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Working Paper The Effects of the Five Percent Uniform Tariff on Agriculture

PIDS Discussion Paper Series, No. 1997-19

Provided in Cooperation with: Philippine Institute for Development Studies (PIDS), Philippines

Suggested Citation: de Dios, Loreli C. (1997) : The Effects of the Five Percent Uniform Tariff on Agriculture, PIDS Discussion Paper Series, No. 1997-19, Philippine Institute for Development Studies (PIDS), Makati City

This Version is available at: https://hdl.handle.net/10419/187338

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The Effects of the Five Percent Uniform Tariff on Agriculture

Loreli C. de Dios

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September 1997

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THE EFFECTS OF THE FIVE PERCENT UNIFORM TARIFF ON AGRICULTURE

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FINAL REPORT JULY 31, 1997

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ACKNOWLEDGEMENT

I gratefully acknowledge the methodological guidance of Dr. Erlinda M. Medalla, comments of Dr. Cristina David, Dr. Leonardo Gonzales and Dr. Intal, insights from Ed Quitoriano and Kathleen Guimbatan and data support from BAS Director Dr. Romeo Recide and MODE; and to Ross Quisao for his patient and persistent research assistance.

I.

EFFECTS ON AGRICULTURE OF A FIVE-PERCENT UNIFORM TARIFF

I. INTRODUCTION

In providing the most basic of man's needs, the agricultural sector is undoubtedly essential to any economy. In the Philippines this importance has been manifested in its significant contribution to national product and export earnings, as well as the employment of a large proportion of workers. At the same time, however the majority of poor families are found in the rural areas, and a highly uneven farm size structure has evolved in which a few large farms coexist with numerous small ones. Compounding this situation is the fact that the sector is particularly subject to uncertainty created by natural factors, resulting in price and output fluctuations. Protective and supportive policies have thus been adopted over the years to meet this and other, sometimes conflicting, objectives of food sufficiency, stable prices, increased farm incomes and export competitiveness.

Food is a crucial concern of any government faced with a growing population. Although it has always been a priority in the Philippines, food sufficiency is a recurring problem. While the attention given to staple crops has been consistent, the generally erratic performance and low productivity of the whole sector have been attributed to government policies that have either been inadequate, inappropriate, or both. The declining share of agriculture in national product is said to be a reflection of the lopsided growth strategy pursued in the past.

Having realized the need to correct such biases, the government has undertaken policy reform in many important areas. In trade the direction is towards liberalization and institutional reform: removal of export taxes, quantitative restrictions and monopoly control, lower and less dispersed tariffs. This trend is reinforced by other developments such as our accession to the GATT and commitments to the AFTA and APEC. But the proposed 5% uniform tariff, to be implemented by 2003, seems to overshadow these other moves in terms some would consider drastic (i.e., level and coverage), although it serves as the ultimate indication of the government's willingness to carry out the liberalization efforts to the fullest.

Agriculture is highly sensitive to these moves, for the reasons of food security, poverty and inequity, which are precisely the issues that called for protective and supportive policies in the first place. In this context, this paper thus seeks to determine how agriculture would be affected by the above pronouncements, given our commitments and concerns. The question "How will agriculture be affected by a uniform tariff regime?" however, presupposes [a] that tariffs are a major policy instrument in agriculture, and [b] that agriculture will fall under a uniform tariff regime just like the rest of the economy. Before the question may be addressed, this paper therefore first seeks to establish the extent of policy intervention in agriculture, to define exactly how much and in what areas intervention has taken place. Total intervention is the desired point of analysis, considering the importance of budgetary support and nontariff protection in agriculture. Then we examine the future policy directions in agriculture given our commitments to the WTO, AFTA and the APEC.

The effects of a uniform tariff on agriculture will then be determined by focusing on three linked sectors: corn, livestock, and meat processing, the latter two being undertaken in a separate paper. This choice is in view of the following: the importance of corn as a feed ingredient; the shortage of corn as a perennial problem, despite past programs aimed at self-sufficiency; the restrictiveness of trade policy with respect to corn; the constraints of infrastructure deficiencies that are particularly felt in corn production; the growing significance of livestock as a source of value-added in agriculture; and the need to examine the implications on the processed food sector. Corn producers will therefore serve as a case study of the competitiveness of agriculture under the present tariff structure and the uniform 5% tariff.

II. METHODOLOGY

A. Producer Subsidy Equivalent

Government intervention includes all actions such as taxes, tariffs, quotas, subsidies, special concessions, rules and regulations, foreign exchange controls, price setting, marketing monopolies, and other forms which alter the incentive structure for economic agents. For agricultural commodities, support prices, price ceilings, levies on producers, and subsidies on inputs and credit are the common forms.

The Producer Subsidy Equivalent (PSE) concept is used to show how much policy intervention has taken place in agriculture. It is an indicator of the value of transfers from domestic consumers and taxpayers to producers resulting from a given set of policies in a certain year (OECD 1987). Thus it is an aggregate measure of the total monetary value of the assistance to output and inputs associated with agricultural policies, and captures the transfers from both government expenditures and price distortions.

Th policies are classified into the following categories: direct income support or financial outlays to producers; price intervention, measured by a price gap; and indirect budgetary transfers. The latter consist of input assistance (tax or subsidies for the use of variable or purchased inputs), marketing assistance (programs which change processing costs), and infrastructure support (programs with long-term effects on farm structure, producer knowledge, and productivity) (USDA 1992). Total PSE is the sum of income transfers, direct payments and indirect budgetary support, while percentage PSE is the proportion of this total to the value of output to producers. Some policies are implemented as integrated packages of different instruments, making it difficult to categorize them properly.

Percentage PSE = $\frac{\text{Total Transfers}}{\text{Value to Producers}}$ $Q(P_A - P_b) + D + I$

$$\frac{Q(P_d - P_b) + D + 1}{QP_d + D}$$

where Q is production quantity, P_d is producer price, P_b is world price converted to domestic currency, D is direct government payments, and I is indirect transfers. Value to producers is the commodity's market value plus any direct government payments.

Viewed in another manner, the PSE is the payment that would have to be made to compensate farmers for the loss of income resulting from the removal of a given set of domestic agricultural policy measures (GATT 1987). The first calculations of PSEs was undertaken by the FAO in 1973. Since 1982 the OECD has been applying the measure to its members' main farm commodities, and its estimates were accepted as the most authoritative source of information on agricultural support and were therefore used in the Uruguay Round negotiations.

There has been general agreement to include only price subsidies in calculating government support to agriculture for the purpose of monitoring reductions in such assistance under the GATT. However Anderson (1995) argues for the continued estimation of PSEs. First, since the nominated tariff equivalents of previous nontariff measures have been set by some countries at excessively high levels relative to the actual, even if reduced over time, those tariffs may not result in lower PSEs, and the extent of reform is likely to be minor; government assistance to agriculture is likely to be reduced by only about one-sixth during the 1990s and most of that has occurred already. Second, the reductions which were required under the UR exclude several support measures which may be important, and these will not be monitored by the WTO, making reinstrumentation into less overt forms possible. Third, transparency is more important the more covert the forms of intervention used.

B. Domestic Resource Costs

Intervention may alter output returns, intermediate input costs, as well as the returns from using resources in an activity. To evaluate the performance of producers within the policy environment, the domestic resource cost (DRC) is used. It is the ratio between the cost of domestic resources (evaluated at accounting prices) and net foreign exchange earnings (value of traded output less that of traded inputs). When compared with the social exchange rate (SER), which represents the opportunity cost of domestic resources used in all activities producing tradeable

goods, it enables one to determine allocative efficiency and comparative advantage of an activity.

For a detailed discussion of the calculation of the DRC, the reader is referred to the Technical Appendix in Vol. II of the study Tecson, Medalla, et al. (1995).

C. Net Present Value

The effects of the uniform tariff will be gauged by assessing the financial viability of producers under the old and the new (uniform) tariff regime, through the use of the net present value (NPV) concept, which discounts net benefits to the present.

III. PAST ESTIMATES OF AGRICULTURAL INTERVENTION

The level of intervention in agriculture has already been documented by some analysts in the past. M.S.J. de Leon (1983) estimated government expenditures in agriculture for the period 1955-80, adopting the methodology from earlier research done by Capule (undated) which disaggregated national government expenditures into the various policy instruments. He found that expenditures grew significantly over the period, but declined starting in the mid-1970s. Expenditure policies have aimed at increased productivity and more equitable income distribution, but government priorities within agriculture changed. There was greater emphasis on irrigation investment, the shares of research and extension remained stable, that of social development programs rose significantly, while environmental management and conservation expenditures also increased. Budgetary outlays for pricing and marketing programs declined (from a peak of 43% to 2.2%), although expenditures from other fund sources such as borrowings may have been substantial. Research and extension continued to have stable shares (between 20-30%) and that of social development programs increased dramatically (from 2 -35%).

In an unpublished study, Seligman identified and quantified intervention into a PSE estimate (1987) covering the period 1977-86. She found that the budget increased by 30% on the average for the period. The bulk of expenditures were in the form of indirect subsidies (50%), agrarian reform, land and resource conservation and management (24%), and support and extension (15%). Research and development had a mere 2% share. As expected, rice received the most support, followed by logs, sugar, coconut, banana, and corn. Income transfers from protection were enjoyed mostly by sugar; corn and chicken followed but by a large difference. Banana, coconut, fisheries, mangoes, and pineapple were heavily penalized.

The PSE value in nominal terms was surprisingly negative for the whole of agriculture, indicating that the income transfer from budgetary support could not offset the policy distortions on prices of specific agricultural activities. PSEs were high for sugar, corn, and chicken, and this was due to the large income transfers from protection, again showing that the different policies affecting pricing dominated the PSE estimates.

Her PSE for importables totaled P47.9 billion for the period 1977-86, while that of exportables was -P125.8 billion (-P77.9 billion total). Income transfers were P39.4 billion and -P119.6 billion respectively (P80.2 billion total), while budgetary transfers were P6.9 billion and P13.1 billion (P20.1 billion total). Average PSE for the whole period was 10.3% of border prices, which is minimal compared to the 50% average tariff. By commodity, cotton, sugar, chicken, and corn received the highest subsidy, while shrimps and prawns, coconut, banana, abaca, and tobacco were penalized.

Habito and Manasan (1992) reviewed the pattern of national government expenditures on agriculture, forestry, fishing and hunting for the period 1975-89. As a proportion of GNP, direct government outlays on agriculture (which summed up to P15.5 billion in 1972 prices) experienced alternating highs and lows during the period, sometimes owing to reversals in priorities, other times the natural result of changes in the overall macroeconomic environment. Irrigation expenditures followed the same pattern, while that on agrarian reform exhibited a very strong downward trend up to 1985, and a large increase during the Aquino administration. Expenditure on farm prices and incomes has been dominated by national government transfers to the NFA, and showed the same erratic tendency except for a real positive growth during the crisis years.

A bias index for government expenditure was also computed by the same authors, defined as the ratio of the sector's share to total government expenditure and sector's share to total GDP. For the period the bias index consistently remained below unity and never exceeded 0.5, indicating a bias against the sector. It also moved with the overall fiscal expansion and contraction.

The same study estimated the longrun impact of government expenditure on agriculture to be small but significant. The shortrun impact was not always statistically significant.

In the same year, a study on foodcrop policies was published by the ADB and the Philippine government, dealing with sector-specific incentive policies which influence profitability of farming, government expenditures which promote productivity, the effects of macroeconomic and intersectoral policy environment, and the appropriate institutional arrangements for the implementation of government interventions.

The section on public expenditure made use of the Habito and Manasan findings described above as well as those of David (1991). In the 1960s the Philippines had among the highest levels of rural development in Asia. At the end of the 1970s this commitment of resources to agriculture declined sharply, particularly in irrigation and price and income support. At the start of the 1980s this was revived but subsequently reduced in the middle and then restored in the later half of the decade.

In relation to the allocation of budgetary resources, the report noted that spending on rural programs such as rural infrastructure and education, is as important as agricultural development expenditures. Furthermore, research and irrigation should have increased allocations.

David (1996) also estimated public expenditures for 1987-94, and obtained a total of P67.67 billion over the 8-year period. Price intervention, rural credit, fertilizer and seed subsidies should have had favorable impacts in the short-term. However, she found that the policy and institutional reforms and the recovery of public expenditures have had a limited impact for the following reasons: trade policy reforms in agriculture have been slow and the incentive problem was exacerbated by the failure to effect a real depreciation of the exchange rate to complement trade liberalization since the late 1980s; increased public expenditure for the sector was allocated mostly for redistributive and market regulation purposes, rather than productivity-enhancing investments; uncertainties generated by slow implementation of land distribution under CARP discouraged investment, and the prohibition of private land transfers and tenancy under the program eroded the collateral value of land and distorted land and labor market arrangements.

Contractionary policies of the early 1980s affected agriculture to the extent that public expenditures shares in GVA in the mid-1980s equaled 1955 levels. Public support to agriculture was thus low compared to the rest of Asia (David 1992), with the Philippine ratio of agriculture expenditures to GDP the lowest among ASEAN in 1988. Even the ratio of agricultural research expenditures to GVA in agriculture is now the lowest among major Asian countries at present, unlike in the 1960's and early 1970s when is was above the developing country average. Increases in public expenditures in the late 1980s went to agrarian reform, environmental protection, price and other support services rather than long-term productivity-enhancing investments.

More unfortunate is the realization that "misguided and inadequate government policies and programs have contributed to the erosion of the country's competitive advantage in agriculture" (David 1995). Policy and institutional reforms and the recovery of public expenditures in the late 1980s had a limited impact. The GATT-UR could accelerate reforms and strengthen support services, but the high binding tariffs, the current method of administering the minimum access requirements, and the short term perspective in safety-net design may reduce the potential positive impact of GATT.

A greater number of studies have measured and analyzed the extent of protection in the whole economy using either the legal rates or the price-comparison approach. Medalla and Power (1979) found little evidence that the import control system was strongly dominating the tariff and tax system in 1974 and therefore estimated implicit tariffs using statutory rates instead. Protection levels between 1969 and 1974 increased for about half of the tradable food sectors in the input-output table, and decreased for the other half. However, about a fourth of the sectors received negative protection in 1974. Effective protection rates (EPRs) based on tariffs and taxes indicated persistence of the bias in favor of manufacturing over other sectors, as well as a penalty on exports.

David (1983) confirmed that price intervention policies have been significantly biased against agriculture, due to the policy objective of promoting industrialization via tariff protection before the 1970s, and increasing regulations during the 1970s. Public expenditure policies have tended to promote agriculture through extension, research, and irrigation primarily, but the policy structure was mainly influenced by the general objective of promoting industrialization.

Her estimates of nominal protection rates from 1960 to 1980 show an average for agriculture that was much lower than the Medalla and Power estimates for manufacturing, excluding the major processed agricultural products. This she explained by citing the large share of exportable and nontraded agricultural commodities. For example, other crops and fishery, whose high tariffs are not fully realized, are in fact exported and penalized by a 4% export tax. Furthermore, export commodities received less protection than import competing commodities. Protection also declined over time and even became negative for export products in the 1970s. Quantitative restrictions, direct government involvement in marketing, export taxes and quotas, special levies, and price controls were the most important forms of price intervention then.

David's methodology consisted of comparing actual domestic prices of agricultural outputs and inputs with the FOB unit value (for exportables) or CIF unit import value (for importables) converted at the official exchange rate. Prices were defined at a "comparable point in the marketing chain to insure that the observed divergence" was due to the interventions and were not real marketing costs.

Her EPR estimates showed an incentive structure that was significantly biased against agriculture, again consistent with earlier conclusions of Power (1971) and Bautista and Power (1979). Price intervention policies undervalued agricultural production in the 1970s through low product and high input prices. However, unlike in manufacturing, the cost of protection was shouldered directly by farmers because of low farm prices. The DRC estimates moreover showed that the major agricultural activities demonstrated comparative advantage, which would have been more effective in the absence of the policy biases.

The World Bank (1983) assessed the impact of government market interventions on the performance of the agricultural sector for a 15-year period, by updating David's estimates of NPRs for selected commodities to 1982. For border prices, the trend value was used. The most apparent feature was the general decline in protection, with many becoming negative by 1975. One factor was the long-term impact of attempts to increase the stability of agricultural prices, through national marketing agencies, price control and defensive buying and selling operations. These depressed producer's incentives, especially in the major export crops (p.21). Levies reduced price peaks but these were not compensated for during low price periods, or implicit taxes for imported goods were minimized when prices were high but low world prices were not passed on to users. Incentives to investment in marketing and storage facilities were lessened by the narrow margins between retail and controlled farm prices.

Overall a bias in the incentives structure against agriculture compared to manufacturing was created by price intervention policies, as shown by the EPR. Value added in manufacturing was protected by 44% in contrast to agriculture which was implicitly taxed or negatively protected. Although not as high as in manufacturing, agroprocessing received high protection (except for milling and coconut product) through depressed prices of raw materials. Net EPR, which takes exchange rate distortions into account, was also generally negative in agriculture, poultry being the only exception.

In Seligman's unpublished study (1987), she calculated implicit protection rates for selected commodities from 1978-86 using domestic wholesale prices and Singapore CIF unit import values. Her results show that for importables, price differentials were positive although not much greater than the average tariff. For exportables, the her estimates varied from double the tariff rate to negative or positive but much lower than the tariff. This implies penalties for the latter products, specifically because of the export tax.

In an official report to the Senate in 1989, the Department of Agriculture stated that the trade policy reforms failed to correct the anti-agriculture bias of previous policies, with the agricultural sector still less protected compared to industry and processed agriculture having the least incentives.

A World Bank project directed by Krueger, Schiff and Valdes (1990) compared the political economy of agricultural pricing policies in 18 countries. Each country followed a common methodology for quantifying the direct and total effects of government interventions on agricultural prices, namely the deviation of actual domestic prices from those that would have prevailed under sectoral and general free trade. The non-intervention prices were obtained by looking at the relative border prices at the free trade equilibrium exchange rate, adjusted for marketing costs. This exchange rate was estimated under assumptions of current account balance and no restrictions on foreign trade. The effects on output, consumption, trade, intersectoral transfers, government budgets, and income distribution were also analyzed.

The Philippine case was handled by Intal and Power (1990), who compared the different phases of pricing interventions by the government in agriculture. During the American colonial period from 1910 to 1934, this was minimal. From the

Commonwealth period until the 1960s, intervention focused on the food sector. Such intervention intensified and widened in scope during the 1970s. Among the principal findings is that the various types of direct and indirect intervention resulted in substantial reductions in sugar and coconut production, a very small negative effect on rice output, and a notable increase in corn output. Furthermore, direct intervention in producer prices of sugar and coconuts had net negative effects that were worsened by indirect intervention.

Nominal protection rates were thus computed for four major commodities: rice, corn, sugar and coconut from 1960-86. For rice, the average NPR from direct interventions showed much variation during the whole period: positive high rates at the start of the 1970s, then negative up to 1981 and positive again afterwards. In contrast, corn production was protected throughout. Sugar on the whole received negative protection between 1972 and 1981. Explicit and implicit taxation of copra increased during the 1970s and early 1980s, reducing the ratio of producer to wholesale prices.

The same study also found that government expenditures increased markedly in relation to agricultural output, but as a share of total expenditures, did not show much change. This is attributed to the declining share of gross value added in crops and livestock to GNP. Although the government spent more on agriculture than it earned in taxes, the implicit taxation of agriculture rendered the net expenditure on agriculture inadequate (p. 112).

Balisacan, Clarete and Cortez (1992) updated to 1988 price comparisons previously computed as the ratio of domestic wholesale to Hong Kong unit import values. They reported that food items appear to have the lowest implicit protection compared to agriculture and non-agriculture, and the difference even widened in the 1970s. However the trade policy bias seems to have diminished through the years (Clarete 1992).

By comparing domestic wholesale prices and border prices of selected food products from 1986 to 1992, Sarris (1995) found that the nominal rates of protection are considerably higher than tariff rates for most of the period. (The Balisacan, Clarete and Cortez estimates for 1986-88 are in line with this observation). This indicates that quantitative controls rather than book rates determine domestic prices. He also noted that the long history of high protection to agriculture has not resulted in excess production, but instead an unsatisfactory performance opposite the signals given to it. The indirect taxation through the overvalued exchange rate or support to non-agriculture have been singled out as explanations.

The fact that tariffs that were bound for major importables under GATT are much higher than book rates supports this view, since the previous levels of protection were higher than that conferred by tariffs. Sarris suggests a reexamination of relative protection levels between agriculture and non-agriculture. This is based on the common perception that agriculture has been given much lower protection throughout, aside from the above observation, as well as the fact that most nonagricultural imports have already been liberalized.

IV. CURRENT POLICY ENVIRONMENT

Several studies have thus examined the numerous forms of policy intervention directly and indirectly affecting agriculture. Budgetary expenditures have been consistently appropriated for assistance to producers in the form of marketing, credit, input subsidies, irrigation, disaster relief, research, technology dissemination, storage and other infrastructural requirements. These forms of intervention continue at present.

Price intervention policies have also been pursued as constantly, and these have contributed to wide price differences. Tariffs have been shown to be less important an instrument than quantitative import restrictions, export bans and taxes, state trading and price control. From the start of the 1980s however, structural adjustment programs were implemented which aimed to correct the distortions created by such policy instruments. The current liberalized environment is thus a result of the removal of quantitative import restrictions, the lowering of the average tariff and narrowing of its dispersion, the elimination of export taxes, as well as price decontrol, tax policy, privatization and de-monopolization, and currency devaluation. All these represent substantial changes from previous policy, although the key reforms in agriculture were not implemented at the same time and their effects are as a consequence yet to be recorded.

In the late 1980s most major importable products remained under QRs, protected by laws. The Magna Carta of Small Farmers (Republic Act 7607) reinforced this by restricting imports of substitutes competing with the domestic product. It covered meat and meat products except beef, poultry and products, corn and its substitutes.

However in order to improve the competitiveness of local industries, a program "to reduce tariffs until these reach one uniform rate" was pursued through Executive Order 288 in December 1995 which modified tariffs on agricultural products. A two-tiered structure of 3% for raw materials and 10% for finished products was to be fully implemented by the year 2003, after which the uniform rate of 5% ad valorem was to take effect in 2004.

Furthermore in March 1996 Republic Act 8178 replaced QRs on agricultural products with tariffs, with the exception of rice, which continues to be subject to such restrictions. It thus repealed all laws restricting imports, e.g. RA 1296 for onions, garlic, potatoes and cabbage, RA 2712 for coffee, PD1297 for ruminants, Section 23 of RA 7607 for corn and its substitutes, live poultry, poultry meat and products, live hogs, pork and pork products, and meat and meat products except beef; Section 15 of RA7308 for seeds, Section 4 of RA4155 for Virginia tobacco, and PD1483 for cigar leaf tobacco. The maximum bound rates committed under the Uruguay Round Final Act will be imposed on such products.

Executive Order 313 provided the interim tariffs for these sensitive agricultural products, in lieu of import restrictions, since RA8178 could create initial adjustment difficulties for the producers. Minimum access volumes (MAVs) were also set for those imported agricultural products that are allowed entry at a lower tariff. Under the EO some articles for which an MAV was determined have two rates of duty: an in-quota rate which applies to imports that are within the MAV, and an out-quota rate for those imports in excess of the MAV. The proceeds from the importation of products within the MAV were also earmarked for an Agricultural Competitiveness Enhancement Fund.

Other adjustment measures for agriculture have been prepared as "safety nets" to ease the transition for those affected by the entry into force of the WTO. Among those already implemented are reduced tariffs on farm machinery, allowing rice and corn exports, anti-dumping and countervailing measures; the inclusion of incentives for key production areas in the Investment Priorities Plan, creation of a guarantee fund to help restore the collateral value of CARPable lands, exemption from the E-VAT of imported raw and processed meat and agri-processors, reduced tariffs on packaging materials, increased budget for agricultural research and development, awarding cargo handling service contracts through periodic public bidding, efficient delivery of extension services with the help of local governments.

Those that still need additional action are the following: the Agricultural Productivity Enhancement Act; the Safeguards Measures Act; technical corrections in the Philippine schedule for pork, poultry meat live poultry on the minimum access volumes; amendments to the Agri-Agra Law to include provisions that will enhance the farmers' credit-worthiness, improve their capacities to undertake viable projects, extend institutional and market linkages, promote organization of farmers and reduce lending risks; a plant variety registration and protection bill; a decision on what sanitary and phytosanitary (SPS) measures to implement, having already completed an inventory of Philippine SPS-related measures.

The government also adopted the Key Production Area approach for the agricultural sector in its Medium-Term Agricultural Development Plan for 1993-98. This approach focuses support on priority areas whose "agro-climatic features and market conditions are favorable for producing, processing, and marketing specific products" (MTADP 1993), and encourages farmers and fishers to produce crops/livestock/marine products only in areas that have the comparative advantage. Support is coursed through specific programs such as Project Self-Reliance which turns over the warehouses of the NFA to qualified farmer cooperatives and federations. In addition, technology assistance, post-harvest and marketing facilities, and market matching are provided.

V. PSE ESTIMATES

The estimated level of policy intervention for the period 1990 to 1995 is given in Tables 1a to 1f. The first component, income transfers, is based on the price gaps for each important commodity, multiplied by their respective volumes of production. [It is noted that the most representative world price of the commodity in its tradable form were chosen.] Only the major crops, livestock and poultry were included, being the main target recipients; however, PSE was computed for the sector as a whole. Direct income support is in the form of crop insurance claims paid to rice and corn farmers, less the farmers' share in premium payments.

Indirect transfers were quantified on the bases of the General Appropriations Acts, which give the annual national government budget by purpose of expenditure, as well as the expenditures of local government units. [Actual expenditures could not be calculated due to the unavailability of data, but it is known that the actual is about 98 per cent of the budget allocation.] The calculations include only those expenditures of agencies directly involved in agriculture; several other related expenditures such as on agrarian reform and on the environment and natural resources are excluded. Also excluded are the amounts which were sourced outside the government budget, e.g., credit assistance from the earnings of certain corporations or outside financing from government financial institutions, official development assistance, or the private sector.

The results show a total PSE ranging from P9.8 billion in 1990 to P22.5 billion in 1995. As a percentage of gross value added (GVA) in agriculture, the PSE was 5.3, 3.9, 5.8, 5.7, 6.2, and 6.6 percent annually from 1990 to 1995. The percentage PSE has correspondingly risen from 13.17 in 1991 to 27.47 in 1995. Thus the share has grown steadily from 1991, although the 1995 increase was due largely to GATT-related adjustment measures. Yet this could be a low estimate considering those items that have been excluded.

Total income transfers have ranged from P150 million to P323 million, and have been about 1.2 to 1.5 per cent of total transfers except for 1991 when it was 2.1 per cent. This was substantially higher than the average annual proportion of 1.5 per cent.

Farmers who suffered crop losses due to calamities such as plant disease, pest infestation, drought or typhoons claimed income support that dropped from 1.1 percent of total PSE in 1990 to share in premium payments fro registered in 1992 and 1994, i.e.

Indirect transfers consisted of ex

assistance, the administration of

extension, and other general items or expenditure which could not be disaggregated into the above forms of support. Expenditures of local government units (LGUs) as

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2000	%PSE					 	ī	ncome
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thousand me	etric tons)					1 000		
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Palay	10540.60	13.90	NFA regularmilled rice	8.61	TH tob white honglut fice 35% bloken	34390	11684	22707
Com	4128.50	8.33	NFA yellow corn grain	2.83	US tob yellow corn	104287	119516	-15229
Coconut	12183.10	8.56	NSO copra ave 2 types	9.81	PH tob copra	281499	123471	158028
Sugarcane	18679.40	15.07	SRA raw sugar	6.61	Cuba tob raw centrifugal sugar	18085	14270	4715
Banana	3082.00	6.16	BAS bungulan 8.8/k	4.63	PH fob bananas	10305	5394	7392
Pineapple	1397.40	9.15	BAS converted 1.3k/pc	3.86	PH fob pineapples	8164	8124	40
Coffee	123.90	65.89	ICOCA ave buying price	65.57	ICOCA ave world price of Robusta	14013	10894	3119
Mango	432.30	32.42	BAS converted 4/k	25.20	PH fob mangoes	14013	5077	-2984
Tobacco	63.70	32.86	PTA Virginia type	79.70	PH fob other unmfd Virginia tobacco	2093	2066	-66!
Abaca	85.80	26.82	NSO ave S2 & I types	34.57	PH fob ave S2 and I types	625024	302150	23288
						625034		
Livestock ar	d Poultry	1					0814	1545
Cattle	213.08	118.59	BAI beef dressweight	46.06	PH cif beef, boneless, fr/ch/frz	20209	26773	5270
Нод	1213.10	65.52	BAI pork carcass	22.07	PH cif pork, fr/ch/frz	19402	20710	1824
Chicken	747.8	64.34	BAS dressed Mla	39.94	HK cif chicken fr/ch/frz	40117	4014	377
Chicken ego	199.91	43.4	NSO converted 21/k	24.58	HK cif bird's eggs in shell fr/ckd	101560	71370	9019
						706604	463520	32307
TOTAL INC	OME TRA	NSFERS	3				400020	· · · · · · · · · · · · · · · · · · ·
		Ţ						
		1				Direct Go	t Payment	3370
DIRECT IN	COME SU	PPORT		1		Direction	1	10437
Crop insura	nce claims	paid to	rice and corn farmers					7067
Less 67.719	6 farmers'	share in	premium payments					
		· · · · · · · · · · · · · · · · · · ·		_		Expend	Fauit/Sub	Total
						22081413	9550	221769
INDIRECT	TRANSFE	RS				2500	250	500
Price Stabili	zation (Ad	ministrat	ive)		l	250000)	25000
Income Sup	port (Adm	inistrativ	e)			167929	3.	0 16792
Input Assist	ance					16282	4900	0 2118
Marketing A	ssistance					141341	3	0 14134
Research a	nd Extensi	on		<u> </u>		1680983	4400	0 168538
	تعصام فالمحد	-intention	Industry Development	Regiona	al Support)	1000000		<u> </u>

SE 1994							+	
2000	%PSE							Income
18747173-8	21.14							Transfers
10747170.0							0/01-1	O(Dd Ph)
Agricultural	Production	Pd	Data Source	Pb	Data Source	Q(Pd)		
Agricultural T	etric tons)					P000	P000	
(Indusario In							00074	47072
Major Crops	10538 10	11 05	NFA regularmilled rice	9.43	TH fob white nonglutinous rice 35%	116446	99374	1012
Com	4519 30	6 96	NFA vellow corn grain	2.85	US fob yellow corn	31454	12880	100/4
Com	4313.00	9.12	NSO copra ave 2 types	9.40	PH fob copra ave	102208	105346	-3130
Coconut	24605 20	12 70	SRA raw sugar	7.05	Cuba fob raw centrifugal sugar	313629	174101	139520
Sugarcane	24095.20	6.42	BAS bungulan 8 8/k	5.02	PH fob banana ave	19980	15623	4357
Banana	1222 00	11 51	BAS converted 1 3k/pc	3,96	PH fob pineapple ave	15237	5242	9995
Pineapple	1023.00	60.09	ICOCA ave huving price	63.40	ICOCA ave world price of Robusta	7348	7754	-406
Coffee	1 122.30	44.24	BAS converted Alk	26 94	PH fob mango ave	16192	9860	6332
Mango	366.00	44.24	DTA Virginia hung	54.00	PH fob other unmftrd Virginia type	1857	3073	-1216
Tobacco	56.90	32.03	NCO sup S2 8 1 boos	31 71	PH fon ave S2 & I types	2436	2873	-437
Abaca	90.60	26.89	NSO ave SZ & Lypes			626787	436126	190661
	<u>l</u>		· · · · · · · · · · · · · · · · · · ·					
Livestock ar	nd Poultry		DALL- of deservoicht	30.67	PH cif beef boneless fr/ch/frz	16880	7757	9122
Cattle	195.55	86.32	BAI beet dressweight	20.50	PH of perk frich/frz	68250	34073	3 34177
Нод	1152.68	3 59.21	BAI pork carcass	29.50	UV of chicken fichtfrz	44632	2925	3 15374
Chicken	709.46	62.91	BAI dressed Mla	41.24	Luk of birde' ages in shell fr/ckd	8655	477	3884
Chicken eg	196.04	4 44.15	SINSO -converted 21/k	24.34	The chibilds eggs in shear more	138417	7586	62557
		[]	- <u></u>					
						765204	51198	7 253218
TOTAL INC	OME TRA	NSFER	S				1	
		<u> </u>						
						Direct Go	vt Paymen	s 121795
DIRECT IN	COME SU	PPORT		- [· · · · · · · · · · · · · · · · · · ·	1	199272
Crop insura	nce claims	paid to	rice and corn farmers					77477
Less 38.88	% farmers'	share it	n premium payments					····
						Expend.	Equit/Sul)
						1106721	730495	1 18372161
INDIRECT	TRANSFE	RS				146226	3 267528	1 4137544
Price Stabil	ization (Ad	ministra	ative)			5000	0 1447	5 64475
Income Sup	oport (Adm	inistrati	ve)			112034	401270	7 5133048
Input Assis	tance					29270	3 38595	678656
Marketing A	Assistance					96018	6 13576	9 1095955
Research a	nd Extensi	on				541818	1 8076	6 5498947
Others (Ge	neral Admi	nistratio	on, Industry Development,	Regio		176353	6;	0 1763536
Expenditure	es of Local	Govern	ment Units				<u> </u>	

TABLE 1c								
PSE 1993		_				. - <u>-</u>		·
2000	%PSE							
14459515.5	21.60		·····				····· · .	ncome
	· · · · · · · · · · · · · · · · · · ·							ransiers
Agricultural	Production	Pd	Data Source	Pb	Data Source	Q(Pd)	C(BP)	Q(Pd-Pb)
thousand m	etric tons)					P000	P000	P000
Major Crons								
Polau	9434 20	9.88	NFA regularmilled rice	7.32	TH fob white nonglutinous rice 35%	93210	69058	24152
Corr	1707 00	6.65	NFA veltow corn grain	2.79	US fob yellow corn	31906	13386	18520
Con	11328 40	5 94	NSO conta ave 2 lynes	7.18	PH fob copra	67291	81338	-14047
Coconat	22015 10	0.57	SRA raw sugar	6.10	Cuba fob raw centrifugal sugar	218152	139782	78370
Sugarcane	22913.10	5.32	BAS bungulan 8 8/k	5.42	PH fob banana	16204	16634	-430
Banana	3009.00	0.20	BAS convoted 1 3k/pc	4 07	PH fob nineapple	8844	5240	3605
Pineappie	1207.40	0.07	BAS converted 1.50 pc	25.41	ICOCA ave world price of Robusta	3810	3148	662
Coffee	123.90	00.75	BAS essented 4/k	23 86	PH fob manno	9732	8007	1725
Mango	335.60	29.00	DTA Virginia huno	50.00	PH fob other unmftrd Virginia type	3382	6282	-2900
Tobacco	104.80	32.27	PTA Virginia type	26 11	PH fob ave S2 & I types	2255	2943	-688
Abaca	81.50	27.67	NSU ave 52 & Types	1.00.11		454786	345819	108968
				·]·				
Livestock a	nd Poultry		DAL hand deeperusieht	45.03	DH of beef boneless fr/ch/frz	15222	8181	7041
Cattle	181.71	83.77	BAI beet dressweight	145.02	DU sif pody frich/frz	62027	21237	40789
Hog	1101.52	2 56.31	BAI pork carcass	19.20	SIFFI OI DOIX Incluinz	38574	27558	11016
Chicken	678.76	56.83	BAI dressed Mia	40.00	TH feb books ages fresh	7334	4335	2999
Chicken eg	g 202.10	36.29	NSO converted 21/k	21.43	5 TH IOD Hen's eggs, itesh	123157	61311	61846
		ŧ						
						577943	407129	170814
TOTAL INC	OME TRA	NSFER	S	i				
		·	l					·j·
		1				Direct Gov	vt Payments	91582
DIRECT IN	COME SUP	PORT						158996
Crop insura	ince claims	paid to	rice and corn tarmers					67414
Less 42.4%	farmers' s	hare in	premium payments					
				<u> </u>		Expend	Equit/Sub	Total
		<u> </u>				10389194	3807926	14197120
INDIRECT	TRANSFER	RS				2064430	1961021	4025451
Price Stabil	ization (Adr	ninistra	(ive)			50000		50000
Income Sup	oport (Admi	nistrativ	'e)			208810	1464313	1673123
Input Assis	tance					278453	291764	570217
Marketing A	Assistance	<u>'</u>				648302	62494	710796
-	and Endoncia	00		1				
Research a	Ino Extensio			Decision	al Cunned)	5678321	3 28334	1 5706657

			1		······································		T	
TABLE IU					<u></u>	·		
PSE 1992	W DOC							
1000	1%PSE			Ì				In come
13844994.5	20.03	L						Tresse
						0.00	0(7)	Transfers
Agricultural	roduction	Pa	Data Source	מאן	Data Source		Q(Pb)	
(thousand m	etric tons)				ł 	P000	19000	P000
Major Crops			1					40.107
Palay	9128.90	8.46	NFA regularmilled rice	7.32	TH fob white nonglutinous rice 35%	77230	66824	10407
Corn	4618.90	6.58	NFA yellow corn grain	2.65	US fob yellow corn	30392	12240	18152
Coconut	11404.90	7.24	NSO copra ave 2 types	8.43	PH fob copra ave	82571	96143	-13572
Sugarcane	21801.90	10.54	SRA raw sugar	5.10	Cuba fob raw centrifugal sugar	229792	111190	118602
Banana	3059.20	4.75	BAS bungulan 8.8/k	4.85	PH fob banana ave	14531	14837	-306
Pineapple	1135.20	9.07	BAS converted 1.3k/pc	3.83	PH fob pineapple ave	10296	4348	5948
Coffee	127.60	27.64	ICOCA ave buying price	18.28	ICOCA ave world price of Robusta	3527	2333	1194
Mango	330.00	25.83	BAS converted 4/k	27.04	PH fob mango ave	8524	8923	-399
Tobacco	117.90	31.64	PTA Virginia type	77.56	PH fob other unmftrd Virginia type	3730	9144	-5414
Abaca	84.30	26.20	NSO ave S2 & I types	32.24	PH fob ave S2 & I types	2209	2718	-509
						462804	328699	134104
Livestock an	d Poultry			[[1	
Cattle	166.91	80.51	BAI beef dressweight	41.26	PH cif beef boneless fr/ch/frz	13438	6887	6551
Hog	1056.98	63.90	BAI pork carcass	26.72	PH cif pork fr/ch/frz	67541	28243	39299
Chicken	651.99	60.82	BAI dressed Mia	39.46	HK cif chicken fr/ch/frz	39654	25728	13927
Chicken egg	180.52	37.88	NSO converted 21/k	19.97	TH fob hen's eggs, fresh	6838	3605	3233
	1					127471	64462	63009
				1		· • • • • • • • • • • • • • • • • • • •		
TOTAL INCO	OME TRAN	SFER	S			590275	393161	197114
						1	1	
DIRECT INC	OME SUP	PORT				Direct Gov	t Payments	100951
Crop insuran	ice claims p	aid to	rice and corn farmers			! 		175323
Less 42.42%	farmers' s	hare in	premium payments	I			 	74372
								i
						Expend	Equit/Sub	Total
INDIRECT T	RANSFER:	S	·		 	10682430	2864500	13546930
Price Stabiliz	ation (Adm	inistrat	ve)	i		1703229	1532000	3235229
Income Supp	ort (Admini	strative	>)			49500	244500	294000
Input Assista	nce					1479802	761000	2240802
Marketing As	sistance				•	634106	279000	913106
Research an	d Extensior			_		602194	48000	650194
Others (Gene	eral Adminis	stration	, Industry Development, F	Regiona	Il Support)	5958257	0	5958257
Expenditures	of Local G	overnm	nent Units			1 255342	0	255342

TABLE	·							
DSE 1001				1				
P3E 1991	%PSF							<u> </u>
9134182.5	13 17							Income
0104102.0			· _ · · · · · · · · · · · · · · · · · ·			L		I ransfers
Agricultural F	Production	Pd	Data Source	Pb	Data Source	Q(Pd)	Q(Pb)	Q(Pa-Pb)
/thousand m	etric tons)					P000	P000	P000
Major Crons								
Palay	9673.30	8.35	NFA regularmilled rice	8.63	TH fob white nonglutinous rice 35%	80772	83481	-2709
Com	4655.00	5.04	NFA yellow corn grain	2.94	US fob yellow corn	23461	13686	46272
Cocoput	11290.90	4.88	NSO copra ave 2 types	6.33	PH fob copra ave	55100	(14/1	+10372
Sugarcane	21824.50	11.38	SRA raw sugar	5.44	Cuba fob raw centrifugal sugar	248363	118/25	129030
Banana	2951.10	5.02	BAS bungulan 8.8/k	4.95	PH fob banana ave	14803	14608	29921
Pineanole	1117.10	6.98	BAS converted 1.3k/pc	4.40	PH fob pineapple ave	7797	4915	127
Coffee	133.40	24.43	ICOCA ave buying price	23.40	ICOCA ave world price of Robusta	3259	3122	1025
Mango	307.00	23.68	BAS converted 4/k	29.95	PH fob mango ave	7270	9193	-1923
Tobacco	85.20	30.12	PTA Virginia type	75.39	PH fob other unmftrd Virginia type	2566	0423	-610
Abaca	85.20	21.18	NSO ave S2 & I types	28.34	PH fob ave S2 & I types	1805	241	117155
						445193	320040	
Livestock al	nd Poultry	1				40000	747	5858
Cattle	162.00	82.25	BAI beef dressweight	46.10	PH cif beef boneless fr/ch/frz	13325	2041	1 31730
Hog	1056,92	2 57.86	BAI pork carcass	27.83	PH cif pork fr/ch/frz	61153	2941	11534
Chicken	577.88	3 56.47	BAI dressed Mla	36.51	HK cif chicken fr/ch/frz	32030	A27	2711
Chicken eq	g 170.81	40.89	NSO converted 21/k	25.02	TH fob hen's eggs, fresh		42/1 6225	7 51843
<u></u> ,	×	1				114100	0223	/
		·				550204	30020	7. 168998
TOTAL INC	OME TRA	NSFER	S	·)			00020	
		·						
		<u> </u>				Direct Go	vi Pavmeni	s 58349
DIRECT IN	COME SUI	PORT						83956
Crop insura	ince claims	paid to	rice and corn farmers					25607
Less 30.5%	farmers' s	hare in	premium payments					
				.		Expend	Equit/Sut	Total
		<u> </u>				569717	3 220966	2 7906835
INDIRECT	TRANSFE	RS				13904	8, 99605	6 1135104
Price Stabil	lization (Ad	ministra	tive)			5000	0	0 50000
Income Sup	oport (Adm	nistrativ	/e)			19718	0 63700	0 834180
Input Assis	tance					6524	7 30421	0 36945
Marketing /	Assistance	_1				58331	4 5681	8 64013
Research a	and Extensi	on	- Industry Doublenment	Region	al Support)	440588	6 21557	8 462146
Others (Ge	neral Admi	Caulor	n, moustry Development,			25649	8	0 25649
Expenditure	es of Local	Govern	ment Units	.!				
				•	-			

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ABLE 1f								
SE 1990								
000	%PSE							ncome
9843160.34	16.34			_ -		.		Transfers
					D. 1. C	O(Pd)	Q(Pb)	Q(Pd-Pb)
Agricultural	Production	Pd	Data Source	Pb	Jata Source	POOD	P000	P000
thousand m	etric tons)							·[
Maior Crops					259/	78282	65049	13233
Palav	9319.30	8.40	NFA regularmilled rice	6.98	TH fob white nonglutinous rice 35%	27610	12863	14756
Corn	4853.90	5.69	NFA yellow corn grain	2.65	US fob yellow corn	40011	61135	-11224
Coconut	11940.40	4,18	NSO copra ave 2 types	5.12	PH fob copra ave	49911	103041	84561
Sugarcane	18666.90	10.05	SRA raw sugar	5.52	Cuba fob raw centrifugal sugar	10/002	103041	2389
Banana	2913 30	5.19	BAS bungulan 8.8/k	4.37	PH fob banana ave	15120	4406	2647
Dineannle	1155 80	6.18	BAS converted 1.3k/pc	3.89	PH fob pineapple ave	/143	2430	-192
Coffee	134 10	21.96	ICOCA ave buying price	23.39	ICOCA ave world price of Robusta	2945	0000	2323
Mango	337.60	35.57	BAS converted 4/k	28.69	PH fob mango ave	12008	9000	2520
Tabacco	81 70	22 47	PTA Virginia type	53.09	PH fob other unmftrd Virginia type	1836	4337	5202
topacco	80.50	17.09	NSO ave S2 & I types	23.66	PH fob ave S2 & I types	13/6	1903	105452
Adaca				+		383842	2/83/5	100402
L'un ala ale a	nd Pouliny							2420
LIVESLOCK a	160.00	63.97	7 BAI beef dressweight	43.68	PH cif beef boneless fr/ch/frz	10811	/38/	3429
	109.00	60.93	BAI pork carcass	32.97	PH cif pork fr/ch/frz	62723	33990	28/2/
Hog	550.65	5 54 70	BAI dressed Mia retail	31.26	HK cif chicken fr/ch/frz	28934	1749	11439
Chicken	559.00	1 20 24	SINSO converted 21/k	23.10	TH fob hen's eggs, fresh	486	382	3 1037
Chicken eg	ig 165.70	29.30	N30 converted 2 m	1		10733	3 6270	0 44633
				+			and a second state	
		Necco				49117	5 34108	0 150095
TOTAL INC	JOME TRAI	NOFER	1				: 	
	···							
						Direct Go	vt Paymen	IS 11110/
DIRECT	COME SUI	proid to	rice and corn farmers					150064
Crop insur	ance claims	paiu it	n premium navments					38957
Less 25.90	% tarmers	Sharen						7-1-1
						Expend.	Equit/Su	
NIDIDECT	TRANCEE					786291	2 171904	6 9581958
INDIRECT	RANSFE	ministr	ativa			98647	3 92894	8 191542
Price Stab	ilization (Ad	inumistre ti	uvo)			13553	0 6697	0 20250
Income Su	pport (Admi	msuau	<u>vej</u>	- 		17950	0 34200	52150
Input Assis	stance				-	4873	1 33334	7 38207
Marketing	Assistance					49662	8 4770	31 54440
Research	and Extensi	on	- Industry Douglooment	Region	al Support)	574129	5	0 574129
Others (G	eneral Admi	nistratio	on, moustry Development,			27475	55	0; 27475
Expenditu	res of Local	Govern	nment Units		<u></u>			

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well as equities and subsidies to government corporations were also added to this. The total amounts of indirect transfers grew from P7.9 billion in 1991 to P22.2 billion in 1995; in 1990 the figure was P9.6 billion.

Table 2 shows the breakdown of the indirect transfers. Infrastructure support had the highest shares throughout, due especially to irrigation projects. In fact this was the only other component that grew in 1995, aside from income support. The next largest expenditures were on the administration of price intervention measures principally marketing boards and equity/subsidy to government corporations. This was overtaken only in 1994 by input assistance expenditures, and mainly because of the large equity/subsidy figure. Total indirect transfers grew substantially in 1995, despite the very small allotment for equity/subsidy to government corporations, and largely because of the increase in infrastructure support.

Excluding irrigation expenditures whose benefits do not accrue immediately, equities/subsidies to government corporations, as well as the catch-all "general development support", the largest shares went to the administration of marketing support and research and extension. Furthermore it is heartening to note that the budget for research and extension rose by almost 50 percent, although this includes the expenditures of state colleges and universities.

VI. CORN PRODUCERS

A. POLICY ENVIRONMENT

In establishing the effects on agriculture of a uniform tariff, we focus on corn because of its economic importance as a crop: one-third of farmers grow corn; while nearly one quarter of the population consume it as food; its real contribution to GVA in agriculture is 7 percent; and its strong linkage as a feed ingredient for livestock and poultry, which in turn are high growth areas in agriculture. The country has been self sufficient in white corn for food but not in yellow corn for feed, and about 70% of total corn production is used as animal feed (DA 1994).

There has also been substantial government intervention in the sector. Policies up to 1991 have consisted of trade measures, notably import licensing and a 20% tariff; grain stabilization reflected in the regulation of domestic market entry and operations, and corn and livestock production programs. Direct market intervention by the National Food Authority was meant to stabilize supply and demand for grains, given its mandate to buy palay and corn when the domestic price was lower than a support price, in order to help the farmer recover his production costs.

Prior to 1986 the NFA was the sole importer of corn, and afterwards anyone with an import permit was allowed to import; in 1994 this licensing function was given to the DA. This direct intervention in the grains market is currently being phased

TABLE 2	·	<u> </u>				
	CATECOPIES	(in million ne			:-	
BUDGET ALLOCATIONS BY PSE		(in minor pe	.303/			
	1990	1991	1992	1993	1994	1995
				·		
INCOME SUPPORT	202.500	50.000	294.000	50.000	64.475	250.000
Disaster relief payments	135.530	. 50.000	49.500	50.000	50.000	250.000
Equity/Subsidy to gov't corps.	66.970		244.500		14.475	
PRICE INTERVENTION	1915.421	1135.104	3235.229	4025.451	4137.544	5.000
Quotas	4.309	3.361	3.229	3.430		
Marketing boards	982.164	135.687	1700.000	2061.000	1462.263	2.500
Equity/Subsidy to gov't corps.	928.948	996.056	1532.000	1961.021	2675.281	2.500
	<u> </u>	i				
INPUT ASSISTANCE	521.500	834.180	2240.802	1673.123	5133.048	1679.299
Fertilizer subsidies	14.265	13.559	16.309	15.428	14.1/1	13.605
Agricultural credit subsidies	14.507	13.462	14.070	84.711	1/3.180	75.000
Dispersal/breeding programs	78.694	38.774	89.968	10.1/1	890.216	140./41
Agricultural implements asst.	<u> </u>			41.500	;	7.500
Others	72.034	131.385	1359.455	57.000	42.774	1442.453
Equity/Subsidy to gov't corps.	342.000	637.000	761.000	1464.313	4012.707	
	1 200.078	260 457	012 106	570 217	679 656	211 025
MARKETING ASSISTANCE	382.078		913.100	5/0.217	0/0.000	Z11.023
Market development		42.750	7.000	2.500	112.422	10,904
Storage subsidies	10.007	13.750	7.000	3.500.	37.205	18.000
Grading and inspection	12.207	10.204	29.551	49.497	07.003	21.310
Others	28.650	41.293	397.333	223.430	72.103	69.345
Equity/Subsidy to gov't corps.	333.347	304.210	279.000	291.704	365.953	49.000
	3600 210	2763.068	3137 432	3390 720	4296 909	13748 177
INFRASTRUCTURE SUPPORT	496.628	583 314	602 194	648 302	960 186	1413 413
Research and extension	2307 133	1405 095	2461 864	2281 175	2311.069	3201 037
	3 788	2 555	2401.004		2011.0001	20.000
Cibere	744 880	499 708	25.374	370 415	809 119	9069 727
Ciners	47 781	272 396	48 000	90 828	216 535	44 000
Equity/Subsidy to gov t corps.	41.101			00.020		
GENERAL DEVIT SUPPORT	2685.494	2498.528	3471.019	3026.733	2297.993	4519.075
SENERAL DEV 1. COLI SINI						
TOTAL	9307.203	7650.337	13291.588	12736.244	16608.625	20413.376
Total Equity/Subsidy	1719.046	2209.662	2864.5	3807.926	7304.951	95.5
Total excluding Equity/Subsidy	7588.157	5440.675	10427.088	8928.318	9303.674	20317.876
			;			· · · · · · · · · · · · · · · · · · ·
SOURCE: Computed from General	I Appropriation	s Acts for the	years indicate	d	:	

out however, hence it is not pursuing this as actively as in the previous decades, although even then budget limitations allowed it to procure only less than 3% of total corn production. With the MAV mechanism which was implemented starting in 1996, the NFA acted as cargo consolidator for small importers. The in-quota tariff is 35% from 1996 to 2000, and the out-quota rates go down from 100, 80, 80, 65, and 65 annually for the period. Actual import volumes exceed the MAV, which were 65080 metric tons in 1995 and 134981 metric tons in 1996.

At present the Grains Production Enhancement Program (GPEP) implemented from 1993 -98 rationalizes production by focusing support on areas which have the comparative advantage. Such areas are pinpointed to be Pangasinan in Region I, Cagayan, Isabela, and Quirino in II, Pampanga and Tarlac in III, Batangas and Palawan in IV, Albay and Camarines Sur in V, Zamboanga del Norte and del Sur in IX, Bukidnon in X, South Cotabato and Sarangani in XI, North Cotabato and Sultan Kudarat in XII, and Lanao del Sur and Maguindanao in the ARMM.

Services are concentrated on increasing production and productivity (through seeds, fertilizer, HYVs, access to technology, and credit), reducing post-harvest losses (through less costly acquisition of equipment and facilities, and adequate transport), and maintaining equitable price levels. Marketing support is the most critical component, and the programs consist of the gradual takeover of selected NFA warehouses by qualified farmer cooperatives and federations; the small farmer's quedan which allows qualified farmers to store their produce in NFA warehouses while waiting for better prices; allowing farmer organizations to sell their produce in deficit areas using NFA warehouses and transport facilities for a fee; operating a cooperative trading center in Manila to provide them a ready market for their produce.

Corn production programs actually started as early as 1969, and had the major objectives of attaining corn productivity and self-sufficiency. Their limited success (Perez 1985) was due to the lack of adequate technology to combat pests, lack of credit, inadequate qualified technicians, low prices and the high cost of marketing. Even under the CPEP in 1990 yields increased but the extent to which these can be achieved on a cost-effective basis was not known (Gonzales 1991).

The GPEP components are shown in Table 3 with their corresponding amounts. Irrigation support still takes up the largest proportion, followed by credit and marketing support. The rest are insignificant by comparison. The components specific to corn consist of [a] seed subsidy of onē 18-kilogram bag of hybrid corn seed for free for every hectare; [b] lower fertilizer prices through a deferred tax payment and subsidy scheme for imported fertilizer; [c] research for better production technology; [d] production, post-harvest and marketing loan availability at interest rates that are 25% lower than market rates; [e] easier acquisition of postharvest facilities.

TABLE 3	_			
GPEP: TOTAL COST BY COMPONENT 1993-96				
(in million pesos)				4000
	1993	1994	1995	1996
Irrigation Support	2075.82	4710.98	6548.3	6508.76
Credit Component				
Capital Infusion for Production Loans	740	3330	1420	1960
Capital Infusion for Post-Harvest Facility Loans	211.34	1616.66	1797.34	3465.34
Credit Facilitation	1.5	1.5	1	1
Marketing Support	1648.88	1983.28	1915.84	1713.36
Certified Seed Subsidy	442.52	1297	1507.3	1715.1
Post-Harvest Facilities and Technology Support	30.6	60.38	69.82	76.2
Production Technology Devt.& Dissemination	18.6	23.2	27.2	20.7
Public Information Support	4.2	9	5	3
Program Management	8.9	7.8	11.5	7.9
TOTAL	5182.36	13039.8	13303.3	15471.36

In 1995 however the program suffered a setback caused by the decision to use Cargill seeds for the seed subsidy. The supplied seeds instead resulted in stalk rot, resulting in large income losses for those farmers who availed of these free (Rimban 1996), and causing them to perceive the government program as a failure. The hybrid seeds required double the amounts of fertilizer and pesticides, but produced plants which could not survive Mindanao's wet and humid climate hence the susceptibility to stalk rot. This was because hybrid seeds are "sensitive and sitespecific, performing well in some and poorly in other locations," as admitted by Cargill's local partner, the Ayala Agricultural Development Corporation (quoted in Rimban 1996). Promised yields were 5 tons per hectare but some farms only harvested 3.7 tons, and since they needed more of the costly fertilizer and pesticides, many farmers fell into debt. This failure caused some observers to conclude that production arrangements in which the producer is not given a cl are likely to be unsuccessful.

However others deemed the program successful in introducing the farmer to the use of hybrid seeds. Nevertheless some point out many disadvantages in hybrid corn production: the inability to replant, a tendency to be dependent on seed breeders/suppliers most of whom are foreign companies whose rights will subsequently be protected, an alteration of traditional farming practices, risk of disease, increased use of chemical inputs which could harm the soil, and further soil damage from more frequent planting. The high production costs result in high output prices which in turn make it an unprofitable activity in the face of cheaper imports, causing them to shift to other crops.

B. PREVIOUS RESULTS

Numerous analysts have also studied the economics of corn production in particular. Rodriquez (1982) showed the presence of comparative advantage, since the DRC he estimated DRC was below SER, although costs excluded marketing.

The corn marketing system in three regions were also assessed separately under the Accelerated Agricultural Production Project of the Department of Agriculture and the USAID (PCCI and DA, 1988, 1989, and 1992). The entire commodity system from production to distribution and end-use was studied. In South Cotabato, the primary research site, it was found that timely supply of yellow corn for feed was insufficient during certain seasons; shipping services were inadequate; import policy was inconsistent and uneven in implementation; post-harvest facilities and technologies were limited given the erratic weather and periodic harvest gluts; and farm price of corn was low during peak harvest time.

The major findings were similar in North Mindanao: substantial shortages of white and yellow grain; insufficient, inefficient and damaged infrastructure and vehicles; insufficient post-harvest drying capacity during the rainy season; insufficient and limited access to timely/accurate marketing information; and inadequate working capital and high costs of formal credit. These also surfaced in the Cagayan Valley appraisal: unseasonally low prices of corn; constrained access to forma credit sources; inadequate drying floors and corn shellers and poor road infrastructure.

In a relatively recent major study (IFPRI 1991 edited by Gonzales and Rosegrant), Gonzales and Perez assessed the financial and economic viability of corn as a commodity system, analyzed the impact of policies, and evaluated comparative advantage. They pointed out several areas of policy concern: the new corn technology, post-production activities, infrastructure, economic incentives, and comparative advantage. Corn hybrid technology is highly input capital intensive, with seeds and fertilizer comprising 32% of farm production costs. Also, their timing and availability do not coincide with farmers seasonal demands. Policy has not encouraged the dissemination of the new cultivars already developed. Fertilizer use is not efficient since the farmers have no knowledge of the optimum use and farm requirements. Limited access to credit exacerbates the need for cash to buy the expensive inputs. Shelling and drying facilities for the higher yields would allow farmers to benefit from a higher price for quality corn. Corn processing is a very small cost component, and profit margins are so low as to discourage investment in these activities.

The lack of quality roads, bridges, ports and bulk handling and shipping facilities constrain distribution of corn: trading and distribution costs account for 35% of total costs from farm to Manila wholesale, freight being 35-42% of trading costs. Costs of moving corn from Gen. Santos in South Cotabato to Manila wholesale was P860/MT, or 54% higher than the CIF of P560/MT from Bangkok to Manila. The DRC estimates however show that comparative advantage exists in the production of corn through import substitution (costs up to Cebu/Manila with wholesale domestic prices for Pd and adjusted CIF at wholesale for Pb), but none in exporting (using US FOB price for Pb).

Mendoza and Rosegrant in the same volume investigated the marketing aspect and found that the volume of marketable surplus moving out of the farm (on the average small at 3 hectares and geographically dispersed) is small (60 cavans/hectare), suggesting that cost advantages to drying, storing, and transporting may not exist, aside from the wet weather conditions at harvest time. They found support for the spatial integration of regional corn markets, and that price changes in the central urban markets are transmitted to the rural, and not vice-versa, but a time lag of 1-2 months takes place before price changes in the rural markets adjust to exogenous shocks in the central markets. Rural corn traders do not completely respond to price changes in the central market, and price adjustments between markets located farther apart tend to be slower. A competitive market structure is also indicated, and prevailing market price is important in corn pricing. Overall there are benefits to developing better infrastructure facilities to link production to market centers; marketing costs would be reduced. Setboonsarng and Rosegrant next compared the Philippines with Thailand and found that the high-cost situation here is caused by both higher production and marketing costs. Land rent and inputs are costlier due to government policy and factor endowments. However an adjustment of the exchange rate to equilibrium levels would nearly eliminate these cost differences. The more important factor is the marketing aspect, given the small size and dispersed nature of the corn market. Poor infrastructure, shipping regulations, price protection which reduce incentives to efficiency all contribute to high costs.

Similarly, Gaspay's (1993) examination of the two countries revealed that the Thai farmers have the physical efficiency advantage over their Filipino counterparts because of their land abundance and better soil conditions, weaker domestic demand, and superior transport infrastructure. Thailand has effectively promoted economic efficiency by allowing the price of corn to be determined by world prices while concentrating efforts on high-yielding seed development and distribution and the appropriate rural infrastructure. This is better appreciated when we note that corn is more important for the Philippine economy than for the Thai, as it accounts for a larger share of both production and harvested area, and that Filipino farmers apply more fertilizer. Yet average yield in Thailand was 2.4 metric tons per hectare versus 1.3 metric tons here.

Thus while constraints in research and extension, seed distribution and farm technology exist, evidence indicates that the serious structural problems are in postharvest technology, transportation and marketing, due to underinvestment and restrictive policies in these areas. Distortions in price and trade policy are the key problems (Rosegrant 1991).

Garrido (1993) echoed these findings when he reviewed the infrastructure capabilities and needs in major areas, concluding that infrastructure levels are insufficient to support the requirements of the feed and livestock industry. He recommended the upgrading of roads, deregulation of shipping rates, and the installation of bulk handling facilities in major ports. He estimated the level of spending required for rural road improvement to be only 3% of the total national budget.

C. DRC RESULTS

Two sets of data are used to assess the performance of corn producers in this study the Bureau of Agricultural Statistics (BAS) 1991 Cost and Returns Survey for Corn consisting of 2500 respondents from all regions nationwide, and a 1995 small survey of 30 farmers conducted in the three major corn-producing areas (South Cotabato, Bukidnon and Isabela, in Southern Mindanao, Northern Mindanano, and Cagayan Valley, respectively). These three areas were identified to have comparative advantage under the Key Production Area approach of the government, and are major corn producers with an aggregate annual production of 988373 metric tons (Quitoriano 1996), representing about 41% of national production.

The BAS data yielded DRC/SERs which show comparative advantage in yellow corn production (Table 4a). In general, average farm size is small, considering that the ideal is three to five hectares for a household. Production per hectare has not reached the potential 5 to 6 metric tons for the variety being planted nor the corn program target yields, but the national average of 2 metric tons is not too far from the Thai average of 2.55 in 1988. However, the dispersion from this average is wide and only seven regions are this productive. At least three of these regions - all in Mindanao - also devote a larger farm area to corn, while two in Luzon are efficiently using a smaller than average area to yield higher-than-average volumes.

Prices varied between regions, and the national average was only P3.63 per kilogram. Noting that the average wholesale price per kilogram in the major trading centers or markets was P5.04/kg, it immediately becomes obvious that the marketing margins may reach 40%, which is consistent with the Gonzales and Perez findings of 35% share of marketing in total costs. However, with an estimated P0.83/kg. commercial marketing cost of corn in 1991 (NFA), the margins could be only 20%.

DRCs evaluating value of output at book rates and excluding marketing costs are expectedly lower than those which include costs up to the trader's warehouse. Using $P_d/P_b = 1.49$ computed as the ratio between the domestic wholesale price for P_d and US f.o.b. as border price, P_b , the DRC/SERs increase by 27 to 32 percentage points on the average. However, when evaluated using the farm price for P_d , the performance does not alter much because of the narrow price difference, and even improves for some areas whose farm price is lower than P_b . This only indicates that most of the inefficiencies stem from the marketing system which is the major reason for high domestic wholesale prices.

Net present values or NPVs were calculated to find out how the farmers would fare under the 5% uniform tariff. The result at the national level shows a worsening off of the already negative NPV. Only two regions exhibit a positive NPV under the uniform tariff: Central Luzon and Eastern Visayas, despite the latter's low average yield and the fact that it had a negative NPV previously. The common factor is the relatively high price which the farmers received for their output. At the current tariff of 20%, at least five regions showed positive NPVs: Central Luzon aside from Southern Tagalog, North, South and Central Mindanao.

An examination of the cost of labor and raw materials across regions in Table 4b shows that Central Luzon farmers apply the most fertilizer and seeds per hectare, with Central Mindanao showing similar high levels. Both areas have the highest yield; the fertility of Mindanao soil enables farmers there to use less fertilizer than their Luzon counterparts although still above the national average. Northern and Southern Mindanao farmers use seeds less intensively and still show high yields.

TABLE 4a											Í
DRC RESULTS USING											$\frac{1}{1}$
1991 BAS SURVEY											╀
YELLOW CORN											╉
							RATE	USING	Pd/Pb	NPV	ł
		Duration	Dring	Value of	Total Cost	DRCWSER	DRCSISER	DRCn/SER	DRCs/SER	Current	1
REGION	Average	Production	Price	Value of	Total Cost	Production	Un to traders'	Production	Up to traders'		1
	Farm size	(k/na)	(F/Ky)	Output		Cost only	warehouse	Cost only	warehouse		1
· · · · · · · · · · · · · · · · · · ·							- Haronouso				
	1.02	2012 00	3.63	7307 50	7397 30	0.98	1.02	1.29	1.33	-89.76	ŝ
Philippines	1.03	2012.00		1007.00	1007.00		· · · · · · · · · · · · · · · · · · ·		•		
H	0.65	2127 30	3 84	8158.30	9247.50	1.16	1.17	1.52	1.54	-1089.20)
liocos	1 13	1877 10	3.97	7459.60	8011.10	1.08	1.09	1.42	1.43	-551.45	5
Cagayan valley	0.94	2818 60	4.61	12985.00	11694.00	0.86	0.88	1.14	1.16	1290.90)
	1 04	2181.90	3.31	7222.10	7027.60	0.93	0.98	1.21	1.28	194.48	3
Bicol	0.90	985.94	3.90	3845.20	4516.00	1.20	1.22	1.56	1.59	-670.86	<u>}</u>
Western Visavas	0.86	790.88	3.78	2989.50	3958.70	1.37	1.40	1.79	1.83	-969.15	<u>دَ</u>
Central Visavas	0.33	835.77	4.54	3794.40	5268.70	1.46	1.47	1.88	1.89	-1474.30	ן ר
Eastern Visavas	1.34	745.46	4.98	3710.20	2737.60	0.70	0.72	0.88	0.91	-9/2.51	
Western Mindanao	1.16	1081.70	3,94	4258.70	4720.40	1.07	1.11	1.34	1.39	-401.08	3 1
Northern Mindanao	1.76	2334.90	3.77	8802.40	8243.00	0.88	0.92	1.15	1.20	24 60	1
Southern Mindanao	1.48	2602.90	3.23	8407.20	8372.50	0,98	1.01	1.30	1.33	1175 00	2
Central Mindanao	1.72	2811.70	3.28	9213.90	8038.90	0.79	0.86	1.03	1.12	-1776.00	ñ
CAR	0.98	862.18	3.99	3440.10	5217.00	1.57	1.60	2.05	2.09	-1110.30	-

TABLE 40				······		_ · · · · . · · · · · · ·	<u>}</u>
COSTOFIA	POP AND		RIALS BA	S 1991 SU	RVFY		-
Vollow Corn	BUK AND						
Tenow com							<u> </u>
Region	LABOR C	COST	SEEDS	3	FERTI	LIZER	YIEL
	Total	Mandays	P/ha	kg/ha	P/ha	kg/ha	kç
Philippines	2685	42.27	380.00	17.03	1062.00	3.61	20
llocos	3189	50.84	342.24	19	1077.30	3.56	21
Cagayan	2643	42.90	202.40	16.5	1280.60	4.27	18
CLuzon	3564	45.60	709.32	20	1737.00	6.05	28
STagalog	2684	39.95	215.28	15	1086.50	3.62	21
Bicol	1968	42.16	136.16	16	621.00	2.26	S
Wisayas	1297	32.46	121.44	15	429.64	1.43	7
CVisayas	1673	42.73	138.92	13	477.48	1.64	8
EVisayas	1388	36.92	85.56	12	269.56	1.12	7
WMindanao	1920	37.17	188.60	10	67.16	0.23	10
NMindanao	2338	35.87	139.84	10.64	1380.00	4.52	23
SMindanao	2973	39.26	572.24	16	1490.40	4.82	26
CMindanao	3464	44.67	755.32	20	1212.60	4.18	28
045	1302	35.53	94.76	17.5	483.00	1 67	5

•

										
						·				[
							USING	Dd/Db	NPV	NP
					USING BOO	K RAIE	DDCNSER		Current	w/5%
Average	Production	Price	Value of	Total Cost	DRCp/SER	URUS/SER	DROPISER	DicosoLic Linto tradere'	Ouncin	
Farm size	(k/ha)	(P/kg)	Output		Production	Up to traders	Production	Up to traders		
			·		Cost only	warehouse	Cost only	warenouse		
			·			1.00	1.26	1 20	-66 22	-40
0.78	1278.70	3.81	4865.40	4931.60	0.99	1.02	1.20	1.23	-00.22	
						2.02	<u></u>	4 16	-7697 07	-744
0.34	1265.00	4.15	5249.90	12947.00	3.01	3.02	4.10	4.10	837 78	14
0.87	1348.80	5.26	7087.70	6249.90	0.85	0.86	1.09	1.7	-2349.00	-282
0.54	1377.20	4.22	5814.60	8163.60	1.46	1.40	1.07	1.07	-643.02	-116
0.46	1699.30	4.82	8190.70	8833.70	1.09	1.09	1.42	1.45	-040.02	
0.60	674.51	4.57	3080.50	3855.40	1.24	1.25	1.30	1.30	1040.58	_12
0.48	764.05	3.75	2866.70	3916.30	1.36	1.38	1.72	1.74	-1049.00	-12
0.44	1006.30	4.45	4480.00	3708.60	0.86	0.87	1.10	1.11	571.44	
0.50	803.13	4.38	3517.70	3016.80	0.84	0.85	1.05	1.05	500.94	
0.88	783.66	3.94	3083.70	3643.00	1.18	1.20	1.51	1.54	-559.34	-/(
0.95	1237.30	3.62	4479.00	4973.00	1.08	1.11	1.37	1.41	-494.07	-8
0.88	1490.40	3.51	5237.10	4898.30	0.91	0.93	1.17	1.20	338.82	-1
1.18	1660.10	3.39	5631.20	5233.90	0.87	0.93	1.11	1.18	397.29	-1:
0.59	865.61	5.59	4838.80	4945.40	1.01	1.02	1.29	1.31	-106.60	<u>/ -4;</u>
	Average Farm size 0.78 0.34 0.87 0.54 0.46 0.60 0.48 0.44 0.50 0.88 0.95 0.88 1.18	Average Production Farm size (k/ha) 0.78 1278.70 0.34 1265.00 0.87 1348.80 0.54 1377.20 0.46 1699.30 0.60 674.51 0.48 764.05 0.44 1006.30 0.50 803.13 0.88 783.66 0.95 1237.30 0.88 1490.40 1.18 1660.10	Average Production Price Farm size (k/ha) (P/kg) 0.78 1278.70 3.81 0.34 1265.00 4.15 0.87 1348.80 5.26 0.54 1377.20 4.22 0.46 1699.30 4.82 0.60 674.51 4.57 0.48 764.05 3.75 0.44 1006.30 4.45 0.50 803.13 4.38 0.88 783.66 3.94 0.95 1237.30 3.62 0.88 1490.40 3.51 1.18 1660.10 3.39	Average Production Price Value of Farm size (k/ha) (P/kg) Output 0.78 1278.70 3.81 4865.40 0.34 1265.00 4.15 5249.90 0.34 1265.00 4.15 5249.90 0.34 1265.00 4.15 5249.90 0.34 1265.00 4.15 5249.90 0.54 1377.20 4.22 5814.60 0.46 1699.30 4.82 8190.70 0.60 674.51 4.57 3080.50 0.48 764.05 3.75 2866.70 0.44 1006.30 4.45 4480.00 0.50 803.13 4.38 3517.70 0.88 783.66 3.94 3083.70 0.95 1237.30 3.62 4479.00 0.88 1490.40 3.51 5237.10 1.18 1660.10 3.39 5631.20	Average Production Price Value of Total Cost Farm size (k/ha) (P/kg) Output	Average Production Price Value of Total Cost DRCp/SER Farm size (k/ha) (P/kg) Output Production Cost only 0.78 1278.70 3.81 4865.40 4931.60 0.99 0.34 1265.00 4.15 5249.90 12947.00 3.01 0.87 1348.80 5.26 7087.70 6249.90 0.85 0.54 1377.20 4.22 5814.60 8163.60 1.46 0.46 1699.30 4.82 8190.70 8833.70 1.09 0.60 674.51 4.57 3080.50 3855.40 1.24 0.48 764.05 3.75 2866.70 3916.30 1.36 0.43 1006.30 4.45 4480.00 3708.60 0.86 0.50 803.13 4.38 3517.70 3016.80 0.84 0.83 783.66 3.94 3083.70 1.08 0.84 0.95 1237.30 3.62 4479.00	Average Production Price Value of Total Cost DRCs/SER DRCs/SER Farm size (k/ha) (P/kg) Output Production Up to traders' 0.78 1278.70 3.81 4865.40 4931.60 0.99 1.02 0.34 1265.00 4.15 5249.90 12947.00 3.01 3.02 0.34 1265.00 4.15 5249.90 12947.00 3.01 3.02 0.34 1265.00 4.15 5249.90 12947.00 3.01 3.02 0.34 1265.00 4.15 5249.90 12947.00 3.01 3.02 0.34 1265.00 4.15 5249.90 12947.00 3.01 3.02 0.46 1699.30 4.82 8190.70 8833.70 1.09 1.02 0.60 674.51 4.57 3080.50 3855.40 1.24 1.25 0.48 764.05 3.75 2866.70 3916.30 1.36 1.38 0.5	Average Production Price Value of Total Cost DRCp/SER DRCs/SER DRCp/SER Farm size (k/ha) (P/kg) Output Production Up to traders Production 0.78 1278.70 3.81 4865.40 4931.60 0.99 1.02 1.26 0.34 1265.00 4.15 5249.90 12947.00 3.01 3.02 4.15 0.34 1265.00 4.15 5249.90 12947.00 3.01 3.02 4.15 0.41 1377.20 4.22 5814.60 8163.60 1.46 1.46 1.87 0.46 1699.30 4.82 8190.70 8833.70 1.09 1.09 1.42 0.60 674.51 4.57 3080.50 3855.40 1.24 1.25 1.56 0.44 1006.30 4.45 480.00 3708.60 0.86 0.87 1.10 0.50 803.13 4.38 3517.70 3016.80 0.84 0.85 1	Average Production Price Value of Total Cost DRCp/SER DRCp/SER DRCp/SER DRCs/SER DRCs/SER	Average Production Price Value of Total Cost DRCp/SER DRCs/SER DRCs/SER

	TS EOP PI	IKIDNON 9	SAMPLE 19	95-96								
DRC RESUL												
							·					
Dessendant		C TRANS	PORT COS	L TS			INCLUDIN	G TRANSP	ORT COST	S		
Respondent	EXCLUDIN DDC/SEB	DECISER			NPV at 5%	TARIFFS	DRC/SER	DRC/SER	DRC/SER	CURREN	NPV at 5%	TARIFFS
	DRU/SER		lusing	NPV	using	lusina	usina	using	using	NPV	using	using
		25% +	Pd/Ph		20% t	35% t	20% t	35% t	Pd/Pb		20% t	35% t
	20%1	33% L			20701							
	1 42	1.64	3 79	-7756	-11224	-13456	0.76	0.87	1.81	9108	3534	-340
<u>A</u>	1.43	1,04										
	0.00	1.00	214	360	-992	-1858	0.97	1.1	2.16	261	-1078	-193
<u>B</u>	0.90	1.09	2.14									
	0.82	0.04	1 08	3077	639	-1649	0.63	0.72	1.46	10758	6576	362
<u> </u>	0.03	0.94	1.30									
		0.57	1 12	11337	29603	21190	0.52	0,58	1.16	40099	28530	2022
<u>D</u>	0,5	0.57	1.13	41001	25005	21,00			+			
	0.11	0.46	0.0	87064	66586	51866	0.41	0.47	0.91	87266	66796	5203
<u> </u>	0.41	0.40	0.3	07004	00000							
	0.62	0.72	1 45	27407	15971	8177	0.52	0.59	1.18	44304	30765	2131
F	0.03		1.45	21401				1				
	0.49	0.56	1.06	27743	19962	14578	0.51	0.57	1.09	26951	19275	5 1396
6	0.49	0.50	1.00					1				
		0.69	1 37	20667	13067	7860	0.56	0.63	1.29	23967	7 15961	1042
<u></u>	0.59											
<u> </u>		0.47	0.95	44776	33947	26092	0.41	0.47	0.95	4596	34986	2701

TABLE 6b															
BUKIDNON	SAMPLI	E 1995-	96												
Deenendent	Corp	Farm	Prod	Vield	Price	Value of	Total Cost	Cost of	RAW MA	TERIAL	FARM AS	SSETS			
Respondent	Variatu	Cizo	kas	ner ha	P/kg	Outnut		Labor	Seeds	Fertilizer	Machine	Tools	Animals	Structures	S
	variety	(has.)	<u>nys.</u>				· · · · · · · · ·								
A	vimo		5775	1925	3.98	22984	30740	14628	2850	8775	0	3000	12000	0	
A													L		
	UF	1	990	990	9	8910	8550	5491	135	975	0	2454	10000	0	
8	wille														
	u huh	1	2035	2035	55	23568	19590	8538.3	1062.5	5850	0	952	24000	1600	
<u> </u>	y nyo_		1375	1375	9.0										
<u></u>	white	15	12376	2750.2	7	86632	45295	22508	4275	11700	0	1800	24000	0	
D	y nyo	4.5	12010	2100.2	· · · ·										
	y hyb	5	19800	3960	6.8	151580	64534	33920	5074	15925	0	9708	12000	1000	
<u> </u>	y nyo	2	2200	1100	7.7				1						
	white	5	14081	2346.8	5.7	80262	52855	25406	4182.5	8450	30000	1500	0	125749	
<u> </u>	w trad									1250(pe	st)	<u> </u>		ļ	
6	v hvh		7920	3960	7	55440	27697	20157	1900	2600	0	900	12000	<u> 0</u>	
9	<u>y nyo</u>	+										1		05400	
н	v hvb	1	8250	4125	6.5	53625	32958	20325	1550	5395	0	6700	18000	25199	
<u> </u>	w trad	1								316(fuel)	<u> </u>		<u></u>		<u> </u>
	y hyb	3	11881	3960.3	6.8	80791	36015	19006	4275	9262.5	0	200		U	
	<u> </u>	1				ļ		L		<u> </u>	<u> </u>		<u> </u>	<u> </u>	<u> </u>

TABLE 7a											
DRC RESU	LTS FOR S	U OUTH COT	ABATO SA	MPLE 199	5-96						
Respondent	EXCLUDIN	I IG TRANSI	I PORT COS	TS			INCLUDIN	G TRANSF		rs	
<u> </u>	DRC/SER	DRC/SER	DRC/SER	CURREN	NPV at 5%	TARIFFS	DRC/SER	DRC/SER	DRC/SER	CURREN	NPV at 5
	using	using	using	NPV	using	using	using	using	using	NPV	using
	20% t	35% t	Pd/Pb		20% t	35% t	20% t	35% t	Pd/Pb		20% t
A	0.3	0.34	0.67	34138	27377	22436	0.24	0.27	0.52	50111	4135
В	0.49	0,56	1.17	19096	13531	9620	0.79	0.91	2.08	5300	146
c	0.32	0.36	0.72	37742	29973	24328	0.24	0.27	0.54	58620	4824
D	0.42	0.48	0.99	21062	15819	12001	0.33	0.37	0.74	33404	2661
E	0,39	0.45	0.96	73389	55851	42615	0.34	0.39	0.82	95125	7487
F	0.32	0.36	0.72	89896	71388	57911	0.3	0.34	0.67	103098	8293
G	0.33	0.37	0.74	78996	62527	50548	0.3	0.34	0.67	94586	7616
н	0.64	0.74	1.86	4799	2728	1246	0.52	0.6	1.4	7769	532
1	0.58	0.67	1.81	24475	15567	8329	0.58	0.67	1.78	25293	1628
······································	0.4	0.45	0.0	0864	7518	5848	0.33	0.37	0.73	13852	1100

													· .			
	· · · · · · · · · · · · · · · · · · ·	1														
TABLE 7b	<u> </u>															
SOUTH CO	TABATC	SAMP	LE 1995-	96									·			
Respondent	Corn	Farm	Prod	Yield pe	er ha.	Price	Value of	Total Cost	Cost of	RAW MA	TERIAL	FARM A	SSETS			
Respondent	Variety	Size	kgs.	(cobs)	(grain)	P/kg.	Output		Labor	Seeds	Fertilizer	Machine	Tools	Animals	Structure	s
		(has.)														
					5504 4		50000	14088	7777 5	1662.5	2257 55	0	2427	0	0	
Α	y hyb	1.75	16940	9680	5531.4	3	50620	14900	1117.5	1002.3	2201.00					
	y hyh	2	6706	3353	1916	6	40236	21141	10388	1900	5200	0	825	0	0	
P	y nyo	⁻												ļ	ļ	
С	y hyb	1.75	20020	11440	6537.1	2.9	58058	18314	8353.8	1900	4260	0		U U	U	
							00070	47070	CCEA	1425	4072 5		3100	12000	2759	
D	y hyb	1.5	13090	8726.7	4986.7	3	39270	1/2/3	0004	1423	4972.0	_			1	
F	v hvb	3	40040	13347	7626.7	3.4	136136	58743	23475	2850	7800	300000	3300	24000	10000	
<u> </u>	<u></u>		ļ !							1	7000	0,000			20596	
F	y hyb	5	38504	7700.8	4400.5	3.6	138614	44868	20329	4/50	1 7800	24202	000	· · · · · ·	20050	
		ļ	0.500.4	0001	6020.4	25	122212	40696	22652	4940	5760	i - o	3200		0 0	
G	y hyb	4	35204	8801	5029.1	3.5	123212	40030				<u>-</u>				
<u> </u>	y hyb	1	4621	4621	2640.6	3.3	15247	9987	4117.5	1235	2600	0	2400) <u> </u>	0 0	
									40000	2225	7227 6	278030	800		5000	
1	y hyb	3.5	19090	5454.3	3116.7	3.9	/4451	49431	12029	1500/fue	3150(pe	st)				
ļ		- 05	5269	10736	6134 9	32	17178	6930	4034.6	686	1300		100) () 0	
J	ју пур	1 0.5	5300	10/30	0104.5	<u> </u>	1 1110		1 100 110							

-

TABLE 8a												
				5.00		· · · ·						
DRC RESUL	TS FOR IS	ABELA SA	WINCE 199	5-96		· · · ·	<u> </u>					
Recoordant		IG TRANS	PORT COS	<u>с </u>	· · · · · · · · · · · · · · · · · · ·		INCLUDIN	G TRANSP	ORT COST	S		i
Respondent	DRC/SER	DRC/SFR	DRC/SER	CURREN	NPV at 5%	TARIFFS	DRC/SER	DRC/SER	DRC/SER	CURREN	NPV at 5%	TARIFFS
	Using	using	usina	NPV	using	using	using	using	using	NPV	using	using
	20% t	35% t	Pd/Pb		20% t	35% t	20% t	35% t	Pd/Pb		20% t	<u>35% t</u>
										7400	707	-340
A	0.98	1.11	2.23	1192	-4406	-8020	0,84	0.95	1.88	1122	102	-340
							0.50	0.64	1 26	37038	24847	1636
В	0.55	0.62	1.24	38038	25722	1/14/	0.50	0.04	1.20			
				40475	4677	070	0.73	0.84	1 86	9726	4284	63
C	0.71	0.82	1.82	10175	4077	919	0.75	0.04				
	0.40	0.56	1 21	33561	23411	16323	0.52	0.6	1.3	30536	20764	1397
<u>D</u>	0.49	0.50	1.41									
	0.66	0.75	1.56	20691	12135	5737	0.63	0.71	1.46	24753	15690	889
<u> </u>										1	5405	160
F	0.71	0.81	1.75	9747	4596	1020	0.71	0.81	1.72	10394	5162	152
								0.07	1 20	22725	15470	982
G	0.61	0.69	1.33	21350	13392	7978	0.59	0.07	1.28	23723	10410	
				7000	2010	1460	0.72	0.81	1.67	6368	3035	5 68
Н	0.67	0.76	1.5/	/ 368	3910	1 1400	0.72			<u> </u>		
	0.72	0.83	1 75	5696	2579	436	0.78	0,89	1.87	4696	1704	4 -34
 -		0.03	1.10									
	+077	0.87	1 69	4798	1659	-424	0.79	0.9	1.74	4428	1335	-71

	<u> </u>														
ISABELA SA	AMPLE	1995-96	;												
		IT a series	Drad	Viold	Drice	Value of	Total Cost	Cost of	RAW MA	TERIAL	FARM A	SSETS			
Respondent	Corn	Parm	Piùa	norba	D/ka	Output		Labor	Seeds	Fertilizer	Machine	Tools	Animals	Structures	i
	variety	Size	kgs.	per na.	F/Kg.			Labor							
		(nas.)			<u> </u>				<u> </u>	<u> </u>					
	hi huh		6300	3150	59	37170	35978	18312	2842	5850	0	1545	14000	0	
A			0300	- 0100	- 0.0					126					
	u huh	A	12600	3150	7	88200	50162	23100	4060	10400	0	1485	14000	0	
В	y nyu		12000		<u> </u>					360					
<u> </u>	y hyb	1 75	5513	3150.3	6.9	38036	27861	14252.5	1776	5150	0	1545	14000	0	
	y riyb	1,70	0010	0.00.0						685					
	ly imp	25	10125	4050	7.2	72900	39340	15810	2537.5	7162.5	35000	995	14000	27000	
<u> </u>										1125				07000	
<u> </u>	v hyh	3	10125	3375	6.5	65813	45122	19350	3045	5940	0	1545	14000	37000	
<u> </u>	9 1.90									3150			11000	<u> </u>	
F	v hvb	2	5490	2745	6.7	36783	27036	11588	2030	4230	35000	1485	14000) 	
	<u></u>								ļ	600			14000		
G	ly hyb	2.5	8438	3375.2	6.6	55688	34337	19862.5	2537.5	3400	<u> </u>	935	14000		
	1									625	40000	1025	14000	27000	
Н	y hyb	1	3600	3600	7	25200	17832	5015	1015	076	40000	1 1320	14000		
							10071	0505	1015	9/0	<u></u>	185	14000		
1	y hyb	1	3150	3150	<u> 7</u>	22050	16354	0592		280	·				
						01.00	40000	0102	1015	1050	r	535	14000	5000	
J	y hyb	11	3150	3150	6.8	21420	10022	9102		, <u>1930</u>					

Half of the Bukidnon farmers instead turned in a worse performance under the third scenario. Except for one or two, high yields per hectare correlated with better resource use. The ownership of farm equipment also contributed to a better performance. All of the Isabela sample became uncompetitive when evaluated using price ratios whether or not transport was included. And this despite their abovenational average yields, as well as heavy fertilizer use and ownership of one draft animal each. NPVs decline under the uniform tariff, and the drop is larger when coming from a higher rate, i.e., 35% versus 20%. These results are generally consistent with the BAS-derived indicators, as well as the 1991 IFPRI estimates of DRC/EER for the same three areas shown in Table 9: corn farmers possessed a comparative advantage whatever the input level or variety.

The sample distribution of farms based on size is roughly similar between the three areas, although the selection of the informants was based on income. Yields per hectare hover around the 3 metric ton level in the Isabela sample, while those in the Bukidnon area range widely from less than one to 4 metric tons. In the South Cotabato sample the cobs conversion to grain result in much higher yields ranging from 2 to 6 metric tons.

Labor arrangements differ between areas, tenancy being dominant in Isabela and wage work and owner-cultivators more common in the other two areas. In South Cotabato the *pakyaw* method is a common practice, given the higher cropping intensity, i.e., three-crops a year, which possibly contributes to the higher land values compared to the two other areas. There is also a more developed wage system, as a result of which man-days are shorter. Labor-intensive farm technology, however still persists in all areas. The main labor costs are incurred in land preparation, weeding, harvesting and shelling/hauling. There are a required number of days to finish the tasks, since the crop suffers otherwise. Costs per hectare range from P2700 to P6000 in the Mindanao survey areas and P3500 to P6200 in Isabela, although these exclude family labor and post-harvest costs.

The majority of the sampled farmers were traditional white corn farmers and consumers. They shifted to yellow corn production with the introduction of new varieties under the government's *Masaganang Maisan* program in the 1970s, and this accelerated in the 1980s when high-yielding varieties were promoted together with credit and market support and the assurance by the NFA of price support. Thus farmers started producing for cash rather than consumption (Quitoriano 1996), and also shifted away from eating white corn as a staple.

In order to be high-yielding however yellow corn depends on high-quality seeds and fertilizer, since productivity relies on climate and soil conditions rather than on irrigation. This results in high production costs because both inputs need to be purchased instead of self-produced, and they are expensive. The intensity of input use depends on the finances of the farmer. Farmers who have the means use the required amount of inputs needed to produce the highest possible yields. Such

TABLE 9										
DRC/EER ES	TIMATES OF I	FPRI 1991						· · · · · · · · · · · · · · · · · · ·]
Variety	Input Level	Bukidnon	SCotabato	Isabela	Philippines					
yellow hybrid	high tech	0.71	0.68	0.69	0.69			 }		
· · · · · · · · · · · · · · · · · · ·	medium	0.75	0.76	0.78	0.76				i	
	low tech	0.94	0.85	0.88	0.85					· · · · · · · · · · · · · · · · · · ·
white open-	medium	0.85	0.63	0.58	0.68					
pollinated	low tech	0.99	0.83	0.87	0.94				 	
PRODUCTIO	N COSTS								}	
			BUKIDNO	N		SCOTABA	то		ISABELA	
		Total Cost	P/kg	Prod Cost	Total Cost	P/kg	Prod Cost	Total Cost	P/kg	Prod Cost
yellow hybrid	high tech	18148	3.66	11433	17206	3.5	9979.5	16685	3.49	10678
				(0.63)			(0.58)	 	: 	(0.64)
	medium	13750	3.75	8800	16654	3.81	10325	12322	3.01	8256
				(0.64)			(0.62)		1	(0.67)
	low tech	9307	4.5	6515	9386	4.16	6101	8705	4.21	6094
		-		(0.70)			(0.65)	-		(0.70)
white open-	medium	13689	4.09	9172	12495	3.99	6872	11827	3.02	6860
pollinated				(0.67)			(0.58)			(0.55)
	low-tech	5401	4.66	3835	6799	4.05	4351	6044	4.06	4170
	1 .		f I	(0.71)			(0.69)	i.		(0.64)

means however are usually acquired not from farming but from other sources such as a small business or family members working elsewhere.

Farmers who do not have cash to procure such inputs have to rely on credit usually from traders who are able to impose their prices at harvest time. In these cases, it is obvious that they are unable to choose the best price for their produce, and if the value is just enough to pay back their loan, then there is no marketable surplus which they could use as savings for the next crop. And so goes the cycle which effectively prevents them from making choices, and leads them to view prices as behaving not in accordance with supply and demand but controlled by those who have the scarce factor at their disposal.

Expensive farm credit is regarded by most respondents as the biggest constraint facing most corn farmers: interest rates range from 10 to 15% *per month* on the cost of seeds and fertilizer which is payable at the end of the cropping season. Farmers have had to rely on the informal lending sector for capital needs; the lack of collateral (plus the inability to postpone their needs) disqualifies them from availing of formal sources of capital or choosing other traders.

Traders have thus filled the gap left by the government in the provision of capital, credit, or inputs to farmers who otherwise do not have the means or access to such factors of production. Their activities are not limited to trading, but include financing, selling of supplies, rental operations of shelling, drying, transport, or storage facilities. In some cases traders or moneylenders offer financing schemes to farmers for them to shift to a particular crop which is more profitable. Between two crops of similar profitability the farmer would choose that which is harvested more frequently since this assures the household of more regular income (Quitoriano 1996). In the context of the market, traders are fulfilling the role of input-provider with the accompanying risks, whose returns are in the form of the ability to "dictate" prices; with free entry however such returns are bound to be a result of demand and supply.

Government efforts at assisting such farmers are apparently inadequate or nonexistent in the areas, except in South Cotabato where there is a two-year old crop lending program through the Land Bank which allows up to P12000 per hectare at 12% per annum interest. The impact of this on productivity is not yet evident since the first loans are still being used to repay debts. Even the government's support price did not suffice since that marketing avenue was preempted by the conditions of the credit arrangement between the farmer and the trader which binds the. former to sell to the latter. Nevertheless the sampled farmers felt that the supportprice mechanism and market intervention by the NFA served as a leverage against price manipulation by the trader, but now that these have been abolished, there is a more pronounced feeling of neglect.

VII. IMPLICATIONS OF COMMITMENTS TO THE WTO, AFTA, AND APEC

WTO Commitments

Although the Philippines has unilaterally instituted trade reforms since the 1980s, being a signatory to the GATT starting in 1982 has reinforced the country's resolve to realize the link between freer trade and economic efficiency. The most significant round of negotiations thus far has taken place in Uruguay, including areas never taken up before, e.g. agriculture, services, textiles and clothing, intellectual property rights and investment measures. Because the GATT governs the conduct of international trade among 118 countries which account for 90% of total world trade, the inclusion of these areas was perceived to be a historic move that would bring forth stable and transparent trading rules and reduce distortions created by domestic policy, in a systematic and comprehensive manner not otherwise possible.

In agriculture, the major areas of commitment under the Uruguay Round are market access, the reduction of domestic subsidies, the reduction of export subsidies, and the harmonization of sanitary and phytosanitary measures. Market access consists of three main provisions: tariffication of all quantitative restrictions, the comprehensive binding of all tariffs on agricultural products, and the reduction of tariffs. Tariff equivalents of all nontariff barriers now replace the latter, which are then added to existing tariffs.

Minimum access import volumes or tariff quotas for products that were protected by QRs are to be set. That is agricultural imports should be allowed at specific volumes upon which lower tariff rates are imposed, equivalent to the tariffs applied before the implementation of the agreement. Volumes exceeding this "in-quota" amount are levied the higher rates which are the tariff-equivalent of the QRs. A special safeguard provision allows an increase in tariffs of up to one-third the applicable rate, when an import surge occurs as a result of the removal of the QRs.

Domestic subsidies should be quantified into an aggregate measure of support (AMS), to include those subsidies provided to agricultural producers either in the form of output or input price supports or income transfers that encourage production. It excludes specified domestic subsidies, as well as direct payments to farmers, if the latter are made under production-limiting programs and based on a fixed area/yield or cover less than 85% of base level production. This AMS is to be reduced by 13% over ten years starting in 1995. It is not product-specific, but covers both national and sub-national subsidies. However, a *de minimis* provision exempts countries whose specific AMS is below 10% of the total value of production of the commodity.

Likewise, export subsidies are to be quantified and both coverage and total budgetary outlays reduced. Hence both the number of recipient agricultural products and the total amount spent shall be decreased.

The agreement on sanitary and phytosanitary (SPS) measures allows trade controls which are necessary for the protection of human, animal, and plant life or health, if these are based on scientific principles and are applied on a nondiscriminatory basis. The use of international standards is encouraged but not required, and the use of stricter national standards is allowed.

The Philippine government has complied with these provisions by issuing RA 8178 in 1996, which tariffied existing quantitative restrictions on agricultural imports. The exception is rice, for which the country has invoked special treatment that enables us to postpone our compliance with the agreement for ten years, although minimum access volumes equal to 1% of consumption and effective productionrestraining measures have to be implemented.

The government has also already specified the bound tariffs in the schedule which it submitted to the GATT. An earlier schedule, EO 288, defined the tariffs of agricultural products which had no QRs; such rates are below their respective bound levels. For those that were tariffied, EO 313 set the tariffs at the maximum allowable bound levels. These schedules reach the year 2000.

The minimum access volumes (MAV) implementation rules and regulations have already been determined since July 1996. In general the allocation criterion in the initial year is market share while for the subsequent years new entrants are given allocations from the incremental licenses authorized for the year. The following schedule gives the minimum access volumes and in-quota tariffs.

Product	Unit	1996	Initial in- quota tariff	2003	2005	Final in- quota tariff
Live bovine	Head	12652	30	18980	9942	30
Live swine	Head	2570	30	2570	1285	30
Live goat	Head	51234	30	78494	40814	30
Live poultry	Head	563412	40	8879300	4651063	40
		6				
Beef fresh/chilled	MT	4087	30	5305	2741	30 -
Beef frozen	MT	21131	30	130994	72046	30
Pork fr/ch/frz	MT	33725	30	50595	26503	30
Goat meat fr/ch/frz	MT	695	30	1045	548	30
Poultry meat,	MT	15180	50	22040	11505	40
fr/ch/frz						
Potatoes	MT	965	50	1455	760	40
Coffee	MT	927	50	1391	745	40

Corn	MT	134981	35	202475	106059	35	
Rice	MT	61513		203096	113496		
Sugar	MT	39854	50	59783	31314	_ 50	

Source: GATT-UR, Schedule LXXV Part I Section I-B of the Philippines and Administrative Order No.9, 1 July 1996, Department of Agriculture

The Philippines does not provide either domestic support and export subsidies which are both illegal under the WTO, hence no laws have been required to demonstrate compliance. In particular, the market price support for rice was 5.3% of production value. For corn, since the administered price was lower than the world price, market price support was virtually non-existent although in absolute terms it was 0.34% of production valué (GATT-UR Schedule of the Philippines, Part IV).

In the case of sanitary and phytosanitary measures, the country has already made an inventory vis-à-vis those required by the International Plant Protection Convention, the Codex Alimentarius Commission, and the International Office of Epizootics. However there is a need to decide on what measures to implement, that is whether to adopt those required by international bodies or make our own. GATT allows countries to have stricter-than-global standards, but there is also a move to harmonize standards.

In relation to the Trade-Related Aspects of Intellectual Property Rights which provides that each country institute a protection system from intellectual property rights for plant varieties, none exist in the Philippines. At present, IPR protection systems cover non-agricultural products.

AFTA Commitments

The main instrument for making ASEAN a free trade area is the Common Effective Preferential Tariff (CEPT) scheme, whose ultimate objective is to reduce tariff rates among members to 5% or below. Its implementation was accelerated in January 1996, in the following manner: [a] shortened time frame from 15 to 10 years so that by the year 2003 all CEPT products have a 0-5% tariff; [b] include unprocessed agricultural products; [c] phase out the Temporary Exclusion List by 1 January 2000. These implied the phase-out of the PTA. [The harmonisation of tariff nomenclature, customs procedures, and valuation systems by the end of 1995 was also agreed upon.]

Hence for the items in the Normal Track with tariffs above 20%, applied tariffs must be 20% by 1998, and 0-5% by 2003, while items with tariffs at or below 20% should have these reduced to 0-5% by 2000. For those in the Fast Track program, the applied tariffs must be 0-5% by 2000 and 1998, respectively. [The schedules are merely indicative and do not preclude members from a faster/slower tariff reduction for each tariff line within the specified time frame.] Products from the Temporary Exclusion List were to be incorporated into the Inclusion List in five equal annual instalments starting in January 1996.

Unprocessed agricultural products in the Immediate Inclusion List were to be transferred to either the Normal or Fast Tracks by January 1996. Non-tariff barriers were also removed. Those from the TEL are to be transferred to the Inclusion List by year 2003. Those in the Sensitive List (which includes corn) will be treated differently, so that the time frame may be longer than 2003 and tariffs do not have to be reduced to 0-5%. However the tariff reduction commitment will have to be deeper than the UR commitments. Thus the special mechanism shall be an improvement over the GATT offers so that tariffs on imports from ASEAN will be lower than those from outside. There shall be only one mechanism: a common ending tariff rate higher than 5% by a target year; reciprocity rule; review of non-tariff barriers; review of quotas and state trading; 40% rule of origin; safeguard through the CEPT emergency clause; and exclusion of rice.

For a product to be eligible for concessions under the AFTA-CEPT, three conditions must be fulfilled: being in the Inclusion List of the exporting and importing countries and having a tariff of 20% and below; having a program of tariff reduction; and being an ASEAN product with local content of 40%.

The effect of the accelerated CEPT is for the ASEAN average tariffs for CEPT products (representing 89.03% of all tariff lines in ASEAN) to fall from 7.76% in 1996 to 2.95% by the year 2003. However since 7.11% or items which are in the TEL are to be phased in, the CEPT will cover nearly 98% of all tariff lines by 2000. The only excluded products will be those in the General Exception category and sensitive agricultural products (2.87%).

Non-tariff barriers are to be eliminated gradually within five years after the enjoyment of concessions. Such barriers have already been identified, focusing on those that affect the most widely-traded products in the region. Their elimination however varies depending on their nature. The objective is therefore to limit their trade-hampering effects or creating competition windows or market access.

The Philippine's Sensitive List of unprocessed agricultural products consists of live swine, live poultry, fresh and processed meat of swine, poultry meat, potatoes, onions, garlic, manioc(cassava) starch, sweet potatoes, guavas, papayas, corn, grain sorghum, palm nuts and crude palm oil.

<u>APEC Commitments</u>

Open trade and investment in the APEC region by 2010/2020 also coincides with the Philippines' own unilateral liberalization initiative. Tariffs, which already average 15.57% at present, will be reduced further by the phasing down of MFN rates and towards uniform protection across sectors, so that a 5% tariff is the final target by 2004. However sensitive agricultural products including rice are exempted from this. Tariff quotas will also be gradually expanded according to WTO commitments.

Most non-tariff import restrictions have already been tariffied. The remainder consist of quantitative restrictions on rice, for food security reasons; import regulations maintained for reasons of health, safety, and national security, and residual import licensing requirements under cover of the GATT Article on restrictions for balance-of-payment reasons. The latter will be progressively eliminated. Transparency is also assured with the exchange of information.

Domestic laws on anti-dumping, agriculture and customs valuation have already been aligned with the WTO within the required timeframe.

The summary for 1996 and 2000 for agriculture is tabulated below. The figures for the year 2000 exclude sensitive agricultural products under EO 313 and EO 328. Average tariffs drop between the two years, demonstrating further the compliance with commitments.

	1996	2000
Bound tariff lines (%)	13.72	13.72
Duty-free tariff lines (%)	0.00	0.00
Ratio of tariff lines with quotas to all lines	19.41	0.00
Simple average bound tariff rate	50.52	40.36
Simple average applied tariff rate	27.43	9.91
Average applied tariff rate for all lines subject	27.43	9.91
to duty		
Import-weighted average applied tariff rate	18.35	9.22
Import-weighted average bound tariff rate	38.00	29.30
Standard deviation of distribution of applied	24.40	7.20
tariffs		

Source: APEC, Manila Action Plan for APEC, Vol. II – Individual Action Plan (Philippines), Nov 1996.

Impact of These Commitments

The Agribusiness Systems Assistance Project (ASAP) and Department of Agriculture (1994) has assessed the impact of the GATT-UR agreement on key agricultural commodities, by identifying the winners and losers that result from the implementation, although confined to the market access provisions only. The criterion used was the incremental impact of such provisions on production. About 33 commodities were included in the assessment, sorted first according to tradeorientation. i.e. whether import-competing or export-oriented.

A formal economic model called the Country Projections and Policy Analysis Model of Philippine Agriculture was used for the major products such as rice, corn, pork, poultry meat, sugar, and coconut. The economic performance of these products was projected with and without the implementation of the GATT commitments. For the minor products, price analysis was used to determine whether imports would enter with the tariff quotas or not, or with the bound tariffs. For exportables, the assessment was based on the trading partners' tariff rates.

Those products put at risk by the Agreement are corn, sugar, garlic, onion, pork, and poultry. Favored products consist of coconut, seaweed, prawn, tuna, pineapple, mangoes, cashew, cutflowers, asparagus, papaya, banana, durian, and pili. Neutrally-affected are rice, cabbage, potato, coffee, beef, dairy, cotton, cassava, black pepper, pomelo, maguey, abaca, salago, and tobacco. Most of the major products are thus at risk, coconut being the only favored one (the impact on rice is neutral since it is not yet included).

The specific impact of the GATT-UR on corn was further calculated by the ASAP (1996). The wide price gap was seen to persist if the QRs were to be simply tariffied. Domestic corn was forecast to be cheaper than out-quota imports but at a diminishing rate. If efficiency in domestic corn production and marketing does not improve over time, then out-quota imports will become cheaper than domestic corn towards the year 2004 as out-quota tariffs are reduced. The Philippines will not progress from being a net importer to a net exporter if existing constraints aggravating inefficiencies in the corn sector persist, e.g. inadequate infrastructure and services.

Furthermore, domestic corn utilization is projected to grow faster than domestic production as the supply restraint is lifted with tariffied QRs. The inflow of corn imports will cause the high domestic prices to fall and in turn, a reallocation of resources into higher-paying sectors. Without productivity improvements offsetting the decline in corn harvests, total corn production will fall. However the built-in adjustment and competitiveness-enhancing measures will enable domestic farmers to cope better.

David (1996) has evaluated the agreement and its implementation thus far, concluding that unless a drastic redirection of policies is made, the potential benefits, e.g., reduced distortions, increased transparency, increased government revenue, decreased budgetary cost of administration, reduced rent seeking and bureaucratic corruption, will not be realized. The reasons she gives are [a] the exemption of rice, [b] the high binding tariffs, and [c] minimum access volumes which are much lower than import demand at the in-quota tariff.

Out-quota tariffs on corn are 100% which confer a higher effective rate of protection than before. In the past objections to a highly restrictive corn import policy were addressed by giving import allocations to a more organized and vocal sector of the feed/poultry/hog industry: prior to 1995 import allocation-holders paid only a 20% book rate compared to the 60-70% nominal tariff, and after 1995 a 35% in-quota tariff compared to a 100% out-quota tariff. Moreover, the MAV implementation procedures provide the larger feed-livestock-poultry producers a cost advantage over the small ones who have to rely on the domestic corn supply.

David further finds that the MAV implementing procedures tend to be counter to the spirit of tariffication. They institutionalize rent-seeking since [a] import rights are not bidded out but based first on historical market shares and then a more complicated procedure of sharing between users; [b] the MAV will be increased whenever there is a perceived shortage; [c] NFA will be the import consolidator of corn although other allocation-holders are not obliged to use its services; [d] revenues from the MAV importation will be used for agricultural support for 9 years, but project proponents should come from the private sector. Thus quantitative restrictions continue to be in effect; the role of government parastatals is extended; rent-seeking is promoted; the budgetary process is fragmented; and public expenditure allocation is rendered inefficient.

David also emphasized (1996a) that the shift from QRs to tariffs should not lead to greater protection or distortions in price incentives. Public expenditure policies should be used to ease the burden of adjustment of the affected sectors. Since the binding tariffs were generally higher than the average implicit tariffs from 1990-94, adopting them as the applied tariffs was neither necessary nor desirable. The applied tariffs should be lower. e.g. 60%, high enough to ease the transition but lower than the historical rate to indicate decisive efforts towards liberalization. This should then decrease to 10% by 2005. In general a more uniform and lower level of tariffs will be more efficient, more equitable and less susceptible to rent-seeking.

Implications of the Commitments

Under the WTO we have reduced tariffs on non-sensitive agricultural commodities, converted QRs to tariffs, bound these rates for the sensitive ones, and set minimum access volumes. If we compare tariffs alone, the 5% uniform tariff is generally deeper than the commitments to the WTO since the bound rates there range from 5-50%. But since the more important agricultural commodities are subject to tariff quotas in which both the in-quota and out-quota rates are at much higher levels than the uniform tariff, although these are to be reduced gradually and some imports are guaranteed access with the MAVs, it seems that trade barriers for such goods have not been totally dismantled. However for corn the tariffs seem much lower than the calculated difference between the domestic wholesale price of . P8.88/kg and landed cost of corn from the US at P3.25/kg: 173% versus 35% inquota and 100% out-quota in 1996. Corn users thus enjoy a price advantage by importing, and with progressive lowering of tariffs, they are more than willing to import their requirements.

Within the AFTA, the average CEPT rates which are given as follows, will be lower than 5% after 2003, although the averages in 2000 are already near the targeted rate. Since corn is in the Sensitive List however, it is treated differently so that the time frame may be beyond 2003 and tariffs may not be reduced to the 0-5% range.

			the second s		the second s		the second s	
Country	1996	1997	1998	1999	2000	2001	2002	2003
Brunei	2.46	2.29	1.91	1.74	1.39	1.39	1.39	1.39
Indonesia	11.63	10.61	8.84	7.91	5.81	5.70	5.00	4.25
Malaysia	5.93	5.14	4.42	3.67	2.90	2.83	2.83	2.83
Philippine	9.17	8.33	7.16	6.53	5.42	4.90	4.89	3.73
S								
Singapore	0	0	0	0	0	0	0	0
Thailand	14.10	12.69	10.15 ⁻	9.28	7.00	6.99	5.78	4.63
ASEAN	7.76	7.00	5.79	5.19	3.97	3.88	3.47	2.95

Source: ASEAN Secretariat, AFTA Reader, Vol. III – New Time Frame: Acceleration of Tariff Reduction, September 1995.

Relative competitiveness within the ASEAN will depend on the importance of the region as a source of raw materials and destination of our products. At present trade is taking place but confined to a smaller number of products than would be expected from countries which have the benefit of relative proximity, but this trade is growing. With the low tariffs and absence of QRs within the CEPT, much larger volumes should be traded as a result. The extent to which producers will seriously consider the ASEAN neighbors as a market or supplier will depend on the costs of selling or buying from them relative to the rest of the world. For agricultural commodities whose tariffs are not reduced as much or as quickly, the likelihood of increased trade in these is even smaller. It is possible though that even with the special treatment given to agriculture under AFTA and WTO, CEPT rates could be lower than outside ASEAN so that it becomes advantageous to source from within the region.

With respect to the APEC, since the procedure is concerted unilateral liberalization, then our own efforts at lowering tariffs, removing import quotas, and ensuring transparency would suffice as indicators of our commitment to liberalize. But since sensitive agricultural products again are exempted, although tariff quotas will be gradually expanded, the benefits of freer trade are also delayed. Governments are all similarly careful in lowering trade barriers in agriculture because of perceived high adjustment costs, even if these are short term.

VIII. CONCLUSION

We have established the presence of numerous forms of policy intervention which render a tariff change alone inconsequential if the uniform tariff is to be applied in agriculture. However we have also seen that in fact many agricultural commodities will continue to enjoy special treatment in the form of tariff quotas and a longer timeframe, aside from the continuation of policy intervention as shown by our commitments to the WTO and the AFTA. For instance the levels of government spending on agriculture are likely to remain since these are allowed under the WTO; in fact the rise in the 1995 budget is due to several GATT-related expenditures meant to assist those in transition.

The performance of corn producers was nevertheless examined under a 5% uniform tariff, and the results showed them to possess comparative advantage when evaluated using tariffs alone. However when evaluated against import prices they turned uncompetitive. This indicates that despite the large expenditures devoted to the sector for several decades, such input, price, marketing, and infrastructure support have not been effective in making producers ready to face imports.

The survey showed that indeed there are critical gaps in the government's assistance programs which have to be addressed, although they are in the right direction. Previous studies already confirmed that the lack of marketing infrastructure constrains producers from realizing the comparative advantage they achieve at the farm level. Yellow corn farming in the research areas is furthermore characterized by credit dependency which preempts them from appropriating for themselves any surpluses of production or benefits of better price offers. Since farmers respond rationally to price incentives, higher productivity would be achieved if credit were less of a problem.

The different cost components would respond to a lowering of tariffs if there were no other such constraints. However the arrangements that have evolved which make the farmer sell at a less favorable price or which just offsets his loan show that these other constraints are binding. For example hybrid seeds are fertilizers are the major cost items; at present these are subject to 3% tariffs, yet most farmers have to obtain these on credit at a high 10% monthly surcharge. Furthermore there are seed subsidy programs which are supposed to make an impact on farmers' costs. These cost-reducing efforts would be effective if their availability did not require a much scarcer resource, capital.

The large potential of corn as a feed ingredient is another linkage that should favor farmers, given the high and growing unsatisfied demands for the commodity. However, according to feed industry sources, substitutability is high among the various feed ingredients, and feed millers simply pick the cheapest one and adjust the mix to satisfy nutrient requirements. Hence there is still pressure to meet this low-price requirement, aside from being locally available. Corn silage is gaining ground as an alternative feed, with higher returns, but this is still concentrated in the northern areas where there is a more developed livestock industry. Some large poultry integrators have also responded to the problem of high corn costs caused by expensive transport by "going to the source", i.e., setting up farms where the corn is grown.

In consultations with corn farmers and users organized by the Department of Agriculture in 1993, the general sentiment was that the sector needed protection

but there was disagreement about the method and whether it should be reduced. Constraints on production, post-harvest facilities, marketing and transport infrastructure have created an unfavorable environment especially compared with other countries which even subsidize their producers. Such constraints should be addressed adequately before protection is removed, although the latter should in turn be time-bound. Farmer's reactions to the uniform tariff were more focused on the "when" rather than the level or uniformity, but they prefer one that will assure them of profits and not merely break-even prices. Rational rates should be unified across related tariff lines but differentiated across value-added lines.

Agriculture will undoubtedly be subject to the same liberalization pressures in the future. The fact that sensitive goods are presently exempt should not cause government to be complacent about providing or augmenting critical support. The tariff quotas on corn for example are actually lower than the price difference, rendering imports cheaper than domestic corn even with 100% out-quota tariffs. It has been indicated that farmers still need support in critical areas such as credit and marketing. Because these are already part of the support programs, it seems intervention has not produced the desired results and is even considered lacking in certain areas.

Agriculture has historically been heavily protected, although the tariff structure was found to be biased against it relative to manufacturing. Yet it has performed dismally when compared to those in other countries. The removal of quantitative restrictions in 1996 and their replacement by tariffs were supposed to improve the situation. But the differences between the domestic and landed cost of corn are much higher than both in- and out-quota rates and if such differences persist, then they could only be attributed to high costs that trade policy changes alone cannot solve.

The large expenditures devoted to the sector are meant to assist it to become productive; import-competitiveness should follow suit. But the government is also rightfully concerned with the other goals of food self-sufficiency and stable prices and incomes. The current liberalization efforts are positive moves towards addressing all these objectives with the correct tools. It is however inevitable that intervention will alter output returns, intermediate costs, as well as the returns from using resources in a particular activity. In the case of our corn producers, such intervention has still not achieved the desired impact. The superior performance may also possibly be due to the quality of seeds which could be better in high-yielding areas, if their prices are to be the indicators, as well as the number of man-days devoted to the crop. Central Luzon farmers have the highest total production cost because of their intensive input use, but since they also received among the highest prices for their produce their output value surpassed that of all other regions.

The same table shows that on the average 42 man-days were spent on corn production from land preparation to bagging of the grain. It takes 114 days for the crop to mature, and the first 30 days is the crucial period in which weeds are likely to overtake the growth of the stalk. Hence the high labor requirements particularly in weeding. There is pressure to complete tasks within the usual time, or the crop suffers. The man-days devoted to the crop are shorter in Mindanao, where cropping is more intensive.

White corn, which used to be a staple in the Cagayan Valley, Visayas and Mindanao, is grown in even smaller farms since it's cultivation is mainly for consumption purposes. Yields are lower although this is as expected for traditional varieties, such lower productivity in turn resulting in smaller output and then higher prices. The reduced hectarage may be attributed to several factors among which is the shift to other more profitable crops. DRC/SERs using book rates show comparative advantage (Table 5), but those using price ratios show the opposite, since they are above unity for all regions. NPVs are generally negative although three regions show positive values with a uniform tariff.

Tables 6a and 6b, 7a and 7b, and 8a and 8b present the background information about each of the three survey areas and DRC/SERs results which were calculated with and without transport costs to the traders' warehouse. In South Cotabato corn is sold on the cob, while in Bukidnon and Isabela they are sold as grain. However the farmers do not take on the burden of transporting their produce, since these are picked up by traders who contracted to buy the output at the start of the planting season. Correspondingly, in including transport costs the output was assumed to be valued at market prices of corn grain. In addition, three scenarios each were computed: [i] at 20% tariffs, [ii] at 35% tariffs which is the in-quota rate for 1996, and [iii] using price ratios to approximate the influence of the various forms of intervention on the domestic price.

The survey results are even more encouraging than the BAS-based calculations, with majority of respondents from all three areas exhibiting ratios less than unity when using tariffs to deflate output values. The results using book rates were so low in the South Cotabato sample that the use of Pd/Pb in evaluating value of output made only three respondents disadvantaged. A look at their average yield shows a high productivity hence the positive performance. Furthermore there seemed to be a threshold level of input use below which performance was likely to be adversely affected. Likewise, NPVs were positive and large for all but one who was uncompetitive.

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