Philippine Review of Economics and Business
Volume XXXVI, No. 1, June 1999

TRADE-RELATED PROBLEMS AND POLICY ISSUES IN PHILIPPINE AGRICULTURE*

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1. Introduction

This paper outlines the key problems and policy issues associated with the implementation of the WTO's agriculture agreement in the Philippines. With the impending continuation of the agriculture negotiations at the WTO in less than a year, these problems and issues are expected to increasingly attract the attention of policymakers and stakeholders in the second half of this year. This discussion will focus on whether or not our implementation of the agricultural tariffication law and the associated rules and regulations thereof have conferred positive net gain particularly for the sector and the country as a whole. The net economic impact of these trade liberalization measures is difficult to isolate from the effects of the El Niño and the Asian financial crisis in 1997 and 1998. Nonetheless, it is equally difficult to dissociate the present problems of the sector and the measures put in place in compliance with the country's commitments under the WTO. Reports of government failure in delivering the competitiveness enhancing measures for the sector and legislating the safety measures over the last three years are not helpful in clarifying the appropriate contribution of the weather, the Asian financial crisis, and the trade liberalization measures to the present problems of the sector.

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* Presented at the *National Forum on Agricultural Issues: WTO, AFTA and AFMA* on June 10, 1999 at the Bureau of Soils and Water Management Convention Hall, Diliman, Quezon City.

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As the country grapples over the propriety of opening up its agricultural markets to foreign competition, the WTO process of continuing the negotiations to further globalize agricultural markets in the world, as well as to continue the process of installing a rules-based trading regime for agriculture in the world, unfolds. Besides weighing the net advantages of deepening market access commitments, the country will have to assess if it is in its advantage to adopt the proposed new rules on agricultural trading.

The most important trade-related agricultural policy issue this country will have to decide on will be the tariffication of the rice quantitative import restriction. As it is right now, the country is allowed to defer the removal of its rice QR until January 1, 2005. While the Philippines may opt to negotiate in the next round of negotiations for the continuation of this special treatment, the country may not easily succeed in this effort particularly if Japan and South Korea would have opted to tariffy their respective rice QRs.

2. Implementation of Agricultural Trade Policy Commitments

Following the ratification by the Philippines Senate of the Uruguay Round Final Act, the GOP acceded to the WTO in 1995 as one of the organization's founding members. Under this trade treaty, the Philippines agreed to not only increasingly open its agricultural markets to foreign competition but also to legally enable the rules governing agricultural trade as defined in the treaty including the WTO agriculture.

Tables 1 and 2 show the key commitments of the Philippine government under the WTO agreement on agriculture. Market-commitments including tariffication of non-tariff border measures, tariff rate binding, tariff rate reductions, and minimum access volumes (MAV) dominate the commitments of the Philippine government. There are none in the areas of domestic support measures and export subsidies.

Table 1 - A Summary of Philippine Agricultural Commitments in the WTO

Key Item in Agreement	Philippine Commitment	Remarks
Prohibition of the Use of Additional Non-Tariff Measures	Yes	NTMs include discretionary import licensing, variable import levies, import quotas, and import bans
Conversion of all existing import QRs to tariff protection measures	Yes, except rice	The tariffication of the rice QR is postponed for ten years. Tariffication is done at twice EO 470 rates and subject to a 100 percent maximum rate.
Tariff Bindings	Yes, at ceiling bindings	A ceiling binding is set above the present rate.
Tariff Reductions	Yes	Average cut is 30 percent.
Reduction of WTO-inconsistent Production Subsidies	No	Philippines maintains less than 10 percent subsidy rate.
Reduction of export subsidies	No	Philippines does not maintain export subsidies.
Harmonize sanitary and phyto-sanitary measures	Yes	Harmonization is done on the basis of internationally accepted practices and scientifically supported. Equivalency of procedures is defined.

Source: Department of Agriculture

Table 2 - The Philippine Government MAV Commitments in the WTO

Description of Products		Tariff Item	Initial Quota	Initial Tariff	Final Quota	Final Tariff	Implementation
Horses	'hd	HS 0101	57.00	30	57.00	40	1995-2004
Cattle	'1000 hd	HS 0102	12.20	30	20.34	40	1995-2004
Live swine	'1000 hd	HS 0103	2570.00	30	2570.00	40	1995-2004
Live goat	'1000 hd	HS 0104	49.37	30	82.29	40	1995-2004
Live poultry	'1000 hd	HS 0105	5708.12	40	9513.54	40	1995-2004
Beef	'1000 mt	HS 0201	4.00	30	5.57	30	1995-2004
Pork	'1000 mt	HS 0202	32.52	30	54.21	30	1995-2004
Goat meat	'1000 mt	HS 0204	0.67	30	1.12	40	1995-2004
Poultry meat	'1000 mt	HS 0207	14.09	50	23.49	40	1995-2004
Potatoes	mt	HS 0701	930.00	50	1550.00	40	1995-2004
Coffee	mt	HS 0901	5.90	50	5.90	40	1995-2004
Corn	'1000 mt	HS 1005	130.16	35	216.94	35	1995-2004
Rice	'1000 mt	HS 1006 ST*	59.00	50	119.46	50	1995/1999
Rice	'1000 mt	HS 1006 ST*	119.46	50	238.94	50	1995-2004
Sugar	'1000 mt	HS 1701	38.43	50	103.40	50	1995-2004

* Special Treatment. Lifting of QR is deferred for ten years. National Food Authority has the first right to import the quota in accordance with the food security policy

In 1996, Congress passed Republic Act 8178 to legally enable the country's market access commitments. This law lifted all quantitative import restrictions in agriculture except rice. It replaced these import regulations with the highest possible tariff protection, 100 percent. Anyone can import these products at the country's tariff binding rates, which are supposed to go down to 50 percent in 2004 in accordance with the WTO agreement. For corn, the tariff rate goes down from 100 percent in 1995 to 50 percent in 2004. This manner of tariffication exceeds the corresponding tariff equivalent rates for most of these products. For example, the tariff equivalent rate for corn was 60 percent. The government tariffied this at 100 percent as shown in Table 3. This excessive tariffication however is not unique and is legal in the WTO since the tariffied rate is within the tariff binding commitment of the government.

Table 3 - Applied Tariff Rates and Estimated Tariff Equivalent Rates on Selected Agricultural Products

Sector	Domestic Price (pesos/kg)	Foreign Price (pesos/kg)	Tariff Rate Replacing a non-tariff measure (in percent)	Average Tariff Rate Equivalent (in percent)
Feed/Livestock				
Yellow corn	5.4	4.06	100	60
Prok, 2nd class	49.17	44.48	100	11
Broiler Chicken meat	36.11	26.46	100	37
Beef, 2nd class	72.59	76.16	60	–5
Vegetables				
Garlic	87.49	17.61	100	397
Red Onions	18.97	8.72	100	118
Cabbage	10.28	7.33	100	40
White Potato	12.62	9	100	40
Commercial Crops				
Raw sugar	10.14	6.29	100	61
Coffee, Robusta	27.69	41.81	100	–34

Source: ASAP, Department of Agriculture

With respect to rice imports, the Philippine government invoked Annex 5 which accords a WTO contracting party the privilege to postpone the tariffication of the QR on a politically sensitive food staple. Conditions are however attached to this privilege, two of which are worth mentioning. One condition is to guarantee minimum import access from one percent in the first year of implementation and increasing to 4 percent at the end of ten years. The other condition is that an effective production restraining measure is in place. The Department of Agriculture (DA) has assigned the National Food Authority (NFA) the first right to import the minimum access in accordance with PD 4 defining the charter of the agency.

The Secretary of Agriculture issued the rules and regulations of the MAV system through DA Administrative Order No. 9 in 1996. The DA Secretary issued this order in behalf of a Cabinet-Level MAV Management Committee tasked by Congress to supervise the implementation of the country's tariff rate quota commitments. In these rules, the tariff rate quotas were allocated to importers for products that the country has had regular and substantial imports such as corn. For those with hardly any imports such as pork, the rules allocate the quotas on the basis of local output share. These rules were amended by DA Administrative Order No. 9 in 1997 to introduce more transparency in the system and improved access for entrants into the MAV system.

3. Recent Agriculture Performance

Any evaluation of the net economic gains for the Philippines of the worldwide implementation of the WTO's agricultural trade liberalization is made difficult by the Asian financial crisis and drought in 1997 and 1998. In 1997, the sector grew by slightly over one percentage point. This performance worsened in 1998 when agriculture contracted by six percent. Given the growth performance in 1997 and 1998 and the fact that the Philippines tariffied agricultural import QRs in 1996 because of the WTO, it appears that the dismal performance of the sector is caused by the liberal import policies of the Philippines during this period.

These setbacks in 1997 and 1998 reinforced a trend of poor agriculture performance. The sector has had growth of over 3 percent on average since the EDSA Revolution in 1986. Rice has been an important contributor to this growth. Accounting for roughly 17 percent of agriculture's value added, rice growth or lack of it has explained the fluctuation of agriculture's growth performance in recent years. The inability of farmers to plant rice in the first semester of 1998 because of El Niño, as well as the lack of seeds and credit, despite the return of rains in the second half of 1998, pulled down the growth of the sector compared to its performance in 1997.[1]

An important point to note in Table 4 is that the livestock and poultry industries have grown at above average rates. In the second half of the 1980s, these industries had grown at least three times that of the sector. This performance had pulled up the growth of the corn industry, the second largest crop in the sector. During the first half of the 1990s however, the growth of the livestock/corn industry complex has substantially diminished, raising a concern about the sustainability of the agricultural growth in the future.

Traditional cash crops such as coconut and sugar continued to exhibit poor performance in this period. Coconut had contracted in the 1980s and this may be explained by the adverse policies during the Marcos years that distorted incentives in the industry. But the industry failed to recover since then. In the 1990s, it grew at slightly above zero percent. The sugar industry for the same period appeared in a better situation than coconut. Despite a similar pattern of policy distortions[2] imposed by the Marcos government on the industry, sugar managed to exhibit slight growth in the second half of the 1980s and recovered with a growth of 3.15 percent in the early 1990s.

The export banana industry that generated foreign exchange earnings for the Philippines in the 1970s and 1980s appeared to have lost steam in the second half of the 1980s. The increasing competition in the Japanese banana market cut banana prices and reduced the

[1] The sector grew by slightly over one percentage point in 1997.
[2] These covered export taxes, production levies and/or export monopolies.

Table 4 - Average Growth Rates in Real Gross Value Added in Agriculture (in percent)

Industry/ Industry Group	1986-1990	1991-1995	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Agriculture and Fishery	3.13	2.24	2.99	1.91	4.31	4.63	1.80	3.12	0.75	2.62	2.97	1.72	3.46
a. Agriculture	3.29	2.32	1.67	0.86	7.74	4.87	1.29	2.91	0.64	2.93	3.43	1.66	4.98
Palay	2.15	2.96	4.96	-3.19	1.32	9.26	-1.61	4.00	-5.63	3.34	11.71	0.02	7.05
Corn	2.97	-2.01	0.39	6.20	3.43	-2.51	7.32	1.31	-0.76	3.87	-5.82	-8.65	0.57
Coconut including copra	-8.60	0.90	-7.00	-8.21	-6.67	-22.21	1.10	-4.04	0.25	0.18	0.06	8.04	-1.50
Sugarcane	0.28	3.15	-11.26	-9.24	-1.83	30.03	-6.29	27.22	4.84	7.92	1.31	-25.57	20.76
Banana	-4.90	0.82	1.95	0.97	-19.12	-0.92	-7.38	-0.26	3.64	0.32	1.36	-0.99	-0.36
Other crops	4.20	2.18	-0.79	1.66	16.96	4.85	-1.68	2.69	0.45	0.92	1.88	4.97	1.91
Livestock	9.04	3.33	14.40	9.15	6.07	12.40	3.18	1.23	0.79	4.66	4.79	5.20	6.59
Poultry	12.91	5.66	4.45	7.40	31.53	10.93	10.22	3.36	10.87	6.19	2.62	5.25	11.27
Agricultural activities and services	5.00	2.34	1.62	0.81	10.68	3.66	8.20	1.70	4.23	0.74	1.49	3.55	2.34
b. Fishery	2.76	1.92	8.09	5.72	-7.56	3.66	3.90	3.96	1.17	1.37	1.14	1.98	-2.71

Source of Basic Data: National Statistical Coordination Board

competitiveness of the country's banana exporters. It is unlikely that the industry can recover soon because of the Japanese recession in the second half of the 1990s.

The same note applies to the other crops that include fruits and vegetables for export to East Asia. In the early 1990s, these tended to be the emerging industries in the agriculture sector, realizing the potential for diversifying the sector from its prolonged focus on rice and corn. The recent regional financial and economic turmoil unfortunately is expected to reduce export demand in general including those of other crops.

Fishery has grown at below the average growth rate of the sector. With the growing concern on the rapid depletion of fishery resources particularly in municipal fishing grounds, the industry is expected to continue dragging down the entire sector's growth performance.

The impact of the drought shows in the output contraction for all major crops particularly in the second quarter of 1998. El Niño started in the second half of 1997 at a time when the country experienced excessive rainfall. This timing inadvertently helped in expanding agricultural output by 5.35 percent in the last quarter of 1997. However, the drought progressively deprived the sector of needed water during the first half of 1998, causing widespread contraction of output. Agriculture contracted by 14.32 percent during the second half of 1998, aggravating the economic slowdown. Were it not for the drought, it is likely that the sector's growth performance would have moderated the economic slowdown induced by the regional financial crisis as during the economic recession from 1984 to 1985.

While El Niño explains to a great extent the sector's contraction in 1998, the crisis likewise aggravated the situation. For agriculture, the crisis manifested itself in reduced food demand due to lower per capita income; less public and private investments in agriculture; less credit flowing into the sector; weaker agricultural export growth as a result of the economic recession in East Asia.

a) *Reduced food demand.* It became clear at the start of this year that portions of the population were without access to rice even though there was supply of rice in the country.

Such food insecurity is traced to reduced income of the affected population. If cereal imports were prohibited, the contraction of rice and corn output would have automatically induced a decline in food demand even if income levels were high. Rice and corn imports were however brought in by the government in anticipation of the drought. Despite the preparedness, portions of the rural population were without food, some of whom were subsistence farmers who were unable to grow crops due to the drought.

b) *Less government budgetary support.* The capacity to recover immediately from the crippling drought was greatly impaired due to lack of government budgetary resources to sustain publicly supported productivity programs in rice and corn. When the rains returned, farmers did not have seeds and planting materials to take advantage of the improved water situation. The lack of seeds and planting materials could have been alleviated quickly if the government had resources to gain access and distribute seeds and planting materials to agricultural producers. The situation at the end of the El Niño called for practical plans to quickly put the sector on the recovery track. The government was in the best position to come up with and implement such plans. Unfortunately, the financial resources of the government were low due to the economic slowdown. For 1998, the budget of the Department of Agriculture was reduced from a figure close to P50 billion to about P13 billion. The unprecedented appropriated amount was for the continuing program of enhancing the competitiveness of the sector in preparation for the increasing globalization of agricultural markets; the expected La Niña weather disturbance; and the sector's modernization program that Congress ordered to be implemented under the Agriculture and Fisheries Modernization Act. When the Estrada administration assumed office, it inherited a budget program for 1998 that cannot be funded from existing fiscal resources of the government. It therefore had to slash the approved budgets of all GOP agencies in order to bring the fiscal deficit down to P40 billion from nearly P100 billion. The DA's budget was not spared in the process.

c) *Reduced credit flows.* As early as the last quarter to 1997, rice traders were already alarmed by the measures taken by the financial institutions with respect to inventory and production credit to agriculture. Loans were recalled and credit lines of traders were temporarily suspended. This occurred as the main rice crop of 1997 was harvested. The implication of the tightening of inventory and trading credit is to disrupt the financing system of rice production and marketing. It would take a year or two before the system can be restored to normal levels. The impaired capacity of agricultural producers to quickly take advantage of the improved water situation at the start of the second half of 1998 reflects the disruption of the financing system in agriculture.

d) *Weaker export performance.* East Asian markets comprise nearly 43 percent of agricultural exports in 1996 (see Table 5). The Japanese market is second in size to the US market. About a fifth of total agricultural exports was sold to Japan in 1996. The ASEAN has been a fast growing market for Philippine exports, rising from nearly 5 percent in 1991 to 11.3 percent in 1996. Robust per capita income growth in ASEAN played an important role in increasing the country's ASEAN export market. For the very same reason, one may expect over the next five years a cut of the ASEAN market share if, as expected, there is hardly any economic growth in most of the ASEAN region.

One of the important features of the financial crisis is the substantive devaluation of the Philippine peso. All things remaining the same, this would have made exports become more competitive and therefore grow. Alburo, et al. (1994) in a study done on the impact of the GATT on the exported fruits and vegetables concluded that the exchange rate is the "most important factor affecting competitiveness" of exports. A depreciated currency protects, proportionately more, the profitability, and hence, competitiveness in peso terms relative to unit cost.

Table 5 - Philippine Agriculture Trade, by Region/Country of Origin and Destination: 1991 and 1996 (Value in million US dollars)

Country/Region	Imports				Exports			
	1991		1996		1991		1996	
	FOB Value	% Share	FOB Value	% Share	FOB Value	% Share	FOB Value	% Share
ASEAN	90.52	9.20	513.83	19.60	84.23	4.82	250.72	11.32
Australia	128.52	13.06	377.21	14.39	20.68	1.18	21.00	0.95
Canada	21.06	2.14	49.54	1.89	32.24	1.85	40.09	1.81
China	55.06	5.59	73.66	2.81	65.76	3.77	52.05	2.35
Chinese Taipeh	16.96	1.72	32.27	1.23	17.17	0.98	28.62	1.29
European Union	153.47	15.59	224.77	8.57	311.20	17.82	389.06	17.57
Hongkong	9.56	0.97	24.50	0.93	56.70	3.25	87.54	3.95
Japan	53.08	5.39	28.89	1.10	482.01	27.60	455.84	20.58
Latin America	11.09	1.13	149.53	5.70	8.25	0.47	11.84	0.53
Middle East	16.87	1.71	80.18	3.06	37.91	2.17	54.34	2.45
New Zealand	32.43	3.29	93.74	3.58	3.11	0.18	7.07	0.32
Others	66.50	6.76	109.95	4.19	33.24	1.90	36.69	1.66
South Asia	43.60	4.43	163.86	6.25	7.70	0.44	4.18	0.19
South Korea	11.62	1.18	26.56	1.01	68.19	3.90	75.22	3.40
United States	274.07	27.84	672.93	25.67	517.92	29.66	700.59	31.63
Total	984.42	100.00	2,621.43	100.00	1,746.31	100.00	2,214.83	100.00

Source: National Statistics Office

Agricultural exporters however were unable to take advantage of the opportunity to expand their exports due to several factors. Following the devaluation, interest rates started to increase, credit line was frozen or canceled indefinitely, imported raw materials became more expensive, and the dollar rate was too unstable to make any intelligent business decision. Moreover, while the Philippines devalued its currency by 50 percent, Thailand, Indonesia, and Malaysia did the same and by a larger percent. Thus, we lost competitiveness in the export markets vis-á-vis these countries, according to agricultural exporters.

The diversified markets of agricultural exports cushioned the impact of the crisis on agriculture. With Japan, the United States and the European Union are the leading destinations of the country's agricultural exports. The US accounts for slightly over 30 percent of the country's agriculture exports in 1996, up from only 29 percent in 1991. The European Union's share was 17 percent of the country's agriculture exports in 1996, third in size following US and Japan. The relatively stronger performance of the US and EU economies continued to provide business to the country's agricultural exports.

As in the case of exports, the United States is the country's top trading partner in agriculture, representing a fourth of all agriculture imports. The European Union, second in size in 1991, was displaced by the ASEAN and Australia in 1996. From a share of 15 percent, the EU accounted for less than 10 percent in 1996. Australia's inroad into the Philippine market is nonetheless short of that of the country's ASEAN partners. Aside from Australia, there are trading partners making significant niches in the Philippine market—Latin America, South Asian, and the Middle East. On the other side, Japan, China, and Canada had followed the European Union's declining performance in the first half of the 1990s.

4. Explaining the Agricultural Import Trends in the Post-WTO Period

The country's market access commitments have the potential of providing stiff competition to the sector either through out-quota or MAV imports. Table 6 displays the imports of sensitive agricultural products since 1992.

Table 6 - Volume and Value of Imports of Selected Agricultural Commodities: 1992-1996 (Quantity in metric tons; F.O.B. Value in Million US $)

Commodity	1996		1995		1994		1993		1992	
	Quantity	Value	Quantity	Value	Quantity	Value	Quanity	Value	Quantity	Value
Corn	402,344.72	85.701	208,023.60	33.440	894.097	0.420	647.761	0.297	604.000	0.179
Poultry meat	1,270.04	1.198	850.575	1.140	541.963	0.702	182.082	0.249	14.611	0.037
Meat of Swine	4,315.92	6.760	1,016.995	0.693	233.495	0.209	39.109	0.022	416.740	0.356
Onion	1,374.19	0.145	0.829	0.001	0.108	0.000	209.586	0.054	0.026	0.000
Cabbage	2.15	0.003	0.262	0.003	0.367	0.000	1.999	0.001	80.716	0.029
Garlic	165.72	0.657								
Rice	862,384.93	294.042	263,250.684	75.665	163.778	0.075	201,605.301	35.760	633.800	0.249
Raw Sugar	2,000.00	0.784	128,572.500	48.588						
Potatoes	12.00	0.007	135.649	0.065	21.666	0.030	0.316	0.001	0.090	0.000
Barley	5,629.07	1.146	5,120.122	0.734	6,224.763	0.761	4,951.526	0.626	6,251.953	0.651
Feed wheat			40,339.047	7.373						

Source: National Statistics Office (NSO)
Bureau of Agricultural Statistics (BAS)

Corn

Corn is generally viewed to be the most vulnerable, and having a substantial small farmer population, the industry is typically highlighted in public discussions on agricultural trade liberalization. One observes a marked increase of corn imports from Table 6. Corn imports were negligible imports before 1995. In 1995, these imports rose by a factor of 23,000 percent between 1995 and 1994. The 1995 import volume nearly doubled in 1996.

These sharp increases need not reflect only the impact of the measures instituted by government to implement its WTO obligations. The MAV commitment of the government is substantially less than the annual volume of corn that was actually imported. The increases in corn imports are likely the result of the shortage of corn output. In 1995 and 1996, corn output decreased even as corn demand increased, following the economic recovery during these two years. If this was the result of trade liberalization, then one would have observed out-quota importation of corn during these two years but this did not happen. In other words, the country would have had realized the same scale of corn imports even without the country's WTO commitments. To address the shortages, the NFA imported most of these volumes for feed purposes and allocated the volume to various livestock producers in the country.

Rice

Rice imports rose as well for the first two years of implementation of RA 8187, increasingly by nearly one million metric tons in 1996. This substantial increase in importations cannot be attributed to the trade liberalization under the WTO since the Philippines, along with Japan and South Korea, is allowed by the WTO to defer the tariffication of its QRs till the end of 2004. As in corn, the observed increase of rice imports may have been the result of the rice shortage in 1995. Domestic prices rose substantially in 1995 as a result of the shortage and delays in importing rice to address the shortage.

Subsequent imports of rice in 1997 and 1998 were needed in order because of the El Niño weather phenomenon.

Sugar

In 1996, the sugar industry complained about falling sugar prices. From receiving P800 per bag of sugar way back in the first half of the 1990s, the sugar producers and millers were receiving prices between P500 to P600 per bag. As the milling season was underway, producers fear that prices might even fall to P400, which is a serious problem since, according to one expert, the break-even price of sugar was in the neighborhood of P600.

The unusually high level of imported sugar is the result of speculative activities on the part of traders. Since 1992, raw sugar has been freely importable with only customs duty as a restriction. In that year, sugar had a tariff rate of 75 percent and this decreased to 50 percent by 1995. By 1995, it is public knowledge that the sugar tariff rate will increase to 100 percent because of the agricultural tariffication and EO 313. That is, since sugar is part of the list of sensitive commodities that need to be tariffied as a result of our membership to the WTO, then the tariff rate on sugar had to be increased.

Few analysts notice that the sugar QR had already been lifted in 1992. While legally enabled, it took another two years before a firm tested the effectivity of the import policy for sugar. A firm imported sugar from Thailand at 50 percent tariff rate on raw sugar and 32 percent tariff rate on refined sugar. The sugar industry was unable to block legally the said importation. This event emboldened traders to do the same. Thus, when sugar tariff rate was supposed to increase to 100 percent as soon as Congress would have enacted the Agricultural Tariffication Law, imports of raw sugar that by then could be imported at 50 percent increased. This culminated in early 1996. If one looks at Table 6 on agricultural imports, the volume of imported sugar in 1995 was unprecedentedly high in 1995 at 128,572 thousand metric tons. In the following year, the volume of imports dropped to only 2,000 tons.

To the extent that the Agricultural Tariffication Law provoked speculation, then the government's implementation of its WTO commitments in a way caused the adjustments in the sugar industry. But the blame can be placed on two factors. One factor is that the government increased the tariff rate on an-already liberalized imported product and announced this policy reform way before the implemen-

tation date. The other factor is that the Congress took a year and a quarter before it legally enacted its WTO commitment, thereby giving ample time for speculators to bring in imported stocks at levels far exceeding the fundamental sugar requirement of the country in a single year.

Meat

Imports of pork are increasing significantly. Before 1995, the volume of pork imports in a given year was below 1,000 metric tons. In 1995, the country imported a little over 1,000 metric tons of pork and this increased four-fold to over 4,000 metric tons in 1996. Most of these imports are in the form of pork bellies.

There were out-quota importations in 1996, even as the tariff rate quota of pork remained underutilized. According to the MAV Secretariat, the agency at DA responsible for the day-to-day implementation of the MAV commitments, it only issued a little over 2,000 metric tons of import quotas for pork. But the total importation of pork in 1996 amounted to 4,316 metric tons, implying that there were importers who were not given access to the tariff rate quota that ended up importing at out-quota tariff rates.

Poultry meat comprises the meat of chicken, turkey, and ducks primarily. The total volume of imports of poultry meat in 1996 was only 1,270 metric tons, most of which were in the form of turkey and ducks. Moreover, there was hardly any growth of imports between 1995 and 1996, although between 1994 and 1995 poultry meat imports increased dramatically. The flat growth of chicken meat imports in 1996 is the result of unusually soft prices of locally grown chicken in 1996 as a result of over-expansion in local broiler production.

Over the next five years, local production will continue to dominate the market for pork and poultry meat, although imported meats will continue to increase. There are two factors favoring local production particularly in pork. Imported pork will come in frozen form. The bulk of the consumers would still prefer at the moment to buy fresh pork in the country's wet markets. This preference would certainly change, in the same way it did for frozen chicken meat. It took the country's large commercial broiler producers seven years before the population accepted frozen chicken meat in the market. However. the

underdeveloped cold storage system in the country, particularly in wet markets and in rural areas, will in the horizon slow down the pace of importing poultry and swine meat. The bulk of the population will continue to be without refrigerators for some time. Thus, for most of these Filipinos, they will have to source their pork and chicken meat straight from the wet market.

Vegetable products

The effect of RA 8178 is seen in the case of the three vegetables whose imports were banned or restricted—onions, cabbages, and garlic. Nearly 166 metric tons of garlic had been imported in 1996, as soon as Congress passed RA 8178. In 1997, the monthly volume of imported garlic is at least 300 metric tons. Garlic producers are certainly increasingly in competition with imported garlic producers in the local market. Imported onions, previously restricted, dramatically increased. The country imported nearly 1.4 metric tons of onions in 1996, up from about less than roughly a tenth of one metric ton before 1995. Imported cabbages increased although the numbers are rather small. In 1996, the country imported nearly 2.15 metric tons of cabbages, substantially higher than the corresponding figure in 1995. However, the country imported a little over 80 metric tons of cabbages in 1992. Imported potatoes hardly responded positively to RA 8178. The blip of potato imports in 1995 consists of imported potato seeds. The country imports potato for planting purposes instead of for food, although semi-processed potato for french fries are increasingly being imported. However, the importation of the latter has not been restricted.

5. Policy Issues

The rice self-sufficiency policy

It is the policy of the government to source the country's food requirements locally and to import food grains only when it is absolutely necessary. The policy intends to keep the country less vulnerable to international market disruptions. The policymaker tends to protect the consumers from the worst case scenario that no rice can be imported in adequate amounts when the population needs to.

A related argument in favor of self-sufficiency is that in a developing country like the Philippines, the bulk of the population depends on food production activities. Opening the local rice market to foreign competition threatens to deprive the majority of the population with their source of income. Underlying this argument, of course, is that a majority of the Philippine rice producers have limited or zero access to alternative means of livelihood.

However, the argument that rice farmers have limited or zero access to alternative means of income highlights the profile of market transactions costs in the dynamics of rural development. High market transactions costs for agricultural products tend to drive the bulk of the population to produce their basic food requirements. Transaction costs associated with purchasing or selling a good typically cannot be passed on to the market and are usually borne by the farmers. If these costs are high, own-food production can become optimal for rice producers. For as long as such costs remain high, it will be true that rice farmers will have little option for shifting to other uses of their land. This is because selling cash crops can be unprofitable due to the existing high market transaction costs.

Without efforts to reduce such transaction costs through investments in rural infrastructure such as roads, the government finds itself in a vicious cycle. With the existing high transaction costs, the rural farmers become engaged in largely subsistent food production activities. The government is then pressured to support such activities through food productivity programs. Such programs, in turn, provide the farmers with signals to remain in the government's food productivity programs, reinforcing the government dependency situation and the notion that there are hardly any income generating alternatives for the rice farmers.

In addition to food productivity programs, the government uses trade policy to attain its rice self-sufficiency goal. Imports have been regulated in a manner that caused minimum adjustments to the rice farmers. In the case of rice, the Philippines continues to impose QRs on imports, and grants the import monopoly to the state-owned NFA. Corn QRs, on the other hand, had been converted into ordinary customs duty in 1996. Trade protection, nonetheless, is still enforced through relatively high tariff rates for corn.

There is still scope for further improving rice productivity through appropriate programs. Nevertheless, at some point in time, with continuing growth in both population and per capita income, the country is bound to hit the limits imposed by land—its most constraining factor. Competition from other uses of farmlands will bid up land prices and agricultural lands may be reallocated to higher value crops or non-agricultural uses. Relative land scarcity is beginning to affect the relative prices of rice here in the Philippines, unlike in Thailand and Vietnam.

Although there is a high likelihood of introducing improved rice technology, land rents in the near future can escalate to the point where the benefits from the introduction of better technology can be neutralized. Government productivity programs would then be increasingly viewed as programs that merely offset the diminishing returns in grains production, rather than attaining self-sufficiency.

When land scarcity becomes the constraining factor in increasing rice productivity, the government will tend to increasingly rely on trade protection or regulations on the use of farmlands to attain self-sufficiency. Trade protection or regulations on the use of farmlands will increase prices of food grains at the expense of consumers. This situation will, of course, induce additional production, thus achieving the self-sufficiency targets in rice. But this is a more expensive strategy with increased welfare costs, and the consumers end up paying more for their food.

Rather than wait for the time when food prices have to increase to cope with the rising costs of production primarily from land scarcity, it will, in the long run, be better to liberalize rice imports for attaining food security.

While the concern about a possible disruption in the international rice market is valid, this is unlikely. Besides, there are ways to address the problem of a market disruption in rice trade other than through a policy of self-sufficiency. First, rice storage has to be encouraged. The government can also facilitate substitution away from rice to other food sources, with root crops, wheat, and corn being possible substitutes to rice. When the rice market is disrupted and the country is unprepared with substitutes, the uncertainties that the population must confront are unnecessarily increased.

Rice price stabilization

The current food security program of the Philippine government is defined in PD 4, as amended, that sets the charter of the NFA. Among other functions, the NFA has the mandate under PD 4 for a quarter of a century to stabilize year-round rice prices, make rice affordable for the country's population, minimize the fluctuations of palay prices, and ensure that such prices provide farmers a reasonable level of income. The current policy configuration under the program may be summed up with the NFA's "buy high and sell low" commercial transactions in the rice industry.

Recognizing the strategic importance of rice as a source of income for the majority of the rural population, the government likewise controls the importation of rice. By limiting that such importation be done only in the extreme case of a rice shortage and only by the NFA, the rice farmers are assured of income from rice farming. Officially, the government policy is for self-sufficiency in rice. The discretionary import licensing, the NFA import monopoly, and palay price supports are handles to enforce this policy.

The current design has avoidable costs. The apparent policy inconsistencies in the deign have caused financial losses for the NFA. Since 1986, NFA's net operating loss had fluctuated from nearly P387 million in 1990 to over P2.3 billion in 1992. It was only in 1996, when the NFA imported rice that it posted a net operating profit of P1.2 billion.

Not only are financial losses incurred, the design likewise may have resulted in a less effective implementation of its food security program and distorted the palay market. Since 1980, rice prices deviated from their mean levels by at least 5 percent in 17 out of 100 cases. At the peak of the rice crisis in 1995, monthly market prices deviated from a six-month moving average by at least 25 percent. Other occurrences of abnormally high fluctuation came about in 1984 and 1989. In terms of rice subsidies for the poor, only 50 may have reached the poor, representing 0.2 percent of their income (see, for example, Balisacan; Subbarao and others). On average (1986-1996), farm prices of palay were lower by 8 percent of farm prices than if market rice wholesale prices would have been fully transmitted to palay prices.

In order to improve the design of the country's food security program, the following reforms are proposed: (i) stabilize rice prices at market levels and implement a separate targeted food safety net program for the poor; (ii) apply a seasonal price premium to the NFA's palay procurement price during the dry season and set the procurement price at a level that reflects not only local production costs and productivity but also the world price of rice; (iii) set the procurement volume to no more than the NFA's strategic 30-day rice buffer stock; (iv) institutionalize a transparent and timely rice import policy formulation; (v) allow the private sector to import rice, if the country would have to import rice; and (vi) institutionalize a buffer stock program of the private sector given license to import rice.

Besides these reforms, the NFA's present charter (PD 4) needs to be improved in order to institutionalize a more consistent and cost-effective food security program for the country. The institutional improvement involves separating the regulatory functions of the NFA from its proprietary operations. A government agency may be created under the Department of Agriculture which will take up the governmental functions/responsibilities of ensuring food security. In addition, a grains trading corporation is to be established with both government and private sector equity. The public sector's equity is capitalized from the existing proprietary assets of the NFA. While the government agency receives regular budgetary appropriations from Congress, the corporation, using its existing assets, is expected to generate an income from grains trading.

The de-coupling of the regulatory and proprietary personalities of the NFA will institutionalize a transparent process for food security policy formulation and implementation. On the grains regulatory agency are vested the functions to set the appropriate policy parameters to be enforced for food security. Some of these parameters include: setting the band of rice wholesale prices that need to be defended; deciding on the volume of rice imports required to stabilize rice prices; moving rice stocks into areas hit by natural disasters; stabilizing palay prices in the event of a bumper crop; and other parameters that the government may see fit for attaining food security. Under this set up, the government agency may contract the services at competitive prices of the corporation to implement the food security program (e.g., maintenance of the 30-day buffer stock, movement of rice stocks to disaster-hit areas, etc.). The process allows

grains traders other than the corporation to also bid for the business of providing food security services or part thereof to the government. In such a process, a competitive price can be determined for society's benefit in having food security.[3]

Agricultural tariff protection

A major concern is that agricultural tariff rates do not prepare agricultural producers for the emerging regional and global trade competition in agricultural products. As it is now, tariff protection is highest in agriculture (see Table 7). This is the offshoot of the tariffication of agricultural QRs at maximum levels as provided for in RA 8178 given the Philippine WTO commitments. Table 8 shows the frequency distribution of tariff rates of sensitive agricultural products. With the existing high tariff protection rates, the cost to produce locally will tend to equal the world price in local currency plus the tariff rate. Thus, the higher this tariff rate, the higher the local production costs will be, thereby making Philippine agricultural products relatively more expensive.

Table 7 - Philippine Schedule of Tariff Rates, by Commodity: 1997-2000 (in percent)

	1997	1998	1999	2000
Agriculture	19.62	14.5	14.33	13.26
Chemicals	6.77	5.25	5.15	4.64
Textiles	14.43	12.56	12.52	8.89
Metals	14.85	10.37	9.62	9.02
Machinery	10.63	8.34	8.11	7.47
Mining	5.34	14.69	4.69	3.91
Manufacturing	11.48	9.09	8.84	7.48
Overall	12.47	9.73	9.51	8.2

Source: Tariff Commission

[3] For the corporation to be established to attract private sector investors, it is important that the NFA demonstrates capacity for attaining a positive net operating profit. This then is one measure that the present NFA management may have to ensure.

Table 8 - Frequency Distribution of Tariff Rates on Sensitive Agricultural Products: 1995-2004

Tariff Rate	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Up to 5	0	0	0	0	0	0	0	0	0	0
10 to 30	1	1	1	1	1	1	1	4	6	6
35 to 50	23	23	36	36	44	44	44	41	90	90
55 to 7	14	14	9	9	51	51	51	51	0	0
75 to 90	8	8	50	50	0	0	0	0	0	0
95 to 100	50	50	0	0	0	0	0	0	0	0

Source: EO 313 and RA 8178

While the policy of maximum tariff protection has been adopted to minimize the adjustment costs being experienced as the Philippine domestic markets are opened to competition, the policy also prevents the agriculture sector, particularly the grains sector, from becoming competitive. The idea behind the current policy of maximum tariff protection for key agricultural products is that the country's producers need to be given temporary trade protection while public infrastructure facilities are being provided by the government to enable local industries to compete with imported products.

The lack of competitiveness in Philippine agriculture stems from two types of failures. The first pertains to the government's failure to provide the required public support services that are necessary to increase productivity. The other type of failure comes from the producers who fail to keep their production costs down to the minimum. The current policy of maximum trade protection, combined with the provision of public infrastructure facilities, addresses only the first type of failure. Unfortunately, the problem with high tariff protection is that it creates disincentives on the part of the producers to achieve higher levels of productive efficiency. Thus, the high tariff protection rate accommodates the costs of inefficiencies in the sector which arise form both government failure and producer failure. Given this accommodation, there is also the added danger that the flow of public infra-

structure investments and services to the sector will slow down, since the producers' incomes are being artificially increased by trade protection. In short, the high tariff protection rate currently in place makes the task of modernizing the grains sector, as well as the rest of agriculture, less obvious and urgent.

In can therefore be argued that the policy of maximum tariff protection merely postpones the structural adjustments in agriculture that need to be done. Given that the government has to implement its trade commitments under the WTO and the AFTA, it is only a matter of time, a period of six years, before the agriculture sector, including the politically sensitive grains sector, faces serious competition. By the year 2003, CEPT tariff rates are envisioned to be as low as 5 percent for most agricultural products and 20 percent for 25 sensitive farm products. In contrast, the MFN tariff rate that will be applied to imports from non-AFTA countries will be 40 percent.

It is important to note the differentials between MFA and AFTA-CEPT tariff rates. These differentials may induce more serious adjustment problems than if the tariff protection rates were reduced gradually to the AFTA-CEPT rates. Since in agriculture, the Philippines produces "like-products" with the rest of the ASEAN, the country's local production of sensitive products will potentially be displaced by imports originating from the region. It is probable that rules-of-origin may be violated and non-AFTA imports may come into the country at AFTA-CEPT rates. This problem is similar to the present problems being encountered from leakages coming from the duty-free imports.

Given the foregoing analysis, it is thus critical that the country's agricultural tariff protection be gradually reduced starting immediately, in order to increase the competitiveness of the sector and, at the same time, minimize the adjustment problems that are expected to occur when the AFTA-CEPT scheme is fully implemented.

6. Decentralizing Agriculture Sector Infrastructure Development Services

The Agriculture and Fisheries Modernization Act (AFMA) has benefited from over a year of studies done by a congressional body tasked to package a set of measures and investments to prepare the country's agriculture and fisheries sectors for global competition. Among the important measure enacted by the AFMA includes: a budgetary allocation to ensure the funding of agriculture R&D projects, extension, irrigation and other infrastructure; issuance of guidelines for the devolution of communal irrigation systems to local government units (LGUs); guidelines on simplified public bidding of irrigation projects; phased removal of directed credit programs; and creation of a council to coordinate R&D and extension effort in the country.

The initiatives in providing funds for modernizing the agriculture and fisheries sector follow similar initiatives expressing concern on the plight of the country's agricultural producers. On account of the country's accession to the World Trade Organization, the national government had set aside significant amounts of resources for the development of the country's agriculture. The grains sector has been the prime beneficiary of this recent policy attention on agriculture. Budgetary resources for example allocated for the grains sector increased from P0.54 billion in 1993 to over P4 billion in 1997. Moreover, the passage of the AFMA in 1998 promises substantially more development resources to modernize the sector.

One major problem that has emerged in agricultural development planning in the country concerns the absorptive capacity of the Department of Agriculture of agricultural development resources. While a case can be made for expanding the size of DA's field operations in order to process more quickly these funds, involving the LGUs in the process of identifying and implementing development projects in the grains sector is a better option. With LGUs, the sector expects incremental benefits from faster turnaround time for projects and the project need identification improved.

Government decentralization has been a key program of the Government of the Philippines (GOP). In 1991, the GOP enacted a law devolving various governmental functions, largely in the social

services and infrastructure development sectors, to the LGUs. Accompanying the devolution of these various responsibilities had been the institutionalization of internal revenue allotment to the LGUs by the national government. A total of 40 percent of the GOP's internal tax revenues is allocated each year to the LGUs. With the decline in the share of international trade taxes, the LGUs account for an increasing share therefore of the total tax revenues of the national government.

It is increasingly perceived in the country that the devolution program has failed to provide most LGUs adequate resources and expertise with which to effectively assume formerly national government responsibilities. This lack of funds is exacerbated by the fact that even where national government funds are made available to augment local resources, these are exclusively channeled to a centrally packaged menu of programs that may differ from the identified needs and priorities of the LGUs. The LGUs therefore end up passively participating in nationally-funded projects.

Agricultural development is one goal where the development priorities of both the national and local government units intersect. Many of the rural poor—the constituency of most LGUs—depend upon agriculture and fisheries for their livelihood. On the other hand, food security and international competitiveness of the country's agriculture sector are overriding policy concerns of the national government that a more productive grains sector will help to address.

Due to lack of funds and the decades-old practice of central development planning and implementation, many LGUs are unable to put up the required public investments for the development of the grains sector in their respective localities. The few LGUs that are financially able to do so are biased against agriculture-related programs that they perceive as being more costly, having less per capita income impact and poor prospects for cost recovery, and generating smaller political benefits per peso investment than town centers or other highly visible projects.

Developing close DA-LGU linkages, therefore, will only partially solve the problem since there is no assurance that the DA will accede to LGU priorities, nor is there any binding commitment on the part of the LGU to adhere to national targets and objectives given that funds will still be controlled by the DA. Nevertheless, the establish-

ment of a more effective coordination system between the DA and the LGUs can be an initial step in crafting a more formal and effective bottom-up planning and implementation arrangement. For this purpose, the regional field units (RFUs) of the DA will need special reorientation and training in planning and handling projects in closer coordination with the LGUs. The LGUs, in turn, will have to actively involve farmers and other local residents in the configuration of their plans and implementation of projects in order to generate mass support for the identified projects.

The cost-sharing system will be a more ideal arrangement if only for the fact that it will force the LGUs to attend to their agriculture-based constituents in exchange for funding support from the DA. This will ensure, for example, that the provision of extension services, maintenance of farm-to-market roads, and other critical responsibilities of the LGUs will be attended to. Additionally, the identified programs will presumably be more attuned to the needs of the locality, especially if these are selected and planned in consultation with farmers in the area. Target beneficiaries can, in turn, be asked to provide labor and other types of affordable counterparts, thus enhancing their support and commitment to the program and its implementors. This will, at the same time, make LGU officials more accountable to, and hopefully also more popular with, their constituents.

Several modifications, however, may have to be introduced in the cost-sharing scheme in order to make these more palatable and accessible to the LGUs and ensure that benefits ultimately accrue to intended beneficiaries:

- MDF guidelines were originally designed for loans to the LGUs for income-generating projects. They may not be configured to handle grants or projects that have long gestation and payback periods that are common in agriculture. At present, the guidelines support a ceiling augmentation by central agencies of 50 percent for irrigation and 0 percent for roads. These ceilings may have to be increased and made progressive. The poorest LGUs—the important target beneficiaries of an agricultural development infrastructure program—may only be able to provide up to at most 10 percent of development cost as counterpart resources in cash or in kind, based on existing programs under the BSWM.

- As the DA lowers the counterpart investment by poorer LGUs, it may need to invest in improving the latter's capacity to generate project proposals and develop comprehensive local development planning in their respective areas. An improved quality of such project proposals that can be funded in this decentralized program can substantially reduce the administration cost of the program An *LGU project development facilitation* may need to be designed for this purpose.

- A *transparent project proposal evaluation system* must be devised by the DA to ensure that proposals are fairly and credibly assessed on the basis of pre-determined objectives, targets, and criteria.

- The DA and particularly its RFUs must also establish *effective project monitoring systems* to ensure that co-funded projects are efficiently and effectively implemented and funds are used judiciously and properly. This could include a project monitoring scheme that will continually advise local residents of fund releases and timetables, thus making them aware and vigilant in monitoring projects. These initiatives are critical in the light of cynical remarks that the LGUs will be no better, and could be worse, than national government agencies in minimizing graft and corruption in the implementation of projects.

Lower tariff protection on agricultural inputs including packaging materials

BOI's endorsement of a proposal to increase tariff protection of selected industries including the petro-chemical industry to 20 percent runs against the long run development interest of the agriculture sector and the economy as a whole. It should be pointed out that in 1995, the industry leaders had proposed to increase this tariff to 20 percent and the Tariff and Related Matters Committee of NEDA approved it. Before President Ramos signed this into law, agribusiness leaders had asked President Ramos to reconsider the proposal on the ground that this will not help agricultural processing become more able to compete with imported food products. The primary producers supported the agricultural processors. In response, President Ramos did not increase the tariff rate of polymers that then was set to 10

percent. Two years later, the industry revived the petition, and this time the tariff rate was increased to 15 percent. Now the same lobby is asking for 20 percent tariff protection.

High tariff protection on key agricultural inputs including packaging materials raises processing costs and constrains the sector from competing in both domestic and export markets. It serves no one in the long run. Existing users pay a high cost for such inputs and this dampens profits and discourages investments in the sector. Even the protected producers of these inputs may turn out to be losers. Although they enjoy high protective margins form tariff protection measures, these producers nevertheless forego, in the medium and long terms, potential markets which would fail to materialize because of high prices. Moreover, these protected industries would only survive with the tariff protection, and hence would be far from being globally competitive. They therefore lose the largest potential export market.

The basic inputs in agribusiness industries may be grouped into the following categories: genetic materials; veterinary products and medicaments; packaging materials; far, post-harvest, and processing machinery; and transport equipment. At present, the tariff rates on these products are at least 10 percent. It would serve the interest of the larger community if the tariff protection on the producers of these products is immediately brought down in order to lower prices thereof and encourage demand for them.

A disturbing practice which has survived up to now is to allow access to key inputs free of taxes and customs duties only for exporters. Domestic industries selling to the local market do not enjoy such a privilege. This practice segments local industries into those selling only to export markets and those producing only for the domestic market, with price and quality differences between the products of each of these industries being substantial. This practice weakens domestic industries, be these geared for exports or oriented to the domestic market. The former are disadvantaged because these are restricted from selling into the domestic market without of course paying for the added cost of inputs due to the tariff protection. By failing to tap the domestic buyers as an added market for their products, these industries are more vulnerable to fluctuations in world income and prices, as well as to changes in protection policies in other

countries. The domestic-market oriented industries, on the other hand, are likewise compromised. Because these industries have high costs of production, they require trade protection to be competitive in the domestic markets. Trade protection increases the prices of these industries, thereby reducing their markets.

What is needed now is to put an end to such a segmentation and integrate domestic industries producing like-products by bringing down tariff protection on key inputs. By doing this, such industries can be competitive in both domestic and export markets.

Financing agricultural production and marketing

A key constraint of the sector is the high cost of money relative to the country's competitors and a lack of credit access among agricultural producers. Both micro- and macro-economic factors appear to cause this problem. At the micro level, the provision of rural credit appears to be inadequate because of high intermediation costs in rural areas resulting from the underlying random shifts of agricultural production due to weather fluctuations, as well as the relatively high loan retailing and monitoring cost in rural areas.

This fragile situation is further compounded by the erosion of the collateral value of farm lands resulting from the implementation of the agrarian reform program. With the impairment of agricultural land markets, farm lands cease to become the dependable collateral these used to be in securing agricultural loans.

In developed countries, futures commodities markets enable the agriculture sector to mobilize funds from capital markets at the time of need to finance the holding of inventory after harvest. Such markets also help stabilize prices particularly during harvest as investors buy stocks from producers in anticipation of better prices in the near future.

In the Philippines, traders simulate in an informal way the operations of a commodity futures market. These traders assemble funds from participating investors they know to finance agricultural inventories. Typically, those businessmen engaged in agricultural trading and/or processing lend to producers an amount to finance production inputs. As harvest approaches and estimates of output and future

prices become clearer, such traders will attract other investors, whom they know, to participate in buying the output at a set price. Investors in the pool who need to liquidate his share in the inventory can do so by asking other investors in the pool to buy his share or bring in another investor that the existing investors allow to participate. At the lower run of the marketing chain, smaller traders replicate this system although their holding period for inventories are much shorter than that of larger traders. To reduce risk, small traders lend and buy output to sell to the larger traders.

In the longer term, this informal financing needs to be formally institutionalized. Without this mechanism allowing for funds to flow in and out of the agriculture sector, productivity gains cannot be sustained as only a portion of the incremental agricultural output can be marketed due to lack of inventory capital. Towards this end, it is important to develop financial innovations for the capital requirements of the agricultural sector. One such innovation may be a 90-day commercial paper that traders can issue during the rice harvests. Another may include securitizing the production loans made to agricultural producers to generate additional funding for the sector.

The success of these initiatives will depend upon several factors including improved management systems for the country's agricultural activities. At the moment, the small farming systems entail hundreds of thousands of owner-managers, whose respective capacities to manage the farms and credit risks are fairly uneven. Consolidated management systems run of scores or hundreds of small farms can reduce to a large extent the corporate farming. Whatever modality is used to consolidate management of contiguous small farms, there is a need to define the legal rights and obligations of the various parties to the contract and provide for measures to effectively implement the terms of the contract. The farmers who own the land and labor; the capitalists who have the capital; markets and technology; and the professional managers each have distinct interests. In order for them to come together to form a business enterprise engaged in agricultural production and marketing, the legal system must provide each party adequate protection.