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**The Philippines: Shadow WTO Agricultural
Domestic Support Notifications**

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Markets, Trade, and Institutions Division

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

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ABSTRACT

The objective of this paper is to review the agricultural trade and domestic policies of the Philippines and to provide an assessment of the types and levels of domestic support relative to the rules of the World Trade Organization (WTO). Changes in trade protection and support in the Philippines, including tariff structure, quantitative restrictions, and domestic support, are discussed and analyzed. The paper also discusses the pattern of public expenditure on agriculture in the Philippines, including major agricultural productivity-enhancing programs.

The present structure of protection and support favors the agricultural sector. Trade protection is higher in agriculture relative to manufacturing. There is a quantitative restriction on rice imports and a tariff rate quota in several agricultural commodities. The green box payments and the special and differential treatment constitute the major domestic support for agriculture. These support payments are relatively substantial and will continue to be sizable in the future to support the government's food sufficiency policy. However, the trade-distorting market price support for rice and corn is significantly below the *de minimis* limit that applies to the Philippines under the WTO Uruguay Round Agreement on Agriculture.

Keywords: Philippine agriculture; agricultural support; WTO Doha Round; notification of domestic support; WTO compliance

ABBREVIATIONS AND ACRONYMS

AFMA	Agriculture and Fisheries Modernization Act
AFMP	Agriculture and Fisheries Modernization Program
AMS	Aggregate Measure of Support
BAS	Bureau of Agriculture Statistics
DA	Department of Agriculture
DAR	Department of Agrarian Reform
DBM	Department of Budget and Management
DS	Domestic Support
GAA	General Appropriations Act
GDP	Gross Domestic Product
GMA	Ginintuang Masaganang Ani (“Golden and Bountiful Harvest”)
GOCC	Government-Owned and -Controlled Corporation
HRCF	Hybrid Rice Commercialization Program
LGU	Local Government Unit
MAV	Minimum Access Volume
MFN	Most Favored Nation
MPS	Market Price Support
NFA	National Food Authority
NPR	Nominal Protection Rate
NSCB	National Statistical Coordination Board
OSEC	Office of the Secretary (Department of Agriculture)
PDAF	Priority Development Assistance Funds
QRs	Quantitative Restrictions
SDT	Special and Differential Treatment
TRP	Tariff Reduction Program
URAA	Uruguay Round Agreement on Agriculture
WTO	World Trade Organization

CONFERENCE PROGRAM

Improving WTO Transparency: Shadow Domestic Support Notifications

Measurement Issues and Analysis for Eight Countries—
European Union, United States, Japan, Norway, Brazil, China, India and the Philippines
<http://www.ifpri.org/events/conferences/2008/20080314.asp>

Friday, March 14

9:00-10:00 An Overview of WTO Domestic Support Notifications

David Orden

Discussion Opener: Lars Brink

10:00-11:10 European Union

Tim Josling and Alan Swinbank

Discussion Opener: Erling Vårdal

Coffee Break

11:30-12:40 United States

David Blandford and David Orden

Discussion Opener: Munisamy Gopinath

Lunch

1:30-3:30 Brazil

André Nassar and Diego Ures

China

Fuzhi Cheng

Discussion Opener (both papers): Caesar Cororaton

Afternoon Break

3:45-5:45 India

Munisamy Gopinath

Philippines

Caesar Cororaton

Discussion Opener (both papers): Yoshihisa Godo

Saturday, March 15

9:00-11:00 Japan

Yoshihisa Godo

Norway

Erling Vårdal

Discussion Opener (both papers): André Nassar

11:15-12:30 Wrap Up

1. INTRODUCTION

The Philippine agricultural sector employs 36 percent of the labor force and accounts for roughly 14 percent of gross domestic product (GDP). When the agriculture-based food-processing sector is included, the whole of agriculture contributes 26 percent to GDP. From the 1950s to the 1970s, government policies were biased against agriculture (David 2003; Intal and Power 1990). During this period, the government implemented the following policies: (a) an import substitution policy until the 1980s, creating a bias in favor of manufacturing and against agriculture and exports, which effectively penalized the returns to agricultural investments; (b) export taxes and an exchange rate overvaluation, which greatly reduced earnings from agriculture; and (c) an intervention through the creation of government corporations, which, based on a number of studies, siphoned off the gains from trade (Intal and Power 1990). However, starting in the early 1980s, policy shifted toward protecting agriculture. The system of protection included higher tariffs and a nominal protection rate, as compared with the manufacturing sector, as well as high domestic support (Aldaba 2005; David 2003).

The objective of this paper is to analyze trade policies and public domestic support of agriculture in the Philippines and to assess the types and levels of domestic support relative to rules of the World Trade Organization (WTO). One of the government's key goals in agriculture is a stable supply of food at affordable prices, pursued through trade protection and domestic support to agriculture. The domestic support comes in various forms. Some supports, such as roads, market infrastructure, irrigation, and postharvest facilities, are of a public good in nature. Other supports include product-specific interventions that affect markets and behavior of producers. In the context of the WTO, there are limits to the extent of these supports. This paper analyzes the support to agriculture in the case of the Philippines relative to the limits set by the WTO.

The paper is organized as follows. Following introduction in the first section, section 2 gives an overview of changes in the Philippine economic structure, particularly in agriculture. This section also includes a discussion of trade policies, public expenditure patterns in agriculture, and government program on rice productivity. Section 3 analyzes public domestic support in agriculture. As a member of the WTO, the Philippines has committed to submitting regular official notifications to the WTO on domestic support, market access, and export subsidies. However, it has not been current in its submission, with the latest notification covering the year 2001. To make the analysis current, this section estimates domestic support from 2002 to 2006 and provides projections up to 2013. Section 4 presents a brief summary and conclusion. Lastly, there are two appendices at the end of the paper: appendix A describes the method used in replicating the domestic support level for 2001, in estimating from 2002 to 2008, and in projecting from 2009 to 2013; and appendix B evaluates the market price support for rice and corn from 1995 to 2001, provides estimates from 2002 to 2008, and projects from 2009 to 2013.

2. PHILIPPINE ECONOMIC STRUCTURE AND POLICIES

To put the discussion in perspective, this section briefly describes the structure of the Philippine economy, with particular focus on agriculture. It highlights major shifts in policies in trade and agriculture, as well as patterns of the nominal protection rate and public expenditure in agriculture. This section also discusses the government's rice productivity program, including the program design, cost, and performance.

Structure of the Philippine Economy

Over the past two decades, there have been significant changes in the structure of the Philippine economy. The share of agriculture declined from 22 percent in 1991–94 to 14 percent in 2005–07 (Table 1). Over the same period, the shares of industry and manufacturing remained relatively stable at about 30 percent and 20 percent, respectively, while the share of the services increased from 45 percent to 54 percent.

Palay (rice paddy) is the dominant crop in agriculture. In the last 15 years, there has been an increase in agricultural land devoted to palay production. Of the available agricultural land, 26 percent was planted with palay in 1993 (Table 2). The share increased to 34 percent in 2005. The share of palay in the value of agricultural output has increased from 29 percent in 1993 to 36 percent in 2007.

Table 1. Production structure of the Philippine economy (% share)

Sectors	1991-94	1995-99	2000-04	2005-07
Agriculture, fishery and forestry	21.6	19.0	15.1	14.2
Agriculture and fishery	21.2	18.9	15.1	14.1
Forestry	0.4	0.2	0.1	0.1
Industry	33.0	31.7	31.9	31.6
Mining and quarrying	1.2	0.7	0.8	1.3
Manufacturing	24.1	22.3	22.9	22.7
Construction	5.3	5.9	5.0	4.0
Electricity, gas and water	2.5	2.7	3.1	3.6
Services	45.4	49.3	53.0	54.2
Total	100.0	100.0	100.0	100.0

Source: National Statistical Coordination Board, *National Income Accounts*, various issues.

Table 2. Production structure of Philippine agriculture (% share)

Commodities	1993		2007	
	Area	Value of output	Area ^{/1/}	Value of output
A. Cereals	51.4	40.9	54.1	48.6
Palay ^{/2/}	26.3	28.6	33.8	35.7
Corn	25.2	12.3	20.3	12.9
B. Major crops	33.0	34.4	36.6	35.6
Coconut	24.6	13.2	27.0	11.7
Sugarcane	3.1	5.5	3.1	5.7
Banana	2.6	6.0	3.5	11.4
Pineapple	0.3	3.1	0.4	1.9
Coffee	1.2	1.6	1.1	1.1
Mango	0.5	3.6	1.4	3.4
Tobacco	0.7	1.4	0.2	0.4
C. Other crops	15.6	24.8	9.3	15.8
Total	100.0	100.0	100.0	100.0

Source : Department of Agriculture. *Bureau of Agricultural Statistics*, various issues.

Notes: /1/ Data for 2005

/2/ Rice paddy

Corn and coconut are also major agricultural crops in the Philippines. The share of agricultural land devoted to corn production has declined from 25 percent in 1993 to 20 percent in 2005, while the share of agriculture land planted with coconut has increased from 25 percent to 27 percent. The share of corn in the value of agricultural output has improved slightly from 12 percent in 1993 to 13 percent in 2007, while the share of coconut has declined from 13 percent to 12 percent.

There have also been significant shifts in the structure of demand—most notably in foreign trade, which has evolved as a dominant sector in the Philippine economy. The share of exports of goods and services has improved from 30 percent in 1990–94 to 46 percent in 2005–07 (Table 3). Likewise, the share of imports of goods and services has increased from 36 percent in 1990–94 to 47 percent in 2005–07.

Table 3. Expenditure structure of the Philippine economy, (% share)

Expenditure items	1990-94	1995-99	2000-04	2005-07
Private consumption	74.1	73.4	69.5	69.7
Government consumption	10.1	12.6	11.6	9.7
Gross capital formation	22.8	22.1	18.3	14.8
Exports of goods and services	30.3	45.9	51.1	45.8
Less: Imports of goods and services	(36.0)	(52.6)	(53.3)	(47.4)
Statistical discrepancy	(1.3)	(1.4)	2.9	7.4
Total	100.0	100.0	100.0	100.0

Source: National Statistical Coordination Board, *National Accounts of the Philippines*, various issues

Within merchandise exports, the share of agricultural exports has dropped from 40 percent in 1980–84 to 7 percent in 2005–06 (Table 4), while the share of manufactured exports surged from 44 percent to 88 percent in those same years. Within manufactured exports, there have been significant shifts as well. Exports of clothing and garments at first saw strong growth, though this was later surpassed by the growth in exports of electronic products. At present, 60 percent of the US\$47 billion merchandise exports from the Philippines comprise office and telecom equipment, of which semiconductor is a major sub-sector. The declining share of garment exports from the Philippines is partly due to the entry of exports of clothing from China. More significant is the absence of a competitive and efficient local textile industry that supports the garments sector, as fabrics used in garments are mostly imported.

Table 4. Foreign trade structure of the Philippine economy

Commodities	1980-84	1985-89	1990-94	1995-99	2000-04	2005-06
Structure of exports (average % share)						
Agricultural products	40.3	28.3	18.5	9.5	6.0	6.6
Food	34.5	23.9	17.0	8.6	5.5	6.1
Fuels and mining products	15.4	11.1	8.2	3.9	3.1	5.4
Fuels	1.0	na	2.3	1.2	1.2	2.0
Manufactures	44.3	60.6	73.3	86.6	90.9	88.0
Iron and steel	1.0	na	0.5	0.2	0.1	0.4
Chemicals	1.8	na	2.8	1.5	1.1	1.5
Pharmaceuticals	0.1	na	0.1	0.1	0.1	0.1
Machinery and transport equipment	19.6	25.7	36.0	65.1	75.7	72.3
Office and telecom equipment	17.7	21.6	30.0	56.7	64.8	56.8
Electronic data processing and office equipment	0.0	na	2.2	15.8	20.1	18.2
Telecommunications equipment	0.4	na	7.4	4.4	3.1	2.2
Integrated circuits and electronic components	0.9	na	13.0	39.7	41.6	36.4
Automotive products	0.7	na	0.7	1.4	2.5	3.5
Textiles	1.1	1.0	1.5	1.3	0.8	0.6
Clothing	9.8	16.4	19.7	9.9	6.5	5.6

Table 4. Continued

Commodities	1980-84	1985-89	1990-94	1995-99	2000-04	2005-06
Structure of imports (average % share)						
Agricultural products	11.2	12.8	11.0	10.0	8.7	7.5
Food	9.0	10.1	8.7	8.3	7.5	6.7
Fuels and mining products	30.5	20.9	16.5	11.2	13.2	16.9
Fuels	32.0	na	13.0	8.4	10.7	14.5
Manufactures	58.4	66.3	72.5	78.7	78.1	75.6
Iron and steel	5.8	na	4.8	3.9	2.9	2.6
Chemicals	11.0	na	10.6	8.6	8.2	7.3
Pharmaceuticals	1.0	na	1.2	1.0	1.0	1.0
Machinery and transport equipment	32.0	33.3	42.1	54.3	56.7	57.6
Office and telecom equipment	10.6	15.5	17.6	32.1	41.9	44.5
Electronic data processing and office equipment	0.7	na	2.6	7.3	9.6	7.6
Telecommunications equipment	1.6	na	5.3	4.9	4.5	2.6
Integrated circuits and electronic components	0.4	na	7.8	21.9	27.8	34.3
Automotive products	3.7	na	4.3	3.8	2.7	2.1
Textiles	3.9	7.5	6.4	3.8	3.1	2.2
Clothing	0.0	0.1	0.2	0.2	0.2	0.2
Export less Imports (million US\$)						
Agricultural products	1,201	681	57	-1,086	-994	-807
Food	1,076	636	291	-719	-765	-638
Fuels and mining products	-1,562	-834	-1,826	-2,801	-3,766	-5,942
Fuels	-462	na	-1,846	-2,502	-3,510	-6,292
Manufactures	-2,206	-1,383	-4,561	-3,817	3,798	1,404
Iron and steel	-76	na	-730	-1,232	-1,048	-1,122
Chemicals	-144	na	-1,441	-2,463	-2,633	-2,945
Pharmaceuticals	-13	na	-179	-316	-361	-467
Machinery and transport equipment	-1,454	-1,009	-3,352	-874	6,196	3,371
Office and telecom equipment	106	133	188	4,272	7,641	2,988
Electronic data processing and office equipment	-10	na	-32	1,506	3,653	4,227
Telecommunications equipment	-20	na	-17	-440	-491	-308
Integrated circuits and electronic components	3	na	6	3,051	4,479	-932
Automotive products	-281	-265	-650	-919	-95	496
Textiles	-239	-504	-863	-956	-852	-840
Clothing	503	997	1,947	2,262	2,265	2,351

Source: World Trade Organization *Time Series on Merchandise and Commercial Services Trade*

Note: na-not available

In contrast, the structure of imports indicates a relatively stable share of agricultural imports—about 10 percent, which are mainly food items. At present, of the US\$50 billion merchandise imports of the Philippines, almost 60 percent comprise office and telecom equipment. This is primarily for the semiconductor sector, which is generally an assembly-type operation in which the main value addition is labor. Raw materials are imported from foreign companies operating in the Philippines. Thus, despite the surge in manufactured exports (Table 4), the share of manufacturing in the overall GDP (Table 1) has not improved through the years.

Another notable trend in Table 4 is the deterioration in agriculture net trade, particularly in food net trade. From a net exporter in agricultural and food of more than US\$1 billion per year in the first half

of the 1980s, the Philippines has experienced a continuous decline in its net trade position in these commodities. In 2005-06, the annual average agriculture trade deficit was US\$800 million, of which the bulk was food imports. This is despite government's effort to implement food self-sufficiency policies and programs.

The literature attributes the growing trade deficit in agriculture and food to higher growth in domestic demand relative to domestic production. The growth in domestic production lags behind demand because of declining agricultural productivity and comparative advantage. David (2003) has shown decreasing trend in revealed comparative advantage (RCA) in agriculture and agricultural exports in Table 5, which indicates declining Philippine competitiveness in the international market. As a result, its agricultural export share in the world market has declined sharply. Furthermore, Coxhead and Jayasuriya (2003) have shown declining lowland and upland productivity in the Philippines. Also, Habito and Briones (2005) have indicated that while the Philippines is at par with other countries in land productivity, the overall productivity in the crop subsector has stagnated. Moreover, while David (2003) has noted an improvement in productivity in poultry and livestock, on the whole Mundlak, et al. (2004) have indicated that the contribution of total factor productivity (TFP) in agricultural output growth fell sharply from 36 percent in 1961-80 to 9 percent in 1980-98. This trend is in sharp contrast to the experience of Thailand and Indonesia where substantial TFP improvements occurred over the same period.

Table 5. Trend in revealed comparative advantage in agriculture

Year	Agriculture	Coconut	Sugar	Banana	Pineapple	
					Canned	Fresh
1960	3.0	na	na	na	na	na
1965	2.7	131.8	15.3	na	na	na
1970	2.6	145.0	21.4	na	na	na
1975	3.8	211.2	22.0	29.3	na	na
1980	2.9	224.1	12.1	30.4	82.2	48.9
1985	2.4	212.3	7.6	31.2	91.6	59.7
1990	1.6	212.4	3.8	23.4	70.2	54.6
1995	1.1	153.5	2.0	14.1	41.5	23.6
1998	0.8	105.3	1.4	8.8	33.2	11.5

Source: David (2003)

Note: na-not available

On the other hand, higher demand is a result of increased demand for items with higher income elasticities such as wheat, milk and dairy products, beef, etc., in which the Philippines does not have comparative advantage (David, Intal and Baliscan, 2007). In the case of rice, there has been a build up the level of rice stocks. Also, there is higher demand because of high growth in population (Dawe, Moya, and Casiwan, 2006). The average annual population growth rate in the Philippines is about 2.3 percent, which is high compared to the dynamic economies in the region.

Trade Policies

In 1949, the Philippines embarked on a development strategy of industrial import substitution with lesser emphasis on agriculture and exports. The strategy provided protection to domestic producers of final goods through high tariffs on competing imports and low tariffs on essential producer inputs. The policy did not accomplish much because the growth of manufacturing value added and industrial employment increased only minimally. In 1970, the government shifted toward export promotion by extending tax exemptions and fiscal incentives to capital-intensive firms located in export processing zones. However, the strategy achieved very little as well because of the continued presence of a highly skewed intersectoral

tariff protection in favor of import-substituting manufactured goods. In addition, the imposition of export taxes, the policy of keeping an overvalued exchange rate, and the presence of government corporations, which not only regulated domestic prices but also siphoned off the gains from domestic and international trade, created a strong bias against agriculture and exports.

The restrictive trade policies adopted between the 1950s and the late 1970s created serious market distortions (Austria and Medalla, 1996). They penalized the domestic economy in three respects: (a) import controls resulted in an overvalued exchange rate that favored import-substituting firms; (b) continued protection increased domestic output prices, which became an impediment to forward linkages; and (c) tariff escalations and import controls weakened backward linkages, as tariffs on capital and intermediate goods were kept low relative to finished products.

The policy structure during this period promoted rent-seeking activities and distorted economic incentives against investments in agriculture. The agricultural sector, which served as the country's backbone, providing the necessary foreign exchange needed by the import-dependent manufacturing sector, stagnated, and its comparative advantage eroded. This prolonged system of protection resulted in the industrial sector venturing on import-dependent, assembly-type operations with minimal value-added content. Realizing the pitfalls of the import-substitution policy followed by an unsuccessful export-promotion strategy, the government started implementing a series of trade reform programs (TRPs) in 1981.¹

The first phase of the tariff reform program (TRP 1) started in the early 1980s with three major components: tariff reductions, an import-liberalization program, and realignment of indirect taxes. The maximum tariff rates were reduced from 100 to 50 percent. Between 1983 and 1985, sales taxes on imports and locally produced goods were equalized. The markup applied to the value of imports (for sales tax valuation) was also reduced and eventually eliminated. The implementation of TRP 1 was suspended in the mid-1980s because of a balance of payments crisis; it was resumed in 1986.

In 1991, the government launched TRP 2 to realign tariff rates over a five-year period. The realignment involved narrowing tariff rates through a series of reductions in the number of commodity lines with high tariffs and an increase in the number of commodity lines with low tariffs. The program was aimed at clustering tariff rates within the 10 to 30 percent range by 1995. In 1992, a program to convert quantitative restrictions (QRs) into tariff equivalents was initiated. In 1995, the Philippines, under the WTO, committed to gradually removing QRs from sensitive agricultural product imports (products identified by the government as being politically sensitive in nature), with the exception of rice, by switching toward tariff measures.

In 1995, the government implemented TRP 3 which established a four-tier tariff schedule: 3 percent for raw materials and capital equipment not available locally, 10 percent for raw materials and capital equipment available from local sources, 20 percent for intermediate goods, and 30 percent for finished goods. However, the overriding goal of TRP 3 was to implement a uniform tariff rate of 5 percent by 2005.

Furthermore, in 1996 under TRP 3, the government implemented a tariff quota system for sensitive agricultural products. According to the minimum access volume (MAV) provision, a relatively low tariff rate was imposed on imported sensitive agricultural products up to a minimum import level (in-quota tariff rate), while a higher tariff rate was levied beyond the minimum import level (out-quota tariff rate). Table 6 lists products with the MAV provision, including the in-quota and out-quota tariff rates. One can observe that whereas there has been reduction in the out-quota tariff rates across commodities, the in-quota rates have remained generally unchanged since 1996. By 2005, the in-quota and out-quota tariffs for several products were equalized, though still at relatively high levels.

¹ The TRPs were major components of the structural programs funded by loans from the World Bank and the International Monetary Fund in the 1980s.

Table 6. In-quota and out-quota tariff rates of selected commodities (%)

Commodities/tariff rates	1996	2000	2005
Live pork (swine)			
Less than 50 kgs			
In-quota	30	30	30
Out-quota	60	45	35
50 kgs or more			
In-quota	30	30	30
Out-quota	40	35	35
Live sheep and goat			
In-quota	30	30	30
Out-quota	60	45	40
Live poultry (2000 grams or more)			
In-quota	40	40	35
Out-quota	80	50	40
Pork meat (swine)			
In-quota	30	30	30
Out-quota	100	60	40
Meat of sheep, goats (fresh or chilled)			
In-quota	30	30	30
Out-quota	60	40	35
Chicken meat			
In-quota	50	45	40
Out-quota	100	60	40
Duck meat			
In-quota	50	45	30
Out-quota	100	60	40
Potato (fresh or chilled)			
In-quota	50	45	40
Out-quota	100	60	40
Onions			
In-quota	30	30	40
Out-quota	100	60	40
Garlic			
In-quota	30	30	40
Out-quota	100	60	40
Coffee			
In-quota	50	45	30
Out-quota	100	60	40
Sugar Cane			
In-quota	50	50	50
Out-quota	100	65	65
Corn			
In-quota	35	35	35
Out-quota	100	65	50
Rice (milled or wholly milled)	50	50	50

Source: Tariff Commission

In 1998, TRP 4 was undertaken to recalibrate the tariff rate schedules implemented under the previous TRPs. The decision to recalibrate resulted from a tariff review process that evaluated the pace of tariff reduction in line with the competitiveness of the local industry and to raise additional government revenues. The planned uniform tariff rate in TRP 3 was suspended under the TRP 4.

Table 7 shows the effects of the series of TRPs on nominal tariff rates. The overall average tariff rate declined from 28.8 percent in 1990–94 to 10.8 percent in 2004, though it increased to 14.8 percent in 2005. Although all tariff rates across commodities decreased, there are differences in the rates of decline. The average tariff rate on agriculture in 1990–94 was 23.6 percent, which was lower than the average tariff rate on manufacturing (32.3 percent) and on food processing (46.2 percent). In 2004, the average tariff rate on agriculture was 20.1 percent, whereas in manufacturing, it was 9.9 percent. The ratio of the average tariff on agriculture to the average tariff on manufacturing increased from 0.8 in 1990 to 1.5 in 2004. However, in 2005, an increase in the average tariff rate on manufacturing (to 15.2 percent) was largely due to the increase in the tariff rate on food processing (to 31.6 percent). Aldaba (2005) attributed the increase in tariffs on manufactured commodities in 2005 as policy reversal in trade which tends to undermine the gains from the series of tariff reform program implemented. This policy reversal in trade is the outcome of political pressures from various interest groups.

Table 7. Most favored nation (MFN) tariff rates in the Philippines

Sectors	1990-94	1995-99	2000	2001	2002	2003	2004	2005
Sectoral weighted average	28.8	21.3	17.4	14.1	12.6	11.8	10.8	14.4
Agriculture, fishery and forestry	23.6	19.5	16.6	15.7	15.1	14.9	14.5	14.4
Mining	1.4	0.7	-0.2	0.4	0.3	0.4	0.4	0.4
Manufacturing	32.3	23.2	18.7	14.3	12.4	11.3	9.9	15.2
Food processing	46.2	40.4	35.1	27.0	24.6	23.1	21.5	31.6
Ratio (%): agriculture tariff ÷ manufacturing tariff	0.7	0.8	0.9	1.1	1.2	1.3	1.5	0.9

Source: Tariff Commission

Estimates of the Nominal Protection Rate of Major Crops

David, Intal, and Balisacan (2007) provided estimates of nominal protection rate (NPR) of major agricultural commodities. Table 8 presents the historical NPRs of 8 key agricultural commodities.²

In the second half of 1970s and the first half of 1980s the NPR of rice was negative. The negative NPR however had little effects on the producers because of high world commodity prices together with the implementation of the Green Revolution and the land reform programs. During the Green Revolution there was an expansion of irrigation and introduction of new seeds and fertilizer which increased rice productivity. The government also increased credit facilities to rice farmers. Under the land reform program tenant rice farmers became owner-operators.

² The estimates of NPRs of David, Intal and Balisacan (2007) ended in 2004. We extended the series to 2007 using available data from the World Bank, the International Monetary Fund, and the Philippine Bureau of Agricultural Statistics. Furthermore, in the original estimates of David, Intal and Balisacan (2007), the NPRs for chicken, pork and beef were derived using Singapore import unit value. To be consistent with the NPRs of the other commodities, the NPRs presented in Table 8 for chicken, pork and beef were derived using the world price of these items as reported in the World Bank database. Similar to David, Intal and Balisacan (2007), to convert world prices to border prices we factored in additional 15 percent to the world prices to account for cost, insurance and freight (CIF).

Table 8. Nominal protection rate (%)

Year	Rice	Corn	Sugar	Coconut		Beef	Chicken	Pork
				Oil	Copra			
1960-64	20	53	9	-16	-24	30	115	-13
1965-69	12	44	86	-29	-31	-32	163	-24
1970-74	4	19	-37	-31	-35	-53	84	-38
1975-79	-13	30	-26	-20	-28	-25	91	-39
1980-84	-13	25	19	-28	-37	15	100	-28
1985-89	16	67	122	-16	-31	6	56	2
1990-94	26	70	51	-7	-26	31	69	43
1995-99	67	86	107	-12	-20	103	43	88
2000	87	104	82	-17	-33	73	23	53
2001	83	79	73	-21	-33	26	8	37
2002	63	51	111	-13	-18	18	5	76
2003	49	30	86	21	-20	28	-2	49
2004	21	41	47	-10	-30	-1	-5	32
2005	15	53	15	-16	-34	5	0	47
2006	19	51	2	-11	-32	16	22	80
2007	27	32	80	-10	-28	26	27	94

Source: David, Intal and Balisacan (2007) for 1960 to 2005, International Monetary Fund Commodity Prices (2008) and Bureau of Agricultural Statistics (2008) for 2006 and 2007.

However, the sharp fall in irrigation investments and the stagnation of the yield potential of newer modern varieties in the 1980s slowed down domestic production of rice. The drop in the world price of rice increased the NPR of rice from the average 16 percent in 1985-89 to 67 percent in 1995-99. It reached a peak of 87 percent in 2000. However, there has been a general decline in the NPR of rice after reaching a peak of 87 percent in 2000. In 2005, the NPR of rice dropped to its lowest level of 15 percent. There are two reasons behind the declining NPR: the increase in the world price of rice and the depreciation of the Philippine currency. Table 9 shows that the world price of rice increased from US\$192 per metric ton in 2001 to US\$301 per metric ton in 2005 while the exchange rate depreciated from PhP44/US\$1 to PhP55/US\$1. In contrast, the wholesale price of rice increased only from PhP15.9 thousand in 2000 to PhP19.1 thousand per metric in 2005.

Table 9. Exchange rate, world prices, and domestic wholesale prices

Year	World price, CIF, US\$/metric ton ^{/a/}									Wholesale price, PhP 000/metric ton							
	PHP/US\$	Rice	Corn	Sugar	Coconut		Beef	Chicken	Pork	Rice	Corn	Sugar	Coconut		Beef	Chicken	Pork
					Oil	Copra							Oil	Copra			
1960-64	4	109	58	119	322	209	837	502	885	0.5	0.3	0.3	0.9	0.5	3.8	3.6	2.5
1965-69	4	145	61	58	405	241	1,210	431	993	0.6	0.3	0.4	1.1	0.7	3.2	4.4	3.0
1970-74	7	222	93	280	578	361	1,776	535	1,317	1.1	0.7	0.7	2.8	1.6	5.4	6.4	5.2
1975-79	7	304	125	292	703	478	2,170	796	2,184	1.9	1.2	1.4	4.1	2.6	11.2	11.2	9.9
1980-84	17	346	147	343	826	541	2,838	907	2,950	2.9	1.9	2.9	6.7	3.9	33.5	18.1	21.4
1985-89	22	263	114	202	554	377	2,695	1,096	2,509	6.1	3.8	8.1	9.6	5.4	59.0	34.8	47.4
1990-94	26	293	122	267	553	370	2,905	1,290	1,857	9.4	5.4	10.4	13.5	7.2	99.5	56.8	65.2
1995-99	39	293	138	263	799	514	2,097	1,528	1,610	15.3	7.9	16.5	22.7	13.4	134.6	68.7	90.9
2000	44	192	102	207	518	350	2,222	1,504	1,500	15.9	9.2	16.7	19.1	10.4	169.6	81.6	101.5
2001	51	171	103	219	366	232	2,449	1,610	1,554	16.0	9.4	19.3	14.7	7.9	157.5	88.7	108.4
2002	52	196	114	175	484	306	2,421	1,596	1,196	16.5	8.9	19.0	21.7	13.0	146.9	86.2	108.8
2003	54	205	121	180	537	345	2,277	1,675	1,351	16.5	8.6	18.1	35.3	14.9	157.5	88.5	109.0
2004	56	256	129	182	760	518	2,889	1,916	1,797	17.3	10.1	14.9	38.4	20.3	160.4	101.9	132.4
2005	55	301	113	256	710	476	3,017	1,876	1,724	19.1	9.5	16.2	33.0	17.4	174.8	103.8	139.3
2006	51	319	140	375	698	463	2,941	1,749	1,623	19.5	10.9	19.6	31.8	16.2	175.8	109.9	149.7
2007	46	352	187	254	1,057	698	2,992	1,978	1,623	20.7	11.4	21.1	44.1	23.1	173.6	116.2	145.2

Source: David, Intal and Balisacan (2007) for 1960 to 2004, International Monetary Fund Commodity Prices (2008) and Bureau of Agricultural Statistics (2008) for 2006 and 2007
/a/ CIF means cost, insurance and freight.

The NPR of corn has always been positive and increasing years prior to 2000. The NPR of corn reached a peak of 104 percent in 2000. However, unlike rice which is staple food of Filipinos, there is not much political pressure on corn. The high domestic corn prices are major concerns only for livestock growers because corn is a major animal feed ingredient.

Similar to rice, there has been a declining trend in the NPR of corn after the peak in 2000. The NPR dropped to its lowest value of about 30 percent in 2003 and 2007. This trend is due to higher world prices of corn and to the depreciation of the Philippine currency. The world price of corn increased from US\$102 per metric ton in 2000 to US\$187 in 2007. The domestic wholesale price of corn increased only from PhP9.2 thousand to PhP11.4 thousand per metric ton over the same period.

Among agricultural crops, sugar has been one of the highly protected commodities in the Philippines. It has the highest NPR among key agricultural crops. There are two interesting periods that need to be highlighted with regard to sugar. Before the end of the Laurel-Langley Agreement in 1974, nearly all domestic production of sugar was exported to the U.S. The high NPR during this period was in effect an income transfer from U.S. consumers to Filipino domestic sugar producers. However, after the end of the Agreement when a large part of local production was consumed domestically, the high NPR of sugar shifted the burden to Filipino consumers and food processors. In both periods, Filipino domestic sugar producers benefitted from high NPR (David, Intal and Balisacan, 2007).

After 2000, although the NPR of sugar is generally high, it fluctuated considerably. It declined to 73 percent in 2001, but surged to 111 percent in the following year. The NPR dropped to the lowest level of 2 percent in 2006, but again surged to 80 percent in 2007. The wide swing in the NPR of sugar was due to the erratic movement of the world price of sugar. The domestic wholesale price of sugar however was not as fluctuating as the world price of sugar.

Because of export tax and export ban, the NPR of coconut (copra and coconut oil) is negative. This has adverse effects on coconut farmers. The devaluation in the 1970s and the world commodity boom did not translate into higher profits for coconut farmers. Instead, the export tax resulted in high revenues for the government and the export ban lower raw material costs for the coconut oil milling industry. These policies were eliminated beginning in 1986. However, the continued existence of a government corporation at present that controls 70 to 80 percent of the coconut oil milling implies that the government retains its control over domestic prices of copra.

The producers of chicken broilers were highly protected in the earlier years until the second half of the 1980s. During these years, the NPR of chicken was generally above 100 percent. Although the NPR of chicken declined in the 1990s, the levels were still above 50 percent.

The world price of chicken has not increased significantly except in 2007. It was the depreciation of the Philippine currency from 2000 to 2005 that resulted in the drop in the NPR of chicken during these years. In 2007, the NPR of chicken was 27 percent.

The NPRs of both beef and pork were negative in the 1970s. They became positive in the 1980s and surged to higher levels in the 1990s. While the NPR of beef declined, the NPR of pork remained very high at present.

Before the mid-1980s, the NPRs of agricultural inputs such as fertilizers, agricultural chemicals, and farm machineries was generally higher compared with the NPRs of agricultural crops except sugar (Table 10). This was largely due to the government's industrial promotion policies, which increased domestic prices of manufactured inputs to agriculture. However, after this period and during the trade liberalization, there was a substantial reduction in the NPRs of agricultural inputs. From 2000 to 2004, the NPRs of agricultural inputs were at a uniform 3 percent.

Table 10. Nominal protection rate for agricultural inputs (%)

Inputs	1960-64	1965-69	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04
Fertilizer ^{/a/}									
Urea	49	55	-13	28	21	11	5	3.4	3
Amorphous	17	32	-9	54	19	15	12	3	3
Pesticide ^{/b/}	24	24	29	35	35	20	16	7.2 ^{/c/}	3
Tractors ^{/b/}									
2-wheel	24	20	21	24	24	12	10	10	3
4-wheel	24	20	21	24	24	12	10	10	3
Threshers ^{/b/}	24	24	24	24	24	30	22	10	3
Water pumps ^{/b/}	46	46	46	46	46	30	24	10	3

Source: David, Intal, and Balisacan (2007)

/a/ Based on price comparison, i.e., the percentage difference between the ex-warehouse price and the CIF import unit value, where CIF is cost, insurance and freight.

/b/ Based on book tariff rates. Implicit tariff from 1960-1984 includes the import tariff and advance sale tax (10 percent and 25 percent) mark-up respectively. The advance sale tax was abolished in 1986 and hence the implicit tariffs from 1985 onwards includes tariff rate only.

/c/ This refers to insecticide

Agricultural Sector

This section gives an overview of Philippine agriculture. It reviews the pattern of public expenditure on agriculture. It highlights the performance of the National Food Authority (NFA), which is a major agricultural institution that monitors the developments in food supply in the Philippines. This section also discusses a major agricultural program—the Agriculture and Fisheries Modernization Program (AFMP)—and a specific rice program designed to increase productivity—the Hybrid Rice Commercialization Program (HRCP). It highlights the cost of HRCP and the design and performance of the program.

Public Expenditure on Agriculture, 2000–2005

The budget of the whole Department of Agriculture (DA) is composed of three major items: The Office of the Secretary (OSEC); other DA attached agencies and corporations, of which the National Food Authority (NFA) is one of them; and the Agriculture and Fisheries Modernization Program (AFMP). There have been major shifts in public expenditure on agriculture. In 2000, OSEC was a major item in the overall expenditure, accounting for 71.3 percent of the total (Table 11). However, after the implementation of the AFMP in 2001, the budget was reallocated from OSEC to AFMP. Thus, expenditure in OSEC declined from PhP14.8 billion in 2000 to PhP2.5 billion in 2002. From 2002 to 2005, the budget allocated to OSEC remained within PhP2 to PhP3 billion, whereas the allocation to AFMP was more than P10 billion annually. We take note of this because in the Appendix we argue that the green box payments and special differential treatment in the domestic support can be approximated by the AFMP's budget.

Another notable pattern is the expenditure of other DA-attached agencies and corporations, of which the National Food Authority (NFA) is a major entity. There was a spike in public expenditure of these agencies, increasing from PHP2.9 billion in 2002 to PhP12 billion in 2003. This increase was largely due to a budget allocation for the NFA, which has been in financial distress. The NFA allocation increased from PhP1 billion in 2002 to PHP10.7 billion in 2003. It declined to PhP4.9 billion in 2004, but surged again to PnP12.9 billion in 2005.

Table 11. Total public expenditure on agriculture

DA Agencies	2000	2001	2002	2003	2004	2005
	PhP million					
Office of the Secretary (OSEC)	14,783	2,447	3,565	2,818	3,183	2,329
Other DA attached agencies and corporations	5,949	4,636	2,864	12,014	6,527	14,458
National Food Authority (NFA)	2,000	2,586	960	10,742	4,938	12,941
Agriculture and Fisheries Modernization Program (AFMP)	-	15,864	13,309	10,064	10,178	13,565
Total ^{/a/}	20,732	22,947	19,737	24,897	19,888	30,352
Total public expenditure on agriculture as percent of:						
National government expenditure	3.2	3.2	2.5	3.0	2.2	3.2
Gross Domestic Product (GDP)	0.7	0.6	0.5	0.6	0.5	0.6
GDP-agriculture, fishery and forestry	4.1	4.2	3.6	4.2	3.1	4.1

Source: Department of Budget and Management and National Income Accounts, various issues

Note: /a/ Table A.1 in the Appendix lists the components of AFMP.

On the whole, however, the overall public expenditure on agriculture in the Philippines is not substantial, accounting for only about 3 percent of the total government expenditure. Public expenditure represents about 0.6 percent of GDP and 4 percent of agricultural GDP. A recent World Bank technical working paper (World Bank, 2007) on public expenditure in Philippine agriculture found that there is a relative underspending on agriculture in the country by international comparison. In terms of GDP, Philippine spending on agriculture is comparable to the Lao People's Democratic Republic and Vietnam; it is lower than other middle-income countries, such as China and Thailand. This underspending is mainly due to the fiscal constraints in the Philippines and the country's limited financial capability, as indicated by low tax ratios relative to middle- and high-income developing countries.

Agricultural and Fisheries Modernization Act

A major policy shift in agriculture policy took place when the Agriculture and Fisheries Modernization Act (AFMA) was approved by the Philippine Congress in 1997. AFMA is based on a plan that has five broad objectives: (a) food security; (b) poverty alleviation and social equity; (c) income enhancement and profitability, especially for farmers and fisherfolk; (d) global competitiveness; and (e) sustainability (Republic Act 8435). AFMA was implemented through AFMP in 2001, when the government started allocating budget for the program from the General Appropriations Act (GAA). When President Arroyo took over the administration in 2001, various programs were carried out under the AFMA, including the Ginintuang Masaganang Ani³ (GMA) programs in rice, corn, coconut, sugar, high-value commercial crops, livestock, and fisheries. In 2003, the AFMA was amended by the Philippine Congress to further strengthen the expected impact of the Act. The amendment included exemptions for enterprises engaged in agriculture from paying tariffs and import duties on importations of all types of agriculture and fisheries inputs until 2015. These items include imports of chemicals, seeds, machinery, and equipment.

Table 12 shows the breakdown of the expenditure on the AFMP by major commodity groups. Because of the preoccupation on food security concerns, the budget allocation process gives a disproportionate share to rice production. In fact, in the development plan of the Philippine economy for the period 2004-10, one of the primary objectives was to make food plentiful at affordable prices. The government equates the overall concern for food to rice sufficiency. Thus, the World Bank (2007) study finds that from 2001 to 2005, rice gets almost 60 percent share of the budget, while agricultural commodities only share less than 10 percent. In contrast, government funding for exportable agricultural crops has been quite modest.

³ Which means 'Golden and Bountifully Harvest'.

Table 12. Distribution of expenditure by commodity groups (%)

Commodity groups	2000	2001	2002	2003	2004	2005
Rice	39.1	53.8	59.0	53.2	56.6	58.0
Non-rice	11.5	12.6	8.3	7.5	9.6	8.7
Livestock	6.5	8.2	5.7	4.4	5.3	4.2
Fisheries	9.2	12.3	14.0	16.6	13.7	8.5
Other commodities	33.7	13.1	13.0	18.2	14.9	20.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: "Philippines: Agriculture Public Expenditure Review"; Technical Working Paper 40493. World Bank, 2007.

National Food Authority

The public budget allocation to agriculture is geared toward food self-sufficiency, particularly to rice sufficiency. The government sets a system of price support to assist rice farmers and imposes a price ceiling to help consumers. It procures rice from farmers, controls imports, and maintains buffer stocks to stabilize supply and prices. Furthermore, it minimizes seasonal price variations in different regions. The government also monopolizes rice importation and exportation. These interventions are implemented through the NFA.

The NFA's procurement of palay has declined considerably; from more than 10 percent of total production in the early 1980s to 0.5 percent in 2005 (Table B.2 in the Appendix). A key reason for this decline is the financial difficulty currently faced by the NFA.⁴ However, the NFA remains heavily involved in rice importation. From 1998 to 2006, the NFA's rice imports accounted for about 15 percent of rice production. In addition to rice, the NFA is also involved in corn, though its influence on this market has recently declined to almost zero.

The fiscal cost of the government's program on rice self-sufficiency is substantial, as reflected in the NFA's surging financial deficit. From 2000 to 2005, the NFA's cumulative deficit amounted to P44.2 billion (Table 13). In 2005, its deficit of P10 billion was almost half the total deficit of all government-owned and controlled corporations (GOCCs)⁵. In 2006, the deficit further deteriorated to P16.4 billion.

Table 13. Deficit of the National Food Authority (PhP million)

	2000	2001	2002	2003	2004	2005	2006
Deficit of NFA ^{/a/}	-1,897	-2,274	-8,086	-3,689	-1,836	-9,978	-16,430
Total deficit of monitored GOCCs ^{/b/}	-19,160	-24,540	-46,360	-65,320	-85,410	-21,700	—
Ratio (%): NFA deficit/Total deficit of GOCCs	9.9	9.3	17.4	5.6	2.1	46.0	—

Source: Department of Finance

Note: /a/ National Food Authority; /b/ Government-owned and controlled corporations

Table 14 shows the NFA's financial statement, including the current subsidies from the national government. In 2005, the subsidy was more than PhP13 billion. Despite the subsidies from the national government, the deficit of the NFA remained substantial. Thus, the net domestic bank credit of the NFA increased considerably.

⁴ There are also claims that some rice farmers are hesitant to sell to the NFA. They fear that their credit history during the Green Revolution credit program of the 1970s might be revived once they transact with the government.

⁵ All GOCCs both in agriculture and non-agriculture.

Table 14. Financial performance of the National Food Authority (PhP million)

Financial accounts	2000	2001	2002	2003	2004	2005	2006
Total receipts	22,688	14,408	19,472	17,136	25,239	40,591	30,369
Operating receipts	21,523	12,480	19,176	16,886	24,387	40,375	30,101
Sales of goods and services	21,523	12,390	18,256	15,964	19,806	27,204	25,290
Current subsidies	0	90	920	922	4,581	13,171	4,811
Other receipts	1,165	1,928	296	250	852	216	268
Current expenditures	28,474	15,342	23,742	24,765	31,493	46,664	44,041
Operating expenditures	22,768	11,138	19,596	18,810	26,339	40,846	37,625
Other operating expenditures	5,706	4,204	4,146	5,955	5,154	5,818	6,416
Interest payments	1,430	1,718	1,471	1,964	2,748	3,186	3,927
Others	4,276	2,486	2,675	3,991	2,406	2,632	2,489
Internal cash generation	-5,786	-934	-4,270	-7,629	-6,254	-6,073	-13,672
Capital expenditures ^{/a/}	-3,888	1,341	3,815	-3,939	-4,418	3,905	2,758
Financing deficit (-1)/surplus(+)	1,898	2,275	8,085	3,690	1,836	9,978	16,430
Net domestic financing	1,898	2,578	8,085	3,840	1,853	9,996	16,497
Net domestic bank credits	-89	3,244	8,109	-311	107	5,732	17,328
Net other domestic financing	1,987	-666	-24	4,151	1,746	4,264	-831
Net external financing	0	-303	0	-150	-17	-18	-67

Source: Department of Finance

Note: /a/ major component is changes in inventories

The subsidy from the national government is expected to surge because of the rice crisis in 2008. The subsidy will not be enough to finance the growing deficit of the NFA. The indebtedness of the NFA will therefore continue to increase. Because stability in the rice market has significant political ramifications in the Philippines, the government will be forced to absorb NFA's debt, and will therefore put further pressure on the national government's current very tight fiscal constraint.

The Hybrid Rice Commercialization Program

The primary objective of government's policy on rice is how to improve productivity through the introduction of a new technology called the hybrid rice. The hybrid rice technology is the result of cross breeding of two different parental lines to produce the hybrid rice seeds. Genetically, the hybrid seed (called F1) will have superior characteristics and will have yield advantage over its best parent. This phenomenon is called hybrid vigor (or "heterosis"). However, the crop produced from the hybrid seeds (F2) will have significantly diminished hybrid vigor. Thus, it is not economically efficient to reuse seeds from hybrid rice because the yield will drop sharply.

Research on hybrid rice in the Philippines was initiated in 1993. In 2001, the government adopted the Hybrid Rice Commercialization Program (HRCP). To improve palay productivity under the program, the government aggressively pursues a two-pronged approach: (a) it encourages production of hybrid seeds; and (b) it gives incentives to farmers to increase the adoption of hybrid seeds.

David (2006) conducted a comprehensive look at the HRCP and evaluated the program's performance, budgetary cost, profitability to farmers, adoptability, and viability in the long-run. In terms of the program's budgetary cost, David found that accounting for the direct and indirect costs of the hybrid promotion program is not straightforward. The source of information that is explicitly available is the planning budget of the GMA Rice Program—one of the DA's key programs that is funded as a lump sum allocation under OSEC. The DA is flexible in reallocating budget resources approved by the Philippine Congress in order to increase the allocation to rice programs. Also, the OSEC has realigned to the rice program funding sources from foreign grants and surpluses from other DA-attached entities. Outside the DA, there are several other sources of funds that support the HRCP. For example, some of the

financial resources of the Department of Agrarian Reform (DAR) were used to support the program. In addition, resources of a number of local government units (LGUs) and of several Congress members from their discretionary Priority Development Assistance Funds (PDAFs) have been used to subsidize hybrid seeds and other related agricultural inputs.

The HRCF requires huge financial resources and has relied heavily on government subsidies. David (2006) has estimated that the government poured in sizeable resources amounting to PhP10 billion between 2001 and 2005 to support the HRCF program. Table 15 shows the breakdown of David's (2006) estimates of the financial resources used in the rice program between 2001 and 2005. The DA's GMA Rice Program was the largest source of funds, amounting to PhP6.5 billion. This amount includes procurement of hybrid seeds, support to seed growers, subsidies for other inputs, research and development, techno-demo farms, salary supplements for LGU staff, and other expenses.

Table 15. Estimated budgetary outlays for HRCF in 2001-05 (PhP billion)

Budget source	Budget
DA GMA rice program	6.47
Local government units	
Personnel	1.20
Procurement/distribution	0.75
PDAF (Congressional pork barrel)	1.00
DAR	0.50
Total	9.92

Source: David (2006)

Notes: DA = Department of Agriculture

GMA = Ginintuang Masaganang Ani ("Golden and Bountiful Harvest")

PDAF = Priority Development Assistance Funds (Congressional pork barrel)

DAR = Department of Agrarian Reform

The LGU contributions include the time their agricultural staff spent on seed distribution, farmer's training and technical assistance, program planning, monitoring, and reporting. Based on certain assumptions made by David (2006), this amounted to PhP1.2 billion. The LGUs also procured hybrid seeds and other agricultural inputs for distribution to farmers, which cost them about PhP0.8 billion. Several members of Congress designated some of their PDAF allocation to support the program. For example, in 2003, close to PhP400 million of the PDAF was used for agricultural-related inputs, such as hybrid seeds, fertilizers, foliar, soil conditioners, and others. Another PhP300 million was disbursed in 2004. For 2001–2005, the total funds from the PDAF amounted to PhP1 billion. In 2004, the DAR used about PhP500 million from the Agrarian Reform Funds to finance distribution of hybrid seeds and other subsidized inputs. All of this totaled to about PhP10 billion of government finances to promote the HRCF.

How does the system of government seed procurement and subsidies work under the HRCF? To provide incentives to hybrid seed producers, the government buys the hybrid seeds at a guaranteed price of PhP2,400 per 20-kilogram bag of seeds. To encourage farmers to replace their inbred seeds with hybrid seeds, the government sells the hybrid seeds at half the price during purchase, with the remainder to be paid after harvest. Furthermore, if the seeds are paid for in cash during purchase, farmers get an additional discount of PhP200 per bag. However, based on past experience, the farmers' nonrepayment of the remaining PhP1,200 per bag of seeds is extremely high, which essentially means that the government only recovers between PhP1,000 and PhP1,200 per bag of seeds that it buys from the seed growers at PhP2,400. This does not cover other distributional and transaction costs of seeds that result from the government picking up, storing, and distributing the seeds.

To further encourage farmers to adopt hybrid seeds, the government provides additional subsidies for other farm inputs. For example, farmers who adopt hybrid seeds are entitled to a PhP500 discount on chemical fertilizers for every bag of hybrid seeds purchased. In addition, some amounts of chemicals,

such as zinc sulfate, organic fertilizers, foliar fertilizer, and soil conditioners, are distributed for free for every bag of hybrid seeds obtained by a farmer. Based on the estimates of David (2006), the government provides PhP1,000 of additional subsidies per bag to encourage each farmer to adopt the hybrid seeds.

How has the HRCP performed so far? David (2006) estimated the yield advantage of hybrid rice over inbred rice using country-wide data collated by the Department of Agriculture (DA). The estimates are presented in Table 16. The estimates show that in a number of rice seasons, hybrid seeds have yield advantage over inbred seeds by an average of more than 30 percent, or an additional of more than a ton per hectare. The highest yield difference between hybrid and inbred was 55 percent during the dry season of 2002⁶. However, the yield difference dropped significantly thereafter.

Table 16. National average yield of hybrid and inbred in irrigated areas ^{/a/}

Season	Average yield (t/ha) ^{/b/}		Yield advantage	
	Hybrid	Inbred	t/ha	Percent
Wet 2001	5.5	4.3	1.2	27.9
Dry 2002	6.8	4.4	2.4	54.5
Wet 2002	5.8	4.5	1.3	28.9
Dry 2003	6.1	4.6	1.5	32.6
Wet 2003	6.0	4.6	1.4	30.4
Dry 2004	6.1	4.7	1.4	29.8
Wet 2004	5.6	4.6	1.0	21.7

Source: David (2006)

Notes: /a/ in irrigated areas. Inbred seeds are certified

/b/ t/ha = ton per hectare

However, while on average the yield advantage of hybrid over inbred is high using country-wide data, the high yield advantage is not uniform across rice fields in the Philippines. The yield advantage varies significantly across rice farms. This can be observed in the farm-level data of yield performance of hybrid and inbred in a number of rice provinces in Table 17. Hybrid has significant yield advantage over inbred in Kalinga, Laguna during the wet season of 2003, Mindoro Oriental, Camarines Sur, Bohol in the wet season of 2003, Negros Oriental, Leyte, and Agusan del Sur in the wet season of 2003. However, this is not the case in Isabela, Nueva Vizcaya, Quezon, Iloilo, Davao del Norte, and Agusan del Norte. Thus, David (2006) concluded that based on farm-level survey, hybrid seeds have yield advantage over inbred only in three out of fifteen sample provinces. “In most cases, there was no statistical difference in yields between hybrid and inbred varieties even though yield advantage may seem high because of wide variations in farm yields for both hybrid and inbred adoptors. In some provinces, hybrid varieties even had lower average yields than inbred. With one exception, yield advantage is statistically significant only when the difference in average yields between hybrid and inbred reach 1 ton per hectare or more.” (David 2006, p 38).

⁶ There are two production seasons in the Philippines: wet and dry season. However, the wet and dry seasons in the North do not coincide with the seasons in the South. Below is the rice planting and harvesting seasons in the Philippines:

<u>Season</u>	<u>Planting</u>	<u>Harvesting</u>
Wet season, North	May-July	October-December
Dry season, North	January-March	May-June
Wet season, South	October-December	March-May
Dry season, South	May-June	November-December

Table 17. Average yield of hybrid rice and yield advantage over inbred rice

Province	Yield advantage					
	Average yield (t/ha) ^{/a/}		t/ha		percent	
	Dry 2002	Wet 2003	Dry 2002	Wet 2003	Dry 2002	Wet 2003
Kalinga	6.3	5.3	1.74	1.05	38***	25***
Isabela	5.8	5	0.64	-21	13	-4
Nueva Vizcaya	3.5	4.2	0	0	0	0
Laguna	4	4.6	-0.28	1.02	-6	29*
Quezon	2.9	3.1	-0.28	0.09	-9	3
Mindoro Oriental	5.5	5.6	1.7	1.86	45***	50
Albay	5.7	4.8	0.49	0.42	9	9
Camarines Sur	4.6	4.3	0.71	0.53	18	14
Iloilo	1	4.4	-2.35	0.75	-70	-14
Bohol	3.3	4.3	-0.06	0.63	-2	17
Negros Oriental	3.6	3.5	0.56	0.7	18	25
Leyte	4.3	4.2	1.04	0.64	32***	18**
Davao del Norte	4.2	4.2	-0.13	-0.02	-3	-0.6
Agusan del Sur	4.7	3.6	0.06	0.5	-1	16
Agusan del Norte	2.6	2.7	0.22	0.01	-8	0.4

Source: David (2006)

Note: *** Significant at 1%; ** significant at 5%; * significant at 10%

No asterisk means difference is not statistically significant

/a/ t/ha = ton per hectare

Despite the huge financial resources from the government through various subsidies, the performance of the HRCP has not been very encouraging so far as. Table 18 shows the target areas for the implementation of the program between 2001 and 2005, and the area planted with hybrid seeds during dry and wet seasons. The area targeted for hybrid rice increased significantly both during the wet and dry seasons. The area planted to hybrid rice as a percent of targeted area was more than 50 percent. However, in terms of the total area of rice land in the Philippines, the area planted to hybrid rice is small – about 6 percent in wet season and 5 percent in dry season.

Table 18. Implementation of HRCP

Area	Season	
	Dry	Wet
Target areas (has) ^{/a/}		
2001	—	20,665
2002	13,087	31,699
2003	49,629	93,687
2004	92,706	182,625
2005	251,060	224,820
Area planted to hybrid (has)		
2001	—	5,472
2002	7,078	21,301
2003	25,521	54,691
2004	77,982	131,790
2005	186,329	138,709

Table 18. Continued

Area	Season	
	Dry	Wet
Percent of target area (%)		
2001	—	26.5
2002	54.1	67.2
2003	51.4	58.4
2004	84.1	72.2
2005	74.2	61.7
Percent of total rice area (%)		
2001	—	0.2
2002	0.4	0.9
2003	1.6	2.3
2004	4.7	5.5
2005	10.9 (5.0) /b/	5.8

Source: David (2006)

Notes: /a/ has = hectares

/b/ Figure in () is the estimated % of total rice area using seeds based on the first semester Rice and Corn Production Survey of the Bureau of Agricultural Statistics.

This adoption rate seems to be very small relative to the massive support from the government. One reason behind this low performance is the very high drop-out rate of farmers who participated in the program. David (2006) compiled data of farmers who participated in the program using information across municipalities in the country. The drop-out rate refers to the number of farmers who participated in the program but reverted back to growing inbred in the following season. Table 19 shows the average drop-out rate. The drop-out rate during the dry season of 2002 was 68 percent, but it increased to 80 percent in the wet season of 2002 and dry of 2003. The drop-out rate slightly declined in the wet season of 2003 and dry of 2004, but surged again to 86 percent in the wet season of 2004.

Table 19. Distribution of sample municipalities by drop-out rate (%) /a/

Municipality/drop-out rate	Dry 2002	Wet 2002	Dry 2003	Wet 2003	Dry 2004	Wet 2004
Number of municipalities	8	18	25	37	48	38
Average drop-out rate	68	80	80	67	69	86

Source: David (2006)

Note: /a/ Figures under Wet 2004, for example, refer to percentage of farmers in the season who did not grow hybrid rice in the succeeding dry season in the succeeding dry season of 2005.

There are several reasons why the drop-out rate is high. Based on the hybrid rice factsheet provided by the Pesticide Action Network Asia and the Pacific (PAN AP, 2007), some of the major reasons why the drop-out rate is high are:

1. Hybrid rice seeds are expensive. The cost of unsubsidized hybrid rice seeds is PhP2,400 per 20-kilo bag versus the average cost of certified inbred seeds of PhP1,400 per similar bag. A number of factors contribute to the high cost of hybrid rice seeds production. (a) Hybrid rice seeds are partially open and therefore susceptible to seed-borne insect pest diseases especially under the humid tropical conditions in the Philippines. Under such conditions, hybrid rice seeds would require cold dry storage facilities which are uneconomical and very expensive for seed growers to maintain. (b) Hybrid rice seed production is expensive because it is labor, input and knowledge intensive. Compared to normal mechanized rice cultivation, hybrid rice seeds production requires additional 50 man-days/hectare. The production of hybrid rice

seeds depends heavily on gibberellic acid, which is a growth regulator required to synchronize the flowering of the hybrid seed parents. Furthermore, hybrid rice seeds cultivation requires more fertilizers than ordinary inbred rice production

2. Despite the yield advantage of hybrid rice seed over inbred in some rice farm lands in the Philippines, net income for farmers are lower because of higher cost of seeds, fertilizers, pesticide, and farm labor wage.
3. Hybrid rice cannot be reused as seeds during the subsequent cropping season because the yield will deteriorate sharply. Thus, it is uneconomical for farmers to save some of the hybrid rice. Farmers are forced to purchase expensive new seeds every cropping season.

Another feature of the HRCP observed by David (2006) is that about half of the market for hybrid rice seeds is controlled by a single supplier. Thus, the guaranteed price of hybrid rice seeds paid by the government largely benefits this single supplier.

Table 20 shows comparative cost and revenue of seed and rice production of hybrid and inbred rice. This cost comparison is based on the procurement price of hybrid seeds of PhP2,400 per 20-kilo bag. The net return of hybrid seed production is more than PhP63,000 per hectare. In contrast, inbred seed growers only realize about PhP35,000 per hectare. On the other hand, the return of hybrid rice farmers is about PhP20,000 per hectare. The net return of inbred rice farmers is about PhP15,000 per hectare.

Table 20. Profitability of hybrid and inbred seed production and rice production (PhP/ha)

Cost/revenue	Seed Production			Rice dry 2004	
	Hybrid		Inbred ^{/b/}	Hybrid	Inbred ^{/b/}
	1 ^{/a/}	2 ^{/b/}			
Yield (kg/ha) ^{/c/}	1,000	735	4,977	5,355	4,993
Gross revenue	120,280	100,329	67,689	48,098	41,762
Cost of production	55,095	47,220	32,340	28,209	26,925
Gross revenue less cost of production	63,185	63,109	35,324	19,889	14,838
Cost per kilo		63	65	7	

Source: David (2006)

Notes: /a/ Average of cost and returns data of cooperatives assuming average yields of F1 seeds of 1 ton/hectare for Isabela (ISGMPC for dry 2004, Roxas for wet 2004, San Manuel for wet 2004), Cagayan (CSPMC for wet 2004), and Kalinga (Tabuk for dry 2004).

/b/ Based on sample of farms in 5 provinces (Isabela, Nueva Ecija, Iloilo, Davao del Sur, Davao del Norte) reported in the Sikap/Strive Foundation and PhilRice (2005) study.

/c/ kg/ha = kilo per hectare

Table 21 shows four major producers of hybrid rice seeds. Various cooperatives produce three types of hybrid rice seeds (Mestizo 1, 2, and 3). SL Agritech produces SL 8. Bayer Crop Science produces Tisoy and Bigante. Masanto produces Magilas. The share of the various cooperatives in the market of hybrid rice seeds increased from 43 percent in the wet season of 2003 to 69 percent in the dry season of 2004, but the share dropped to 47 percent in the dry season of 2005. The share of SL Agritech, which is a single domestic company, increased from 41 percent in the wet season of 2003 to 44 percent in the dry season of 2005. The market share of Bayer Crop Science is about 10 percent.

Table 21. Hybrid rice seeds, procured/subsidized (in bags) ^{/a/}

Seed producer	Wet 2003	Dry 2004	Dry 2005
Cooperatives	30,201	146,962	99,221
Mestizo 1	26,064	89,259	58,009
Mestizo 2	—	1,219	1,395
Mestizo 3	4,137	56,484	39,817
SL Agritech	29,138	48,807	93,611
SL8	29,138	48,807	93,611
Bayer Crop Science	9,098	17,211	20,164
Tisoy	582	2,266	—
Bigante ^{/b/}	8,516	14,945	20,164
Monsanto	2,126	—	—
Magilas	2,126	—	—
Total	70,563	212,980	212,996

Source: David (2006)

Notes: /a/ As of August 2004

/b/ Bigante which comes in 15kg/bag is considered equivalent to the 20kg/bag for all others.

David (2006) has also noted that Bigante seeds of Bayer Crop Science are not produced locally. They are imported from India. Bigante receives the lowest price guarantee from the government, yet Bayer Crop Science survives and still captures 10 percent of the market. Based on this, David (2006) has argued that it is not necessary to grow locally the hybrid rice seeds where the cost of production is very high. The seeds can be developed elsewhere under similar tropical production conditions in the Philippines, but with lower cost of production. In fact, given the natural and economic conditions in the Philippines, the country is less competitive in hybrid rice seed production than rice cultivation.

The implementation of the present rice productivity program through the HRCP has major flaws. It is costly and not sustainable. It cannot survive without large amount of government support. The government cannot sustain the support to HRCP indefinitely because the budget allocation to program plus the widening deficit of the National Food Authority will create a large dent on government resources. The government is faced with a very tight budget constraint. Furthermore, the massive subsidies provided by the government to implement the program only distorts farmers' choice among different variety of rice, especially between inbred and hybrid rice (David 2006).

The government should therefore stop the present costly and inefficient system of subsidies in the HRCP (David 2006). Instead, the government should divert its resources to supporting research and development activities that are focused on inbred varieties. "Rather than promote costly technologies such as hybrid rice, a more responsive approach in addressing rice productivity problems is to enhance inbred-based seed system with farmer's practice of saving, re-using and exchanging seeds. National governments should instead focus their meager resources on sustainable initiatives that ensure farmers' participation in technology developments such as Participatory Plant Breeding Programs and at the same time, focus on other factors that cause yield constraints." (PAN, AP 2007, p 5).

In sum, section 2 describes the structure and policies in Philippine agriculture. While the trade sector in the Philippines has gone through a series of reforms since the 1980s, the trade protection on agriculture, particularly on key food items, is still high. Furthermore, the policy focus of the government in agriculture is on rice. It is currently implementing a rice productivity program through the adoption of a new technology on hybrid rice seeds. However, the results of the program so far are not encouraging.

Will the current agricultural domestic support in the Philippines violate the agreements set in the WTO? The next section will put the discussion on Philippine agriculture domestic support within the context to the WTO agreements.

3. AGRICULTURAL DOMESTIC SUPPORT IN WTO CONTEXT

The current basis for the continuing multilateral negotiations in the Doha Development Agenda (Doha Round) for global agricultural trade is the WTO's July 2004 Agricultural Framework. This framework identified three "pillars" for negotiations, based on the Uruguay Round Agreement on Agriculture (URAA): market access, domestic support, and export subsidies. In this paper, we focus on domestic support issues within the context of Philippine agriculture.

The idea under the WTO is to reduce trade-distorting subsidies through a set of agreed-upon expenditure limits (or commitments). Subsidies are classified by the degree of distortion through colored boxes. The "green box" contains domestic subsidies that do not distort trade, or at most only result in minimal distortion. Payments that fall under this box include outlays for public activities (such as agricultural research and extension), conservation and the environment, rural development, food security stocks, domestic food aid (such as food stamps), farm disaster payments, and structural adjustment programs. Also included in this box are decoupled payments, or payments that are not linked to current production decisions or prices, such as commodity direct payments. These types of payments are referred to as "green" in the traffic-light sense, because countries can proceed with these expenditures without limit.

Payments under the production-limiting programs are also exempt from the limits. These payments are classified under the "blue box." For crops, these are payment programs on fixed area and yield based on no more than 85 percent of a fixed base-period production. For livestock production, these are payment programs that are tied to a fixed number of livestock.

Payments under the "amber box" are at the core of the URAA disciplines and Doha Round negotiations. There are imposed limits on the amount of subsidy payments under this box, and the payment limits are reduced over time. These payments are largely trade distorting, such as market price support (MPS) and production-related subsidies to farmers. However, within the amber box, small amounts of subsidy payments are allowed, regardless of the nature of the subsidy payments. These payments are called the *de minimis* exemptions. For developed countries, product-specific *de minimis* support cannot exceed 5 percent of the total value of production of a basic agricultural product during a relevant year. There is also a second category of non-product-specific support with a *de minimis* limit of 5 percent of the total value of agricultural production. For developing countries, the *de minimis* supports cannot exceed 10 percent. In addition, under another provision of the URAA, developing countries are allowed to exempt as "special and differential treatment" investment and input subsidies that are part of development programs. For the developed and developing countries, all support payments that fail to qualify for exemption are added up in what is called the total aggregate measure of support (AMS). The total AMS should not exceed a certain limit, though this limit varies across countries. For example, the limits specified in the Uruguay Round Agreement indicate that the United States cannot exceed US\$19.1 billion in the total AMS, and the European Union cannot exceed US\$83.3 billion (67.2 billion euros). The Philippines does not have total AMS commitment. Consequently, its non *de minimis* AMS is constrained to zero. However, the Philippines is subject to the 10 percent *de minimis* exception, which provides a category for its support.

The rules and procedures for computing the market price support as part of the AMS have ambiguities, which could be a potential source of disagreement. These ambiguities stem from the use of fixed external reference prices and from the vague definition of eligible production. In computing the MPS the external reference price (which is the average of the years 1986–1988) remains fixed. If calculation of the AMS is expressed in domestic currency, as it is for the Philippines, the use of a fixed external reference price might create a problem in calculating the AMS for developing countries, where inflation rates are generally higher as compared with developed countries.

The URAA is also vague in stating whether the quantity of production eligible to receive the administered price is total production, or only the marketed surplus that is actually sold in the market, or the quantity that is actually procured by the government through the price support mechanisms. Some

countries use procurement of agricultural commodities by government agencies (such as government-owned food corporations) as eligible production, while others consider the entire production volume of the commodities.

To monitor developments in domestic support across countries, the WTO requires each member country to submit regular notifications. The notification requires each member to classify their support into the various colored boxes described above and to compute the amount of the AMS. However, countries do not comply with this requirement seriously. The WTO notifications, which can be downloaded from the WTO website, are often out of date.

Philippine WTO Notification on Agricultural Domestic Support

The latest submission by the Philippine government on domestic support which is available at the WTO website was dated August 22, 2002 (WTO, 2002). It covered the years 1999, 2000, and 2001. Table 22 is based on this latest submission and on the previous ones. Based on the WTO notification format, Philippine domestic support falls under three categories: (a) green box payments, (b) special and differential treatment (SDT), and (c) market price support (MPS) under the product-specific AMS. There are no supports under the direct payments (blue box) or under the non-product-specific AMS. Moreover, as noted above, the Philippines does not have total AMS limit/commitment. Thus, the *de facto* limit on domestic support for the Philippines is the *de minimis* level, which is 10 percent of the value of production of an agricultural commodity.

In 1995, the Philippines reported a substantial amount of SDT worth P6.26 billion, almost twice the amount of the green box payments. Within this SDT, the largest item was investment subsidies to agriculture, which totaled P5.14 billion. In 1996, there was a major shift in reporting, when green box payments more than doubled to P7.4 billion and SDT payments dropped to P1.39 billion. Within the green box payments, the largest item was research, which increased more than 10 times since the previous year. In 1997, the reported green box payments increased dramatically to P15.18 billion, mainly due to the increase in support payments to research and infrastructure services. In 1998, the amount of support for research and infrastructure services dropped. The decline in payments to research continued in 1999, but for infrastructure services, it recovered significantly. From 1998 to 2000 the support for extension and advisory services picked up. In 2001, when the Philippines reported its last notification to the WTO, green box payments totaled P12.96 billion—about three times the value in 1995. On the other hand, payment for SDT in 2001 was P3.92 billion, which was lower than the value in 1995.

Table 22. Official WTO domestic support notification of the Philippines, 1995–2001

	1995	1996	1997	1998	1999	2000	2001	Data Source
Green Box Payments (DS: 1), PhP thousand	3,503,735	7,398,445	15,179,120	7,625,373	9,218,826	12,960,350	12,961,350	GAA ^{/g/}
General services								
Research	299,921	3,385,589	6,514,184	1,249,767	963,310	1,663,077	1,663,077	
Pest and disease control	19,561	42,530	87,852	46,247	73,665	91,527	92,527	
Training services	93,561	259,883	156,214	272,849	214,621	195,976	195,976	
Extension and advisory services	135,593	222,105	228,876	580,274	753,856	1,308,252	1,308,252	
Inspection services	114,687	128,094	95,411	179,647	193,987	108,301	108,301	
Marketing and promotion services	160,310	190,289	211,065	293,975	375,382	409,218	409,218	
Infrastructure services	1,630,102	2,167,378	5,995,947	3,498,469	5,396,367	7,804,416	7,804,416	
Domestic food aid	—	—	—	—	—	—	—	
Decoupled income support	—	—	—	—	—	—	—	
Income insurance and income safety net programs	—	—	—	—	—	—	—	
Payments for relief from natural disasters	—	—	—	—	—	—	—	
Structural adjustment assistance								
Producer retirement programs	—	—	—	—	—	—	—	
Resource retirement programs	—	—	—	—	—	—	—	
Investment aids	—	—	—	—	—	—	—	
Environmental programs	—	—	—	—	—	—	—	
Regional assistance programs	—	—	—	—	—	—	—	
Others	—	—	—	—	—	—	—	
Public stocking for food security purposes								
Stabilization program for food items	1,000,000	924,077	1,500,000	1,449,145	1,192,638	1,241,993	1,241,993	
Payments for relief from natural disasters								
Crop insurance	50,000	78,500	389,571	55,000	55,000	137,590	137,590	
Special and Differential Treatment (DS: 2), PhP thousand	6,264,000	1,393,977	2,107,429	1,932,303	1,584,193	3,276,479	3,917,441	DA /h/
Investment subsidies to agriculture ^{/a/}	5,138,000	909,364	1,926,906	1,002,005	1,202,530	1,692,108	2,322,922	
Input subsidies ^{/b/}	1,126,000	484,613	180,523	388,433	275,542	1,534,965	1,570,854	
Funds for agricultural investment ^{/c/}				541,865	106,121	49,406	23,665	
Direct Payments Under Production-Limiting Programs (Blue Box) (DS: 3)	—	—	—	—	—	—	—	

Table 22. Continued

	1995	1996	1997	1998	1999	2000	2001	Data Source
Product-Specific AMS (DS: 4, 5, 6, 7, 8)								
Market price support (DS: 5)	Applied Administered Price (PhP/kg) ^{/d/}							
Rice	14.00	14.00	14.00	13.20	14.67	14.62	14.62	NFA ^{/i/}
Corn	4.50	5.25	6.00	6.00	6.00	6.00	6.00	
	Eligible Production (thousand tons) ^{/e/}							
Rice	27	93	65	40	364	431	310	
Corn	0	12	40	208	0	8	0	
	Product-Specific AMS (PhP million) ^{/f/}							
Rice	257	877	617	347	3,683	4,337	3,122	
Corn	—	35	148	779	—	30	—	
	10% Value of Production (PhP million)							
Rice	10,312	11,603	11,148	8,775	12,067	12,812	13,465	
Corn	3,055	3,201	3,306	3,181	3,883	4,150	4,267	
Non-product-specific AMS (DS: 9)								
	—	—	—	—	—	—	—	

Source: World Trade Organization

Notes: /a/ Soft loans and grants for agricultural investment—These involve the provision of loans and grants for irrigation and other farm infrastructure support, farm equipment, postharvest facilities, research development, training, and extension activities.

/b/ Provision of access to farm inputs—This measure provides low-income resource-poor producers with the opportunity to have easier access to good-quality inputs, such as seeds, planting materials, fertilizers, and animal stock, in order to improve farm productivity.

/c/ Investment credit and grants—Government funds directed to improve rural structure, acquisition of machines, equipment, and postharvest facilities

/d/ External reference price, average 1986–1988 (PhP/kg)

/e/ Eligible production consists of rice procured plus palay (paddy) procured converted into rice terms using a 65% milling recovery rate.

/f/ Administered price less external reference price multiplied by eligible production.

/g/ General Appropriations Act

/h/ Department of Agriculture

/i/ National Food Authority

The other two components under the green box are payments for a stabilization program for food items for food security purposes and crop insurance for relief from natural disasters. Payments for food security are also sizable, at more than a billion pesos, or about 10 times larger than payments for crop insurance.

The Philippines reports MPS for rice and corn. The calculation of MPS is based on the external reference price, which was computed as the average for the period 1986–1988 and the yearly applied administered price. All prices are expressed in pesos per kilogram (P/kg).

In principle, for the administered support price to be effective in helping farmers, it has to be above the farm gate price. However, as illustrated in the appendix, this support price was lower in 1995, 1996, and 1998. The wholesale price of rice is higher than the administered ceiling price, which should be the case in order to protect consumers from price surges. The difference between the wholesale and the border price is the nominal protection rate. In the appendix it is also shown that administered price used in the WTO notification is similar or close to the rice ceiling price. This implies that the computed MPS for rice in the notification measures price gap closer to the level of consumers than producers. The correct price to use should be the support price for farmers. Thus, based on the calculation in the appendix, for rice, the appropriate external reference price is P4.56 per kilogram, whereas for corn, it is P2.26. The external reference price is subtracted from the administered price, which varies yearly, and then multiplied by eligible production to get the MPS value. The eligible production is defined as procurement by the NFA from rice and corn farmers. In the case of rice, NFA procurement is in terms of palay (rice paddy). In the MPS calculation, procured palay is converted into rice terms using a 65 percent recovery milling rate.

The MPS for rice peaked at P4.34 billion in 2000. During that year, 10 percent of the total value of rice production was P12.81 billion. Therefore, the MPS was significantly below 10 percent *de minimis*. In fact, for the whole period covering 1995 to 2001, the MPS for rice was significantly lower than the 10 percent *de minimis* limit. The same was true for the MPS for corn.

Shadow Agricultural Domestic Support Notification, 2002–2008

The official domestic support series ended in 2001, the year when the Philippine government last notified. In this section, we attempt to replicate the 2001 notification, using available information, in order to derive a method for estimating shadow agricultural domestic support notification from 2002 to 2008. This task, however, is not straightforward, because there is no available documentation for the 1995–2001 notification and the items in the official sources of information do not match the items in the WTO notification format. We therefore had to reconcile data in the official sources with the numbers in the WTO notification. The Appendix provides a step-by-step discussion of the procedure that we devised and adopted to estimate the shadow notification. Table 23 presents our best estimates of the agricultural domestic support in the Philippines for 2002 to 2008, based on our replication method.

Table 23. Shadow Philippine notification of domestic support to WTO

	2001	2002	2003	2004	2005	2006	2007	2008
Green Box Payments (DS:1), PhP thousand	11,116,133	11,426,306	6,976,505	5,889,786	8,548,733	7,314,776	10,379,016	16,345,962
General services								
Research	996,679	971,534	662,619	803,783	645,389	668,296	966,695	1,494,573
Pest and disease control	—	—	—	—	—	—	—	—
Training services	2,027,955	2,172,555	648,924	378,158	2,062,295	1,125,094	1,627,456	2,516,154
Extension and advisory services	1,190,341	903,322	731,120	479,092	473,939	602,291	871,218	1,346,960
Inspection services	90,657	1,083,461	534,542	419,080	281,765	375,708	594,264	980,898
Marketing and promotion services	186,549	105,798	120,682	95,056	149,182	107,061	154,864	239,430
Infrastructure services	5,244,369	5,173,865	3,703,847	3,139,846	3,922,392	3,422,554	4,950,746	7,654,176
Domestic food aid	—	—	—	—	—	—	—	—
Decoupled income support	—	—	—	—	—	—	—	—
Income insurance and income safety net programs	—	—	—	—	—	—	—	—
Payments for relief from natural disasters	—	—	—	—	—	—	—	—
Structural adjustment assistance								
Producer retirement programs	—	—	—	—	—	—	—	—
Resource retirement programs	—	—	—	—	—	—	—	—
Investment aids	—	—	—	—	—	—	—	—
Environmental programs	—	—	—	—	—	—	—	—
Regional assistance programs	—	—	—	—	—	—	—	—
Others	—	—	—	—	—	—	—	—
Public stocking for food security purposes								
Stabilization program for food items	1,241,993	902,000	461,000	461,000	900,000	900,000	1,100,000	2,000,000
Payments for relief from natural disasters								
Crop insurance	137,590	113,771	113,771	113,771	113,771	113,771	113,771	113,771
Special and Differential Treatment (DS: 2), thousand pesos	2,618,923	2,324,120	3,627,840	3,101,661	3,133,936	2,500,627	3,617,173	5,592,385
Investment subsidies to agriculture ^{/a/}	1,283,310	1,266,057	906,340	768,328	959,818	837,507	1,211,459	1,872,995
Input subsidies ^{/b/}	1,190,243	1,053,100	2,660,113	2,212,842	2,083,522	1,590,725	2,300,994	3,557,486
Funds for agricultural investment ^{/c/}	145,370	4,963	61,387	120,491	90,596	72,395	104,720	161,904
Direct Payments Under Production-Limiting Programs (Blue Box) (DS: 3) —	—	—	—	—	—	—	—	—

Table 23. Continued

	2001	2002	2003	2004	2005	2006	2007	2008
Product-Specific AMS (DS: 4, 5, 6, 7, 8)								
Market price support (DS: 5) ^{/d/}								
Applied Administered Price (PhP/kg)								
Rice	15.38	15.38	15.38	15.38	15.38	15.38	15.38	22.56
Corn	6.00	6.00	6.00	6.08	7.13	8.50	8.50	9.50
Eligible Production (thousand tons) ^{/e/}								
Rice	308	195	192	135	50	48	65	130
Corn	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0
Product-Specific AMS (PhP million s) ^{/f/}								
Rice	3,337	2,109	2,083	1,461	538	514	704	2,341
Corn	—	—	—	—	15.8	—	—	—
10% Value of Production (PhP million)								
Rice	13,46	14,250	14,48	16,30	18,16	19,41	21,80	32,19
Corn	5	7	2	8	7	9	9	9
Rice	4,267	3,848	3,951	5,489	4,980	6,599	7,707	9,757
Corn	—	—	—	—	—	—	—	—
Non-Product-Specific AMS (DS: 9)								

Source: Author's calculations

Notes: /a/ Soft loans and grants for agricultural investment—These involve the provision of loans and grants for irrigation and other farm infrastructure support, farm equipment, postharvest facilities, research development, training, and extension activities.

/b/ Provision of access to farm inputs—This measure provides low-income resource-poor producers with the opportunity to have easier access to good-quality inputs, such as seeds, planting materials, fertilizers, and animal stock in order to improve farm productivity.

/c/ Investment credit and grants—Government funds directed to improve rural structure, acquisition of machines, equipment, and postharvest facilities.

/d/ Based on external reference price (average 1986–1988: rice – P4.56/kg corn – P2.26/kg)

/e/ Eligible production consists of rice procured plus palay (paddy) procured converted into rice terms using a 0.65 milling recovery rate

/f/ Administered price less external reference price multiplied by eligible production

The green box payments declined from P11.1 billion in 2001 to P5.9 billion in 2005. However, this trend reversed in the following year, reaching P16.35 billion by 2008. The increase was due to the substantial climb in expenditures on infrastructure services (P7.65 billion in 2008), training services (P2.53 billion), and stabilization program for food items (P2 billion). There were also notable increases in expenditures on research (P1.94 billion) and extension services (P1.36 billion).

Under the SDT, investment subsidies to agriculture and input subsidies were the two major items. Investment subsidies to agriculture initially saw a declining trend through 2004; this trend reversed in 2005 to reach an expenditure of P1.87 billion by 2008. There were also significant increases in input subsidies in 2003 (P2.66 billion) and in 2008 (P3.56 billion).

The administered price of rice increased to P22.56 by 2008. As discussed in the appendix, starting in May 2008, the government has increased the support price of palay from P10 per kilogram to P17 per kilogram. Thus, for the whole of 2008, the average price is P14.67. The P22.56 per kilogram price support is in terms of rice using the 0.65 recovery rate.

The government increased the price to encourage domestic rice production in order to minimize the negative impact on the domestic market of the uncertainties in the international rice market. The world price of rice increased from \$305 per metric ton in 2006 to \$361 in 2007 and to \$907 in April of 2008. Because the Philippines imports 12.4 percent (1.7 million metric tons) of its rice requirement annually, the price hike has had a significant effect on the domestic market.

The NFA's procurement of rice has remained very low due to the financial difficulties discussed earlier. Thus, despite the widening gap between the average external reference price of P4.56/kg and the administered price, the MPS for rice in 2008 was still significantly below the 10 percent *de minimis* limit. The 2008 MPS for rice was P2.34 billion, while the *de minimis* limit was P32.2 billion (or the MPS 92.7 percent below the limit).

In May 2008, the support price of corn was also increased to P10/kg. Thus, in the whole of 2008, the average support price was P9.50/kg. Because there was zero NFA procurement of corn, the MPS for corn was also zero. The *de minimis* limit was P9.76 billion.

Projection of Philippine Agricultural Domestic Support

We did not have the benefit of a rigorous econometric model for determining our projection of domestic support. We instead based our projections on historical trends. In projecting the agricultural domestic support until 2013, we applied the following assumptions:

- i. Real GDP agriculture will grow by 4 percent per year from 2009 to 2013. Its implicit price deflator will also grow by 4 percent per year. This information will project nominal GDP agriculture.
- ii. The average ratio between AFMP and nominal GDP agriculture from 2001 to 2008 was 1.74. In 2009 to 2013, we assume the ratio to increase to 2 percent. The budget for the AFMP has been projected based on this ratio.
- iii. The average share of green box payments in the sum of green and SDT from 2001 to 2008 was 0.74. On the other hand, the average share of SDT in the total was 0.26. We applied these ratios to break down the budget for AFMP to green box payments and SDT.
- iv. We assume the administered price of palay to remain at P17/kg in 2009. It will increase to P18/kg in 2011 and P19/kg in 2013. We converted the administered price into the price of rice using the 0.65 recovery ratio. We assume that the wholesale price of rice will follow the growth in the administered price of rice over these years. Furthermore, we assume production of palay to grow by 4 percent annually. We assume NFA rice procurement at 130,000 metric tons annually in the projection. We derived the MPS for rice, the value of production, and the 10 percent *de minimis* limit using these projections.
- v. We assume the administered price of corn to be set at P10/kg in 2009 and 2010. It will increase to P12/kg in 2011 and 2012 and to P13/kg in 2013. We assume the wholesale price

of corn to follow this pattern. We also assume corn production to grow by 4 percent annually from 2009 to 2013. Because there is zero NFA procurement of corn, we retain this assumption until 2013. We derived the MPS for corn, the value of production, and the 10 percent *de minimis* limit using these projections.

Table 24 presents the results of this exercise. The green box payments will increase from P16.35 billion in 2008 to P22 billion in 2013. SDT will increase from P5.59 billion in 2008 to P7.75 billion in 2013. The MPS for rice is projected to increase from P2.3 billion in 2008 to P3.2 billion in 2013. These values are significantly below the *de minimis* limit. The MPS for corn is zero because there is no NFA procurement of corn.

Table 24. Projected Philippine agriculture domestic support

	2008	2009	2010	2011	2012	2013
Green box payments (DS: 1), PhP thousand	16,345,962	16,172,501	17,466,301	18,863,605	20,372,694	22,002,509
Special and differential treatment (DS: 2), PhP thousand	5,592,385	5,693,813	6,149,318	6,641,264	7,172,565	7,746,370
Direct payments under production-limiting programs (blue box) (DS: 3)	—	—	—	—	—	—
Product-specific AMS (DS: 4, 5, 6, 7, 8)						
Market price support (DS: 5), PhP million						
Rice	2,341	2,807	2,807	3,007	3,007	3,207
Corn	—	—	—	—	—	—
10% of value of production (million pesos)						
Rice	32,199	38,814	40,367	44,451	46,229	50,749
Corn	9,757	10,681	11,109	13,864	14,418	16,245
Non-product-specific AMS (DS: 9)	—	—	—	—	—	—

Source: Author's calculations

4. SUMMARY AND CONCLUSION

There have been major policy shifts in agriculture in the Philippines. Government policies in the 1950s, 1960s, and 1970s were initially biased against agriculture. However, since the early 1980s, government policy has shifted toward protecting agriculture. The system of protection has included high tariffs and a nominal protection rate, as compared with the manufacturing sector, as well as high domestic support.

Within agricultural, there are differences in protection. Rice, corn, sugar, and chicken are highly protected commodities. Rice is the only commodity at present that is under quantitative restriction. Coconut, beef, and pork have negative protection. Food manufacturing, which is largely agriculture based, is also highly protected.

In this paper, we reviewed the government's expenditure pattern in agriculture. Since 2000, there have been major shifts in expenditure, including a reallocation of budget to the Agriculture and Fisheries Modernization Program (AFMP). There was also a spike in expenditure for the Department of Agriculture's attached agencies and corporations due to the infusion of P10.74 billion in funds to the National Food Authority (NFA) for its financial difficulties. This was followed by another infusion of P12.94 billion in 2005. The NFA monitors developments in the country's supply of food, particularly rice and corn.

Although the NFA will remain in financial distress, it is expected to continue to subsidize rice—in particular, the consumer price of rice—because of the ongoing food crisis in the domestic market. The Philippine government has invested substantial resources to increase rice productivity through the present Hybrid Rice Commercialization Program (HRCP). Implementation of this program is expected to continue in the light of the ongoing food crisis. Estimates indicate that from 2001 to 2005, the government invested about P10 billion to run the program. According to some studies, the results are not very encouraging. The hybrid seed adoption rate of farmers remains very low at 5 percent, in part because the dropout rate of those who adopted hybrid seeds is high.

Overall, government spending on agriculture is about 3 percent of total national government expenditure, 4 percent of agriculture GDP, and 0.6 percent of GDP. This expenditure level is low relative to other middle-income developing countries.

The latest submission by the Philippine government on domestic support to the WTO which is available at the WTO website was dated August 22, 2002. It covered the years 1999, 2000, and 2001. Based on the WTO notification format, Philippine domestic support from 1995 to 2001 falls under three categories: (a) green box payments, (b) special and differential treatment (SDT), and (c) market price support (MPS) under the product-specific aggregate measure of support (AMS). There are no supports under the direct payments (blue box) or the non-product-specific AMS. Moreover, the Philippines does not have total AMS limit/commitment. Thus, the *de facto* limit on domestic support for the Philippines is the *de minimis* level, which is 10 percent of the value of production of an agricultural commodity.

In 2001, the green box payments amounted to P12.96 billion, about three times the value in 1995. The major item under the green box is infrastructure services. In 2001, SDT was P3.92 billion, which was lower than the value in 1995. The major items in SDT are investment subsidies to agriculture and input subsidies.

The market price support (MPS) for rice and corn is based on the average external reference price for the period 1986–1988, the yearly administered price, and eligible production. Eligible production is defined as NFA procurement of rice and corn. However, NFA procurement of these commodities remained very low. Thus, the MPS for rice and corn is significantly below the *de minimis* limit.

We extended the domestic support series from 2002 to 2008 based on the replication method we devised and adopted. We further projected the series to 2013 based on certain assumptions. The results indicate that green box payments will increase from P11.43 billion in 2002 to P16.35 billion in 2008 and P22 billion in 2013. SDT will increase from P2.32 billion in 2002 to P5.59 billion in 2008 and P7.75 billion in 2013. Because of very small NFA procurement of rice and zero procurement of corn, the MPS of rice and corn is significantly below the *de minimis* limit and will remain so in 2013.

There are ambiguities in the rules and procedures for computing the MPS. These ambiguities stem from the use of a fixed external reference price and from the vague definition of eligible production. In computing the MPS, the external reference price remains fixed, at the average of the years 1986–1988. Because the MPS calculation is expressed in domestic currency, the use of a fixed external reference price may create problems in the calculation for developing countries, where inflation rates are generally higher as compared with developed countries; however, this is not a difficulty for the Philippines. The use of government procurement as eligible production may not reflect the correct level of price-distorting domestic support, because budget constraints usually limit government procurement of key agricultural commodities, as in case of the NFA. Moreover, the MPS reported in the WTO domestic support notifications may differ significantly from the more economically meaningful measure of nominal protection due to tariffs and evaluated at prevailing world prices.

APPENDIX A: ESTIMATING THE GREEN BOX AND SPECIAL AND DIFFERENTIAL TREATMENT

There are three sources of information in the official notification: (a) the General Appropriations Act (GAA) of the Department of Budget and Management (DBM) for the green box payments; (b) the Department of Agriculture (DA) for the SDT payments; and (c) the NFA for the MPS (Table 13). The GAA includes all budget items of all sectors of government: the executive, the legislative, and the judiciary. Within the executive, budget items of all departments, agencies, and programs are included. One of the departments is the DA. The budget items related to agricultural development are in the main DA budget, in the budgetary support to government corporations within the DA, including the NFA, and in the budget items for the Agriculture and Fisheries Modernization Act (AFMA), which started in 2001 to support the Agriculture and Fisheries Modernization Program (AFMP). We retraced the numbers in the official notification for the green box from the numbers in the GAA for agriculture. We were able to trace two items: stabilization program for food items and crop insurance. The first is under the budgetary support to government corporations for the NFA, and the second is under AFMA—in particular, under operations for the crop sector development.⁷ The remaining items under the green box payments in the notification cannot be traced to the items in the GAA, perhaps because the numbers in the notification are sums of various items in the GAA, which we have no way of identifying because no documentation is available.⁸

When we compared the total of green box payments and SDT for 2001 in the notification with the AFMA expenditure for 2001, we observed a small difference (P16.88 billion for the former versus P15.86 billion for the latter, or about 6 percent difference). We were therefore able to assume that the AFMA expenditure could be used to approximate payments for the green box and SDT. Thus, our first step was to gather two sets of available information: expenditure on the AFMA (Table A.1) and the utilization of funds for AFMA within the DA (Table A.2).

Note that the total in Table A.2 is different from the total in Table A.1. There are two sources for this difference: Table A.2 is only for the DA, whereas Table A.1 covers other items outside of the main DA; in addition, Table A.2 is the actual utilization of funds. Thus, line 21 in Table A.2 is less than the value of line 2 in Table A.1, except for 2003, for which it is slightly above.

We retained the format of Table A.2 because it is closer to the WTO notification format. Our second step was to incorporate the values outside of the main DA in Table A.1 into Table A.2 to come up with the values in Table A.3. The difference between Table A.2 and Table A.3 is in lines 7, 8, and 15. Line 7 in Table A.3 is equal to line 16 in Table A.1 plus line 8 in Table A.2. Line 8 in Table A.3 is equal to lines 11 and 13 in Table A.1 plus line 7 in Table A.2. Line 15 in Table A.3 is equal to lines 14 and 15 in Table A.1 plus line 7 in Table A.2. The rest of the numbers are same.

⁷ The exact item is National Government Subsidy for Crop Insurance Premium of Subsistence Farmers Under the Crop Insurance Program of Philippine Crop Insurance Corporation.

⁸ We met and discussed with the person in charge of WTO issues in the Department of Agriculture in Manila. He commented that there are no available documentations for past WTO notifications on file. The staff who had prepared the previous notification had already left the department.

Table A.1. Expenditure on agriculture and fisheries modernization program, PhP'000

	2001	2002	2003	2004	2005
1 Agriculture and Fisheries Modernization Program	15,863,923	13,308,546	10,064,229	10,178,348	13,565,403
2 Department of Agriculture	14,707,876	11,418,266	9,680,789	9,974,009	12,363,797
3 Office of the Secretary	13,348,014	9,429,128	8,408,829	8,853,692	10,169,095
4 Bureau of Fisheries and Aquatic Resources	1,112,963	1,715,185	983,409	937,707	1,885,088
5 Fertilizer and Pesticide Authority	4,424	—	—	—	979
6 National Agriculture and Fishery Council	—	—	113,703	10,510	128,431
7 National Meat Inspection Commission	113,526	101,973	95,978	99,929	104,497
8 Philippine Carabao Center	128,949	171,980	78,870	72,171	75,707
9 State universities and colleges	—	—	—	—	—
10 Department of Science and Technology	1,803	—	—	—	—
11 Philippine Council for Agriculture, Forestry and Natural Resources Research and Development	1,803	—	—	—	—
12 Budgetary support to government corporations	16,931	443,164	183,440	204,339	230,190
13 Philippine Rice Research Institute	16,931	370,351	136,000	150,000	150,000
14 Philippine Coconut Authority	—	41,334	35,130	36,200	41,330
15 Philippine Fisheries Development Authority	—	31,479	12,310	18,139	38,860
16 Allocation to local government units	1,137,313	1,447,116	200,000	—	971,416

Source: Expenditure Program, Department of Budget and Management, various issues

Table A.2. Utilization of agriculture and fisheries modernization program of the Department of Agriculture, PhP '000

	2001	2002	2003	2004	2005
1 A. Agriculture and Fisheries Modernization Program (AFMP)					
2 Irrigations	5,024,108	5,847,668	4,283,116	3,433,251	3,866,506
3 Postharvest facilities	670,442	330,217	108,747	474,923	1,015,704
4 Other infrastructure	833,129	262,037	218,324	—	—
5 Agro-industry modernization credit and financing program	145,370	4,963	61,387	120,491	90,596
6 Farmer/fisherfolk marketing assistance	130,052	59,193	58,937	51,109	48,337
7 Research and development	945,360	553,204	412,017	458,315	495,389
8 Capability building of farmers and fisherfolk organization and LGUs ^{/a/}	890,362	718,478	448,924	378,158	1,090,879
9 Salary supplement of extension workers under the LGUs	335,300	421,512	519,717	379,134	—
10 National agricultural and fisheries education system	—	—	—	—	—
11 National information network	56,497	46,605	61,745	43,947	100,845
12 Rural nonfarm employment training	—	—	—	—	—
13 Subtotal	9,030,620	8,243,877	6,172,914	5,339,328	6,708,256
14 B. Other Attribution to AFMA ^{/b/}					
15 Regulatory services	228,247	1,124,419	600,873	478,512	315,346
16 Production support	1,190,243	1,053,100	2,660,113	2,212,842	2,083,522
17 Policy and planning	32,585	47,979	114,602	195,468	—
18 Human resources development	280	6,961	—	—	—
19 Program management	855,041	481,810	211,403	99,958	473,939
20 Subtotal	2,306,396	2,714,269	3,586,991	2,986,780	2,872,807
21 Total (A + B)	11,337,016	10,958,146	9,759,905	8,326,108	9,581,063

Source: Department of Agriculture

Notes: /a/ Local government units

/b/ Agriculture and Fisheries Modernization Act

Table A.3. Expenditure on agriculture and fisheries modernization program, PhP '000

	2001	2002	2003	2004	2005
1 A. Agriculture and Fisheries Modernization Program (AFMP)					
2 Irrigations	5,024,108	5,847,668	4,283,116	3,433,251	3,866,506
3 Postharvest facilities	670,442	330,217	108,747	474,923	1,015,704
4 Other infrastructure	833,129	262,037	218,324	—	—
5 Agro-industry modernization credit and financing program	145,370	4,963	61,387	120,491	90,596
6 Farmer/fisherfolk marketing assistance	130,052	59,193	58,937	51,109	48,337
7 Research and development	964,094	923,555	548,017	608,315	645,389
8 Capability building of farmers and fisherfolk organization and LGUs ^{/a/}	2,027,675	2,165,594	648,924	378,158	2,062,295
9 Salary supplement of extension workers under the LGUs	335,300	421,512	519,717	379,134	—
10 National agricultural and fisheries education system	—	—	—	—	—
11 National information network	56,497	46,605	61,745	43,947	100,845
12 Rural nonfarm employment training	—	—	—	—	—
13 Subtotal		10,061,344	6,508,914	5,489,328	7,829,672
14 B. Other Attribution to AFMA ^{/b/}					
15 Regulatory services	228,247	1,197,232	648,313	532,851	395,536
16 Production support	1,190,243	1,053,100	2,660,113	2,212,842	2,083,522
17 Policy and planning	32,585	47,979	114,602	195,468	—
18 Human resources development	280	6,961	—	—	—
19 Program management	855,041	481,810	211,403	99,958	473,939
20 Subtotal	2,306,396	2,787,082	3,634,431	3,041,119	2,952,997
21 Total (A + B)	12,493,063	12,848,426	10,143,345	8,530,447	10,782,669

Source: Department of Agriculture

Notes: /a/ Local government units

/b/ Agriculture and Fisheries Modernization Act

The third step was to convert Table A.3 into the WTO notification format for the green box payments and SDT. The result of this step is presented in Table A.4. Line 21 in Table A.4 shows the stabilization program for food items. Earlier, we identified this item under the budgetary support to the NFA, which is not under the AFMA program. Thus, the values for this item were taken directly from the GAA. We also identified line 23 (crop insurance) as being under the AFMA program. The values for this item were taken directly from the GAA. In reconciling the items in Table A.3 with the WTO notification format, we devised and applied the following correspondence matrix to arrive at Table A.4:

Items in WTO Notification Format	Items in Table A.3
Infrastructure services	Irrigation + postharvest facilities + other infrastructure
Funds for agricultural investment	Agro-industry modernization credit and financing program
Research	Research and development + policy planning
Marketing and promotion services	Farmer/fisherfolk marketing assistance + national information network
Extension and advisory services	Salary supplement of extension workers under the LGUs + program management
Training services	Capability building of farmers and fisherfolk organization and LGUs + national agricultural and fisheries education system + rural nonfarm employment training+ human resources development
Inspection services	Regulatory services – crop insurance
Input subsidies to agriculture	Production support

One may observe no item in this matrix corresponds to investment subsidies to agriculture. We suspect that this was lumped in infrastructure services, which, in Table A.3, include irrigation, postharvest facilities, and infrastructure. To come up with an entry for this item in Table A.4, we added infrastructure services and investment subsidies to agriculture in the actual WTO notification for 1999, 2000, and 2001 and took the average share of each item over those years. We then applied these average shares to break down the total of irrigation, postharvest facilities, and other infrastructure from Table A.3 into infrastructure services and investment subsidies to agriculture for Table A.4.

Table A.4. Shadow domestic support notification of the Philippines

	Actual	Replication	2002	2003	2004	2005
1 Green Box Payments (DS: 1), PhP thousand	12,961,350	12,399,443	12,692,363	7,882,845	6,658,114	9,508,551
2 General services						
3 Research	1,663,077	996,679	971,534	662,619	803,783	645,389
4 Pest and disease control	92,527	—	—	—	—	—
5 Training services	195,976	2,027,955	2,172,555	648,924	378,158	2,062,295
6 Extension and advisory services	1,308,252	1,190,341	903,322	731,120	479,092	473,939
7 Inspection services	108,301	90,657	1,083,461	534,542	419,080	281,765
8 Marketing and promotion services	409,218	186,549	105,798	120,682	95,056	149,182
9 Infrastructure services	7,804,416	5,244,369	5,173,865	3,703,847	3,139,846	3,922,392
10 Domestic food aid	—	—	—	—	—	—
11 Decoupled income support	—	—	—	—	—	—
12 Income insurance and income safety net programs	—	—	—	—	—	—
13 Payments for relief from natural disasters	—	—	—	—	—	—
14 Structural adjustment assistance provided through producer	—	—	—	—	—	—
15 Structural adjustment assistance provided through resource	—	—	—	—	—	—
16 Structural adjustment assistance provided through investment	—	—	—	—	—	—
17 Environmental programs	—	—	—	—	—	—
18 Regional assistance programs	—	—	—	—	—	—
19 Others	—	—	—	—	—	—
20 Public stocking for food security purposes						
21 Stabilization program for food items	1,241,993	1,241,993	902,000	461,000	461,000	900,000
22 Payments for relief from natural disasters						
23 Crop insurance	137,590	137,590	113,771	113,771	113,771	113,771
24 Special and Differential Treatment (DS: 2), PhP thousand	3,917,441	1,335,613	1,058,063	2,721,500	2,333,333	2,174,118
25 Investment subsidies to agriculture ^{/a/}	2,322,922	1,283,310	1,266,057	906,340	768,328	959,818
26 Input subsidies ^{/b/}	1,570,854	1,190,243	1,053,100	2,660,113	2,212,842	2,083,522
27 Funds for agricultural investment ^{/c/}	23,665	145,370	4,963	61,387	120,491	90,596

Notes: /a/ Soft loans and grants for agricultural investment—These involve the provision of loans and grants for irrigation and other farm infrastructure support, farm equipment, postharvest facilities, research development, training, and extension activities.

/b/ Provision of access to farm inputs—This measure provides low-income resource-poor producers with the opportunity to have easier access to good-quality inputs, such as seeds, planting materials, fertilizers, and animal stock in order to improve farm productivity.

/c/ Investment credit and grants—Government funds directed to improve rural structure, acquisition of machines, equipment, and postharvest facilities.

Our replication of the 2001 notification is not perfect. We did not have indicators for expenditure on pest and disease controls. The expenditure for training services is larger than what was reported in the official notification. Our estimates of expenditure on infrastructure services and investment subsidies to agriculture are lower than the numbers reported in the notification. Overall, our estimate of the sum of the green box payments and SDT is lower than the notification by P562 million. We applied this replication method, which provides our best estimates given the available information, to arrive at the shadow notification for the green box and SDT from 2002 to 2005.

We further extended the series until 2008, using information from the GAA for 2006, 2007, and 2008. We applied the numbers for the stabilization program for food items and crop insurance directly from the GAA for these years. We took the average ratio between line 21 in Table A.3 and the expenditure for the AFMA program in 2001–2005 (note that Table A.3 captures the utilization of funds for the AFMA program). We applied this average ratio to the budget for the AFMA program for 2006, 2007, and 2008 to extend line 21 in Table A.3 for those years.

We computed the percentage distribution of the components of Table A.3 for 2001–2005. For each item, we took the average over these years. We then distributed line 21 in Table A.3 for 2006, 2007, and 2008 to each item, using this average percentage distribution. The complete extended series is presented in Table A.5.

Table A.5. Shadow domestic support notification of the Philippines, 2006–2008

	2006	2007	2008
1 Green Box Payments (DS: 1), PhP thousands	7,314,776	10,379,016	16,345,962
2 General Services			
3 Research	668,296	966,695	1,494,573
4 Pest and disease control	—	—	—
5 Training services	1,125,094	1,627,456	2,516,154
6 Extension and advisory services	602,291	871,218	1,346,960
7 Inspection services	375,708	594,264	980,898
8 Marketing and promotion services	107,061	154,864	239,430
9 Infrastructure services	3,422,554	4,950,746	7,654,176
10 Domestic food aid	—	—	—
11 Decoupled income support	—	—	—
12 Income insurance and income safety net programs	—	—	—
13 Payments for relief from natural disasters	—	—	—
14 Structural adjustment assistance provided through producer retirement programs	—	—	—
15 Structural adjustment assistance provided through resource retirement programs	—	—	—
16 Structural adjustment assistance provided through investment aids	—	—	—
17 Environmental programs	—	—	—
18 Regional assistance programs	—	—	—
19 Others	—	—	—
20 Public stocking for food security purposes			
21 Stabilization program for food items	900,000	1,100,000	2,000,000
22 Payments for relief from natural disasters			
23 Crop insurance	113,771	113,771	113,771
24 Special and Differential Treatment (DS: 2), PhP thousand	2,500,627	3,617,173	5,592,385
25 Investment subsidies to agriculture ^{/a/}	837,507	1,211,459	1,872,995
26 Input subsidies ^{/b/}	1,590,725	2,300,994	3,557,486
27 Funds for agricultural investment ^{/c/}	72,395	104,720	161,904

Notes: /a/ Soft loans and grants for agricultural investment—These involve the provision of loans and grants for irrigation and other farm infrastructure support, farm equipment, postharvest facilities, research development, training, and extension activities.

/b/ Provision of access to farm inputs—This measure provides low-income resource-poor producers with the opportunity to have easier access to good-quality inputs, such as seeds, planting materials, fertilizers, and animal stock, in order to improve farm productivity.

/c/ Investment credit and grants—Government funds directed to improve rural structure, acquisition of machines, equipment, and postharvest facilities.

APPENDIX B: ESTIMATING MPS

We now look closely at the calculation of the MPS. Table B.1 shows the details of the calculation of the MPS for rice. The external reference price is P4.56 per kilogram, which is the average for the period 1986–1988. The administered price is about P14 per kilogram. The NFA procurement is palay production in Table B.2 multiplied by a 65 percent recovery ratio plus the small amount of rice procurement by NFA in 1995 and 1996. The MPS is the difference between the administered and the external reference price multiplied by NFA procurement. The results indicate that the MPS for rice is substantially lower than the 10 percent value of rice production.

Table B.1. WTO notification, market price support for rice, 1995-2001

	Price (PhP/kg)		NFA Procurement ('000 MT)	Market Price Support (PhP mil.)	Value of Production (PhP mil.)	
	External Reference	Administered			Total	10% of Total
	1995	4.56	14.00	27	257	103,121
1996	4.56	14.00	93	877	116,025	11,603
1997	4.56	14.00	65	617	111,484	11,148
1998	4.56	13.20	40	347	87,747	8,775
1999	4.56	14.67	364	3,683	120,665	12,067
2000	4.56	14.62	431	4,337	128,125	12,812
2001	4.56	14.62	310	3,122	134,647	13,465

Source: WTO Notification and Philippine National Income Accounts

Table B.2. Production and NFA intervention in rice and corn ('000 metric tons)

	Palay and Rice								
	Palay Production	NFA Intervention				Corn			
		Procurement		Rice		NFA Intervention			
		Palay	Rice	Rice Injection	Rice Importation	Production	Procurement	Importation	Injection
1974	3,560	94	—	194	—	3,219	1	—	5
1975	3,994	233	—	227	—	3,374	673	—	26
1976	4,163	274	—	255	—	3,209	43	—	34
1977	4,295	650	—	202	—	2,864	84	—	29
1978	4,187	519	—	123	—	3,062	154	—	28
1979	4,357	758	—	61	—	3,080	56	—	68
1980	4,408	551	—	280	—	3,050	13	219	101
1981	4,445	581	—	304	—	3,296	62	256	277
1982	4,658	649	—	244	—	3,404	68	342	306
1983	4,643	534	—	799	—	3,134	120	521	465
1984	4,744	298	—	505	191	3,250	15	183	199
1985	5,059	401	—	365	249	3,863	110	247	144
1986	5,266	422	—	113	6	4,091	34	6	105
1987	5,177	572	—	467	—	4,278	27	50	110
1988	5,496	264	—	405	181	4,428	122	25	65
1989	5,974	208	—	472	209	4,522	0	172	98
1990	9,673	572	—	670	621	4,854	320	354	50
1991	9,129	555	—	158	—	4,655	99	—	186
1992	9,434	420	—	521	—	4,619	6	—	166

Table B.2. Continued

	Palay and Rice								
	Palay	NFA Intervention					Corn		
		Procurement		Rice Injection	Rice Importation	Production	NFA Intervention		
		Palay	Rice				Procurement	Importation	Injection
1993	10,538	155	—	485	210	4,798	9	—	7
1994	10,541	61	—	112	—	4,519	7	—	11
1995	11,284	8	22	257	257	4,129	—	207	1
1996	11,269	124	0.6	733	893	4,151	12	558	1
1997	11,269	101	—	623	720	4,332	40	172	39
1998	8,555	62	—	1,627	2,136	3,823	208	317	108
1999	11,787	561	—	1,372	782	4,585	—	—	159
2000	12,389	663	—	1,169	617	4,511	8	60	43
2001	12,955	474	—	813	739	4,525	—	33	33
2002	13,271	300	—	1,239	1,238	4,319	—	157	—
2003	13,500	296	—	1,120	698	4,616	—	—	—
2004	14,497	208	—	1,342	984	5,413	—	—	—
2005	14,603	76	—	1,666	1,805	5,253	3	67	2
2006	15,327	73	—	1,508	1,622	6,082	—	—	0.1

Source: National Food Authority

Table B.3 shows the comparison of the price of rice. In principle, for the administered support price to be effective in helping farmers, it has to be above the farm gate price. However, in 1995, 1996, and 1998, this support price was lower. The wholesale price of rice is higher than the administered ceiling price, which should be the case in order to protect consumers from price surges. The difference between the wholesale and the border price is the nominal protection rate. One can observe from the price comparison that the administered price used in the WTO notification is similar or close to the rice ceiling price. This implies that the computed MPS for rice in the notification measures price gap closer to the level of consumers than producers. The correct price to use should be the support price for farmers.

However, the support price available is for palay and not for rice. Using the 65 percent recovery ratio, we converted the palay support price in terms of the price of rice as the palay support price divided by 0.65. The results indicate that from 1995 to 1998, the support price in terms of the price of rice was lower than the WTO notification administered price; however, from 1999 to 2001, it was higher. From 2001 onward, we used the palay support price converted to the price of rice. We did not use the administered rice ceiling price in the WTO notification.

Table B.3. Price comparison (PhP/kg)

	Farm Gate	Administered			Rice	WTO Notification	(Farm Gate Price) / 0.65 /a/	(Palay Support Price) / 0.65 /a/
		Palay	Rice	Rice				
		Palay Price	Support Price	Ceiling Price				
			Wholesale Price	Border Price	Administered Price			
1995	7.24	6.00	10.25	14.06	8.58	14.00	11.14	9.23
1996	8.13	7.83	13.69	15.84	8.32	14.00	12.51	12.05
1997	7.92	8.00	14.00	15.22	8.36	14.00	12.18	12.31
1998	8.30	8.00	14.00	15.78	11.74	13.20	12.77	12.31
1999	7.87	9.83	14.00	15.75	9.46	14.67	12.11	15.13
2000	8.53	10.00	14.00	15.91	8.49	14.62	13.12	15.38
2001	8.45	10.00	14.00	15.99	8.74	14.62	13.00	15.38

Source: Bureau of Agricultural Statistics, WTO Notification.

Note: /a/ 0.65 is the palay recovery ratio.

Table B.4 shows the quantity comparison. As indicated in the WTO notification, rice procurement of the NFA increased from 27,000 metric tons in 1995 to 310,000 metric tons in 2000. We tried replicating this series using official data on rice and palay in Table B.2. The results are shown under the column "Palay + Rice Procurement." which shows values similar to the values in the notification with very small difference, except in 1996 and 2001.

Table B.4. Quantity comparison ('000 metric tons)

WTO Notification	NFA								Imports	Total
	NFA Procurement	Rice						Palay + Rice Procurement		
		Palay Production	Palay Converted into Rice /a/	Palay Procurement	Palay		Rice Procurement			
					Converted into Rice	Rice				
1995	27	11,284	7,334	8	5	22	27	257	285	
1996	93	11,269	7,325	124	81	1	81	893	974	
1997	65	11,269	7,325	101	65	—	65	720	786	
1998	40	8,555	5,561	62	40	—	40	2,136	2,176	
1999	364	11,787	7,661	561	364	—	364	782	1,146	
2000	431	12,389	8,053	663	431	—	431	617	1,048	
2001	310	12,955	8,421	474	308	—	308	739	1,048	

Note: /a/ using 0.65 recovery ratio

The MPS for corn is simpler than it is for rice. The NFA corn procurement is the same as the numbers reported in the WTO notification. Because NFA corn procurement is almost zero, the MPS is also very small relative to the 10 percent *de minimis* limit.

Table B.5. Market price support for corn, 1995-2001

	External	Administered	Wholesale Price of Corn (PhP/kg)	Production Corn ('000 MT)	NFA Corn Procurement ('000 MT)	MPS (PhP mil)		
	Reference	Corn				WTO	Value of Production	
	Price of Corn (PhP/kg)	Support Price (PhP/kg)					Notification	Total
1995	2.26	4.50	7.40	4,129	—	—	30,551	3,055
1996	2.26	5.25	7.71	4,151	12	35	32,007	3,201
1997	2.26	6.00	7.63	4,332	40	148	33,057	3,306
1998	2.26	6.00	8.32	3,823	208	779	31,809	3,181
1999	2.26	6.00	8.47	4,585	—	—	38,831	3,883
2000	2.26	6.00	9.20	4,511	8	30	41,502	4,150
2001	2.26	6.00	9.43	4,525	—	—	42,671	4,267

Table B.6 presents the data used in our estimates for calculating the MPS for rice for 2001 to 2008. Data from 2001 to 2007 are actual values from official sources. The support price of P14.67/kg is based on the press release from the DA, which stated that the government would increase the support price of palay to P17/kg starting May 2008 until the end of the year. Therefore, the price support is P10/kg from January to April and P17/kg from May to December. The average price for 2008 is P14.68/kg. Converted into rice price, the result is P22.56/kg, which is 46.7 percent higher relative to 2007. The wholesale price of rice in 2007 was P20.66 percent. We assume a 40 percent increase in the wholesale price of rice in 2008.

NFA rice procurement was low in 2005 (76 tons) and 2006 (73 tons). We assume a slightly higher procurement of 100 tons in 2007 and 200 tons in 2008. The MPS in 2007 was P704 million, increasing to P2.3 billion in 2008. From 2001 to 2008, the MPS was significantly lower than the 10 percent de minis limit.

Table B.7 shows the information used in our estimates for calculating the MPS for corn. Data from 2001 to 2007 are actual values from official sources. The support price for corn was increased to P10/kg in May 2008. The average for 2008 was P9.50/kg. We assume that the wholesale price of corn will follow the rate of increase in the administered price for 2008. We calculated the average growth in corn production in 2006 and 2007 and applied this to estimate the production of corn in 2008. Because there was practically no NFA procurement in 2001 to 2007 (except for the 3,000 tons in 2005), we assume zero NFA procurement of corn in 2008. Thus, the MPS for corn is also zero.

Table B.6. Market price support for rice, 2001-2008

	External Reference Price of Rice (PhP/kg)	Administered Price (PhP/kg)		Wholesale Price of Rice (PhP/kg)	Production ('000 MT)		NFA ('000 MT)		MPS (PhP mil) WTO Notification	Value of Production (PhP mil)	
		Palay Support Price	(Palay Support Price) / 0.65		Palay	Rice ^{/a/}	Palay Procurement	Rice ^{/a/}		Total	10% of Total
2001	4.56	10.00	15.38	15.99	12,955	8,421	474	308	3,337	134,647	13,465
2002	4.56	10.00	15.38	16.52	13,271	8,626	300	195	2,109	142,501	14,250
2003	4.56	10.00	15.38	16.51	13,500	8,775	296	192	2,083	144,874	14,487
2004	4.56	10.00	15.38	17.30	14,497	9,423	208	135	1,461	163,017	16,302
2005	4.56	10.00	15.38	19.14	14,603	9,492	76	50	538	181,676	18,168
2006	4.56	10.00	15.38	19.49	15,327	9,962	73	48	514	194,166	19,417
2007	4.56	10.00	15.38	20.66	16,240	10,556	100	65	704	218,090	21,809
2008	4.56	14.67	22.56	28.92	17,127	11,132	200	130	2,341	321,990	32,199

Note: /a/ using 0.65 conversion ratio

Table B.7. Market price support for corn, 2001-2008

	External Reference Price of Corn (PhP/kg)	Administered		Wholesale Price of Corn (PhP/kg)	Production		NFA Corn		MPS (PhP mil) WTO Notification	Value of Production (PhP mil)	
		Corn Support Price (PhP/kg)			Corn ('000 MT)		Procurement ('000 MT)			Total	10% of Total
2001	2.26	6.00	9.43	4,525	—	—	—	42,671	4,267		
2002	2.26	6.00	8.91	4,319	—	—	—	38,485	3,848		
2003	2.26	6.00	8.56	4,616	—	—	—	39,510	3,951		
2004	2.26	6.08	10.14	5,413	—	—	—	54,892	5,489		
2005	2.26	7.13	9.48	5,253	3	16	49,800	4,980			
2006	2.26	8.50	10.85	6,082	—	—	65,991	6,599			
2007	2.26	8.50	11.44	6,737	—	—	77,071	7,707			
2008	2.26	9.50	12.79	7,631	—	—	97,571	9,757			

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