30% in 1997 to 25% in 1998 and 1999 was suggested by the coconut industry groups instead of 20% as recommended by the Tariff Commission (Table 5.44).

The current equivalent tariff levels for both processed products such as margarine and raw materials such as vegetable oils create an imbalance in the local oils and fats industry. It has been recommended by the coconut sector groups that the 1997 tariff level of 30% for these products competing with coconut oil be retained from 1998 onwards (Table 5.44).

Table 5.43 Philippine imports of soybean products (in '000 mt), 1980-1997.

Year	Soybean Meal	Soybean	Soybean as Oil*	SBO Crude	SBO Refined	SBO Total	Total Bean Plus Oil Oil Basis
1980	227.00	11.90	2.14	6.60	1.10	7.70	9.84
1981	243.90	0.20	0.04	3.50	2.50	6.00	6.04
1982	373.50	31.40	5.65	3.10	2.60	5.70	11.35
1983	274.70	30.70	5.53	6.70	3.60	10.30	15.83
1984	374.00	0.00	0.00	3.80	1.50	5.30	5.30
1985	225.80	23.00	4.14	1.70	2.70	4.40	8.54
1986	364.30	5.90	1.06	3.50	6.10	9.60	10.66
1987	400.70	9.50	1.71	5.70	7.70	13.40	15.11
1988	513.10	24.20	4.36	5.40	11.50	16.90	21.26
1989	537.00	28.80	5.18	6.20	14.70	20.90	26.08
1990	624.30	24.00	4.32	5.80	15.90	21.70	26.02
1991	593.20	63.20	11.38	4.70	15.20	19. 90	31.28
1992	676.80	51.90	9.34	3.10	15.20	18.30	27.64
1993	822.60	61.60	11.09	2.81	12.70	15.51	26.60
1994	460.00	95.30	17.15	3.67	13.32	16.98	34.14
1995	898.39	86.88	15.64	-	14.46	14.46	30.10
1996	430.54	137.78	24.80	-	19.37	19.37	44.17
1997	815.62	111.05	19.99	-	23.00	23.00	42.99

Sources: National Statistics Office (1980-1992, 1995-1997) and Oil World Annual, 1995 (1993-1994).
Note: * Extraction rate at 18% from soybean.
SBO = soybean oil

Table 5.44 Philippines tariff schedule for vegetable oils.

HS Hdg. No.	Description	Rate of Duty **(%)** 1997	1998	1999	2000
12.01	Soybeans				
1201.0000	Soybeans whether broken or not	3	3	3	3
15.07	Soybean oil and its fractions, whether or not refined, but not chemically modified				
1507.10 00	Crude oil, whether or not degummed	20 (30)	10 (25)	10 (25)	10 (20)
1507.90 00	Other	20 (30)	10 (25)	10 (25)	10 (20)
15.11	Palm oil and its fractions, whether or not refined, but not chemically modified				
1511.10 00	Crude oil	30	20 (25)	20 (25)	20
1511.90 00	Other	30	20 (25)	20 (25)	20
15.15	Other fixed vegetable fats and oils and their fractions, whether or not refined, but not chemically modified				
1515.21 00	Crude oil	30	20 (25)	20 (25)	20
1515.29 00	Other	30	29 (25)	20 (25)	20
15.16	Margarine; edible mixtures or preparations of animal or vegetable fats or oils or fractions of different fats or oils of this Chapter, other than edible fats or oils or their fractions of heading No. 15.16				
1517.10 00	Margarine, excluding liquid margarine	30 (35)	20 (30)	20 (30)	20 (25)

Source: Philippine Tariff Commission in UCAP (1997).

Note: The figures in parenthesis are the suggested rates from the private sector groups of the Philippine coconut industry.

Tariff in major CNO importing countries

The major markets for Philippine coconut oil have committed to the WTO lower tariffs, which should favor the export of coconut oil to these countries. Nevertheless, because of the increasing competition faced by Philippine coconut products in the world market, the industry is currently increasing its focus on the Philippine domestic market.

Table 5.45 Tariffs for coconut oil and competing products in major markets.

Product/Country	Pre-WTO Tariff	Post-WTO Tariff
Coconut oil		
US	0%	0% (Bound)
EC	3-20%	2.5-9.6%
Japan	10%	4.5%
Soybean oil		
US	22.5%	19.1%
EC	5-15%	3.2-9.6%
Japan	11.5-13.5%	11.5-13.5%
Palm kernel oil		
US	0%	0% (Bound)
EC	4-20%	2-12.8%
Japan	5-17%	2.5-3.5%

5.6 Soybean

5.6.1 Trends in production

Soybean is a minor crop in the Philippines and as such cultivated by smallholders. In 1991, the agriculture census reported a total of 11,949 soybean farms, 98% of which were multicrop farms and the rest single crop farms with total planted area of 3.6 thousand hectares, 93% being multicrop area. Based on this information, the average area planted to soybean is 0.30 hectare, 1.02 hectare for single crop farms and 0.29 hectare for multiple crop farms.

Based on 1990-1997 data from the Bureau of Agricultural Statistics, production and area harvested are decreasing, on average, by 10% (Table 5.46). Productivity is also low which can be attributed partly to non-application of fertilizer in most farms due to high cost of the inputs, although under a soybean contract growing scheme by Nestle Philippines, most production inputs are provided to the farmers.

Domestic production from 1990 to 1993 was, on average, 6% of total supply. This contribution declined to about 2% from 1994 to 1997 as a result of the large proportion of imports in 1994, 1996 and 1997 (Table 5.47).

Table 5.46 Soybean production, area and yield, the Philippines, 1990-1997.

Year	Production ('000 mt)	Area ('000 hectares)	Yield (mt/ha)
1990	3,686	3,138	1.74
1991	2,480	2,306	1.08
1992	2,009	1,846	1.09
1993	2,444	2,039	1.20
1994	2,729	2,524	1.08
1995	3,367	2,432	1.38
1996	2,230	2,040	1.09
1997	1,786	1,473	1.21

Source: Bureau of Agricultural Statistics (BAS).

5.6.2 Trade

Being a small soybean producer, the Philippines is a net importer of soybean and soybean products with the U.S. as its major supplier. From 1990 to 1997, 95% of the yearly supply is accounted for by imports (Table 5.47). Soybean is crushed for its meal for feed for the domestic livestock industry. The by-product, soybean oil, is refined into edible oil. Soybean is also utilized as an ingredient in sauces, tausi (fermented soybean), curds, and snack foods (Lantican 1997). In terms of tonnage, imports of soybean meal averaged 665 thousand metric tons in the 1990-1997 period (Table 5.43) representing the country's major import of soybean products. Total soybean oil imports including refined and crude oil averaged 19 thousand metric tons annually from 1990 to 1997.

It can be observed that soybean imports increased in 1994 during the partial liberalization period and continued during the WTO period. In 1996, soybean imports rose by 51% from 1995 import levels as domestic output decreased by 34%. As noted in the previous section on coconut, the domestic tariff for soybean under the WTO is 3%, which is considered to prejudice the domestic coconut industry in terms of the competition that soybean oil, the by-product of soybean, poses to coconut edible oil.

Table 5.47 Supply and utilization of soybean (in '000 mt), the Philippines, 1990-1997.

	1990	1991	1992	1993	1994	1995	1996	1997
Supply								
Production	3.69	2.48	2.01	2.44	2.73	3.37	2.23	1.79
Imports	24.04	63.25	51.25	61.57	135.52	86.88	137.78	111.05
Gross Supply	27.73	65.73	53.26	64.01	138.25	90.25	140.01	112.84
Utilization								
Exports	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Seeds	0.018	0.014	0.014	0.015	0.014	0.015	0.014	0.006
Feed & Waste	0.14	0.33	0.23	0.32	0.70	0.45	0.71	0.56
Processing	21.25	48.71	40.76	48.02	102.04	66.59	103.16	84.63
Net Food Disposable								
Total	6.28	16.68	12.25	15.66	35.50	23.20	36.13	27.61
Per Capita (kg/year)	0.10	0.26	0.19	0.24	0.52	0.34	0.52	0.40

Source: Bureau of Agricultural Statistics (BAS).

5.6.3 Price

Domestic and international prices of soybean in current terms fluctuated but followed an upward trend during the period 1987 to 1997. Changes in both prices were synchronized in several years, increasing in 1993 and 1996 and decreasing in 1990, 1992 and 1997 (Table 5.48). Domestic prices, on average, are above international prices by 53% in the last three years up to 1997.

Table 5.48 Domestic and international prices of soybean (in US $ per mt), 1987-1997.

Year	Domestic Price (Farmgate) (1)	World Price (U.S. c.i.f. Rotterdam) (2)	Ratio (1/2)
1987	348	216	1.61
1988	318	304	1.05
1989	352	275	1.28
1990	338	247	1.37
1991	342	240	1.42
1992	332	236	1.41
1993	347	255	1.36
1994	444	252	1.76
1995	417	259	1.61
1996	489	305	1.60
1997	423	303	1.40

Sources: Based on Bureau of Agricultural Statistics data for domestic price and Oil World for world price.

5.7 Cassava

5.7.1 Share of value in agricultural production

As one of the major rootcrops in the Philippines, in 1992 cassava contributed US $ 125 million or 48% to total value of rootcrop and tuber production, but only 1.8% to total value of agricultural crops. This share improved modestly over the last five-year period 1992-1997. In

1997, the value of cassava output was US $ 219 million which accounted for 60% of the total value of rootcrops and tubers, and 2.4% of the aggregate value of agricultural crops (Table 5.49).

Table 5.49 Farm gate value of production of rootcrops and tubers (million US $), the Philippines, 1992-1997.

	1992	1993	1994	1995	1996	1997
Agricultural Crops, Total	6,770	6,679	7,770	9,119	10,4426	9,084
Rootcrops and tubers	259	264	289	351	430	367
Cassava	125	138	148	193	252	219
Sweet potato	97	83	93	104	121	109
Other rootcrops and tubers	37	43	48	54	57	38

Source: Selected Statistics on Agriculture (Bureau of Agricultural Statistics 1997).

5.7.2 Trends in production

Cassava farming in the Philippines is basically a smallholder enterprise. The last agricultural census in 1991 reported a total of 792,323 cassava farms, with an aggregate planted area of 114 thousand hectares. The majority (93%) of these farms cultivated more than one crop including potato. These farms have a total area of 95 thousand hectares or an average size per farm of 0.13 hectares. On the other hand, monocrop cassava farms have a total area of 19.2 thousand hectares or an average farm size of 0.58 hectares.

Based on data from the Bureau of Agricultural Statistics, in the 1981-1997 period both harvest area and production posted average yearly growth of less than 1% (Table 5.50). Yields hovered around 8 metric tons per hectare, well below the yields in a few commercial farms of 19 tons per hectare (Lantican 1997).

Table 5.50 Cassava production, area and yield, 1981-1997.

Year	Production ('000 mt)	Area ('000 hectares)	Yield (mt/ha)
1981	1.680	200.00	8.40
1982	1,530	203.45	7.52
1983	1,152	175.60	6.56
1984	1,491	201.53	7.40
1985	1,687	204.56	8.24
1986	1,724	211.40	8.15
1987	1,784	209.75	8.51
1988	1,866	217.11	8.59
1989	1,847	213.10	8.67
1990	1,854	213.80	8.67
1991	1,816	211.04	8.60
1992	1,785	204.31	8.74
1993	1,844	211.42	8.72
1994	1,892	213.09	8.88
1995	1,907	225.93	8.44
1996	1,912	228.30	8.37
1997	1,959	226.50	8.65

Source: Bureau of Agricultural Statistics (BAS).

5.7.3 Supply and utilization

The Philippines relies mainly on its domestic output for its cassava needs. The major users of cassava in the domestic market are the starch manufacturers. In more recent years, about 67% of the total supply was utilized by the processing sector in the manufacture of starch (Table 5.51). Ten percent of domestic supply goes to food consumption in various forms: snacks, and cassava starch as food binder and processed into coffee creamer. Less than half a percent is exported in fresh/dried and pellet forms, and as flour and meal.

5.7.4 Price

On average, domestic wholesale prices in major trading centers were higher in 1989-1991 and 1993-1997. The value of exports was relatively stable from 1992 to 1997. It is difficult to establish a relationship between domestic price and export price as shown in Table 5.52.

Table 5.51 Supply and utilization of cassava (in '000 mt fresh equivalent), the Philippines, 1980-1997.

Year	Supply			Utilization				
	Production	Imports	Gross Supply	Exports	Feed & Waste	Processing	Total	Per Capita kg/year
1980	1,742	0.00	1,742	0.14	105	1,463	174	3.60
1981	1,681	0.00	1,681	0.06	101	1,412	168	3.39
1982	1,531	0.00	1,531	0.20	92	1,240	190	3.91
1983	1,152	0.00	1,152	11.00	69	878	194	3.73
1984	1,492	0.00	1,492	0.08	89	1,089	214	5.88
1985	1,687	0.00	1,687	0.27	101	1,265	321	5.87
1986	1,724	0.00	1,724	11.00	103	1,332	278	4.96
1987	1,784	0.00	1,784	11.00	107	1,292	374	6.52
1988	1,866	0.00	1,866	21.00	111	1,380	354	6.03
1989	1,847	0.00	1,847	20.00	110	1,370	347	5.77
1990	1,854	0.00	1,854	8.00	111	1,457	278	4.52
1991	1,816	0.00	1,816	33.73	109	1,497	176	2.80
1992	1,785	0.00	1,785	0.43	107	1,498	178	2.78
1993	1,844	0.00	1,844	0.42	111	1,549	184	2.82
1994	1,892	0.00	1,892	0.45	114	1,589	189	2.76
1995	1,907	0.00	1,907	0.27	114	1,602	191	2.78
1996	1,897	0.00	1,897	0.42	114	1,593	190	2.71
1997	1,959	0.00	1,959	0.33	118	1,646	196	2.74

Source: Bureau of Agricultural Statistics (BAS).

5.7.5 Trade

The Philippines is a net exporter of cassava products. Most of the exports are in fresh or dried form and as flour and meal (Table 5.53). In 1997, 65% of the fresh cassava export volume was shipped to the U.S. Another 19% went to the Canadian market, while the Japanese market absorbed 2.5% (Table 5.54).

In the whole 1986-1997 period, the Philippines imported cassava products only in 1995. In that year, 700 tons of cassava flour worth US $ 33 thousand was shipped into the country from Singapore.

Table 5.52 Domestic and export prices of cassava (in US $/mt), 1987-1997.

Year	Domestic Wholesale Price*	Export Price**
1987	75	2,297
1988	76	2,860
1989	104	1,278
1990	104	1,303
1991	106	1,162
1992	99	1,312
1993	119	1,354
1994	157	1,405
1995	152	1,451
1996	182	1,452
1997	118	1,539

*Price of fresh cassava ** Export value of fresh/dried cassava
Source: Bureau of Agricultural Statistics (BAS) for domestic prices.
National Statistical office (NSO) for export prices.

Table 5.53 Philippine cassava exports, 1992-1997.

	Manioc fresh/dried		Manioc flour and meal	
Year	Qty (mt)	Value (US $)	Qty (mt)	Value (US $)
1992	426.84	560,154	6.37	20,914
1993	418.35	566,341	6.26	25,413
1994	454.35	638,522	1.90	3,706
1995	267.27	387,911	2.22	12,955
1996	423.75	615,388	0.47	2,053
1997	327.80	504,551	1.04	5,351

Source: National Statistics Office (NSO).

Table 5.54 Fresh manioc (cassava) export by destination, 1996-1997.

	1996		1997	
Country	Qty (mt)	Value (US $)	Qty (mt)	Value (US $)
Total	423.75	615,388	327.84	504,551
U.S.A.	286.41	428,855	214.66	331,812
Canada	74.27	96,902	62,993	94,457
Japan	16.60	19,528	8,071	12,237
Hongkong	6.30	11,000	7,457	14,676
Australia	5.74	9,002	10.14	16,101
United Kingdom	4.72	6,661	8.00	11,494
Other	29,719	43,440	16.51	23,774

Source: National Statistics Office (NSO).

Philippine commitments to GATT/WTO

Under the GATT/WTO Agreement on Agriculture, the initial bound tariff of cassava in 1995 was 50% to be reduced to 40% (first bound rate) in the year 2004. The Philippines, however, made no commitments as to the minimum quantities to be imported under the MAV as cassava is an exportable. A revised tariff schedule for cassava starch as well as maize starch was specified under EO 465 dated January 13, 1998. Tariffs will be reduced from 20% in 1998 to 10% in the year 2,000 (Table 5.55). Although the Philippines is a net exporter of cassava products, exports have been declining since 1992. Given the dominance of small farms with low yields, the lowering of the tariff may adversely affect small cassava producers especially the monocrop cassava farmers.

Table 5.55 Tariff rates for cassava and maize starch, 1998-2000.

		Rate of Duty (%)		
HSC		1998	1999	2000
1108.1200	Maize (corn) starch	20	15	10
1108.1400	Manioc (cassava) starch	20	15	10

Source: Philippine Tariff Commission.

5.8 Potato

5.8.1 Trends in production

Potato is grown in the Philippines on small farms. In 1991, there were 14,102 potato farmers, 94% practiced multiple cropping including potato and 6% were monocrop potato farmers (NSO 1991). With an estimated total physical area of potato farms of 5,178 hectares, aggregate farm size on average would be 0.37 hectares. Multi-crop potato farms have an average size of 0.35 hectares while farms dedicated solely to potato have an average size of 0.58 hectares.

Potato is grown twice in a year in selected areas in the Philippines where the climate and topography are most suited to growing potato – temperate and high plateau. Intensive cultivation is found in the terraced mountains of the Cordillera Autonomous Region (CAR), in the northern part of the country, in upland areas in Visayas and Mindanao regions in the southern part (Appendix Table 27). Benguet province in the CAR region is the largest producer of potato in the country, contributing on average 85% to national production from 1991 to 1994, but declining to 56% in 1995 and 1996 and to 60% in 1997. Potato harvests from Mt. Province, Bukidnon and Davao Sur provinces have become increasingly significant in recent years. Non-traditional and potential growing areas in the lowlands were explored in the 1980s under research programs of the government, accompanied by the introduction of new cultivars and clones suited to the areas (Balaoing, undated). This effort resulted in potato production in commercial values in the Ilocos and Cagayan Valley regions.

Harvest area ranged from 4 thousand hectares in 1990 to 10 thousand hectares in 1992 and 1994. In 1997, harvest area was 6.4 thousand hectares (Table 5.56). Large potato outputs of 148 thousand metric tons per year, on average, were harvested from 1991 to 1994. The increased output was accounted for by Benguet province where credit became readily available under a potato production program, which enabled farmers to increase their area planted and input usage. In 1995, national output was reduced to 85 thousand tons or a 42% decrease from the volume of harvest of 147 thousand tons in 1994. Area harvested also declined by 47%. The reduction in output and area harvested was accompanied by decreases in production and area in Benguet. It should be noted that output increases were largely the result of area expansion more than yield increase. Production increased by 12% from its 1995 level but declined by 9% in 1997.

Imported potato varieties with potential yields ranging from 18 to 27 metric tons per hectare have increased domestic yields to as high as 20 metric tons per hectare. Domestic production of high yielding seeds was encouraged through a German-supported seed program undertaken by the Bureau of Plant Industry from 1977 to 1986. This program together with an import ban of seed potatoes resulted in self-sufficiency in domestic production of certified seed potatoes in some years. Average national yields over the period 1990-1997 stabilized within the range of 14 to 15 tons per hectare (Table 5.56) which is below the potential yield of the imported high yielding cultivars. The reason is that continuous planting caused degeneration of these cultivars resulting in lower yields.

Table 5.56 Potato production, area and yield, 1990-1997.

Year	Production (mt)	Area (ha)	Yield (mt/hectare)
1990	58,286	4,217	13.82
1991	149,537	9,557	15.64
1992	155,611	10,292	15.11
1993	140,998	9,317	15.13
1994	147,425	10,112	14.58
1995	85,302	5,364	15.90
1996	95,666	6,383	14.99
1997	87,252	6,177	14.12

Source: Bureau of Agricultural Statistics (BAS).

5.8.2 Supply and utilization

The domestic supply of fresh potatoes for table use is sourced mainly from domestic production. Part of the seed potato requirement is imported especially for lowland areas because of insufficient supply of good, disease-free potato. Also, certified potato seeds from Benguet and Mt. Province are expensive since seed potato for low elevation areas is normally grown in the highlands (Balaoing, undated). Imports are mostly in small quantities and do not add up significantly to domestic supply as shown in Table 5.57. Per capita food consumption (table potatoes) has been increasing since 1991. Food demand comes from households, major hotels and restaurants. In 1992 to 1997, on average, food consumption of potato accounted for about two-thirds of the yearly supply of potato. Demand from the processing sector comprises 25% of the annual potato supply for the manufacture of flakes, flour or meal and in recent years, potato chips for the growing snack industry, and fries for the fast food industry. The volume of domestic production cannot meet the potato fries requirements of the fast food chains in the country. In the case of the McDonald fast food in the Philippines, this company imports all of its potato fries requirement due to very specific quality requirements which cannot be met by domestic production.

Table 5.57 Potato supply and utilization (in '000 mt fresh equivalent), the Philippines, 1980-1997.

Year	Supply			Utilization					
	Production	Imports	Gross Supply	Exports	Seeds	Feed & Waste	Processing	Net Food Disposable Total	Net Food Disposable Per Capita kg/year
1980	36.00	0.12	36.12	0.00	0.12	2.00	9.00	25.00	0.52
1981	40.00	0.14	40.14	0.00	0.14	2.00	10.00	28.00	0.57
1982	46.00	0.11	46.11	0.00	0.11	2.00	11.00	33.00	0.65
1983	34.00	0.01	34.01	0.00	0.01	2.00	8.00	24.00	0.46
1984	38.00	0.00	38.00	0.00	0.00	2.00	11.00	25.00	0.47
1985	47.00	0.01	47.01	0.00	0.01	2.00	4.01	41.00	0.75
1986	52.00	0.02	52.02	0.00	0.00	3.00	16.00	33.00	0.59
1987	57.00	0.08	57.08	0.00	0.08	3.00	17.00	37.00	0.65
1988	62.00	0.15	62.15	0.00	0.00	3.00	19.00	62.00	1.06
1989	50.12	0.00	50.12	0.00	0.00	3.00	20.00	27.12	0.45
1990	58.29	0.00	58.29	0.00	0.11	4.00	18.00	36.18	0.59
1991	149.54	0.00	149.54	0.02	0.24	3.23	15.50	130.55	2.08
1992	155.61	0.00	155.61	0.01	0.26	7.78	38.90	108.66	1.69
1993	141.00	0.00	141.00	0.00	0.23	7.05	35.25	98.47	1.50
1994	147.42	0.00	147.42	0.00	0.25	7.37	36.86	102.96	1.50
1995	85.30	0.14	85.34	0.00	0.13	4.27	21.33	59.71	0.87
1996	95.67	0.01	95.68	0.00	0.17	4.78	23.92	66.81	0.96
1997	87.25	0.07	87.32	0.00	0.16	4.36	21.81	60.99	0.85

Source: Bureau of Agricultural Statistics (BAS).

5.8.3 Price

Domestic prices of fresh/chilled potatoes at the national level fluctuated (Table 5.58) although its pattern cannot be related with trends in national production (Table 5.56). The average domestic price in 1986 more than doubled the average import price in the course of the potato import ban. The domestic price also exceeded the import price in 1996, this time by only 3%. On the other hand, in 1991 and 1996 import prices more than tripled domestic prices.

Table 5.58 Domestic and import prices of potato (US $ per mt), 1986-1997.

Year	Domestic Wholesale Prices (1)	Import Price (fresh/chilled potato) (2)	Ratio (1/2)
1986	460	195	2.08
1987	306	-	
1988	575	745	0.77
1989	593	1,092	0.54
1990	508	982	0.52
1991	435	1,566	0.28
1992	520	-	
1993	430	-	
1994	513	-	
1995	496	480	1.03
1996	614	2,116	0.29
1997	510	579	0.88

Sources: Bureau of Agricultural Statistics (BAS) for domestic prices and National Statistics Office (NSO) for import price.
- No imports of fresh potato during the year.

5.8.4 Trade

Total potato imports comprised seed potato, fresh potato and semi-processed potato such as flakes, flour and meal (Table 5.59). From 1991 onwards the country stopped importing dehydrated potato. Before the seed potato import ban from the late 1980 period, annual imports were 63 tons valued at US $ 28 thousand, on average (1980-82, 1985-87). Over the period 1986 to 1997, fresh/chilled potato imports occurred only in 1988, 1991 and 1995-1997 with minimal imports in 1991. The relatively large imports of 136 metric tons of fresh potato were required to augment domestic requirements due to a poor harvest as shown in Table 5.55. Imports of semi-processed potatoes of flakes, flour and meals have been increasing.

For seed potato Germany was the major trading partner of the Philippines in 1996 and Australia in 1997 (Table 5.60). In 1997, the U.S.A. was the principal supplier of flour and meal potato, accounting for 93% of total import of this potato product. Similarly, U.S.A. supplied most of the volume of potato flakes imports (76%), uncooked potato (90%) and fresh/chilled potato (29%).

Commitments to WTO

Through the Republic Act 8178 issued on March 28, 1996, the ban on potato imports (RA 1296) was lifted in light of the seed requirements of the industry, and the variety of potatoes needed by the fast food chains and potato chippers which cannot be meet by domestic supply. Before the signing of the GATT-UR in December 1994, potato farmers from Benguet province opposed the importation of raw and semi-processed potatoes as this may pose competition with domestic output. As a way of protecting domestic producers under the WTO, the domestic initial tariff for fresh potato was set from 50% to a maximum of 100% in 1995, to be reduced to 40% in year 2004 (Table 5.60). The yearly MAV for potato is more than the import requirements. Actual fresh potato imports are minimal, only 29% of the MAV in 1995

and there were no imports in 1996. Import duties for potato flour and meals are lower than the tariffs on fresh potato.

Table 5.59 Potato imports, 1991-1997.

Year	Seed Potato	Potato Flakes	Potato Flour or Meal	Potato Fresh/ Chilled	Potato Uncooked/ Frozen*
1991					
Qty (mt)		254.41	1,415.3	3.50	
Value ('000 US $)		5,451	4,766	5.48	
1992					
Qty (mt)		270.94	57.46		
Value ('000 US $)		156	45		
1993					
Qty (mt)		420.70	93.43		
Value ('000 US $)		355	90		
1994					
Qty (mt)	0.55	1,050	45.66		
Value ('000 US $)	0.62	45.66	56		
1995					
Qty (mt)		1,261	223	136	
Value ('000 US $)		1,360	50	65	
1996					
Qty (mt)	12	3,750	48.65	5.36	17,666
Value ('000 US $)	7	4,954	58	11.35	5,803
1997					
Qty (mt)	137.16	1,565	3,868	66.96	17,783
Value ('000 US $)	68.18	1,563	4,198	39	6,090

Source: National Statistics Office (NSO).
* Cooked by steaming/boiling in water.

Table 5.60 Potato imports and sources, 1996-1997.

Commodity	1996		1997	
Source	Qty (mt)	Value ('000 US $)	Qty (mt)	Value ('000 US $)
Seed potato	12.00	7.19	137.16	68.18
Total				
Germany	12.00	7.19	-	-
Australia	-	-	136.00	67.67
Netherlands	-	-	1.16	0.51
Flour & meal of potato	48.65	57.84		
Total				
U.S.A.	45.48	53.82		
Taiwan	1.87	2.76		
Others	1.30	1.26		
Flakes of Potato	3,750	4,954	1,565	1,563
U.S.A.	2,846	3,942	1,094	1,046
Taiwan	422	560	411	445
Canada	409	374	21	21
Hongkong	33	21	18	23
People's Rep. of China	36	30		
Others	4	27	21	28
Fresh/chilled potato	5.36	11.35	66.96	38.80
Australia	2.36	5.62	2.15	6.52
Hongkong	2.70	5.35	1.53	5.18
Singapore	0.30	0.38		
U.S.A.	-	-	19.28	2.91
Others	-	-	44.00	24.19

Source: National Statistics Office (NSO). Continued ……

Table 5.60 Potato imports and sources, 1996-1997 (continued).

Commodity	1996		1997	
Source	Qty (mt)	Value ('000 US $)	Qty (mt)	Value ('000 US $)
Uncooked potato cooked by steaming/ boiling, frozen	17,666	5,803	17,783	6,090
U.S.A.	14,757	4,995	16,004	5,497
Canada	1,081	394	1,218	430
Taiwan	1,302	251	82	20
New Zealand & W. Samoa	-	-	210	72
Malaysia	223	55	175	38
Hongkong	147	54	26	9
Singapore	110	37	7	3
Others	46	17	61	21

Source: National Statistics Office (NSO).

Table 5.61 Potato tariffs and minimum access volumes.

HS Heading	Commodity	Current Rate of Duty	Rate of Duty (%) Initial Bound Rate 1995	Final Bound Rate 2004
0701	Potatoes, fresh or chilled	30	50-100	40

Minimum access volumes (MAV)

Year										
1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
- metric tons -										
465	965	1,035	1,105	1,175	1,245	1,315	1,385	1,455	1,520	760

HS Heading		1998	1999	2000
		Rates of duty (%)		
1105.20 00	Flour, meal, powder, granules and pellets of potato	10	10	7

Sources: Department of Agriculture for fresh potato and Tariff Commission for potato flour, meal, granules and pellets.

6. Conclusions and Policy Implications

Agricultural trade liberalization under the GATT-UR has been a favorite topic for policy debate. This has also resulted in an increasing literature on the topic covering the period before the GATT-UR and post GATT-UR/WTO, such as those from the academe and a policy-consulting group in the Department of Agriculture (DA). There are two opposing views on trade liberalization of agriculture in the Philippines. Those in favor argue on the basis of opportunities to increase the competitiveness of domestic agricultural products, and to increase the prices of agricultural tradables and hence foreign exchange earnings. An open market is also viewed as a means of correcting the overvaluation of the peso, as a vehicle for market expansion and a more efficient resource allocation. Those who oppose agricultural trade liberalization contend, on the other hand, that the country does not have comparative advantage on most of its agricultural products. Furthermore, the safety net measures especially for small farmers are insufficient if not lacking, and dumping of products may eventually replace domestic production and displace employment in non-competitive agricultural commodity sectors.

Under the GATT-UR/WTO, the Philippines is committed mainly to the provisions of market access and sanitary and phytosanitary measures. The country's market access commitments are embodied in the 1996 Agricultural Tariffication Law or RA 8178 which includes the replacement of QRs with tariffs to as high as 100% on agricultural imports with the exclusion of rice, and allows limited or out-quota imports at tariff bound rates which will be reduced to 50% in 2004.

Of the nine commodities considered in this report (rice, maize, coconut, cassava, soybean, potato, chicken, swine and beef), the grain sector - rice and maize - and the livestock sector are critical. Rice is a staple crop and a political commodity as well. Maize is the major feed for livestock. Maize and livestock are integrated industries such that policies for both sectors are interconnected.

Rice is exempted from tariffication for another ten years from the inception of the GATT-UR/WTO for food security reasons, although a minimum access requirement was imposed. Exception is also being sought from the inclusion of rice in the AFTA-CEPT. These measures were taken in consideration of the lack of competitiveness of domestic rice producers and the recurring deficits in domestic production. Because of these deficits, the country has become dependent on the external market.

The problem of lack of competitiveness of domestic rice farmers is being addressed by the current rice production program of the DA, which includes provision of certified seeds and improved postharvest facilities. While these activities are already in process, there is a lack of a performance monitoring system that could quantify the effects of these activities, for example, on rice yields. There should be an identified monitoring unit in the DA. Under the Competitive Enhancement Fund (CEF) which is sourced from the tariff proceeds of the MAV, farm to market roads will be further improved, and provision of irrigation systems will allow at least two croppings a year in areas where single plantings are practiced, although at present the infrastructure supports are not in place. Even with the CEF, the bureaucratic procedure involved in obtaining the proceeds from the MAV has delayed the farm to market road program under this funding scheme. For one thing, this may overlap with road projects of the Department of Public Works and Highways (DPWH). Along this line, it is proposed that proper coordination be made between the agencies concerned.

The increasing reliance on the external market particularly during deficit periods can also be addressed by rationalizing the buffer stock policy and decisions on the timing of imports and the quantity to be imported to alleviate the lean month requirements. In addition, it is also

suggested that the private sector be given a portion of the MAV for rice while still reserving the right of first import for the National Food Authority (NFA).

Given the observation of limited trading of rice in the international market, what remains for the country is to accelerate development programs that would improve rice production and marketing efficiency in order to hedge against future risks on the availability of rice in the international market.

Domestic maize prices have been artificially high compared to international prices, making it less competitive with lower cost maize from major exporting countries such as Thailand. The reason is the high transportation costs from the farm sources to the feedmillers and livestock producers. The domestic protection to maize becomes even higher considering the high binding tariff of 100%. This has some implications for the domestic livestock industry in terms of higher cost of maize, a major feed ingredient. In turn, this will render the domestic livestock industry less competitive. The high tariff on maize compared to wheat will further encourage wheat substitution and possibly a shifting of the use of rice as a feed ingredient. One recommendation that is becoming a general consensus is to lower further the tariff of maize (the country committed to reduce the tariff binding for maize to 50% in 2004). Or at the extreme to remove quotas or allow maize duty free. While this would displace the marginal, subsistence maize farmers, the resources would flow to the smallholder livestock domestic producers especially the chicken and hog raisers who have a better edge. The displaced maize farmers can shift to other more profitable crops. Indeed, this is one of the concepts under the High Value Commercial Crops (HVCC) Development Program of the Department of Agriculture, although there is still a lot of room for improving its implementation. However, there is also concern on what to do with the high yielding open pollinated maize varieties, that have already been developed through R&D investment.

The impact of trade liberalization on the country's major export - coconut oil - as well as on soybean, cassava and potato, is less severe compared to rice, maize and livestock. This does not imply however that these crops are of less significance. What the coconut oil millers are requesting is merely a similar tariff rate to soybean with soybean oil and other maize substitutes. The import ban on seed potato has been lifted under RA 8178. The tariff for cassava flour and potato flour is in place since imports of these products are only minimal.

There are several options facing the policy makers in the agriculture sector that relate to equity and efficiency. These may involve a welfare trade-off, but equity and efficiency need not be a dichotomy, as these can be addressed on parallel grounds under trade liberalization through the improvement of farm infrastructure, investment in technology generation and dissemination, and even macro policies such as a pricing policy that would make domestic and international prices at par.

What surfaces from this paper is the need to put safety net measures in place during the adjustment period both in the short-term and longer-term. Surely, the small and marginal farmers will be affected if these measures are not properly implemented. But the more important issue rests not solely on providing the safety net measures, rather on how to implement trade liberalization under the GATT-UR/WTO or other regional multilateral trading schemes such as the AFTE-CEPT, and to focus on the advantages that they can offer to make the country's agricultural products more competitive.

7. References

Alburo, Florian A. 1993. Political economy of liberalizing foreign trade: Philippine experiences. Philippine Review of Economics and Business 30(1):122-140.

Asian Wall Street Journal. various years. World prices of yellow corn.

Bacani, S.C. 1995. The Uruguay Round's Implication on Philippine Agribusiness Competitiveness: Fruits and Vegetables. Final Report to the Agribusiness System Assistance Program. Publication No. 95-13.

Balaoing, V.G. undated. Overview of the Philippine white potato industry. Documentation of the Workshop on the Strategic Directions for the Philippine White Potato Industry. APRAAP, Philippine Department of Agriculture, 3 pp.

Baldwin, Robert E. 1975. Foreign Trade Regimes and Economic Development: The Philippines. New York: National Bureau of Economic Research.

Balisacan, A. M. 1994. Impact of the GATT Uruguay Round on the Welfare of Farmers in the Philippine. A study prepared for the Philippine Senate.

Bautista, Romeo M. 1990. Industrial protection, foreign borrowing and agricultural incentives in the Philippines. *In* (ed.) Bautista, Romeo M. and Alberto Valdez, pp. 6-134.

Bautista, Romeo. 1993. Macro-Policy and International Trade Perspectives on the Agriculture Sector and Feed Livestock Subsector in the Philippines. Agribusiness System Assistance Program Publication No. 2.02. A joint undertaking of the Philippine Department of Agriculture and USAID. June, 1993.

Bautista, Romeo M.; and Valdez, Alberto. (ed.). 1990. The Bias Against Agriculture: Trade and Macroeconomic Policies in Developing Countries. A co-publication of the International Center for Economic Growth and the IFPRI. ICS Press, San Francisco, California.

Bautista, Romeo M.; and Valdez, Alberto. 1990. The prevalence of trade and macroeconomic policies for agriculture. *In* (ed.) Bautista, Romeo M. and Alberto Valdez, pp. 1-24.

Bureau of Agricultural Statistics. 1997. Production Statistics for KCCDP Priority Crops, 1990-1996. Volume 1, Series 1, Quezon City, Philippines.

Bureau of Agricultural Statistics. 1997. Selected Statistics on Agriculture, 1996. Quezon City, Philippines.

Bureau of Agricultural Statistics. 1998. Estimates of agricultural crop production for 1997, annual. Crops, Livestock, Poultry and Fisheries Statistics Division, Bureau of Agricultural Statistics, Quezon City, Philippines.

Bureau of Agricultural Statistics. 1998. Farmgate and wholesale prices for crops and livestock. Agricultural Marketing Statistics and Analysis Division, Bureau of Agricultural Statistics, Quezon City, Philippines

Bureau of Agricultural Statistics. 1998. Supply-use tables for agricultural commodities. Agricultural Accounts and Statistical Indicators Dvision, Bureau of Agricultural Statistics, Quezon City, Philippines.

Bureau of Agricultural Statistics. Various years. Performance Report in Agriculture, annual reports. Agricultural Accounts and Statistical Indicators Division, Bureau of Agricultural Statistics, Quezon City, Philippines.

Bureau of Agricultural Statistics. Various years. Agricultural Foreign Trade Statistics, various years. Agricultural Marketing Statistics and Analysis Division, Bureau of Agricultural Statistics, Quezon City, Philippines.

Bureau of Animal Industry. Undated. Statistics on chicken imports for breeding, 1989-1997. Quezon City, Philippines.

Bureau of Animal Industry. Undated. Statistics on live swine imports for breeding, 1990-1997. Quezon City, Philippines.

Bureau of Animal Industry. Undated. Statistics on live cattle imports, 1990-1997. Quezon City, Philippines.

Central Bank. 1997. Pesos per U.S. dollar rate, 1985-1997. Reference Exchange Rate Bulletin of the Treasury, Central Bank of the Philippines.

Clarete, Ramon L. Undated. Will the Uruguay Round Increase World Trade in Rice? School of Economics, University of the Philippines, Quezon City, Philippines.

Costales, Archilles. 1993. Technological Potentials and Constraints in the Philippine Corn Feed Industry. Agribusiness System Assistance Program Publication No. 2.03. A joint undertaking between the Philippine Department of Agriculture and USAID.

David, Cristina C. 1994. GATT-UR and Philippine agriculture: facts and fallacies. Journal of Philippine Development 31(38):141-175.

De Leon, Sonia Y. 1996. Sanitary and Phytosanitary Standards (SPS) in Processed Foods. A final report commissioned by the APRAAP Policy Research Group for the Philippine Department of Agriculture.

Department of Agriculture. 1994. GATT and Its Implication on Philippine Agriculture. Quezon City, Philippines.

Department of Agriculture. 1996. Rules and Regulations for the Implementation of the Agricultural Minimum Access Volumes (MAV), July, Quezon City, Philippines.

Department of Agriculture. 1997. Gintong Ani for Livestock. A program document. Quezon City, Philippines.

Department of Agriculture. 1997. Proposed Options on the Treatment of Rice in AFTA-CEPT. A briefing document. Quezon City, Philippines.

Department of Agriculture. 1998. Gintong Ani Program, Shallow Tubewell Irrigation Project Accomplishment Report as of July 28. Regional Field operations, Department of Agriculture, Quezon City, Philippines.

Department of Labor and Employment. 1997. Yearbook of Labor Statistics, 1997. Metro Manila, Philippines.

Department of Transport and Communication. Undated. A list of government airports in the Philippines in 1996.

Department of Trade and Industry. 1996. Guide to DTI Services, 1996. Makati City, Philippines.

Department of Public Work and Highways. 1997. Existing roads by classification and bridges. Metro Manila, Philippines.

De Rosa, D. 1993. Regional trading arrangements among developing countries: The Asian example, in Bautista, p. 21.

FAO. 1998. Quarterly Bulletin of Statistics. 1(4), Rome.

FAO. 1996. Food Outlook Statistical Supplement. January, Rome.

Fertilizer and Pesticide Authority. 1989. Fertilizer Statistics, 1980-1989. Fertilizer and Pesticide Authority, Department of Agriculture, Quezon City, Philippines.

Fertilizer and Pesticide Authority. 1997. Fertilizer exports and imports by grade, 1990-1997. Fertilizer and Pesticide Authority, Department of Agriculture, Quezon City, Philippines.

Garrido, J. Robert R. 1993. Philippine Rural Infrastructure and Options for Reducing Corn and Livestock Marketing and Distribution Costs. Agribusiness System Assistance Program. A joint undertaking between the Philippine Department of Agriculture and USAID.

Gonzales, L.A. 1995. Impact of the GATT-UR on Philippine Agribusiness Competitiveness: The Case of Poultry and Livestock Products. Final report, March. Agribusiness System Assistance Program. A joint undertaking between the Philippine Department of Agriculture and USAID.

Guerrero, III, Rafael D. 1996. Sanitary and Phytosanitary Standards (SPS), Fisheries and Marine Quarantine in Relation to International Standards. A final report commissioned by the APRAAP Policy Research Group for the Philippine Department of Agriculture.

Habito, C.F. 1985. Policy issues, in the Philippine coconut industry. Paper read at Seminar on Economic Development in the Philippines. Diliman, Quezon City, Philippines, December 5-6.

Intal, Ponciano S.; and Power, John H. 1990. Trade, Exchange Rate, and Agricultural Pricing Policies in the Philippines. World Bank Comparative Studies. The Political Economic of Agricultural Pricing Policy.

Kumar, Sree. 1992. AFTA and Beyond. Background paper for the 17th Conference of the Federation of ASEAN Economic Association. Surabaya, Indonesia, November 15-17, 1992.

Lamberte, M.B.; et al. 1990. Philippines. Export Finance: Some Asian Examples. Economics and Development Resource Center, Asian Development Bank, Manila, Philippines.

Lantican, Josefina A. 1997. Market Prospects for Upland Crops in the Philippine. The CGPRT Centre. Bogor. Working Paper Series No. 22.

Lim, Joseph. 1992. A Study on Philippine Exchange Rate Policies. Philippine Institute of Development Studies, Working Paper Series No. 92-09.

Mangabat, M.C. 1996. Assessment of Research in Multistage Production Systems: The Case of Philippine Coconut Products. Unpublished Ph.D. thesis, La Trobe University, Melbourne, Australia.

Manuel, Mauro F. 1996. Sanitary and Phytosanitary Standards (SPS), Meat and Meat Products. A final report commissioned by the APRAAP Policy Research Group for the Philippine Department of Agriculture, September 10.

Medalla, Erlinda M. 1998. Commitments to WTO, AFTA and APEC with Respect to the Agriculture Sector. Philippine Institute of Development Studies, Discussion Paper No. 97-19. Makati City, Philippines.

National Food Authority. 1998. Volume of wheat imports, 1980-1997. Quezon City, Philippines.

National Food Authority. Undated. Philippine monthly rice imports, 1985-1997. Quezon, Philippines.

National Statistical Coordination Board. 1997. Philippine Statistical Yearbook 1996. Makati City, Philippines.

National Statistical Coordination Board. 1997. Summary of Ports Inventory as of December 1996. Makati City, Philippines.

National Statistical Coordination Board. 1997. The National Accounts of the Philippines, Base Year 1985, CY 1995 to CY 1996. Makati City, Philippines.

National Statistical Coordination Board. 1997. National Accounts of the Philippines, CY 1946 to CY 1995. Economic and Social Statistics Office, National Statistical Coordination Board, Makati City, Philippines.

National Statistical Coordination Board. 1998. The National Accounts of the Philippine, Base Year 1985, CY 1995 to CY 1997. Makati City, Philippines.

National Statistics Office. 1980 to 1997. Foreign Trade Statistics, Annual 1980 to 1997. Metro Manila, Philippines.

Oil World, Annual. 1995. Philippine imports of soybean products.

PECC, PIDS, AF. 1996. Perspectives on the Manila Action Plan for APEC. Second edition. Pacific Economic Cooperation Council, Philippine Institute for Development Studies, and the Asia Foundation's Center for Asian-Pacific Affairs. Manila, Philippines.

Pempengco, J.R. 1997. Cattle feedlot operators air side. Food and Agri-Business Monitor (13) 9, September.

Philippine Grain Sector Development Program Project. 1998. Volume 1, Main Report.

Philippine Tariff Commission. 1998. Revised import duties for agricultural products under Executive Order 465 dated January 13, 1998, Modifying the Nomenclature and the Rates of Import Duty on Certain Imported Articles under Section 104 of the Tariff and Custom Code of 1978.

PhilRice-BAS. 1994. Regional Rice Statistics Handbook 1970-1992. A joint publication of the Philippine Rice Research Institute and the Bureau of Agricultural Statistics. First printing.

PhilRice-BAS. 1997. Philippine Rice Statistics, 1970-1996. A joint publication of the Philippine Rice Research Institute and the Bureau of Agricultural Statistics.

Rafloski, Robert. 1993. Rural Infrastructure in the Philippines and Options for Reducing Corn and Livestock Marketing and Distribution Costs: International Comparative Perspective. Agribusiness System Assistance Program Publication No. 2.05. A joint undertaking between the Philippine Department of Agriculture and USAID

Sicat, G.P.; and Power, John H. 1971. The Philippines: Industrialization and Trade Policies. London: Oxford University Press.

Tan, Elizabeth S. 1994. Trade Policy Reforms in the 1990s: Effects of E.O. 470 and the Import Liberalization Program. Research Paper No. 94-11. Philippine Institute for Development Studies. Makati City, Philippines.

Trabajo, Francis Myrna C. 1994. Agricultural Machinery Industry: Impact of Trade Policy Reforms on Performance, Competitiveness and Structure. Research Paper Series No. 94-04. Philippine Institute for Development Studies. Makati City, Philippines.

United Coconut Associations of the Philippines. 1989. Coconut Statistics, Annual 1989, 6 (23), October 1990. Makati City, Philippines.

United Coconut Associations of the Philippines. 1994. Coconut Statistics, Annual 1994, 6 (28), December 1995. Pasig City, Philippines.

United Coconut Associations of the Philippines. 1997. Coconut Industry Kit, Series of 1997. Pasig City, Philippines.

United Coconut Associations of the Philippines. 1998. Coconut Industry Kit, Series of 1998. Pasig City, Philippines.

World Bank. 1998. Commodity Price Data for 1997.

Appendix

Appendix Table 1 Gross domestic product (in million pesos, at constant 1985 prices), the Philippines, 1980-1997.

Year	Real GDP
1980	609,768
1981	630,642
1982	353,467
1983	665,717
1984	616,962
1985	571,883
1986	591,423
1987	616,923
1988	658,581
1989	699,448
1990	720,690
1991	716,522
1992	718,941
1993	734,156
1994	799,368
1995	802,866
1996	848,451
1997	891,530

Source: National Statistical Coordination Board (NSCB).

Appendix Table 2 APEC country members.

Developing Economies		High Income Economies
1. Brunei	8. Mexico	1. Australia
2. Chile	9. Philippines	2. Canada
3.China	10. Papua New Guinea	3. Japan
4. Hongkong	11. Singapore	4. New Zeland
5. Indonesia	12. Chinese Taipei	5. United States
6. Korea	13. Thailand	
7. Malaysia		

Source: Pacific Economic Cooperation Council (PECC), Philippine Institute for Development Studies (PIDS) and The Asia Foundation (AF), 1996.

Appendix Table 3 Existing roads (km) by system classification, the Philippines, 1965-1997.

Year	Total	National	Provincial	City	Municipal	Barangay
1965	55,778	15,921	21,363	4,184	14,309	n.a.
1970	77,950	19,198	25,219	6,254	16,855	10,424
1975	104,430	21,665	28,175	2,680	7,512	44,399
1980	151,919	23,641	29,753	3,692	11,445	83,387
1981	153,528	23,489	29,953	3,723	11,914	84,449
1982	154,473	23,783	29,544	3,740	12,142	85,264
1983	155,635	24,104	29,725	3,718	12,240	85,847
1984	157,139	25,117	28,826	3,896	12,432	86,868
1985	161,867	26,190	28,194	3,987	12,825	90,671
1986	158,499	26,230	28,334	3,987	12,841	87,107
1987	157,810	26,082	28,928	3,984	12,875	85,941
1988	157,448	26,070	29,174	3,982	12,627	85,595
1989	159,059	26,110	29,144	3,949	12,707	87,149
1990	160,560	26,272	29,156	3,949	12,819	88,363
1991	160,610	26,422	29,156	3,949	12,819	88,363
1992	160,843	26,554	29,156	3,949	12,819	88,364
1993	160,883	26,593	29,156	3,949	12,819	88,364
1994	160,948	26,659	29,156	3,949	12,819	88,364
1995	160,970	26,720	29,117	3,949	12,819	88,364
1996	161,264	27,370	28,762	3,949	12,819	88,364
1997	161,313	27,650	28,530	3,499	12,819	88,364

Source: Department of Public Works and Highways (DPWH).

Notes: The decrease of the length of road network from 1986 to 1988 was due to the following: correction of the length of some national and barangay road sections nationwide with overlapping station limits and double listed road sections, and the non-inclusion of the physical length in lineal meter of bridges from the physical kilometer of national road sections.

Appendix Table 4 Distribution of government expenditure in agriculture, the Philippines, 1965-1982.

Year	Total Gov't Expenditure in Agriculture (US $ M)	Rural Roads and Bridges	% Share Irrigation, Storage and Warehouse	Research and Extension	Other Gov't Support Service*
1965	0.042	7.2	28.7	31.1	33.0
1970	0.059	15.1	37.2	17.6	60.1
1975	0.221	3.2	56.4	17.5	22.9
1980	0.463	1.9	62.6	16.0	19.5
1981	0.519	3.0	57.3	18.0	21.7
1982	0.459	4.3	54.4	18.4	22.9

Source: Intal and Power 1990.

* Includes expenditures on stabilization, agrarian reform, and general government administration.

Note: Peso values from original data were converted to US $.

Appendix Table 5 Existing roads (km) by surface type, the Philippines, 1965-1997.

Year	Total	Concrete	Asphalt	Gravel	Earth
1965	55,778	1,462	8,210	34367	11,738
1970	77,950	3,083	11,120	43186	20,561
1975	124,084	5,131	12,621	61389	44,943
1980	148,505	8,255	11,975	77,295	50,980
1981	152,047	8,283	11,960	80,036	51,768
1982	154,473	8,337	11,106	124,612	10,417
1983	155,671	8,542	11,273	125,902	9,953
1984	157,139	8,729	11,298	127,531	9,580
1985	161,867	9,331	11,990	130,643	9,903
1986	158,499	9,366	11,934	127,515	9,684
1987	157,810	9,564	12,535	126,399	9,312
1988	157,448	9,804	12,524	126,051	9,068
1989	157,059	10,146	12,602	127,610	8,631
1990	159,560	10,358	12,753	128,953	8,497
1991	160,710	10,682	13,113	128,401	8,513
1992	160,843	13,389	13,113	125,830	8,504
1993	160,883	13,409	13,130	125,840	8,504
1994	160,948	13,586	13,117	125,743	8,502
1995	160,970	13,713	13,137	125,704	8,416
1996	161,264	14,487	13,537	124,634	8,605
1997	161,313	14,937	13,625	124,165	8,586

Source: Department of Public Works and Highways (DPWH).

Notes: The decrease of the length of road network from 1986 to 1988 was due to the following: correction of the length of some national and barangay road sections nationwide with overlapping station limits and double listed road sections, and the non-inclusion of the physical length in lineal meter of bridges from the physical kilometer of national road sections.

Appendix Table 6 Existing bridges along national roads in linear meters, the Philippines, 1997*.

	Type of Bridge Structure		
Region	Total	Permanent	Temporary
Philippines	261,969	232,206	29,763
NCR	13,813	13,813	
CAR	8,360	5,785	2,575
I	21,503	21,004	499
II	18,997	17,953	1,044
III	19,148	18,882	266
IV-A	15,809	15,185	624
IV-B	18,282	14,191	4,091
V	15,618	14,039	1,579
VI	27,167	22,661	4,506
VII	14,488	13,592	896
VIII	30,112	25,225	4,887
IX	9,084	8,435	649
X	11,569	10,840	729
XI	12,952	11,103	1,549
XII	7,110	5,926	1,184
XIII	14,664	10,983	3,681
ARMM	3,593	2,589	1,004

Source: Department of Public Works and Highways 1997.

* As of December 31, 1997

CAR - Cordillera Autonomous Region

NCR - National Capital Region

ARMM - Aoutonomous Region for Muslim Mindanao

Appendix Table 7 Summary of ports inventory, the Philippines, as of December 1996.

Region	Total as of			Commercial					
				Fishing	Feeder	Private	Public	Operational	Non Operational
	1994	1995	1996						
Total	1312	1422	1428	429	175	490	331	1342	83
NCR	64	69	69	3	-	62	4	64	5
I	40	40	40	18	3	8	11	35	5
II	31	32	32	19	5	4	4	28	4
III	42	49	49	12	-	27	10	42	7
IV	250	253	253	82	53	49	69	235	18
V	105	106	107	63	4	16	24	98	9
VI	128	145	146	47	9	66	24	146	
VII	149	150	150	39	10	59	42	138	12
VIII	102	124	125	30	17	42	36	119	6
IX	68	74	71	21	2	20	28	69	2
X	191	198	198	53	54	50	41	186	12
XI	69	106	106	19	6	60	21	105	1
XII	37	38	38	10	-	21	7	36	2
ARMM	36	41	41	13	12	6	10	41	

Source: Philippine Statistical Yearbook, 1996. Published by the National Statistical Coordination Board (NSCB).

Appendix Table 8 Number and gross tonnage (thousand metric tons) of registered Philippine vessels, by type of vessel, 1984-1993.

Year	Total	Cargo	Light barges etc	Fishing	Other*
1984					
No. of vessels	689	216	37	217	228
Gross tonnage	2,703	2314	30	12	347
1985					
No. of vessels	835	278	63	282	212
Gross tonnage	4,334	4169	33	17	116
1986					
No. of vessels	819	256	49	328	186
Gross tonnage	4,397	4106	51	21	219
1987					
No. of vessels	1,128	334	66	462	266
Gross tonnage	5,907	5820	31	28	28
1988					
No. of vessels	1,124	321	83	419	301
Gross tonnage	4,563	4301	44	26	192
1989					
No. of vessels	1,022	369	79	361	213
Gross tonnage	4,504	4132	39	22	311
1990					
No. of vessels	1,140	429	64	479	168
Gross tonnage	4,343	3655	38	37	613
1991					
No. of vessels	807	300	64	259	184
Gross tonnage	3,043	3939	35	26	42
1992					
No. of vessels	867	275	65	391	136
Gross tonnage	2,808	2669	48	24	67
1993					
No. of vessels	958	302	53	428	175
Gross tonnage	3,815	3665	34	37	78

Source: Philippine Statistical Yearbook, 1996. Published by the National Statistical Coordination Board (NSCB).
* Includes passengers ships, tankers, tugs dredges, etc., sailing vessels, pleasure yatchs, miscellaneous ships.

Appendix Table 9 Number of registered airports, the Philippines, 1976-1996.

Year	Total	National	Private
1976	131	79	52
1977	135	79	56
1978	181	82	99
1979	202	85	117
1980	206	86	120
1981	205	85	120
1982	226	85	141
1983	227	86	141
1984	227	86	141
1985	228	87	141
1986	230	87	143
1987	227	84	143
1988	180	86	94
1989	208	86	122
1990	219	86	133
1991	224	84	140
1992	216	86	130
1993	249	87	162
1994	300	86	214
1995	190	86	104
1996	266	86	180

Source: Philippine Statistical Yearbook, 1996. Published by the National Statistical Coordination Board (NSCB).

Appendix Table 10 Potential irrigable and total service area by type of irrigation system, (in thousand hectares), the Philippines, 1992-1995.

	Potential	Total Service	Service Area by Type of Irrigation		
Year	Irrigable Area	Area	National	Communal	Private*
1992	3,126.34	1,532.75	646.52	734.10	152.13
1993	3,126.34	1,540.14	646.52	734.39	152.13
1994	3,126.34	1,268.43	651.81	442.01	174.61
1995	3,126.34	1,307.01	651.81	474.29	180.91

Source: Philippine Rice Statistics 1970-1996. Published by the Philippine Rice Research Institute (PhilRice) and the Bureau of Agricultural Statistics (BAS), 1997.

*In 1994 and 1995, some private irrigation systems were non-operational or converted to national or communal irrigation systems; some areas were converted to other uses.

Appendix Table 11 Number and capacity of postharvest facilities, the Philippines, 1980-1995.

Year	Warehouse		Rice Mill		Mechanical Dryer		Thresher		Transportation	
	No.	Capacity ('000mt)	No.	Capacity ('000mt)	No.	Capacity ('000mt)	No.	Capacity (' 000mt)	No.	Capacity ('000mt)
1980	7,538	2,568	13,451	4,318	157	446	3,132	2,034	12,727	5,796
1981	8,228	2,674	13,818	5,014	160	481	3,181	2,145	12,624	6,344
1982	8,918	2,780	15,050	5,908	168	519	3,229	2,256	12,522	6,879
1983	9,065	3,503	14,287	9,211	146	441	2,754	2,081	11,763	7,458
1984	9,439	3,466	14,375	9,011	113	1,931	2,585	2,018	11,114	8,010
1985	9,696	3,649	14,259	6,015	111	386	2,338	1,852	11,776	7,492
1986	8,593	3,063	12,007	5,842	94	514	1,838	1,407	9,978	5,432
1987	9,504	3,138	12,531	6,155	116	589	1,865	1,290	10,217	13,048
1988	9,722	3,296	13,688	6,908	105	794	2,113	1,431	10,259	14,245
1989	9,860	3,058	12,916	7,141	139	1,050	1,925	1,333	10,470	10,038
190	10,028	3,800	13,418	7,356	144	948	1,847	1,310	11,551	164,449
1991	9,794	5,488	13,545	7,494	134	1,047	2,090	1,576	11,704	155,293
1992	10,043	4,002	13,478	7,683	143	1,107	1,775	1,401	11,099	182,193
1993	9,950	4,209	13,281	7,626	163	1,860	1,688	1,376	11,412	199,027
1994	11,064	5,189	12,956	7,757	271	2,173	1,570	1,324	10,283	182,152
1995	11,682	4,872	12,817	7,664	377	2,666	1,763	1,495	9,960	182,100

Source: Regional Rice Statistics Handbook, 1970-1992 for the period 1980 to 1989 and Philippine Rice Statistics. 1970-1996 for the period 1990 to 1995. Published by the Philippine Rice Research Institute (PhilRice) and the Bureau of Agricultural Statistics (BAS).

Note: Capacities for mill, dryer and thresher refer to volume of paddy rice while the capacities for warehouse and transportation refer to volume of total grains. Transportation facilities refers to trucks, jeeps, weapon carrier, other land and water facilities used in transporting grains.

Appendix Table 12 Number of installation under the shallow tube-well project, the Philippines, 1995-1997.

Region	1995	1996	1997
Philippines	5296	2777	5713
CAR	99	65	327
I	671	245	419
II	780	341	930
III	723	565	1684
IV	548	175	262
V	289	100	326
VI	492	244	384
VII	112	80	44
VIII	134	43	140
IX	206	100	275
X	153	67	324
XI	439	193	334
XII	400	167	67
XIII	-	611	175
ARMM	250	107	22

Source: Gintong Ani Program, Shallow Tubewell Irrigation Project Accomplishment Report as of 28 July 1998. Regional Field Operations, Department of Agriculture.

Appendix Table 13 Regional breakdown of livestock post-production facilities, the Philippines, 1997.

Year	Existing Operational	Non-operational	Target*	Class "AAA"	Non-"AAA"	Target**	No. Class"AAA"	Capacity Non-"AAA"	No. Target***
Total	98	39	34	11	1028	98	17	64	8
			4						
CAR	1		6		14	4			1
I	10	4	5		104	4	2	7	
II	4	2	7	2	61	8		5	1
III	1	3		2	106	11	4	1	
IV	11	6			142	14	1	5	
NCR					42		2		
V	4	3	4		82	5		4	1
VI	27	2	1	1	121	10	2	9	
VII	18	4	4	3	101	6	3	14	
VIII	11	1			73	10		3	
IX		5			38	5		4	1
X	2	4	2		47	7		6	1
XI	3			1	63	4	3	4	
XII	6		1		14	4			2
XIII		1			13	4		2	1
ARMM		1			7	2			

* Number of Livestock Auction Markets (LAM) targeted for rehabilitation, may include new LAMs that will be established during the Medium Term Development Plan (MTDP).
** Number of abattoirs that will be upgraded during the Plan period.
*** Number of dressing plants that will be upgraded; includes new dressing plants that will be established during the Plan period.
AAA: Export quality of slaughtered meat Non-AAA: For domestic consumption purposes only.
Source: Gintong Ani for Livestock, Department of Agriculture (1997).

Appendix Table 14 Phytosanitary measures for specific plants and plant products, the Philippines.

Plant Item	Evaluation of Philippine Standards	Recommendation
Plants and plant products, in general	More restrictive as it **prohibits** importation or introduction into the Philippines plants, plant products, soil, packaging materials of plants capable of harboring plant pests or being a source of medium of infection or infestation of plant pests	Make it **restrictive**, in lieu of prohobition, subject to quarantine rules and regulations
Fruits and vegetables which can harbor fruitfly spp.	Import regulations consistent with the general and specific principles in international standards for phytosanitary measures (ISPMs)	Continue implementing regulations but restrict other fruit and vegetable imports which can harbor pests of quarantine significance and pests and pathogen. Notify committee on SPS of WTO re RP import restrictions not mentioned in existing regulations
	Philippine regulations on pest surveillance, eradication, management and post-entry quarantine are less well defined and less stringent implementation	Declaration of non-commercial qualities of plant and plant products; more vigilant and regular monitoring of pest outbreaks
Soft/fleshy fruits/vegetables from all countries where dangerous spp. of fruitflies are known to exist	Imports are prohibited, except if required commodity treatment can be provided for under specific bilateral agreement	Continue implementation
Other fruits and veg. serving as hosts to many pests and/or diseases	Restricted/prohibited (not clear)	Regulations need to be unequivocal
Plants/parts capable of propagation	Restricted/prohibited (not clear) Based on BPI Plant Quarantine	The imports of planting materials should be restricted, and **prohibit** import where introduction of exotic pest is possible, except if required treatment to disinfect exists and can be certified
Ornamental a. Fresh cutflowers, bouquets, etc. free from soil, sand, earth	Imported "without necessary permit". But subject to plant quarantine	Regulations need to be unequivocal Adm. Code for 1987 has no specific provision for this item. Import Permit (IP) and Phytosanitary Certificate (PC) should be required
b. All plants, seeds, tubers, bulbs, other propagating materials of orchids, ornamental plants	Imports restricted subject to IP, PC, quarantine treatment, inspection and verification, post-entry quarantine	
Other plant products such as dried or unprocessed bamboo, packaging materials such as rice straw, coconut leaves, grasses or weeds, etc.	Restricted/prohibited	Continue implementation
Beneficial organism/ micro-organism	Importation of organisms potentially harmful to people and the environment is covered by the Biosafety Guidelines Implementing E.O. No. 430 providing for the establishment of the National Biosafety Committee of the Philippines	RP guidelines being revised by National Biosafety Committee. Adequate provisions for implementation made of ISPM Pub. No. 3 regulation. Dissemination of regulations/procedures for dissemination.

Source: Part of a report on Phytosanitary Measures for Specific Plants/Plant Products, Department of Agriculture.

Appendix Table 15 Status of Philippine fisheries and marine quarantine.

Item	Evaluation of Philippine Standards	Recommendation
Live fish (fish, molluscs and crustaceans) and aquatic animal products exported/imported	For exports, no standard (std) for aquatic animal international health certificate as in the OIE std	The Philippines does not have a well-organized and equipped Fish Quarantine Service in place at its international ports.
	For imports, there are no guidelines for risk assessment nor zoning stds as in the OIE	Adopt OIE standards
Import/export procedures for live fish and aquatic animal products	Lacks procedures for safe transporting of personnel concerned and aquatic animals being transported. Also, lacks measures on the following: a. disinfection and other sanitation; b. treatment of transportation water; c. discharge of infected material d. animal health measures applicable before and at departures; e. during the journey between place of arrival in importing country and in transit; f. frontier posts and quarantine stations in importing country and in transit (Note: Philippine frontier posts are in Manila, Cebu, Davao, General Santos, Zamboanga City and Subic)	Adopt OIE measures
Imported live aquatic animals and aquatic animal products	1. Aquatic health measures on arrival being applied. a.1 Inspection of imported live aquatic animals done by Fish Quarantine Officer at frontier post; International Animal Health Certificate required b. An import permit is required by the BFAR	Other OIE measures not being applied should be adopted
	2. Lacks measures on a. international transfer of pathological material and biological products as in OIE std. b. diseases notifiable to OIE	Adopt OIE measures
	The Philippines is free of the following OIE fish diseases	
Red perch and rainbow trout	Epizootic haemotopoetic necrosis (EHN)	
Salmonids	Infectious haematopic necrosis Salmonid herpesvirus type 2	
Carp	Spring viraemia of carp	

Source: Guerrero III 1996. SPS for Fisheries and Marine Quarantine in Relation to International Standards. A final report commissioned by the APRAAP Policy Research Group, Department of Agriculture.

Continued …….

Appendix Table 15 Status of Philippine fisheries and marine quarantine (continued).

Item	Evaluation of Philippine Standards	Recommendation
Rainbow trout	Edtved virus	
Carp, mudfish and catfish	The disease epizootic ulcerative syndrome (EUS) has affected mudfish and catfish in the Philippines	Adopt OIE measures or zoning recommended
Live molluscs (oysters)	Free of OIE list of bivalve molluscs diseases (bona niosis, haplosporidiosis, marteilosis, mikrocytosis,perkinosis, iridovirosis)	
	The following list of OIE crustacean diseases are prevalent in the Philippines affecting *P. monodon*	OIE measures on zoning are recommended
Live larvae, postlarvae and juvenile of shrimp	1. Bacreloviral midget gland nacrosis	OIE measures on zoning are recommended
Live broodstock, postlarvae and juveniles of shrimp	2. Baculovirus monodon disease 3. Infectious hypodermal and hematopoietic necrosis virus disease	OIE measures on zoning are recommended
Live broodstock, post- larvae and juveniles of shrimp	Free of yellowhead virus disease	
Live crayfish	Crayfish plague not found in the Philippines	
Live aquatic animals	Lacks OIE measures on blood sampling and vaccination of aquatic animals; on destruction of pathologens	Adopt OIE measures
Live fish and gametes; molluscs and larvae; live shrimps or prawns and their larvae	Lacks OIE approved international certificates	Adopt OIE measures
Fish, crustaceans and molluscs	Lacks OIE diagnostic manual for diagnosis of fish diseases notifiable to OIE and; compliance manual on requirements and conditions for the export and import of live aquatic animals	Adopt OIE manuals

Source: Guerrero III 1996. SPS for Fisheries and Marine Quarantine in Relation to International Standards. A final report commissioned by the APRAAP Policy Research Group, Department of Agriculture.

Appendix Table 16 Export and import assistance of DTI agencies, the Philippines.

Agency	Assistance/Services Provided
A. Import/Export	
1. Bureau of Standards	Product standards including sanitary and phytosanitary measures for processed products.
B. Import	
1. Bureau of Import Services (BIS)	Pre-import clearance on selected items, monitors importation of liberalized items, technical assistance on dumping matters
C. Export	
1. International Coffee Organization Certifying Agency (ICO-CA)	Manages Philippine coffee exports according to ICO rules, marketing and promotion of coffee exports
2. Product Development and Design Center of the Philippines (PDDCP)	Product and package design, technical information such as Universal Labeling System
3. Bureau of Export Trade Promotion (BETP)	Info on export procedures and documentation; buyer linkages, financing and incentives; product/raw material sourcing
4. Philippine International Trading Corporation (PITC)	Access to international and domestic marketing channels; supply foreign buyers and with Philippine products that meet international standards
5. Center for International Trade Expositions and Missions (CITEM)	Organization of international fairs and missions
6. Philippine Trade Training Center (PTTC)	Designs and implements export training modules to update Filipino entrepreneurs on international market trends and requirements
7. Garment and Textiles Export Board (GTEB)	Formulate negotiation strategies on bilateral trade agreements; buyer-supplier matching, market research and product promotion
8. Foreign Trade Service Corps (FTSC)	Matching of Philippine products in international markets; initial representation for reduction and/or elimination of tariff and non-tariff barriers
9. Philippine Shippers Bureau (PSB)	Identify and negotiate for the most economical and fastest shipping modes.

Source: Department of Trade and Industry 1997.

Appendix Table 17 Agricultural exports by commodity classification (f.o.b. value in million US $), the Philippines, 1980-1997.

Commodity	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
I Food & Live Animals Chiefly for Food	2,015.73	1,905.94	1,579.71	1,475.53	1,521.45	1,171.77	1,223.05	1,300.99	1,493.65	1,502.25	1,456.33	1,547.59	1,624.72	1,694.10	1,816.49	2,178.27	1,963.77	2,005.92
A. Live Animals Chiefly for Food	0.03	0.01	0.01	2.06	1.82	0.33	0.09	0.41	0.55	0.07	0.12	2.28	2.09	2.22	3.25	2.49	1.79	2.07
B. Meat & Meat Preparations	1.50	1.54	1.30	0.53	0.63	0.26	0.49			0.34	0.95	1.14	0.15	0.14	0.14	0.40	0.22	1.10
C. Dairy Products & Birds Eggs	2.18	1.94	2.05	2.74	0.44	0.37	0.26	1.80	0.93	0.53	0.49	0.62	0.68	1.26	0.95	1.43	1.78	1.12
D. Fish & Fish Preparations	138.07	143.35	119.28	131.69	115.48	148.53	196.56	267.00	406.70	409.27	395.29	466.21	392.17	476.57	532.48	501.94	463.58	435.21
E. Cereals & Cereal Preparations	79.58	33.87	5.45	14.55	5.96	5.62	5.69	31.64	8.04	12.17	10.18	14.83	18.49	11.33	14.04	14.06	23.16	38.22
F. Vegetables & Fruits	981.06	944.74	823.97	847.12	972.95	701.80	696.35	795.28	854.13	827.72	804.35	841.52	996.74	965.99	1,056.75	1,421.39	1,203.45	1,287.48
G. Sugar & Sugar Preparations & Honey	658.70	608.94	444.53	320.54	282.88	189.10	108.33	78.17	83.11	121.17	142.27	146.41	121.80	137.80	85.14	88.80	157.76	115.68
H. Cofee, Tea, Cocoa, Spices & Manufactures thereof	65.42	82.71	101.36	73.09	87.35	81.28	131.40	43.70	63.34	58.67	29.58	25.40	16.59	16.57	29.80	31.25	30.04	28.26
I. Feeding Stuff for Animals not including unmilled Cereals)	85.28	84.24	75.65	75.67	45.49	37.86	76.28	74.79	65.44	55.81	56.80	59.63	57.95	55.33	63.04	80.35	72.22	64.40
J. Miscellaneous Edible Products & Preparations	3.91	4.60	6.11	7.54	8.45	6.62	7.60	8.18	11.41	16.48	16.31	16.55	18.06	26.89	30.90	36.16	36.77	32.36

a/ Less than .01 million US $.

Source: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS).

Continued ……

Appendix Table 17 Agricultural exports by commodity classification (f.o.b. value in million US $), the Philippines, 1980-1997 (continued).

Commodity	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
II Tobacco & Tobacco Manufactures	30.16	49.86	48.70	34.96	31.24	4.21	5.05	23.03	26.54	26.33	48.98	69.63	43.06	34.81	32.63	27.94	37.63	40.00
III Crude Materials, Inedible Except Fuels	112.22	95.25	110.96	39.52	52.87	51.61	65.32	93.44	106.03	96.33	108.51	98.20	96.01	88.86	100.65	146.93	161.55	158.43
A. Oil Seeds & Oleagenous Fruits	55.47	43.68	57.74	9.72	10.09	6.91	19.95	1.67	2.49	2.47	2.19	1.15	2.17	1.51	0.42	0.57	0.18	0.14
B. Crude Rubber (including Synthetic & Reclaimed)	8.60	4.73	6.38	5.07	5.63	9.92	10.12	7.57	14.86	10.34	11.80	13.04	10.05	12.12	13.67	27.86	33.88	25.18
C. Crude Fertilizer					0.01	3.48	0.01	6.92	10.79	8.25	10.28	11.93	13.21	1.19	0.15	0.12	0.19	0.14
D. Crude Animal & Vegetable Materials (Including Hides, Skins & Furskins, raw)	48.15	41.84	46.84	24.73	37.14	31.30	35.24	77.28	77.89	75.27	84.24	72.07	70.58	74.04	86.41	118.38	127.30	133.00
IV Animal & Vegetable Oils, Fats Waxes	6.52	4.30	2.29	6.91	26.07	24.12	13.37	16.77	17.32	15.51	14.71	13.04	14.07	12.63	15.52	18.33	18.17	21.63
A. Animal & Vegetables Oils & Fats	5.91	4.22	2.19	3.57	25.99	23.11	12.11	14.22	17.23	15.26	13.25	11.40	12.40	11.39	14.88	17.94	18.08	21.44
B. Fixed Vegetables Oils & Fats	0.61	0.08	0.10	3.34	0.08	1.01	1.26	2.55	0.09	0.25	1.46	1.64	1.67	1.24	0.64	0.38	0.09	0.19
V Fertilizers, Manufactured	0.52	0.04	a/	0.03	1.09	33.42	113.46	86.25	69.35	80.17	71.93	115.86	88.21	85.45	101.25	119.92	114.54	99.00
VI Agricultural Chemicals & Materials	1.50	1.02	1.63	1.70	0.40	0.32	0.57							1.82	3.51	4.35	6.89	9.05

a/ Less than .01 million US $.

Source: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS).

Continued ……

Appendix Table 17 Agricultural exports by commodity classification (f.o.b. value in million US $), the Philippines, 1980-1997 (continued).

Commodity	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
VII Agricultural Machinery	0.26	0.62	0.43	0.49	0.47	0.52	0.25	0.29	0.39			0.34	0.42	0.58	1.97	3.32	4.09	7.53
A. Agricultural Machinery (Including Tractors)	0.04	0.14	0.01	0.11	0.04	0.38	0.18	0.09	0.24	0.01	0.21	0.26	0.06	0.01	0.07	0.24	1.36	0.84
B. Food Processing Machines	0.22	0.48	0.42	0.38	0.43	0.14	0.07	0.20	0.15	0.35	0.45	0.08	0.36	0.57	1.90	3.08	2.73	2.69
Total Agricultural Exports(Value in million US $)	2,166.91	2,057.03	1,743.72	1,559.14	1,633.59	1,285.97	1,421.07	1,520.75	1,713.28	1,720.96	1,701.13	1,844.67	1,866.49	1,918.25	2,072.02	2,499.06	2,306.64	2,337.51
Total of all Exports (Value in million US $)	5,750.88	5,712.11	5,012.03	4,971.41	5,265.89	4,588.76	4,730.03	5,720.24	7,074.19	7,820.71	8,186.03	8,839.51	9,824.31	11,374.81	13,482.89	17,447.19	20,542.55	25,227.70

Source: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS).

Appendix Table 18 Top ten Philippine agricultural exports (Qty in '000 mt; f.o.b. value in million US $), 1980-1997.

Commodity	1980		1981		1982		1983		1984		1985		1986	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Coconut Oil 1/	917.61	566.85	1,039.90	533.47	921.24	401.03	998.25	515.81	587.58	580.24	650.61	347.38	1,249.45	332.78
Banana, Fresh	922.71	114.18	868.56	124.02	926.68	143.11	643.38	104.73	799.65	122.26	789.20	127.62	855.74	130.22
Pineapple and Pineapple Products 2/	345.39	107.37	341.16	116.81	371.82	123.42	313.34	94.46	352.66	121.08	388.20	127.62	392.02	128.36
Desiccated Coconut	87.16	115.99	86.34	101.79	90.25	68.28	89.36	87.91	76.62	105.96	64.75	75.67	67.89	44.27
Copra Oil Cake/ Meal	545.19	81.39	620.36	80.76	588.57	72.12	550.84	72.01	364.41	41.11	443.70	35.53	821.56	74.76
Tuna 3/	59.87	97.81	53.57	100.32	34.33	64.32	37.70	71.04	35.22	61.24	37.37	61.09	35.57	63.08
Sugar (Centrifugal)	1,602.33	557.27	953.07	416.15	1,096.28	370.80	841.52	264.63	841.25	238.72	445.91	144.87	222.04	86.80
Coffee 4/	15.80	44.58	20.52	39.36	24.59	49.43	21.55	46.69	32.55	76.08	30.65	69.54	42.55	118.76
Copra	121.45	47.25	108.31	33.63	177.73	49.22								
Tobacco Unmanufactured	20.37	28.82			26.25	46.72								
Shrimp and Prawns 5/			3.01	23.67			5.01	36.75	6.56	35.01	8.50	63.74	11.35	104.15
Abaca (in bales)							242,465.00	18.04	251.42	29.75				
Fertilizer Manufactured											192.48	33.42	588.91	113.46
Seaweed and Carageenan														

1/ Crude and refined
2/ Fresh and dried, juice
3/ Fresh, frozen and chilled
4/ Raw or green; not roasted (i.e. arabica, robusta, excelsa, liberica)

Note: The export value of a commodity is indicted only if this commodity is ranked as one of the top ten export earners.

5/ Fresh, chilled or frozen

Continued ……..

Appendix Table 18 Top ten Philippine agricultural exports (Qty in '000 mt; f.o.b. value in million US $), 1980-1997 (continued).

Commodity	1987		1988		1989		1990		1991		1992	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Coconut Oil *	1031.21	380.54	792.88	488.21	763.49	376.8	1134.54	360.75	839.89	298.53	882.22	481.16
Banana, Fresh	774.98	121.24	866.79	146.01	851.05	146.19	839.78	149.28	955.41	173		
Pineapple and Pineapple Products **	183.73	86.34	182.84	83.2	193.49	91.26	179.13	88.68		158.21		149.75
Desiccated Coconut	95.15	75.29	88.08	78.29	94.52	75.76	75.34	60.68	80.74	66.24	85.22	87.56
Copra Oil Cake/ Meal	743.31	73.48	531.13	63.42	477.12	53.5	643.92	54.01	612.45	54.88	539.69	52.54
Tuna ***	37.31	69.92	47.45	113.19	57.06	129.99	55.07	117.73	51.23	115.24	50.29	102.32
Sugar (Centrifugal)	162.95	60.32	142.6	60.2	210.26	88.81	246.98	111.38	274.14	114.62	208.06	87.5
Coffee ****	16.27	32.1	26.55	49.9	24.97	41.99						
Copra	128.69	31.99					97.26	20.45				
Tobacco Unmanufactured									24.29	42.52	18.94	33.83
Shrimp and Prawns *****	14.94	154.6	23.54	249.59	26.05	231.21	24.15	218.73	29.61	269.46	23	207.92
Abaca (in bales)												
Fertilizer Manufactured			384.16	69.35	459.16	80.17	432.49	71.93	637.65	115.86	499.33	88.21
Seaweed & Carageenan												

* Crude and refined
** Fresh and dried, juice
*** Fresh, frozen and chilled
**** Raw or green; not roasted (i.e. arabica, robusta, excelsa, liberica)
***** Fresh, chilled or frozen

Note: The export value of a commodity is indicted only if this commodity is ranked as one of the top ten export earners.

Continued ……..

Appendix Table 18 Top ten Philippine agricultural exports (Qty in '000 mt; f.o.b. value in million US $), 1980-1997 (continued).

Commodity	1993		1994		1995		1996		1997	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Coconut Oil	859.2	357.61	848.75	475.16	1,340.41	826.09	792.65	570.64	1,080.17	673.43
Banana, Fresh	22.73	224.7	22.42	246.32	1,213.41	223.74	1,253.17	236.42	1,143.34	216.56
Pineapple and Pineapple Products	418.4	147.35	459.55	145.32	448.36	140.01	439.08	156.27	410.70	149.55
Desiccated Coconut	93.34	83.74	75.11	70.15	73.06	68.18	69.58	84.89	76.79	88.29
Copra Oil Cake/ Meal	488.49	45.3	574.22	53.01	756.34	66.87	474.55	56.31	571.00	52.51
Tuna	71.97	149.92	78.37	168.96	68.3	154.09	74.35	162.64	78.20	164.61
Sugar (Centrifugal)	324.19	101.71	182.11	60.62	153.21	65.88	317.7	136.2	197.82	82.71
Coffee										
Copra										
Tobacco Unmanufactured	17.18	25.67	16.32	23.46						
Shrimp and Prawns	22.73	224.7	22.42	246.32	18.24	218.57	13.51	153.35	10.26	126.43
Abaca (in bales)										
Fertilizer Manufactured	544.07	85.45	584.6	101.25	670.44	119.92	588.42	114.54	493.19	98.95
Seaweeds & Carageenan					37.58	82.83	36.78	94.07	40.35	94.72

Sources: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS) based on data from the National Statistics Office (NSO).

Appendix Table 19 Price of top ten Philippine agricultural exports (f.o.b. US $/kg), 1980-1997.

Commodity	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Coconut oil (crude refined)	0.62	0.51	0.44	0.52	0.99	0,53	0.27	0,37	0.62	0.49	0.32	0,36	0.55	0.42	0.56	0,62	0.72	0.62
Banana, fresh	0.12	0.14	0.16	0.16	0.15	0.14	0.15	0.16	0.17	0.17	0.18	0.18	0.19	0.20	0.19	0.18	0.19	0.19
Tuna	1.63	1.87	1.87	1.88	1.74	1.63	1.77	1.87	2.39	2.28	2.14	2.25	203	2.08	2.16	2.25	2.19	2.10
Pineapple & pineapple products	0.31	0.34	0.33	0.30	0.34	0.33	0.33	0.47	0.46	0.47	0.49	0.36	0.38	0.35	0.32	0.31	0.36	0.36
Desiccated coconut	1.33	1.18	0.76	0.98	1.38	1.17	0.65	0.79	0.89	0.80	0.81	0.82	1.03	0.90	0.93	0.93	1.22	1.15
Copra oil cake/meal	0.15	0.13	0.12	0.13	0.11	0.08	0.09	0.10	0.12	0.11	0.08	0.09	0.10	0.09	0.09	0.09	0.12	0.9
Sugar	0.35	0.44	0.34	0.31	0.28	0.32	0.39	0.37	0.42	0.42	0.45	0.42	0.42	0.31	0.33	0.43	0.43	0.42
Copra *	0.39	0.31	0.28	0.28			0.14	0.25	0.35	0.32	0.21	0.23	0.33	0.26	0.36	0.38	0.44	0.37
Coffee	2.82	1.92	2.01	2.17	2.34	2.27	2.79	1.97	1.88	1.68	0.88	1.01	1.03	1.20	1.82	2.92	4.95	3.78
Tobacco (unmanufactured)	1.41	-	1.78	1.48	1.29	1.24	1.24	1.42	1.44	1.71	1.95	1.75	1.79	1.49	1.44	1.66	1.60	1.60
Shrimps and prawns	8.05	7.86	8.33	7.33	5.34	7.50	9.18	9.05	10.60	8.88	9.06	9.10	9.04	9.89	10.99	11.98	11.35	12.32
Abaca (in bales)	0.09	0.08	0.07	0.07	0.12	0.09	0.06	0.06	0.08	0.10	0.09	0.10	0.12	0.14	0.12	0.14	0.16	0.14
Fertilizer (manufactured)	0.27	0.74	0.08	0.16	0.23	0.17	0.19	0.16	0.20	0.17	0.17	0.18	0.18	0.16	0.17	0.18	0.19	0.20
Seaweeds and carageenan	0.61	0.59	0.74	0.80	0.62	0.82	0.77	0.88	1.01	1.20	1.41	0.79	0.90	0.84	0.94	2.20	2.56	2.35

* Export ban in 1984-1985.

Sources: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS).
Foreign Trade Statistics, various years. Published by the National Statistics Office (NSO).

Appendix Table 20 Agricultural imports by commodity classification (f.o.b. value in million US $), the Philippines, 1980-1997.

Commodity	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
I. Food & Live Animals Chiefly for Food	491.85	563.22	649.72	527.65	424.86	426.36	388.51	450.31	684.32	885.89	1 072.83	786.10	990.15	1,132.28	1,336.02	1,850.55	2,237.25	2,226.94
A. Live-Animals chiefly for food	3.15	3.65	3.96	4.29	3.36	3.44	4.66	6.22	9.10	11.63	14.14	12.31	2.57	37.67	48.51	79.20	77.12	94.91
B. Meat & Meat Preparation	12.15	16.04	20.34	12.94	2.27	3.48	3.67	6.93	9.97	17.76	20.51	16.81	23.42	29.50	57.32	68.97	96.71	129.91
C. Dairy Products and Birds Eggs	112.46	134.91	166.81	128.21	65.60	71.90	98.12	149.54	161.44	216.56	252.84	210.73	252.80	260.50	316.36	409.53	388.46	406.01
D. Fish and Fish Preparations	26.46	29.55	38.09	6.80	1.02	1.39	8.70	15.65	35.39	36.52	47.93	62.19	61.12	48.78	52.78	58.76	68.88	70.18
E. Cereals & Cereals Preparations	214.30	229.96	242.03	248.55	245.01	278.06	168.31	134.41	228.25	338.64	470.87	226.24	301.04	352.15	394.65	533.23	843.08	771.12
F. Vegetables & Fruits	11.02	14.47	15.20	14.24	5.89	7.98	16.43	18.09	36.85	51.00	50.25	37.00	54.42	65.68	99.36	96.78	122.68	137.31
G. Sugar & Sugar-Preparation & Honey	3.33	4.96	4.58	5.01	2.38	3.79	4.38	10.77	20.11	10.20	7.86	12.60	21.42	23.29	39.56	172.81	251.07	62.21
H. Coffee, Tea, Cocoa, Spices and Manufactures thereof	26.72	45.77	42.89	20.86	6.09	8.74	3.70	5.44	8.10	13.72	21.70	23.65	26.45	32.18	44.89	52.24	49.66	78.94
I. Feeding Stuff for Animals (not including unmilled cereal)	80.75	81,09	111.36	80.84	92.07	47.04	87.05	97.64	166.50	176.97	173.91	152.95	185.66	234.31	194.94	263.05	197.26	310.68
J. Miscellaneous edible products and preparation	1.50	2.82	4.46	5.90	1.16	1.55	3.36	5.62	8.81	12.89	12.81	31.53	41.25	48.22	87.65	115.98	142.33	165.72
II. Tobacco &																		

Tobacco Manufactures	35.76	42.06	53.13	58.32	28.79	65.16	65.90	94.39	78.06	65.50	65.36	81.80	102.80	96.50	177.92	118.81	71.52	141.48

Source: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS) based on data from the National Statistics Office (NSO).

Continued ……

Appendix Table 20 Agricultural imports by commodity classification (f.o.b. value in million US $), the Philippines, 1980-1997 (continued).

Commodity	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
III. Crude Materials, Inedible Exc. Fuels	340.85	258.22	258.20	255.36	192.91	216.85	293.48	132.14	153.46	166.82	173.74	181.71	174.30	159.58	231.60	257.13	288.77	244.39
A. Oils seeds and Oleagenous fruit	2.86	117.67	7.85	7.43	0.18	6.36	4.81	8.90	14.04	19.08	16.78	22.38	18.07	28.51	52.46	44.69	76.25	68.51
B. Crude rubber (including synthetic and reclaimed)	14.09	17.94	17.18	16.81	12.09	5.94	10.88	13.27	18.08	22.45	23.88	21.36	25.40	26.22	29.67	34.69	34.14	28.90
C. Fertilizer containing the true f fertilizing substances, nitrogen, phosphorus, potassium/ crude fertilzer	3.80	3,37	7.37	4.23	13.75	20.44	4.60	45.15	29.92	38.97	38.95	4.,32	32.94	14.39	17.63	43.30	28.54	15.71
D. Crude animal & Veg. Materials (inc. hides, skin and furskins, raw)	6.94	7.06	12.85	13.77	7.34	9.48	10.90	64.82	91.42	86.33	94.13	97.65	97.89	90.46	131.84	134.17	149.84	131.27
E. Cotton	43.98	33.58	19.92	29.17	19.81	25.09	32.71											
F. Veg. Fiber. Textile fiber (other than cotton & jute) & wastes of such fibers	0.01	0.00	0.04	0.38	0.66	0.01	0.51											
IV. Animals & Vegetable Oil, Fats Waxes	18.52	17.61	15.96	25.46	33.33	13.32	12.52	12.85	18.00	23.62	24.50	22.05	33.51	23.63	37.74	38.35	56.71	57.21
A. Animal Oils																		

and Fats	5.96	6.12	4.73	4.33	5.34	4.03	3.23	3.85	5.51	5.23	6.08	5.77	9.52	10.58	13.47	20.18	24.40	24.41
B. Animal & Vegetables Oil & Fats processed	1.62	1.62	1.55	2.07	0.91	1.63	0.91											

Source: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS) based on data from the National Statistics Office (NSO).

Continued .....

Appendix Table 20 Agricultural imports by commodity classification (f.o.b. value in million US $), the Philippines, 1980-1997 (continued).

Commodity	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
C. Fixed Vegetables Oils and Fats	10.94	9.87	9.67	19.05	27.08	7.66	8.39	9.00	12.49	18.39	18.43	16.25	23.99	13.05	24.27	18.17	32.31	32.80
V. Fertilizers, Manufactured	139.40	104.36	107.99	90.91	87.99	105.59	83.41	89.24	107.74	103.69	134.07	131.06	144.89	124.94	169.61	194.53	194.62	213.96
VI. Agricultural Chemicals & Materials	14.39	18.60	19.06	17.41	18.48	19.57	22.36	21.84	24.45	27.77	30.32	26.27	26.54	35.50	70.51	81.38	104.02	108.04
VII. Agricultural Machinery	51.84	54.24	49.64	27.09	22.12	9.50	9.24	14.66	40.29	43.92	54.41	30.19	81.51	53.77	89.58	107.90	142.96	107.77
A. Agric'l Machinery excl. tractors	11.89	10.90	8.39	5.72	15.51	1.72	1.39	2.08	5.25	3.66	7.42	8.65	9.66	7.84	15.79	15.05	23.21	67.96
B. Tractors fitted or not w/power to be of winches or pulleys/ Tractors	16.17	18.06	8.06	5.95	1.22	0.40	0.69	0.70	2.30	4.98	3.21	3.45	3.65	3.67	5.23	8.49	13.19	12.93
C. Food Processing Machines & parts thereof	21.96	24.35	31.36	15.26	5.06	6.46	6.06	8.85	21.60	27.49	30.72	16.74	72.70	33.79	66.17	81.55	102.16	
D. Drip Irrigation system		0.00	0.01	0.02	0.02		0.00											
E. For Processing Natural or Man-made Textile Fibers								1.72	10.22	6.24	11.66			4.27	1.03	1.53	2.95	4.52
F. Agricultural Spray & Dusters								1.31	0.92	1.55	1.39	1.35	1.50	4.20	1.36	1.28	1.45	1.67
G. Other Agricultural/ Horticultural/ Appliances for projecting, disposing/liquids	1.83	1.42	1.83	0.14	0.33	0.92	1.10											

Total Agricultural Exports	823.44	862.16	960.71	818.60	655.44	706.83	656.55	816.67	1,106.24	1,317.21	1,555.23	1 259.17	1 599.70	1,626.20	2,112.98	2,648.65	3,095.85	3,101.79
Total of All Imports	7,726.91	7,945.68	7,666.92	7,486.63	6,069.61	5,110.67	5,043.60	6,736.97	8,159.24	10,418.82	12,206.16	12,051.74	14,518.93	17,597.40	21,332.57	26,537.63	32,426.93	35,933.82

Source: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS) based on data from the National Statistics Office (NSO).

Appendix Table 21 Top ten Philippine agricultural imports (quantity in '000 mt; f.o.b. value in million US $), 1980-1997.

Commodity	1980		1981		1982		1983		1984		1985	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Wheat and Meslin	785.72	148.55	796.43	150.77	924.10	157.68	797.17	134.58	766.10	131.10	662.71	106.05
Urea	447.36	88.99	246.18	56.66	332.65	59.27	337.65	45.06	274.79	43.19	369.91	61.68
Milk and Cream	96.22	92.63	78.41	106.18	104.28	138.53	91.33	102.76	55.28	47.93	73.51	59.81
Tobacco Unmanufactured	13.94	33.26	15.39	39.16	12.87	49.48	13.16	53.37	8.27	26.16	12.26	59.17
Soybean Oil Cake / other Residue	226.96	52.36	243.92	62.38	373.50	78.62	274.70	59.89	374.88	81.93	225.78	35.56
Cotton	30.13	43.98	20.35	33.58	14.23	19.92	21.49	29.17	16.15	19.81	20.96	25.09
Malt, Whole / Ground	84.11	21.38	83.92	24.77	100.99	28.64	125.21	32.07	135.17	36.56	77.91	17.94
Flour, Meals & Pellets of Fish, Meat & Crustaceans	79.68	26.35	49.83	16.85	107.37	30.88			17.34	4.81	48.16	9.24
Maize, Unmilled	29.94	35.12	253.14	42.08	340.94	42.67	528.44	70.75	182.40	28.86	281.18	33.47
Agricultural Machinery (in nos.)	42,279.00	34.72	60,037.00	37.47	35,904.00	37.83	40,386.00	17.37				
Meat of Bovine Animals							4.43	10.85				
Rice									189.72	42.32	538.10	110.40
Soybean												
Tobacco Manufactured												

Source: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS) based on data from the National Statistics Office (NSO).
Note: Data on quantity and value in this table refer to the years when an individual commodity is included among the top ten agricultural imports only.

Continued ……..

Appendix Table 21 Top ten Philippine agricultural imports (quantity in '000 mt; f.o.b. value in million US $), 1980-1997 (continued).

Commodity	1986		1987		1988		1989		1990		1991	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Wheat and Meslin	959.68	129.02	671.86	82.07	1,088.93	138.50	1,195.69	196.89	1,531.47	219.83	1,470.37	172.44
Urea	540.27	54.24	617.43	59.21	608.03	72.46	391.09	47.97	625.50	72.83	410.24	59.41
Milk and Cream	94.01	85.02	137.29	130.54	114.78	136.95	115.37	180.13	147.25	220.64	134.53	177.21
Tobacco Unmanufactured	12.72	63.46	19.25	91.92	20.11	71.98	13.58	61.05	11.95	58.83	19.46	71.33
Soybean Oil Cake / other Residue	364.32	64.91	400.73	70.35	513.15	111.18	537.03	122.16	624.28	126.79	593.05	110.47
Cotton	42.61	32.71	49.94	48.11	56.85	71.55	54.25	70.33	51.08	75.63	55.61	80.01
Malt, Whole / Ground	71.73	13.61	135.53	19.79	147.86	27.03	197.85	43.83	181.84	46.96	163.98	41.30
Flour, Meals & Pellets of Fish, Meat & Crustaceans	70.35	16.90	53.78	19.10	76.66	35.04	82.27	37.08	81.10	31.78	61.56	27.01
Maize, Unmilled							153.94	19.22	344.21	49.65		
Agricultural Machinery (in nos.)	8,440.00	5.05	22,143.00	6.48	43,217.00	18.93	44,106.00	22.15				
Meat of Bovine Animals	2.52	2.84	4.31	5.33							10.25	15.36
Rice					119.19	36.79	195.18	51.36	592.73	116.89	0.06	0.04
Soybean											63.25	15.93
Tobacco Manufactured												

Source: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS) based on data from the National Statistics Office (NSO).
Note: Data on quantity and value in this table refer to the years when an individual commodity is included among the top ten agricultural imports only.

Continued ……..

Appendix Table 21 Top ten Philippine agricultural imports (quantity in '000 mt; f.o.b. value in million US $), 1980-1997 (continued).

Commodity	1992		1993		1994		1995		1996		1997	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Wheat and Meslin	1,745.10	235.06	1,797.85	259.89	2,146.89	324.03	2,101.74	348.60	1,898.10	374.88	2,398.83	422.68
Urea	528.61	74.61	596.39	66.90	689.28	89.61	630.87	109.46	649.13	107.35	625.62	89.24
Milk and Cream	147.08	215.77	142.21	220.40	182.06	267.58	202.24	357.21	183.17	329.38	217.28	343.24
Tobacco Unmanufactured	21.81	92.49	13.55	55.61	26.64	89.52	25.23	87.65	13.56	62.10	21.95	121.07
Soybean Oil Cake / other Residue	676.81	129.66	822.63	174.62	655.06	129.76	898.39	167.96	430.54	97.13	815.62	183.94
Cotton	60.31	78.16	57.69	66.56	76.65	107.28	61.60	109.90	76.68	126.30	67.83	106.81
Malt, Whole / Ground	160.39	40.73	126.95	34.06							128.63	37.96
Flour, Meals & Pellets of Fish, Meat & Crustaceans	97.49	41.67	100.14	35.48	126.88	43.40	144.65	56.86	110.15	56.21	151.12	75.53
Maize, Unmilled												
Agricultural Machinery (in nos.)	77,337.00	38.93				89.58	398,074.00	69.17	270,467.00	116.61		
Meat of Bovine Animals	14.40	20.72			35.53	46.90	42.34	57.32	55.44	75.85	68.49	96.98
Rice			201.61	35.76			263.25	75.67	862.38	294.04		
Soybean												

Tobacco Manufactured			4.81	40.89	9.85	88.40					1.63	20.40

Source: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS) based on data from the National Statistics Office (NSO).
Note: Data on quantity and value in this table refer to the years when an individual commodity is included among the top ten agricultural imports only.

Appendix Table 22 Prices of top ten Philippine agricultural imports (f.o.b. $/kg), 1980-1997.

Commodity	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Wheat and meslin	0.19	0.19	0.17	0.17	0.17	0.16	0.13	0.12	0.13	0.16	0.14	0.12	0.13	0.15	0.15	0.17	0.20	0.18
Milk and cream and products	0.96	1.35	1.33	1.13	0.87	0.81	0.90	0.95	1.19	1.56	1.50	1.32	1.47	1.55	1.47	1.77	1.80	1.58
Cotton	1.46	1.65	1.40	1.36	1.23	1.20	0.77	0.96	1.26	1.30	1.48	1.44	1.30	1.15	1.40	1.78	1.65	1.57
Urea	0.20	0.23	0.18	0.13	0.16	0.17	0.10	0.10	0.12	0.12	0.12	0.14	0.14	0.11	0.13	0.17	0.17	0.14
Soybean oil /cake, other residues	0.23	0.26	0.21	0.22	0.22	0.16	0.18	0.18	0.22	0.23	0.20	0.19	0.19	0.21	0.20	0.19	0.23	0.22
Tobacco unmanufactured	2.39	2.54	3.84	4.06	3.16	4.83	4.99	4.78	3.58	4.50	492	3.67	4.24	4.10	3.36	3.47	4.58	5.52
Flour and meal and pellets	0.33	0.34	0.29	0.25	0.28	0.19	0.24	0.34	0.46	0.43	0.39	0.44	0.43	0.35	0.34	0.39	0.51	0.5
Malt, whole/ground	0.25	0.30	0.28	0.26	0.27	0.23	0.19	0.15	0.18	0.22	0.26	0.25	0.25	0.27	0.29	0.28	0.29	0.29
Maize, unmilled (corn)	0.14	0.17	0.13	0.13	0.16	0.12	0.42	0.10	0.10	0.12	0.14	0.30	0.30	0.46	0.47	0.16	0.21	0.18
Meat of bovine animals	2.15	2.40	2.30	2.45	2.70	1.68	1.13	1.24	1.48	1.47	1.55	1.50	1.44	1.51	1.32	1.35	1.37	1.42

Rice	1.61	0.95	1.00	1.00	0.22	0.21	0.15	0.34	0.31	0.26	0.19	0.64	0.39	0.18	0.44	0.29	0.34	0.29

Note: Unit price of agricultural machinery was not included due to problems in averaging prices of large agricultural machineries and their small parts.
Sources: Agricultural Foreign Trade Statistics, various years. Published by the Bureau of Agricultural Statistics (BAS).
Foreign Trade Statistics, various years. Published by the National Statistics Office (NSO).

Appendix Table 23 Estimated paddy production losses, area affected and damaged by cause, the Philippines, 1970-1990.

Year	All Causes	Typhoon and Flood	Drought	Pests and Disease	Rats	Other Causes	All Causes	Typhoon and Flood	Drought	Pests and Disease	Rats	Other Causes
	Quantity (mt)						Area Damaged (ha)					
1970	9,363	7,612	-	1,029	722	-	4,600	4,240	-	320	40	-
1971	470,237	470,158	-	79	-	-	139,560	139,530	-	30	-	-
1972	319,430	267,022	3,168	47,159	2,081	-	47,010	36,970	-	9,900	140	-
1973	842,334	262,020	544,451	34,222	1,641	-	299,150	46,960	236,360	15,240	590	-
1974	567,748	509,318	2,130	51,138	282	4,880	96,130	83,760	220	11,870	40	240
1975	724,957	552,978	117,832	50,421	3,502	224	154,120	105,510	37,280	10,360	790	180
1976	438,690	172,285	5,750	259,040	1,295	320	68,720	41,670	1,050	25,320	620	60
1977	453,225	12,960	33,180	402,095	210	4,780	32,400	2,430	3,820	25,230	20	900
1978	1,054,215	300,045	472,330	280,670	-	1,170	234,280	64,330	121,570	48,270	-	110
1979	1,422,715	927,760	223,405	271,550	-		253,940	146,550	60,480	49,910	-	-
1980	137,830	77,440	13,580	42,695	-	4,115	14,590	6,990	1,620	5,670	-	310
1981	487,815	427,770	20,550	25,465	-	14,030	65,790	61,720	240	3,820		10
1982	324,710	237,105	52,705	33,120	1,015	765	43,960	35,090	2,730	5,880	210	50
1983	729,175	127,035	590.000	11,650	-	490	118,450	11,010	105,300	2,000	-	140
1984	134,125	37,140	42,675	53,100	235	975	20,490	5,220	8,000	7,140	40	90
1985	248,830	196,920	21,105	23,555	4,920	2,330	50,810	40,270	4,220	5,280	400	640
1986	396,505	313,635	43,105	26,020	495	13,250	37,010	26,160	5,960	4,390	100	400
1987	306,258	123,644	170,432	11,436	-	746	50,270	18,900	30,360	900		110
1988	437,652	380,501	46,552	10,010	-	589	72,660	56,290	13,210	2,980		180
1989	259,038	245,809	3,649	9,448	-	132	30,400	27,320	1,700	1,340		40
1990	237,513	108,234	123,131	415	-	5,733	47,210	13,390	32,080	480		1,260

Note: Severe droughts that were comparable with the 1982 and 1987 drought occurred from 1991 to1993. Moreover, severe drought recurred in 1994 to 1995 affecting major padi producing areas. Moderate dry spell was also experienced in some areas.
Source: Philippine Rice Research Institute-Bureau of Agricultural Statistics (PhilRice-BAS 1984).

Appendix Table 24 Paddy production, area harvested and yield, by ecosystem, the Philippines, 1970-1997.

Year	Production ('000 mt)					Area Harvested ('000 ha)					Yield (mt/ha)				
		Rainfed					Rainfed					Rainfed			
	Irrigated	Total	Lowland Rainfed	Upland	Total	Irrigated	Total	Lowland Rainfed	Upland	Total	Irrigated	Total	Lowland Rainfed	Upland	Total
1970	2,952.1	2,370.0	2,008.1	361.9	5,322.1	1,431.9	1,673.4	1,288.9	384.6	3,105.4	2.06	1.42	1.56	0.94	1.71
1971	2,784.0	2,471.2	2,165.0	306.3	5,255.3	1,411.6	1,835.0	1,479.3	355.7	3,246.6	1.97	1.35	1.46	0.86	1.62
1972	2,612.6	2,502.4	2,177.3	325.1	5,114.0	1,356.1	2,034.4	1,633.0	401.4	3,390.6	1.93	1.23	1.33	0.81	1.51
1973	2,890.7	2,496.0	2,121.8	374.2	5,386.7	1,448.3	1,927.8	1,506.9	420.9	3,376.1	2.00	1.29	1.41	0.89	1.60
1974	2,978.8	2,569.9	2,198.5	371.4	5,548.7	1,438.7	2,086.3	1,653.7	432.7	3,525.0	2.07	1.23	1.33	0.86	1.57
1975	3,446.2	2,935.2	2,596.5	338.7	6,381.4	1,492.7	2,138.2	1,744.8	393.4	3,630.9	2.31	1.37	1.49	0.86	1.76
1976	3,556.6	2,986.0	2,596.9	389.1	6,542.6	1,535.3	2,116.2	1,722.1	394.1	3,651.5	2.32	1.41	1.51	0.99	1.79
1977	3,946.3	3,308.0	2,845.8	462.2	7,254.4	1,540.6	2,162.3	1,719.1	443.2	3,702.9	2.56	1.53	1.66	1.04	1.96
1978	4,079.9	3,131.7	2,662.6	469.1	7,211.6	1,526.8	2,021.9	1,587.8	434.1	3,548.7	2.67	1.55	1.68	1.08	2.03
1979	4,534.9	3,150.0	2,748.7	401.2	7,684.8	1,535.8	2,006.9	1,612.9	394.0	3,542.7	2.95	1.57	1.7	1.02	2.17
1980	4,506.7	3,139.9	2,878.0	261.8	7,646.5	1,608.9	1,861.6	1,595.7	265.9	3,470.5	2.80	1.69	1.8	0.98	2.20
1981	4,788.2	3,122.5	2,886.9	235.6	7,910.7	1,655.7	1,763.3	1,533.5	229.7	3,419.0	2.89	1.77	1.88	1.03	2.31
1982	5,343.8	2,989.9	2,817.5	172.5	8,333.7	1,741.0	1,610.2	1,439.9	170.3	3,351.1	3.07	1.86	1.96	1.01	2.49
1983	4,888.5	2,406.4	2,227.0	179.4	7,294.9	1,667.8	1,386.5	1,219.6	167.0	3,054.3	2.93	1.74	1.83	1.07	2.39
1984	5,135.6	2,693.3	2,526.7	166.6	7,828.9	1,754.7	1,407.7	1,249.7	158.0	3,162.3	2.93	1.91	2.02	1.05	2.48
1985	5,821.0	2,984.6	2,833.3	151.4	8,805.6	1,837.6	1,468.9	1,333.4	135.5	3,306.5	3.17	2.03	2.12	1.12	2.66
1986	5,980.1	3,266.7	3,062.0	204.7	9,246.8	1,878.1	1,5861	1,417.0	169.2	3,464.2	3.18	2.06	2.16	1.21	2.67
1987	5,809.0	2,730.1	2,587.7	143.1	8,539.9	1,851.6	1,404.3	1,279.8	124.5	3,255.9	3.14	1.94	2.02	1.15	2.62
1988	6,105.7	2,865.0	2,762.2	103.1	8,971.0	1,956.0	1,436.6	1,348.7	87.9	3,392.7	3.12	1.99	2.05	1.17	2.64
1989	6,591.7	2,867.3	2,752.2	114.7	9,458.8	2,063.8	1,433.5	1,349.4	84.2	3,497.3	3.19	2.00	2.04	1.36	2.70
1990	6,604.8	2,714.4	2,589.0	125.5	9,319.3	2,009.9	1,308.8	1,213.1	95.7	3,318.7	3.29	2.07	2.13	1.31	2.81
1991	6,831.7	2,841.5	2,668.2	173.3	9,673.3	2,060.4	1,364.5	1,238.4	126.1	3,425.0	3.32	2.08	2.15	1.37	2.82

1992	6,611.7	2,517.2	2,370.3	146.9	9,128.9	1,980.4	1,217.7	1,128.3	89.3	3,198.1	3.34	2.07	2.1	1.64	2.85
1993	6,729.6	2,704.6	2,579.4	125.2	9,434.2	2,017.2	1,265.2	1,180.2	85.0	3,282.4	3.34	2.14	2.19	1.47	2.87
1994	7,511.1	3,027.0	2,841.4	185.6	10,538.1	2,219.4	1,432.2	1,315.9	116.3	3,651.5	3.38	2.11	2.16	1.60	2.89
1995	7,598.6	2,942.1	2,755.7	186.4	10,540.6	2,334.4	1,424.3	1,303.7	120.6	3,758.7	3.26	2.07	2.11	1.54	2.80
1996	8,233.6	3,049.9	2 ,817.1	232.8	11,283.6	2,484.5	1,466.6	1,303.6	163.1	3,951.1	3.31	2.08	2.16	1.43	2.86
1997	8,476.4	2,792.5	2,588.0	204.5	11,269.0	2,496.9	1,345.4	1,208.1	137.3	3,842.3	3.39	2.08	2.14	1.49	2.93

Source: Bureau of Agricultural Statistics (BAS).

Appendix Table 25 Maize production, area harvested and yield, the Philippines, 1980-1997.

	Production ('000 mt)			Area Harvested ('000 ha)			Yield (mt/ha)		
Year	Total	White	Yellow	Total	White	Yellow	Total	White	Yellow
1980	3,050.2	2,717.8	332.4	3,199.0	2,,850.0	394.0	0.95	0.95	0.95
1981	3,295.8	2,710.7	585.0	3,294.7	2,683.3	611.5	1.00	1.01	0.96
1982	3,404.1	2,776.0	628.0	3,382.9	2,811.8	571.2	1.00	0.99	1.10
1983	3,134.1	2,355.8	778.3	3,131.9	2,543.9	588.1	1.00	0.93	1.32
1984	3,250.3	2,288.5	961.8	3,226.9	2,537.6	689.3	1.01	0.90	1.40
1985	3,862.8	2,977.8	885.0	3,510.9	2,843.5	667.4	1.10	1.05	1.33
1986	4,090.7	2,925.1	1,165.6	6,595.0	2,762.7	832.3	1.14	1.06	1.40
1987	4,278.1	2,764.1	1,513.4	3,682.6	2,692.7	990.0	1.16	1.03	1.53
1988	4,427.9	2,858.9	1,569.0	6,745.1	2,744.8	1,000.0	1.18	1.04	1.57
1989	4,522.2	2,922.9	1,599.3	3,689.2	2,702.4	986.8	1.23	1.08	1.62
1990	4,853.9	2,965.5	1,888.3	3,879.6	2,738.5	1,081.0	1.27	1.08	1.75
1991	4,655.0	2,905.7	1,749.3	3,589.5	2,583.4	1,006.1	1.30	1.12	1.74
1992	4,618.8	2,699.6	1,919.3	3,331.4	2,350.9	980.5	1.39	1.15	1.96
1993	4,798.0	2,627.0	2,170.9	3,149.3	2,098.4	1,050.0	1.52	1.25	2.07
1994	4,519.2	2,088.9	2,429.3	3,005.8	1,865.9	1,140.0	1.50	1.12	2.13
1995	4,128.5	2,266.1	1,862.4	2,692.3	1,670.3	1,022.0	1.53	1.12	2.22
1996	4,151.3	2,268.2	1,863.1	2,735.7	1,695.6	1,040.1	1.52	1.11	2.18
1997	4,332.4	2,453.2	1,879.2	2,725.8	1,699.0	1,026.9	1.59	1.10	2.39

Source: Bureau of Agricultural Statistics (BAS).

Appendix Table 26 Coconut production, area harvested, number of bearing trees and yield, the Philippines, 1980-1997.

Year	Area Planted ('000 hectares)	Nut Production ('000 nuts)	No. of Bearing Trees ('000 trees)	Nuts per bearing tree
1980	3,236	13,369	313,736	43
1981	3,264	14,190	314,110	45
1982	3,243	13,146	309,620	42
1983	3,241	12,368	308,750	40
1984	3,263	11,738	306,950	38
1985	3,310	12,028	312,680	38
1986	3,323	14,335	314,340	45
1987	3,290	13,730	312,640	44
1988	3,260	12,482	308,200	40
1989	3,110	11,810	289,950	41
1990	3,112	11,940	290,173	41
1991	3,093	11,291	289,604	39
1992	3,077	11,405	288,064	40
1993	3,075	11,328	277,398	41
1994	3,083	11,207	276,496	40
1995	3,064	12,183	281,063	43
1996	3,149	11,368	284,899	40
1997P	3,314	12,053	295,999	41

P - Preliminary.
Source: Bureau of Agricultural Statistics (BAS).

Appendix Table 27 Potato production by region, the Philippines, 1991-1997.

Region	1991	1992	1993	1994	1995	1996	1997
Philippines	149,537	155,611	140,998	147,425	85,302	95,666	87,252
CAR	131,402	137,636	122,163	126,181	54,118	60,411	56,887
Benguet	128,325	134,370	118,053	123,471	49,282	51,480	52,726
Mt. Province	3,056	3,244	4,087	2,688	4,815	8,910	4,120
Ilocos Region	75	58	70	32	_	_	_
Cagayan	66	66	62	179	176	97	193
Nueva Vizcaya	46	43	39	152	150	90	193
Central Visayas	19	175	188	161	165	168	162
Cebu	83	94	118	114	114	118	112
Western Mindanao	28	32	32	28	29	29	29
Northern Mindanao	16,296	16,301	17,056	17,739	25,810	25,988	21,024
Bukidnon	16,296	16,301	17,056	17,739	25,810	25,988	21,024
Southern Mindanao	1,178	1,020	1,097	2,439	4,350	8,263	
Davao Sur	1,073	908	985	2,269	4,174	8,025	
South Cotabato	91	98	71	96	101	155	
Central Mindanao	373	323	330	664	655	710	553
North Cotabato	65	63	66	77	68	68	68
Sultan Kudarat	308	260	264	587	587	641	484

Source: Bureau of Agricultural Statistics (BAS).