

**DEVELOPMENT ASSISTANCE PROGRAM  
for the PHILIPPINES**

**VOLUME II**

**The Philippine Agricultural Sector  
USAID/PHILIPPINES**

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# THE PHILIPPINES/USAID DEVELOPMENT ASSISTANCE PROGRAM

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# THE PHILIPPINE AGRICULTURAL SECTOR

## I. AN OVERVIEW OF THE AGRICULTURAL SECTOR<sup>1/</sup>

### A. Agricultural Growth

Growth in agricultural production has come from expansion of hectarage, particularly during the post-war period before 1960, and from increases in yields due to investments in irrigation, use of fertilizer, and the new higher yielding rice varieties (HYV) after 1960.<sup>2/</sup>

Accounting for about a third of the nation's net national product, the agricultural sector was observed to have grown at about 4 percent yearly over the two decades from 1950 to 1970. Growth suffered in FY 1973, the country having been hit by a series of calamities more severe than any in the post-war years – floods, typhoons, pests and diseases in Central Luzon, as well as droughts and civil disorder in the scuthern parts of the country. The fiscal year 1974 was a recovery year, agriculture output including forestry and fisheries having increased by 5.8 percent over the previous year. Excluding forestry, which suffered growth lags during the year, a higher sectoral growth rate of 8.6 was attained.

### B. Agriculture's Roles

Agriculture has three major functions in the nation's economy: as the provider of food, as source of inputs for other sectors and as a foreign exchange earner. A fourth function, namely, a source of employment, is increasingly being recognized as an important role and one in which the sector's full potential has not been fully explored.

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<sup>1/</sup> *Primary Source: Unpublished paper on Agricultural Sector Planning, National Economic and Development Authority, 1974.*

<sup>2/</sup> *For a more detailed account, see Barker and Crisostomo, "Growth Rates of Philippine Agriculture: 1948–1969." (Paper No. 72–4), UPSE–NEC Workshop Series, 5 July 1972.*

## 1. *Food Production*

With a yearly population growth rate of three percent over the last two decades, food crop output per capita has grown only at a rate of one percent. Production shortfall generally characterized the basic foodstuffs sub-sector and imports have supplemented domestic supplies to satisfy demand. The total value of food imports in 1973 and 1974 amounted to \$165 million and \$242 million, respectively. It constituted more than 10 percent of the country's total annual imports. Cereal accounted for about 55 percent of the expenditures on food imports, followed by dairy products. Some 250,000 metric tons of rice alone had to be imported in 1974 to avert shortages in the low supply months.

In the face of the global oil crisis and world shortages of basic foodstuffs, imports have become relatively costly and a strain on scarce foreign exchange resources. For example, it cost about \$670 to import a metric ton of high quality rice in 1974 compared to only \$117 in 1972, reflecting more than a fivefold price increase.

To meet the increase in domestic demand for a growing population, the Four-Year Agriculture Sector Plan estimates that food production will have to increase annually by about seven percent for rice, 1.8 percent for white corn, 5.8 percent for fish and 7.3 percent for meat.<sup>3/</sup> Thus, the objective of self-sufficiency within the plan period will be attained. Self-sufficiency with gradual increasing and improved nutrition for the population is a priority objective of the sector.

## 2. *Agro-Based Industries*

The enterprises which depend on raw materials produced by the agricultural sector include the various food processing industries — sugar

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<sup>3/</sup> *Estimates of basic food requirement generally take into account only per capita requirement plus other uses and wastage, but does not take into consideration effects of increases in income or relative prices of other commodities.*

milling, rice milling, meat and fruit canners and manufacturers, numerous small scale and cottage industries utilizing fibers, wood and animal hides, and the wood processing industries.

### 3. *Agriculture and Foreign Exchange*

Exports of unmanufactured agricultural products contributed an average of 15.5 percent to export earnings in 1972 and 1973, while agricultural based products, excluding the wood-based exports, accounted for about 33 percent. Taken together, they accounted for about half of the foreign exchange earned from exports during those years. Sugar led the top ten export products, contributing about a fifth of the export earnings. As the second export earner, logs and lumber contributed some 15.8 and 22 percent in 1972 and 1973 respectively.

### 4. *Employment*

Typical of developing countries in Asia and elsewhere, the Philippines' agricultural sector employs a high share of the labor force. Declining from about 60 percent in 1960 to a little over 50 percent in the early 1970's, it grew at the rate of about 2.6 percent over the 1950's and 1.5 percent over the 1960's. The National Manpower and Youth Council has projected employment in the sector to grow at an average rate of 4.2 percent within the period of FY 1973-74.<sup>4/</sup>

Given the highly seasonal nature of work under traditional agriculture, the problem in the sector is mainly one of under-employment which ran as high as 32 percent in 1963. The underemployment rate, however, has diminished in recent years. In 1972, for example, the Bureau of Census and Statistics survey of total agricultural labor force recorded some 6.9 million as employed. Of this, underemployment was computed at 0.9 million, reflecting an underemployment rate of 13 percent. For 1973, underemployment was 12 percent, the same as in the non-agricultural sector.

To help lower the rural-urban migration rate and the social and private costs associated with it, it would appear that the task of employment creation must fall heavily upon the agricultural sector.

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<sup>4/</sup> Experience in other developing countries would indicate that the sector may be unable to absorb additional labor at this rate.

## II. GOP AGRICULTURAL SECTOR OBJECTIVES<sup>1/</sup>

The current GOP (Government of the Philippines) Four-Year Development Plan (FY 1974-77) for agriculture addresses itself to objectives, and to the policies and programs directed at achieving the objectives. It is expected that the next four year plan will continue the same thrust initiated in the current plan period. The average growth rate for the sector is projected at five percent per annum over the FY 1974-77 plan period.

### A. Objectives

The major objectives of the current development plan are as follows:

#### 1. Acceleration of land transfer and distribution -

This major objective seeks to facilitate transfer of tenanted rice and corn lands owned in amounts over seven hectares to tenants, to hasten the classification, distribution and titling of these agricultural lands and to convert lands under seven hectares to leasehold.

#### 2. Self-sufficiency in food and food products -

Typhoons, floods, drought, "tungro" disease and civil disorders wrought havoc on the FY 1973 rice and corn crops and pushed food production back to pre-self-sufficiency levels. The major thrust is recovery from these cereal losses and attainment of self-sufficiency in meat and fish.

#### 3. Conservation and development of natural resources -

The 1972 flood in Central and Southern Luzon dramatized the consequences of the improvident use of forest resources. The nation's forest resources are rapidly dwindling. The focus, therefore, is on the rehabilitation of denuded areas, particularly of critical watersheds, as well as on the conservation of forest resources. At the same time, the development of the wood-based industries is being encouraged.

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<sup>1/</sup> Primary Source: *Four-Year Development Plan - FY 74-77, Republic of the Philippines, Manila 1973.*

4. Expansion of exports and import substitutes -

The objective is to increase foreign exchange earnings from an expanded output of traditional exports (sugar, coconut, tobacco, Manila hemp, and bananas), as well as to develop non-traditional exports (mango, papaya, melon, ginger, shrimp, eel, seaweed, and tuna) and import-substitute crops (cotton, grapes).

**B. Acceleration of Land Transfer and Distribution Objective**

Presidential Decree 27 of October 1972 set forth the basic policy for the Philippine land reform program. It and subsequent regulations provide for transfer of land ownership to tenants on rice and corn land of landlord holdings in excess of seven hectares. The program encompasses approximately 420,000 tenants who farm 760,000 hectares on properties of some 40,000 landlords. The government projects completion of the program by the end of 1977 in accordance with the following schedule:

	<u>Tenants</u>	<u>Hectares</u>
1973	150,000	250,000
1974	190,000	330,000
1975	210,000	370,000
1976	315,000	570,000
1977	420,000	760,000

Since ownership redistribution will affect 45 percent of the nation's rice and corn tenant farmers, the balance (an estimated 520,000) will be provided with strengthened leasehold arrangements which will govern landlord-tenant relationships.

The land reform is aimed directly at the small farmer population with the average tenant beneficiary having the opportunity to become an

owner of the average 1.8 hectares he is now tilling. The reform should increase the proportion of viable, independent small farmers by dispersing land ownership, increasing the share of production going to the farmer himself, and providing greater security of land tenure.

### C. Food Production Objective

The 1973 IBRD Survey Mission Report <sup>2/</sup> estimates the following growth rates as realistic for reaching and maintaining food self-sufficiency.

Rice	4.5%
Corn	9%
Livestock	7.7%
Fish	6%

The above targets are consistent with the GOP 1974-77 Four-Year Development Plan targets, with the exception of rice projected at seven percent and white corn, comprising about 90 percent of total corn production, at 1.8 percent.

The high annual growth rate of the 1950s and 1960s in rice and corn output came from the expanding arable lands and the rapid spread of high yielding rice varieties (HYV) which now cover much of the irrigated areas. Progress henceforth will be slower and depend on expansion of irrigation facilities and the spread of HYV's for both rice and corn as well as packages of technology, to farm producers. This is feasible if greatly increased capital and manpower resources are applied to production programs and the GOP encourages an environment in which adequate market incentives are provided.

#### 1. Rice

Rice is the staple food crop of the country. It is produced on about 3.2 million hectares, representing about 35 percent of the total cropped area.

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<sup>2/</sup> IBRD Agricultural Sector Survey, Philippines, May 2, 1973.

Prior to 1967, the country had been importing rice. In 1968, following the spread of HYV, the country attained self-sufficiency and no imports were made until 1971. However, in early 1972, because of unpredictable natural calamities (typhoons, floods, drought, pest and disease outbreaks), rice imports rose to 650,000 metric tons.

The goal of rice production is to produce enough rice to meet consumption needs by FY 1977 and thereafter. Estimates on paddy production are as follows:

**Paddy Production Plan – FY 1974–80<sup>3/</sup>**  
(In Million MT)

FY 1974		FY 1975	FY 1976	FY 1977	FY 1978	FY 1979	FY 1980
(Plan)	(Actual)						
5.7	5.6	6.2	6.5	7.0	7.5	8.0	8.6

*a* Expansion of Irrigated Areas

The improvement of the existing irrigation systems and construction of new ones will be undertaken. The target is to irrigate 1,094,500 hectares in FY 1977 for the regular crop, and 403,300 hectares in FY 1977 for the dry season crop.

On the aggregate, using the FY 1972 level as a base figure, this would imply irrigating an additional area of 16.6 percent in FY 1974 and 69.5 percent in FY 1977. It is expected that the Upper Pampanga River Project, which will irrigate about 75,000 hectares throughout the year, will be fully operational by the last year of the plan period.

<sup>3/</sup> FY 1974-77 per four-year plan; FY 1978-80 per GOP goal of continued rice self-sufficiency requiring a 7% per annum increase in paddy output.

b. Adoption of Packages of Technology

The area of rice planted to the HYV was 1.2 million hectares in 1971. The plan has been to expand this area to 1.4 million by planting at least 250,000 hectares a year thereafter during the four-year period. The emphasis in the program activities will be on the adoption of full packages of technology which include provision for improved seed, water and credit.

Credit and farm management technicians are employed in a massive, sustained educational campaign to persuade more farmers to adopt the full HYV technology. Special attention is given to rainfed areas.

c. Credit

Credit support is provided by the rural banks, the Philippine National Bank (PNB), the Agricultural Credit Administration (ACA) and other credit institutions. All loans are administered on a supervised credit basis. Farmers who agree to apply the full technological package as recommended by technicians are provided with all necessary inputs.

d. Price Support and Marketing

The government plan assures farmers of a support price of at least ₱5.00 (per 44 kg.) above production costs. This is implemented through an arrangement between the National Grains Authority (NGA) and authorized farmer-producers' cooperatives or private warehousemen-millers. In areas where the private sector may not be performing efficiently, the NGA is authorized to procure directly.

e. Seed Production, Storage and Distribution

Government resources are mobilized for the production of registered seed. The Bureau of Plant Industry makes these available to seed cooperators for multiplication and subsequent distribution to farmers within

the same area. This is expected to minimize the cost of transporting seed. Other possible avenues for reducing seed prices are being explored. Also, assistance in seed storage and processing is given to seed producers.

2. White Corn and Feedgrains (Yellow Corn, Sorghum and Soybean)

Two types of corn are produced in the country: white corn, which is the staple food of some 20 percent of the population, and yellow corn, which constitutes the main component of commercial feeds. Sorghum is a good substitute for yellow corn as a feed ingredient, having an equivalent feeding value of about 70 percent. Soybeans are the main source of plant protein in mixed feeds and can be processed into soy sauce, tahuri, tausi, and tokwa for human consumption.

The goal is to increase white corn and feedgrain production to meet the increasing demand for these commodities. The average annual rate production targets are: white corn, 1.8 percent; yellow corn, 9.1 percent; sorghum, 32.9 percent; and soybean, 209 percent.

a. Production

(1) Corn

The primary emphasis is on increasing the area planted to downy-mildew resistant HYV's of white and yellow corn. Hence, of the one million hectares intended for white corn production per year, the area to be planted to HYV's will increase from 40 per cent in FY 1974 to 80 percent in FY 1977. The same pattern of land utilization is programmed for the planting of the improved varieties of yellow corn. To raise unit yields, the application of fertilizer and pesticides is being intensified. In addition, the possibility of adjusting the planting time of corn will be studied so that harvest time will not fall in high rainfall months.

(2) Sorghum

Sorghum is a new crop to many farmers. However, studies show that it is well adapted to Philippine soil and climatic conditions, and that its yield potential is comparable to corn. It is more resistant to moisture stress than corn.

Since sorghum is a relatively new crop, the emphasis is on project extension and demonstration. It is expected that as a result of these efforts the area planted to the crop will increase from 28,000 hectares in FY 1974 to 60,000 hectares in FY 1977.

(3) Soybeans

Soybeans are a minor crop in the Philippines. In 1972, total area planted was about 1,065 hectares with an estimated production of 15,768 cavans (1 cavan = 50 kgs.)

With the expected world shortage in soybeans and fish meal, a special extension project was launched to meet the country's requirements for animal protein feed. The targets for soybean production are to increase the area planted from 7,520 hectares in FY 1974 to 40,000 hectares in FY 1977.

b. Seed Production, Storage and Distribution

The white corn and feedgrains program is plagued by limited quantities of HYV seeds and high seed prices. To minimize these problems, the GOP is improving seed processing centers and launching an intensive campaign to produce foundation and registered seeds. The seeds will be made available to seed cooperators who will produce certified seed for farmers. In addition, GOP assistance in seed processing and storage will be extended.

c. Price Support and Marketing

The NGA will intensify its procurement program at the government support price, which is estimated at not less than ₱0.40 per kilo of shelled corn grain. The same strategy employed in procuring rice will be used in the corn program. However, in the case of sorghum and soybeans, marketing contracts will be encouraged between feed millers and farmers.

d. Research

Research on corn, sorghum and soybeans will be intensified. This includes the development of high yielding lysine corn and hybrid sorghum varieties. Soybean research will focus on developing high-yielding varieties resistant to disease, lodging and shattering.

3. Beans and Vegetables

Vegetables are the cheapest source of protein, minerals and vitamins for the human body. A Philippine Nutrition Research Center (PNRC) survey in eight regions of the country showed that 63 percent of the protein intake is of vegetable origin and only 35 percent is of animal origin. In 1972, the total output of vegetables was 665,733 metric tons as against the total requirement of 2,219,190 metric tons.

The goal of the beans and vegetables program is to increase production in backyard and commercial farms so that the gap between output and actual requirement can be reduced. It is expected that production of vegetables will increase from 1.4 million tons in FY 1974 to 1.9 million tons in FY 1977, representing an increase in self-sufficiency ratio from 50 percent to 65 percent during the Plan period.

#### 4. Fisheries

Fish is one of the most important food items in the Filipino diet. Yet it has not been produced in sufficient quantities to meet the needs of a fast growing population. In 1973, for instance, effective demand for fish was estimated at 1,635,600 metric tons while domestic production was estimated at only 1,616,500 metric tons.

The goal is to increase fish production at a yearly increment of 5.8 percent for the Plan period. At such a rate, production should be able to fill domestic requirements commencing in 1975.

The Fishery Industry Development Council (FIDC) is providing the needed impetus for fisheries development. It defines comprehensive policy guidelines and programs for the industry.

##### a. Inland Fisheries

Development efforts are concentrated on inland fisheries. The target is set at a growth rate in total brackish and fresh-water fish production of 18 percent per year for the next four years.

##### b. Marine Fisheries

The goal is to increase total production from municipal and commercial fisheries from 1,337,700 metric tons in FY 1974 to 1,367,000 metric tons in FY 1977. This will represent a growth rate of about 2.5 percent a year for the Plan period.

#### 5. Livestock and Poultry Production

The goal is to increase the production of livestock, primarily of beef and carabeef, to meet domestic consumption requirements as well as nutritional requirements for animal protein foods.

The specific growth rate targets in production for each year are as follows: pork, 8 percent; beef, 6 percent; carabeef, 6.9 percent; poultry, 8.2 percent; and eggs, 7.3 percent.

**Projected Production and Requirement for Meat, FY 1974-77**  
(in thousand metric tons)

	<i>FY 1974</i>	<i>FY 1975</i>	<i>FY 1976</i>	<i>FY 1977</i>
Production	784	844	908	977
Consumption	748	771	795	820
Surplus (Deficit)	36	73	113	157

**D. Conservation of Natural Resources Objective**

Forestry occupies almost two-thirds of the land resources. The lumber industry annually earns ₱100 million in foreign exchange and ₱130 million in local sales. It provides direct livelihood to about half a million people.

Progressive forestry reforms were introduced during the late sixties and continue to be felt at present. To conserve forest resources, the government has adopted policies aimed at discouraging log exportation and encouraging local wood processing. As a result, the exportation of logs and lumber declined from 1970 to 1972. On the other hand, there was a marked increase in the production and export of plywood and veneer.

Continued emphasis will be on forest protection, better utilization of forest products, and reforestation. With the merger of the former Bureau of Forestry, Reforestation Administration, and Parks and Wildlife Office into one Bureau of Forest Development, it is hoped that forestry programs can be coordinated and implemented more efficiently.

1. Forest Protection

Efforts are directed towards preventing the illegal occupancy of forest lands by settlers and squatters and the illegal removal of forest products from public forests by unauthorized persons.

2. Forest Delineation

There is a need to establish forest zones and permanent boundaries so that forest management policies can be clearly formulated and strictly implemented. There are about 8.5 to 9 million hectares of productive forest areas but so far only 4.9 million hectares have been classified. The delineation of forest areas will be accelerated by using aerial photographs wherever possible and by fielding more land classification parties.

3. Reforestation and Soil Erosion Control

The reforestation of watershed areas and steep slopes will be intensified. There are about 1.4 million hectares of watershed lands that are critically degraded. The goal was to increase the reforested area per year as follows: 39,100 hectares in 1974 and 41,100 hectares each year thereafter.

Under this reforestation program, fast growing commercial species will be produced for extension in denuded areas. These shall provide timber and fiber for the forest-based industries.

4. Close Supervision of Concessionaires

The government will assure full control and management of the country's forest areas. The multiple use concept will be applied in the management and utilization of forest resources. Corollary to this will be the strict enforcement of forestry laws to prevent illegal logging and further denudation.

## 5. Slash and Burn Management

The commercial forest area is rapidly shrinking partly because of the destructive inroads made by slash and burn farmers. To minimize such destruction, a resettlement program will make provisions for the resettlement of slash and burn farmers, especially those farming on steep slopes, to land more suitable for agriculture. An educational campaign has also been initiated to inform such farmers of the ecological value of forests, to equip them with skills for alternative employment, and to encourage them to adopt soil conservation practices.

## E. Export Expansion Objective

### 1. *Coconut*

The coconut industry plays a significant role in the Philippine economy. Around 80 percent of production is exported, contributing almost \$237 million, or over 20 percent of total foreign exchange earnings from exports.

Coconut producers are generally uneconomic, disorganized, and indifferent. The goal of the coconut development program, therefore, is to transform these producers into competent and viable entrepreneurs involved in all aspects of the industry, thus making vertical integration possible. This involves increasing the efficiency of farm operations, organizing broad-based self-reliant farmers' associations, and providing opportunities for farmer participation in end-user and marketing enterprises.

### 2. *Bananas*

Bananas are becoming a major export crop. The Philippines began exporting bananas five years ago, with Japan as the major market. Since then, the growth has been phenomenal. In 1968, banana exports to Japan of the Cavendish variety were worth about ₱80,000. In 1972, exports were valued at about ₱100 million. The country now supplies 30 percent of Japan's annual imports.

### 3. *Sugar*

Sugar is a prime dollar earner in the country. In 1970, sugar constituted 19 percent of total Philippine exports. Hectareage devoted to sugar doubled from 208,750 hectares in FY 1961 to

422,631 hectares in FY 1971. Production likewise increased from 20.8 million piculs to 32.5 million for the same period. This increase induced the establishment of more sugar mills, such that the number of mills grew from 23 in FY 1961, to 36 in FY 1972, with a milling capacity of 156 thousand metric tons.

It is expected that by FY 1976 the Philippine sugar industry will produce about 2.5 million short tons of sugar per annum. The target is to increase sugar production by 4.5 percent per annum.

#### 4. *Tobacco*

Several farmers are dependent on tobacco for their livelihood while the GOP receives millions of pesos in revenue from the industry annually.

In 1972, the area planted to tobacco was about 92,000 hectares, representing 1.2 percent of the total cultivated area in the Philippines. This hectarage was devoted to two types of tobacco, namely, Virginia and cigar-leaf filler, the total production of which amounted to approximately 30 million metric tons.

The tobacco program is designed to expand and develop the native and Virginia tobacco industries to produce annually nine million kgs. of cigar-leaf filler and six million kgs. of Virginia tobacco during the Plan period.

#### 5. *Fibers*

##### a. *Manila Hemp (Abaca)*

During FY 1972-73, the area planted to abaca totalled 173,020 hectares. Total production amounted to 110,097 metric tons, of which around 99,000 were exported with a value of about ₱18 million. While the volume of abaca intended for cordage manufacture has declined, demand from the paper manufacturing industry has steadily risen. Presently, about 70 to 80 percent of exported abaca is consumed in the milling of pulp and paper. Evidently, millers have realized

the great potential of abaca as a raw material for paper manufacture. There is, however, a need to stabilize supply and prices if the industry is to survive.

The plan is to increase the abaca output through improved production and processing. The following measures are being adopted: (a) rehabilitation of abaca plantations that have been depleted and/or planted with substandard varieties; (b) reopening of abandoned plantations; and (c) improvement of production and processing methods in order to cut down costs. The procurement and distribution of high-yielding varieties of abaca seed pieces will be made a priority requirement.

*b. Cotton*

The nation's textile mills need additional cotton to produce the fabrics that will satisfy the needs of the people. To feed these mills, about 240,000 bales of raw cotton (1 bale - 478 lbs.) are imported annually.

Cotton can be grown commercially under Philippine conditions. From 1955 to 1963, the area planted to cotton was 2,048 hectares which yielded 919 metric tons of fiber valued at ₱1,277,000. To meet the present fiber requirements of the country, an area of 150,000 to 300,000 hectares will be needed based on a yield of one-half to one ton of seed cotton per hectare.

*6. Fruits*

With the emergence of markets in Japan, Hongkong and South Korea, the demand for fresh fruits is rising rapidly. At present the Philippines export bananas in sizeable quantities to Japan and mangoes to Hongkong. There are other fruits which could be exported, such as melons and watermelons, mangosteen, papaya, jackfruit and cashew, but their export potentials have not been fully exploited. On the other hand, the country imports sizeable amounts of fresh and dried fruits from other countries. These include apples, grapes, citrus fruits and pears.

The goal of the fruit development program, therefore, is to develop the local fruit industry in order to increase exports to other countries and at the same time to produce in sufficient quantities those that are imported.

7. *Paper*

The growing paper industry has been dependent on the importation of pulp. The country imports annually about 49,000 tons of pulp valued at \$5 million, of which more than half consists of long fiber pulp. The Paper Industries Corporation of the Philippines (PICOP) alone requires about 12,000 tons of long fiber annually.

Long fiber pulp can be produced in the country from two local pine and one other tree species which are favorably recommended for reforestation purposes. The target is to plant, initially, about 30,000 hectares to these species.

8. *Fish Exports*

To promote exports of shrimp, tuna, seaweed, eel and other fishery products, efforts will be directed at improving the acceptability of these commodities in foreign markets. Quality standards for these goods meant for export will be effected.

### III: CONSTRAINTS TO REACHING OBJECTIVES

#### A. Constraints to Land Transfer and Distribution

##### 1. Effective Opposition of Smaller Landholders

Opposition by landlords has increased as land distribution has proceeded downward in the scale of landholdings. This is partially due to the sizeable landlord population owning smaller holdings. Nearly 80 percent of landlords whose holdings are subject to transfer fall in the category of small landlords, identified as from 7 hectares to 24 hectares. Secondly, resistance can be described as a function of the number of those benefited from land reform as against those deprived. Whereas the ratio of beneficiaries to landowners was nearly twenty to one in land categories above 24 hectares, it is less than five to one from 24 hectares to 7 hectares. It is also in this category where most of the (relatively small number) government officials are to be found, and the views of such landholders of course carry disproportionate weight. Further, greater opposition is engendered among small landlords relative to larger ones because of their higher dependency on the land as a source of income. Finally, a less obvious, less numerous, but influential group of landowners in this category is made up of the heirs of those large landlords who succeeded in circumventing the prohibition against parcellization among family members after October 21, 1973. These small landholders, making effective use of President Marcos' frequent references to the middle class as the backbone of his regime, in due course succeeded in recruiting the all-out support of the Philippines' most influential newspaperman in support of the position that whatever the promises of P.D. 27, the interests of the middle class should not be sacrificed for the benefit of the tenants.

##### 2. Lack of Evidence of Positive Impact on Land Productivity

Productivity goals are rather unimportant compared to social goals as stated in Philippine agrarian reform legislation since 1953. However, perhaps because a simplistic theory of share tenancy is

easily grasped, expectations that land reform would lead to an increase in land productivity have been widespread. As empirical evidence to the contrary has accumulated for Philippine rice production, some of the more knowledgeable who based their support for land reform largely on the productivity issue have become disillusioned and have withdrawn their support. This has probably been exacerbated by worldwide concern and publicity for food shortages and famine which give support to policies to increase production, and insufficient concern for measures to distribute the increase to those who need it most. Evidence of this policy trend is seen in General Order 47 which requires all corporations which employ more than 500 persons to enter into rice production in a scale sufficient to supply the needs of its employees.

Research by Ruttan<sup>1/</sup>, Sandoval and Gaon<sup>2/</sup>, and the Bureau of Agricultural Economics generally finds per hectare production of rice to be unrelated to type of tenure in spite of the greater incentive of owner-operator and leasehold tenants to work their farms more intensively than share tenants. Sandoval and Gaon found the average production of 251 farms of Central Luzon which shifted from share tenancy to leasehold or ownership to be 51.0 cavans per hectare in the crop year 1968-69. The 115 farmers who remained share tenants had an average yield of 52.3 cavans. Research by Mangahas, et al<sup>3/</sup> supports the previous findings. Data is presented which shows average yield from 1968 to 1970 to be owners 46.3 cavans, lessees 50.5, share tenants 52.2. Dispersion within the tenure classes is so great that the differences are not significant. He goes further to show that emphasis

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<sup>1/</sup> R. W. Ruttan, "Tenure and Productivity of Philippine Rice Producing Farms," *Philippine Economic Journal*, 1966, Vol. 1, No. 1.

<sup>2/</sup> P. Sandoval, B. Gaon, "Agricultural Land Reform in the Philippines: Economic Aspects," *University of the Philippines, Los Banos*.

<sup>3/</sup> Mahar Mangahas, "The Political Economy of Rice in the New Society," *Discussion Paper 74-10, 1974. Institute of Economic Development and Research, University of the Philippines School of Economics*.

on the simple theory of share tenancy and the tenant's labor inputs neglects the productive contribution of the landlord. The more rapid adoption of high yielding varieties by share tenants is evidence of the closer landlord-tenant relation where the landlord retains an economic interest in production and is evidence of his productive participation in farm decisions. Mangahas points out, however, that his and other research have not treated the effect of tenure type on the incentive to make investments in land productivity. Very recent evidence from the Agrarian Reform Institute, UP Los Banos, (Nicolas, 1975<sup>4/</sup>) indicates that land reform beneficiaries may invest more in the farms than they now own. Ninety percent stated that they have spent more money on their farms since receiving land transfer certificates, but the purposes of the expenditures were not described. It also supports the simple theory of share tenancy that owner-operators have more incentive to work on their farms. Whether the incentives for labor and investment will outweigh the useful role of the former landlord depends in large measure upon how effectively institutional credit and extension supplant the role of the landlord.

### 3. *Lack of Short Run Impact on Beneficiaries*

Research by Mangahas et al estimates that the land reform beneficiary who was formerly a share tenant has the present net worth of all future income from land increased by 84 percent, using a 20 percent discount rate. However, from this increase must be subtracted several new cost items which pertain to his new status: land taxes, Samahang Nayon (pre-cooperative village associations) membership fee (one payment of ₱10.00), annual membership fee of ₱5.00, barrio guarantee fund of one cavan per hectare each year, and barrio savings fund of 5 percent of any production loan or ₱5.00/month if the farmer does not borrow. Even with these subtractions, he has a substantial increase in average annual income due to land reform.

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<sup>4/</sup> Jose S. Nicolas, "Some Aspects of Operation Land Transfer: A Comparative Analysis of Small Landowners and OLT Tenant Beneficiaries," Agrarian Reform Institute, Los Banos.

The former leasehold tenant, however, is a net loser when he becomes subject to land reform. His amortization payments are almost exactly the same as his 25 percent lease payment, but he incurs the same burdens of ownership and membership in Samahang Nayan as listed above. After his amortization payments are completed, he will realize an increase in spendable income, but that increase discounted 15 years at 20 percent is only equivalent to a 2 percent increase in income today. The land taxes and Samahang Nayan payments no doubt exceed that 2 percent increase in net worth.

Although data are inadequate, the indications are that about 20 percent of all tenants were actually lessees paying the 25 percent of harvest called for in existing law. Thus, this portion of land reform "beneficiaries" will be somewhat worse off relative to their position as lessees, except as they may feel more secure as amortizing owners.

4. Lack of Perception by Tenants that Benefits Will Offset Risks

The estimated 80 percent of beneficiaries who were share tenants enjoy an increased income only when viewed on the average. Research has shown that the conversion from share to lease tenancy substantially reduces landlord assistance to the tenants and there is little doubt the land transfer will almost totally sever the relationship.<sup>5/</sup> Share tenants' prime source of credit is his landlord (38 percent), with only 15 percent using any institutional credit. Lessees used institutional credit in 32 percent of the cases, landlords only 16 percent, and other private money-lenders 34 percent. The beneficiary will be exposed to the full risk of crop loss due to natural disasters. Quantitative data have not been generated to express such losses as an annual average loss which might be compared to the difference between the effective rate of interest on loans from landlords and the 12 percent rate on institutional borrowing to determine whether the beneficiary is better off credit-wise than he was a tenant. Even if the data were available, the evidence would not be conclusive because the impact of risk is a

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<sup>5/</sup> Frank Lynch, et al, "View from the Paddy", Institute of Philippine Culture.

perceptual matter. Farmers at a low level of living are much less willing to take risk than persons in more comfortable circumstances. Empirical evidence as to how Filipino farmers feel about land reform is mixed. Lynch and De Los Reyes<sup>6/</sup> found farmers in Nueva Ecija only lukewarm toward leasehold conversion because of the patron-client relationship, an important element of which is the sharing of risk. More than half (54 percent) of current share tenants expressed satisfaction with their tenant status and another 27 percent favor it but with reservations; only 20 percent expressed outright rejection of the system. Lynch (1974) found 37 percent of the farmers in the Bicol Region reluctant to take on the risks of amortizing owner while 61 percent would prefer ownership. Yet, the Agrarian Reform Institute found strong support and optimism for land reform as a result of interviewing farmers who had received land transfer certificates.<sup>7/</sup> Ninety percent stated that they were happier as amortizing owners than as tenants; 79 percent said they are living more comfortably now.

## B. Constraints to Food Production

### 1. Lack of Price Incentive for Farmer to Produce

The price of rice is a political as well as an economic factor due to its being a wage good which is a major determinant in the cost of living. The share of cereal and cereal products, the majority of which is rice, averaged 37% of food expenditures and 20% of total in 1971. Thus, any increase in price has an immediate impact on the cost of living of low income people. Consequently, there has been a consistent policy towards controlling the price of rice to urban consumers.

On the other hand, the government has also realized that increased production is necessary if large imports of rice are to be avoided. Thus, there has been an effort to support the price for producers at a high enough level to be conducive to increased pro-

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<sup>6/</sup> *Ibid.*

<sup>7/</sup> *Nicolas, op. cit.*

duction. These two policies are often in conflict resulting in either low profit margin for the producers or low margins for processing and distribution of rice.

The current method of implementing these policies has been to impose a price ceiling at the retail level on rice and subsidize inputs to the farmer. However, because of the extreme inflationary pressure on the input side, the subsidy is now insufficient to insure a return to these inputs and their use is declining. The holding of a constant price for rice during inflation means that the real price of rice is declining, thus producers, millers, and retailers are caught in a classic cost price squeeze.

In the long run, production must continue to increase at the rate of three percent a year just to maintain the present position. The latest analysis of demand indicates very low income elasticity for rice. Because of the importance in the diet, rice is also price inelastic (about 0.1 to 0.5). That is, small changes in output create large changes in price. There are investments being made in agriculture such as irrigation and infrastructure, but it is not likely these will result in long run increases of greater than 3%. Thus, price levels are likely to be maintained at current real price levels or more.

## 2. High Weather Variability Increases Risk

A profitable price incentive policy and provision for adequate and timely production credit has lessened to a degree the risks associated with the adoption of improved HYV of rice. The risks associated with weather, however, remain major constraints to both adoption of technology and incremental food production.

The Philippines lies solidly within the typhoon belt. During the 90-year period from 1884-1973 the country has been visited by an average of 19 typhoons a year. In 1934 alone, 39 separate typhoons affected the country bringing high winds, floods, loss of crops, property and lives.<sup>8/</sup> Some limited research work on the weather has been undertaken but to date insignificant progress has been made mitigating the effects of these storms. Research work in rice has developed short, stiff-strawed lodging resistant, high yielding varieties, with a high flag

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<sup>8/</sup> Source: Jesus E. Calooy, *Philippine Climatology*, PAGASA; (Philippine Weather Bureau).

leaf to protect the panicle, offering limited possibilities to withstand exposure to typhoons. Floods which destroy standing crops and wash away harvested crops remaining in the fields do extensive damage annually in low lying plain areas such as the fertile Central Luzon plain. Flood control measures and drainage facilities are planned to help alleviate the situation. But the high risks of wind and rain facing small farmers at a time when his crops are ready for harvest, continue to be a major obstacle to obtaining on farms the types of yields proven possible on research fields.

#### The High Cost of Agriculture Inputs

Escalated oil prices have affected the price of agricultural inputs in the Philippines as in other countries of the world. The Government of the Philippines, in an effort to increase food production, established a subsidized price for fertilizer used on food crops while fertilizers used on export crops were sold at the world market price. Despite the subsidized price, urea has increased 324 percent over the past year for food crops. While this policy was good in theory, it was difficult in practice. A price differential of ₱100 per 50 kg bag of urea resulted in a lively blackmarket trade. This policy is now being seriously studied by the GOP and will most likely result in a single pricing system.

Though the price has been high on fertilizers, the supply has generally been available to farmers as needed, except possibly in remote areas. The GOP, in an effort to be assured of an adequate supply of fertilizers, purchased fertilizers from all available sources when the prices were rapidly rising. As a result the Philippines now has a 9-12 month supply of most fertilizers and a very good supply of other agricultural chemicals.

Paul J. Stangel of the TVA, in recent discussions with fertilizer industry and government leaders reports that "a major drop has occurred in fertilizer use, in some cases 60 percent below the 1974 level. This holds for both the food and export crop sectors. Preliminary indications are that this is due not only to high prices but also to the uncertainty about the ability of the government to maintain rice prices

at the support level particularly during the peak of the harvest season. Partial reports from Leyte and certain remote areas suggest that farmers receive in some cases less than 50 percent the official support price for their rice."<sup>9/</sup>

4. Lack of Profitable Technology for Dissemination to Farmers

With the exception of rice, technology has not advanced as rapidly for other food and feed grain crops to stimulate increased production. However, the wide gap between known technology and that used by farmers is most likely due to the lack of incentives and/or markets for the new or increased production. Still other crops have not received the intensive attention given rice, because of its importance in Asian diets, and this is a constraint to increased food production.

Corn yields in the Philippines are low, averaging only 0.8 metric tons per hectare compared to 2 metric tons in Thailand. Very little fertilizer is used on corn, less than 10 percent of the planted area.<sup>10/</sup> One of the major factors in low yields has been serious infestations of downy mildew and of the corn borer. University of the Philippines Los Banos (UPLB) corn breeders have been working on downy mildew resistant lines which have just recently been released. Seeds are being multiplied in two yellow and one white varieties with acceptable levels of resistance to downy mildew. Better varieties are being developed and work is under way to develop corn borer resistance.

Sorghum is a relatively new crop in the Philippines and as a result farmers have experienced difficulties with seed viability, cultural practices, threshing and lack of markets.<sup>11/</sup>

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<sup>9/</sup> Paul J. Stangel, et. al., *Consultancy Report No. 9, USAID/Manila, April 1975.*

<sup>10/</sup> IBRD *Agricultural Sector Survey*, p. 2.

<sup>11/</sup> IBRD, *op. cit.*, p. 24.

Soybeans are a minor crop, but one that offers tremendous potential in terms in providing a high quality vegetable protein for both human and livestock consumption. However, yields are generally low, seed viability is very low and markets are difficult to find since there are no local processing facilities.

With these and other crops, much work remains to be done on cropping systems that will increase productivity per unit of land area. Intercropping with plantation and field crops offer many possibilities. Researchers are working on this problem, but much remains to be done in terms of developing early maturing varieties, tillage practices and timing sequences.

The high cost of agricultural chemicals demonstrates the need for better technology to make more effective use of these inputs. For example, IRRI has demonstrated a 30-40 percent increase in rice production by placing fertilizer and pesticide in a mudball in the root zone. However, a machine to place the fertilizer is yet to be developed for widespread use of the technique. There may be other techniques yet to be discovered for making more efficient use of production inputs.

5. *Inadequate Marketing Systems for Selected Farm Produce, Including Farm to Market Roads, Ports and Marketing Facilities*

The marketing constraint is a very complex factor in the food producer — to — consumer chain. With the exception of rice, markets for agriculture produce are relatively underdeveloped or non-existent. Farmers most often say they do not raise soybean or sorghum because there are no markets. Yet, these crops are in demand for the livestock feed industry.

The marketing of agricultural commodities is almost entirely in the private sector, with the exception of National Grains Authority that makes purchases as needed to stabilize rice prices.

Mears reports the economic efficiency of the rice market "may be relatively high ... more effectively developed than in many neighboring countries ....."<sup>12/</sup> Both Mears and the IBRD team report general surplus rice milling capacity with about two-thirds of the cono-type and one third Engelberg. Both types of mills produce a high percentage of broken grain with the Engelberg being the less efficient in producing quality rice.

There is a general lack of drying facilities for both rice and corn, resulting in unnecessary losses and poor quality grain reaching the market. According to the IBRD report, "More drying facilities for corn will be especially important in Mindanao and the Cagayan Valley, where very large increases in output can be expected in the future."<sup>13/</sup>

The IBRD report states "The physiography of the islands makes transport difficult between islands and intra-island, adding substantially to the costs of marketing, and thus lowering prices to producers. Roads, especially feeder roads, and ports are needed to facilitate inter-island, intra-island and export shipment."<sup>14/</sup> Mears agrees with the IBRD Team but adds, "improved transport infrastructure and management will help facilitate the realization of floor and ceiling price policies and a more efficient market."<sup>15/</sup>

According to Mears "transportation and handling costs (of rice) account for one-third of the total margin, milling for 20 to 25 percent with middlemen and processing margins about 30 percent."<sup>16/</sup>

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<sup>12/</sup> *Rice Economy of the Philippines*, Mears, p. 114.

<sup>13/</sup> IBRD, *op. cit.*, p. 51.

<sup>14/</sup> IBRD, *op. cit.*, p. 51.

<sup>15/</sup> Mears, *op. cit.*, p. 181.

<sup>16/</sup> Mears, *op. cit.*, p. 255.

Inadequate marketing system: Lack of storage processing facilities in the rural areas aggravate low farm prices and result in higher prices to the consumer. The lack of profitable production incentive is particularly severe in areas remote from large urban centers, especially when dealing with highly perishable farm commodities. Although the GOP has announced ambitious goals for the Food Terminal Incorporated and has launched plans for a series of trading centers, lack of infrastructure inhibits the growth of viable commercial enterprises in the rural areas. Aside from roads, the lack of bulk handling and portside refrigeration facilities and well-maintained rural road networks continue to limit the growth of agricultural markets. As a result, low production price incentive to the farm and commercial marketing sectors exist.

6. Inadequate Irrigation and Flood Control

The GOP estimates the total land area covered by existing irrigation facilities at 958,000 hectares with the total crop area served in both rainy and dry seasons at 1,109,000 ha. The IBRD team estimated that only about 883,000 ha were actually irrigated.<sup>17/</sup> Operations and maintenance of existing systems is a continued problem with many projects needing complete rehabilitation to be more efficiently used. Inadequate water supply is a major problem of many systems.

Gravity irrigation systems account for about 0.7 million ha of the cropped area and are divided into two main groups. Approximately 0.4 million ha are operated and maintained by the National Irrigation Administration (NIA). The remainder of the area is serviced by communal systems operated by private farmers. Two-thirds of the communal systems have either been built or rehabilitated by NIA.

Pump irrigation projects serve a cropped area of about 150,000 ha and were developed and supervised by the Irrigation Service Unit formerly under the Bureau of Public Works, but now under the NIA. Inadequate maintenance of the pumps and water shortages are the major causes of disappointing performance.

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<sup>17/</sup> IBRD, *op. cit.*, Annex 3, p.1

The IBRD team reports that after the 1972 floods, NIA prepared revised goals for the development of irrigation for the period FY 1973-76 that provided for about 344,000 ha under gravity systems and 126,000 ha under pump systems. During the FY 1973-75 period, 187,000 ha were brought under gravity systems and 96,000 ha under pump systems. The IBRD team concludes that performance will likely fall short of these goals.<sup>18/</sup>

Irrigation in rather widespread areas will be essential if the Philippines is to achieve self-sufficiency in food production. Since new land will not be available, the only means of intensified production on existing land will be through irrigation. This will require intensive efforts in rehabilitating existing systems, building additional facilities and encouraging private investment. The IBRD team estimates that for rice self-sufficiency between 1975 and 1980, irrigation facilities will have to be expanded to some 360,000 ha.

7 Inadequate Management of Production Credit<sup>19/</sup>

Until 1973 there was a severe lack of institutional credit for crop production in the Philippines. Since that time the GOP has successfully and rapidly expanded the amount of production credit being made available to small farmer producers. However, collection rates have fallen precipitously over the past year to 51% for Phase III of Masagana 99 and unless corrected, this trend could dry up credit sources, thus undermining the GOP increased food production objective. It appears that too much unorganized credit is being provided from too many sources through too many organizations with unplanned and self-serving interests.

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<sup>18/</sup> IBRD, *op. cit.*, Annex 3, p.2

<sup>19/</sup> Sources: a. Glenn Browne "Agricultural Credit in the Philippines - Spring 1975", USAID, March 1975.

b. Richard V. Bernhart, et. al., "Final Report - Philippine Accelerated Rice Production Program", ATAC, March 1975.

c. Department of Agriculture, "Masagana 99 Program Summary", Government of the Philippines, March 31, 1975.

### C. Constraints to Expanding Agricultural Exports

The producers of export crops face many of the same constraints as food growers. Recently, the most serious problem has been the rapidly escalating cost of production inputs. High production cost is one of the most serious problems in the sugar industry. Sugar yields have dropped by 30 percent since the 1950's, mostly due to the expansion into marginal areas for sugar production.<sup>20/</sup>

To compete in the world sugar market, in the absence of sugar quotas, the industry will need to become more efficient. Development of disease and pest resistant varieties of seed stock as well as improvements in irrigation facilities continue to be important to improved production efficiency.

Coconuts are basically a small farmer industry with 68 percent of the coconut farms being under five hectares. Plant disease is a serious problem in some areas. Much work needs to be done in developing disease-resistant high-yielding varieties. Traditional systems for making copra result in uneven drying, which in the high humidity, stimulates growth of molds and attracts insects making the copra susceptible to aflatoxin contamination. Much remains to be done in improving the processing of copra for the export market.<sup>21/</sup>

Bananas and pineapple are grown by vertically integrated industries with constraints within the context of those industries. The production of abaca and other crops have the usual production constraints plus the vagaries of the world market demand.

Government programs on the various export crops are geared principally to increasing production, decreasing production cost by increasing yield per hectare, improving quality and raising farm incomes. Programs concerning the major traditional exports are oriented to a total

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<sup>20/</sup> IBRD, *op. cit.*, p. 25

<sup>21/</sup> IBRD, *op. cit.*, p. 27

rationalization of the industry. In general, however, government projects relating to the production of export crops are essentially limited to extension work, research, seed production and credit assistance.

#### D. Constraints to Conservation of National Resources

There are some 14 million ha of productive or commercial forest lands in the Philippines. Most of the commercial forests area is under license for timber cutting, and about 80 percent of logs produced are exported, almost all to Japan. Wood processing operations in the Philippines are still quite small. The local lumber industry is primarily oriented to the domestic market and operates well below capacity.<sup>22/</sup>

The commercial forest land area has been reduced recently by about 200,000 ha a year, from the legitimate release of land designated as suitable for agricultural use but largely from illegal logging operations and the inroads of squatters who engage in shifting cultivation. Unfortunately, much of the illegal activity has taken place on lands that should remain treed, because of steep slopes or other characteristics. As a result lands have been denuded, heavy run off problems and soil erosion are evident, particularly, in Central Luzon where large areas have been taken over by the useless cogon grass which is difficult to eradicate. The IBRD report estimated that 1.4 million ha. of important watershed lands are critically degraded, with replantings averaging less than 10,000 ha. a year during the past decade.<sup>23/</sup>

#### E. Administrative and Institutional Constraints

Agricultural administrators are confronted with critical financial and personnel problems as they seek to improve the responsiveness and competence of their respective agencies in meeting assigned responsibilities. Civil service pay scales do not attract and hold higher quality college graduates. Often field workers cannot be provided small amounts of

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<sup>22/</sup> IBRD, *op. cit.*, p. 36.

<sup>23/</sup> IBRD, *op. cit.*, p. 37.

demonstration materials, travel allowances and even their pay when they are needed, damaging morale and inhibiting satisfactory job performance. Failure to keep personnel policies competitive with the dynamic private sector leads to a heavy resignation rate of professional cadres that, in turn, creates a demand for in-service training and job orientation for new employees distracting and inhibiting agency performance capacity.

These troublesome and frustrating administrative bottlenecks add to the structural weakness of the individual institutions and restrain their capacity to function in a mutually supporting manner.

The Philippine agriculture sector possesses a set of institutions required to support sharp gains in productivity and diversification of production, but none of the institutions meet quality and quantity performance standards associated with announced agricultural development goals. Statistics are generally not available on a geographic basis and in the time frame needed to support formulation and timely adjustment of major policies such as: price levels and stabilization; import-export regulation for production inputs and output; and terms and amount of production credit. The extension, research, training, credit, input supply and marketing institutions are rapidly securing adequate numbers of suitably trained staff to mount effective production program for a single commodity -- rice. However, in many cropping regions there is minimum cooperation among these agencies to secure unified, cooperative action in support of individual farmers. Organization of such teamwork for other principal export and food crops is just getting underway. These institutions have little capacity to deal with the individual farmer and his problem of securing optimum returns from his land and labor resource or to deal with the issues of cropping systems.

A set of local institutions also exist that are partially effective. Many irrigation distribution systems do not deliver water when desired and fall into a state of disrepair through ineffective maintenance resulting in wasted irrigation water at best or fail completely when engines are not maintained and repaired. Several local credit institutions provide pro-

duction credit, but intermediate and long term loans are generally not available to small farmers. Input delivery points are frequently located at provincial capitals and larger municipal towns creating a transport problem and considerable inconvenience involving time loss in making purchases and securing deliveries. Frequently, inputs are not available in the recommended quantity and at the precise time when the farmer should use them to secure optimum returns. Markets for farm products are not well organized and offer relatively stable farm prices only in the case of rice. Ordinarily, farmers do not have access to current market prices even though the national market news service is functioning satisfactorily for the major wholesale markets. As new crops are introduced, market development is a concurrent requirement.

Tradition and political forces reinforce existing institutional structures and inhibit reorganization of governmental agencies. In contrast, the private sector is pragmatic and dynamic.

#### IV. AGRICULTURAL SECTOR POLICIES

##### A. **Basic Development Policies**<sup>1/</sup>

The Government of the Philippines has listed the following basic development policies:

1. Private enterprise shall remain the medium of economic progress within the guidelines defined by the government.
2. Monetary, credit and fiscal policies shall be employed to promote economic growth and stability.
3. Greater labor utilization shall be encouraged through the use of various instruments available to the government and through the institution of reforms in labor laws, regulations and practices.
4. Industries in established areas of priority will continue to be accorded incentives under the country's investment incentives laws. Further rationalization of industry shall also be undertaken, taking into consideration the availability of resources, the size of existing or potential markets and the regional location of specific industries.
5. Agricultural development shall be emphasized in harmony with industrial development in order to expand agricultural production, attain self-sufficiency in basic staples and raise farm incomes.
6. Exports shall be expanded and diversified through various instruments available to the government.
7. Foreign investments shall be encouraged especially in the defined areas of priority. Laws and regulations covering foreign investments shall be liberalized without prejudice to national sovereignty.
8. A realistic exchange rate shall be maintained in order to promote exports and, in general, to maintain external stability.

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<sup>1/</sup> *Four-Year Plan, op. cit., p. 19.*

9. Within the government, efforts at streamlining the administrative machinery for coordinated planning and implementation shall be continuously pursued.
10. Steps will be taken to restructure and provide continuing support to the educational system so as to develop the manpower skills required by future development.
11. Infrastructure development shall continue to be accorded high priority by the government.
12. Price control shall cover only basic commodities; it is not intended to become an integral part of the economic system. It is only an interim measure designed to discourage speculation, control monopolistic profits by providing for an allowable rate of return to investment, and encourage efficiency through better cost management.
13. International cooperation, compatible with national interest, shall be promoted to ensure understanding and collaboration particularly with other Asian countries.
14. Foreign economic policy will strive towards a diversification of the country's sources of imports and of markets for its export products.

## **B. Agricultural Development Policies<sup>2/</sup>**

### Dynamic Flexibility

The GOP's adoption of the policy of "dynamic flexibility" in the economic system is designed to loosen certain constraints in the formulation of policies and serve to make policies responsive to rapidly changing situations.

### Classification of Policies

The policies may be classified as: policies that stimulate and enhance production (production-oriented); policies which increase demand for labor and increase income (employment/equity-oriented); and policies for the benefit of consumers (consumer-oriented).

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<sup>2/</sup> Primary Source: NEDA Unpublished Paper, op. cit., Part VI.

## Production-Oriented Policies

Policies to stimulate agricultural production are evident in the areas of farm credit, input subsidies, farm price support, extension services, and infrastructure.

1. Credit Policies. In anticipation of the withdrawal of landlord credit to the beneficiaries of the land redistribution effort and in support of the GOP's food production programs, credit has been expanded through various monetary instruments and institutions.

Foremost of the measures currently being pursued to expand rural credit are:

a. The sale of Central Bank Certificates of Indebtedness to mop up excess liquidity in the urban areas and redirect them to the rural areas through the liberalized rediscounting of rural bank eligible loan papers granted under supervised credit.

b. Beginning 1973 and related to the GOP's drive to recuperate from the preceding year's losses in food production, collateral requirements for rural bank and Philippine National Bank borrowers were relaxed such that farmers participating in the government food programs can borrow without the usual real estate or chattel mortgage collateral.

c. 100 percent rediscounting by the Central Bank of all eligible rural bank and Philippine National Bank papers covering loans granted under the supervised credit scheme at a preferential rate of not more than 3 percent per annum was initiated.

d. Expansion of the rural banking system from 655 as of September 1974, with the objective of establishing 45 to 100 rural banks per year, to 1,015 in 1977 has commenced. The rural banks development program has announced the goal of raising the rural banks present lending capacity of ₱1.2 billion to ₱3.1 billion within the four-year plan period.

e. During 1973, Philippine National Bank mobile banks, in support of the rice and corn production programs, were introduced. Consisting initially of 90 jeeps and 2 helicopters, they demonstrated a timely and quick lending approach to hinterland farmers. The effort should be directed at sustaining the initial enthusiasm with which this new lending approach was received.

f. Coverage was guaranteed by the Land Bank of up to 85 percent of production loan losses (currently limited) on rice, corn, sorghum and soybeans under supervised credit. In Muslim areas, all types of production are extended guaranteed coverage up to 80 percent. In the event of calamities, all borrowers can restructure their short-term loans up to a maximum period of 3 years. They can then be granted new loans to enable them to recover their losses and pay back the restructured accounts.

g. To take care of part of the credit needs in the Mindanao areas predominantly populated by Muslims and devise a credit system that conforms to the Muslim's socio-cultural and religious beliefs, the Amanah Bank was established in 1973 with public funding.

h. To help expand sugar production, the ceiling on crop loans per picul of sugar was raised from ₱30 or ₱35 to ₱60, with Philippine National Bank allocating an additional financing of ₱300 million for sugar.

i. Central Bank Circular No. 408 (May 31, 1974) which strengthens PD 57 (November 19, 1972) and Section 34 of the Agricultural Land Reform Code (R.A. 6389) directs all lending institutions, public and private, to set aside 25 percent of their loanable funds for agricultural credit, effective November of 1974. Some ₱4.8 billion should be generated.

2. Supervised Credit Policy. Corollary to expanded credit, farm technical supervision has been made a component of all loans extended to farmers participating in the major food production programs. This is an initial attempt to expand the supervised credit system. Government extension workers are assigned to rural banks, the Philippine National Bank and the Agricultural Credit Administration to assist the farmers in the preparation of a farm plan and budget which becomes the basis for the loan, to advise in the technical aspects of farm activities and to act as the credit collection agent for the lending institution.

### 3. Input Subsidies

a. *Fertilizer.* In order to reduce prices of fertilizer which have trebled or quadrupled over the 1971 price level and to ensure its use in the GOP's crash rice program, a fertilizer subsidy program was adopted in late 1972 and opened to farmers participating in the GOP's food production programs. Fertilizer sold at regular prices are, in effect, also subsidized in terms of import taxes and duties not levied by the GOP as collection of these were suspended.

As an additional measure to ensure supply in areas programmed for food production, an allocation system has been devised giving priority to the requirements of food programs and export crops.

To alleviate the supply problem, activities in the exploration of local guano and phosphate rock fertilizer are encouraged. Surveys of these resources are being undertaken by the Bureau of Mines, while the Development Bank of the Philippines has evolved a credit program to finance mining activities.

In the private sector, a program for expanding total capacity of fertilizer plants has been designed. The initial expansion will involve installation of 2 new plants for phosphate fertilizer production as well as a complex modification of present urea production facilities. To be undertaken by Planters Products, Inc., the expansion will produce an additional 132,000 tons/year to the present capacity of some 390,000 tons.

Among the above, the fertilizer subsidy program merits scrutiny and review by the agencies involved. The program's cost to the GOP in direct subsidies was estimated by the Fertilizer Industry Authority to reach ₱200 million for crop year 1974/75. The present two tier pricing system has resulted in some undesirable, but inevitable, results. It is noted that black marketing, for example, has become highly profitable and rampant.

The use of more locally available organic fertilizers such as guano and compost should be stressed and local intentions for processing organic fertilizer materials encouraged.

b. *Farm equipment subsidy.* A policy of subsidizing farm equipment indirectly is evidenced in the measure granting exemption to priority endeavors from taxes and duties on imported farm equipment and machineries.

#### 4. Farm Support Price

Farm floor prices are established for the essential crops as incentives to producers. There are support prices for rice, corn, sorghum, and tobacco. In the formulation of floor prices, a minimum ₱5.00 profit over costs has been assured for rice and corn producers. The National Grains Authority, as the marketing board for the cereal crops, is authorized by law to procure local produce where and when farm prices go below the support price.

The GOP rice price policy has had as its objective the attainment of a "cheap rice for consumers" policy, while still providing producers with a support price high enough to encourage increased production.

Thus currently a ceiling price has been imposed on retail prices while production inputs for producers has been subsidized. As input costs have risen by three times over the past 18 months the subsidy on inputs is now inadequate and their use is declining. Therefore, producers, millers and retailers are caught in a cost price squeeze.

The achievement of the twin goals of high income for producers and low price for consumers requires more efficient production, i.e., investments to increase productivity, such as in irrigation and research (which usually cost much less than rice price programs). Therefore, attention is being given to a) increased investments in irrigation and research and b) limiting price policy programs to counteracting short-run seasonal price fluctuations due to exogenous factors, e.g., weather. Furthermore, rice price programs that supplement rather than depress the private trade are being devised and selected with timely import controls complemented by a buffer stocks program. Also, a grain exchange which would provide an efficient market information mechanism to traders and the GOP has been proposed. A crop reporting and price outlook service is developed and the release and dissemination of this information being systematized.

#### 5. Irrigation and Feeder Roads

Policies on irrigation have reflected a conscious attempt to hasten the development of irrigation systems as reflected in the National Irrigation Administration's Ten-Year Irrigation Program. The bulk of foreign assistance has

been solicited for irrigation facilities. The timetable for the completion of the Upper Pampanga River Project was accelerated, and the plan in the next ten years is to irrigate a total crop area of 2.14 million hectares. As a matter of policy, priority is given to rice lands.

The development of rural feeder roads is similarly a major thrust of the present infrastructure program.

6. Others

Three measures designed to increase production of rice, corn and other food crops deserve mention:

a. General Order No. 47 (May 27, 1974) requiring all domestic corporations and partnerships having a work force of at least 500 employees, to supply their employees' rice/corn needs through imports or even their own production; the National Grains Authority serves as the coordinating and implementing agency.

b. Presidential Decree No. 472 (May 24, 1974) directing holders of permits or lessees of grazing lands in the public domain to utilize suitable portions for the production of rice, corn and other food crops; some 22,000 hectares of land were programmed for cultivation during the last crop year. The Department of Natural Resources is the coordinating and implementing agency.

The justification for pursuing these measures lies partly in the current and predicted world-wide grain shortage which has made difficult locating possible supplies and ensuring delivery, apart from the high cost importation now involves. But the attempt to increase the output of rice implies inevitable conflicts between present and future uses of existing resources. For instance, utilizing portions of pasture lands for growing rice would simply reduce land available for growing cattle which the GOP is also trying to promote. If it were true that of total leased pastureland only about 30 percent is utilized, then for the foreseeable future, there is not so much reason for concern. Nonetheless, the time will come when the question of trade-offs between rice and cattle production will have to be resolved.

The same might be said in the current plan requiring forest concessionaires to provide space for producing rice and/or corn. Reportedly, no cost-benefit analysis has been made in planning the program, but potential conflicts exist

with GOP's objectives of encouraging industrial tree planting, acceleration of the reforestation of open and denuded areas, and the "slash and burn" management program calling for eviction of slash and burn farmers and other illegal occupants of public forests. The forest ecosystems also deserve consideration in making these decisions.

c. The policy promulgated by PD No. 331 (November 8, 1973) requiring that all public forests be developed, managed and utilized on a sustained yield basis, implies continuous or periodic production with the aim of achieving at the earliest practicable time an approximate balance between growth and harvest or use. This also has a beneficial effect on agricultural crops in terms of regulated water supply. As conservation tools, the protection of forests for sustained use, reforestation and industrial tree plantation are indirectly crucial to agricultural production, as these help prevent floods and soil erosion as well as the silting and sedimentation of rivers, dams and reservoirs.

#### Employment/Equity-Oriented Policies

1. Agrarian Reform Among the policy instruments the GOP has adopted, agrarian reform has the widest implications and intent in the attainment of a more equitable distribution of income and wealth and the improvement of the small farmer's social status.

Successive measures affecting land reform were instituted following declaration of martial law. Foremost among these are (1) declaration of the whole country as land reform area; (2) land to the tillers; (3) measures providing credit for land amortization for production; (4) organization of new institutions, e.g., Samahang Nayan, Kilusan ng Bayan, and the policy of requiring membership in these village-level associations as prerequisite to enjoying the benefits of agrarian reform.

2. The policy of promoting, encouraging and vigorously supporting the use of new techniques of cereal production is in itself a policy that is not only production-oriented, but is labor-demanding as well. Increased employment is implicit in the new technologies in rice culture requiring intensified production and permitting double cropping. The new techniques, however, are mainly applicable to irrigated areas — implying that their impact on employment is limited and concentrated in particular regions or areas. The

intensified rice program of the GOP is currently limited to only about a third of the cropped area and includes areas with better than average yields. Farmers in these areas are assured of credit, production inputs, and technical supervision. The remaining unprogrammed areas constituting the other two-thirds have access to the usual farm extension service.

If the full potential of the new output increasing techniques in decreasing underemployment is to be realized, more investment in irrigation is needed. In the meantime, policies which tend to favor areas which are better off in the first place in terms of yields might have to be modified or projects shaped directing attention to the unprogrammed areas.

3. The inclusion of labor-intensive fishing industry and other agricultural endeavours, in the Investments Priority Plan is another policy which increases the demand for labor.

4. The price support policy for some agricultural wage products, more particularly rice and corn, and the fertilizer subsidy program are also intended as income-increasing devices for the smaller farmers. However, some questions are raised as to whether these measures do in fact benefit smaller farmers; (1) because small farmers' production is mostly for their own consumption; the size of their farm land being relatively small resulting in little marketable surpluses, if any; and (2) the fertilizer subsidy program would also seem to benefit the farmers who are somewhat better off judging from the areas selected for participation in the National Food and Agriculture Council program. It is also rather limited in extent in terms of number of farmers receiving benefits from the program. For instance, the number of farmers participating in the Masaqana 99 rice program for the period May-July 1974 (434,714 farmers) constitutes roughly only 25 percent of total rice farmers.

5. Policy on farm mechanization. So far, no clear-cut policy seems to have been enunciated with regard to farm mechanization although the availability of aid-funds (e.g. CB-IBRD Mechanization loan fund), tax free importation for favored agricultural activities, point to a policy favoring mechanization. The use of labor intensive farming methods has been advised as a means for alleviating the employment problem and recommendations have been made for caution on

encouraging use of larger farm machinery which does not add to production.<sup>3/</sup> On the other hand, the Department of Agriculture believes that a rigid policy against the use of machinery would not be realistic nor desirable. Recognizing that not all mechanization has an adverse effect on employment, a few criteria might be adopted towards spelling out the policies.

Aside from the criterion of whether such mechanization would be essential for increasing output, for purposes of defining the policies, it might be worthwhile to consider the following circumstances where mechanization can have positive effects:

1. Where operations can be performed only slowly or inadequately using hand methods or which take place at times of peak labor demand when labor is in fact a scarce resource.
2. Where use of tractors for rapid land preparation will permit an increase in double cropping.
3. Where use of other implements, such as small mechanical threshers would be required to handle the increased harvest and materially reduce losses in the processing occurring on farm.
4. Where mechanization is to be opted for, the use of locally manufactured tillers, tools and implements can be favored over imported equipment.

#### Consumer-Oriented Policies

The following policy measures indicate concern for consumers:

1. The Price Control Law (PD 234) imposing retail price ceiling on rice, corn and other basic staples.

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<sup>3/</sup> See International Labor Organization (ILO) Sharing in Development: A Programme of Employment, Equity and Growth for the Philippines, Vol. I, Geneva, 1973, pp. 61-66.

2. General Order No. 47 requiring private companies with a work force of 500 or more to supply the three-month need of their employees with rice at subsidized prices (P1.90 per kilo) during the year 1974.
3. The quota allocation system for sugar and the adoption of measures designed to meet domestic demand for sugar.
4. The adoption of a subsidized, lower selling price of coconut products for domestic use compared to export price.
5. Enforcement by the military, with detention power, of the price control law, and military sanctions against hoarding and profiteering acts.
6. Imports of cereals by the National Grains Authority during times of supply shortages.
7. As a function prescribed by the law creating the cereal agency, the National Grains Authority can engage in building up buffer stocks of rice and corn through local procurement or imports for sales in places where there are shortages.

#### **Agricultural Land Use Policy**

The population pressure and the competing demands on land for food crops, export crops, forage, pasture, and forests production underscore the importance of enunciating a policy on agricultural land use. Based on what the government wants to promote and based on the lands' more optimum uses, which have yet to be comprehensively identified, definite policies can be formulated to resolve present and future conflicts.

As an initial requirement, the data base, including information on land categories, land use pattern and classification of some 8 million hectares of unclassified land needs to be completed.

A number of specific agricultural land use policies affecting particular crops have been promulgated, some of which are evident in the following decrees:

1. Presidential Decree No. 262 (August 2, 1973) which authorizes the use of virgin public lands for rice, corn and other staple crops:

2. Presidential Decree No. 427 (24 May 1974) directing the use of suitable portions of public domain leased as grazing lands for the production of rice, corn and other staple crops;
3. Letter of Instruction No. 58 which limits the hectarage planted for banana exports to 21,000 hectares.

National Government Expenditures for Agriculture

National GOP investment in the agricultural sector since FY1972 confirms the GOP policy of placing more emphasis on agricultural development. Since FY 1972, national government expenditures in the sector have increased as follows:

<u>FY</u>	<u>US\$ Million</u>
1972	76
1973	184
1974	369
1975 (estimate)	339

Source: NEDA (₱7.00 = US\$1.00)

## V. AGRICULTURAL SECTOR PROGRAMS AND PROJECTS <sup>1/</sup>

### A. Agrarian Reform

One of the cornerstones of the "New Society" following Proclamation 1081, agrarian reform is the promise that land would be distributed to the farmer-tenants. Agrarian reform is now being pursued in greater earnest as the major obstacles impeding the meaningful implementation of past land reform programs have been removed.

Utilizing an integrated approach, the program activities encompass the following areas: distribution of land among the landless and favorable financial arrangements for tenant land purchaser; security of tenure and fair rents; improved methods of cultivation through technical services; credit provision; cooperative marketing facilities; provision of infrastructure to ensure farm viability, and land consolidation.

#### 1. Operation Land Transfer

Operation Land Transfer was launched in November 1972 by the Department of Agrarian Reform following PD 27 (October 21, 1972). If its present targets are achieved, some 760 thousand hectares of tenanted rice and corn lands will have been transferred by 1977 to about 420 thousand farmers from about 40 thousand landlords with holdings in excess of 7 hectares. Implementation of the transfer of ownership is proceeding in stages. The first stage involved estates of 100 hectares and above. The authority to proceed to the 2nd priority groups (50-100 hectares) was given in mid-1973, for the 3rd (24-49 hectares) in October 1973, and for the 4th (7-23 hectares) in November 1974. An estimated 520 thousand rice and corn tenants on landlord holdings 7 hectares and below will receive increased security of tenure through written leasehold contracts.

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<sup>1/</sup> Primary Source: NEDA Unpublished Paper, op. cit.

The land transfer certificate is the official means of identification of the plot which the tenant is entitled eventual ownership and which he is prohibited by decree to transfer to anyone except by hereditary succession. Within the first year-and-a-half, certificates covering about 40 percent of the targeted area were issued to some 179,000 farmers or about 43 percent of the total number of tenants included in the program. Projected for accomplishment during FY 1975 is the transfer of an additional 40 thousand hectares to some 20 thousand farmers. This would bring accomplishment to close to 50 percent of total targeted area, benefiting about 50 percent of the expected beneficiaries of the program.

2. Land Valuation and Compensation

With the objective of diverting landlord capital in agriculture to industrial development, the second phase of Operation Land Transfer, which is land valuation and landowner's compensation, was implemented in January 1974. As of May 1975, over 100 million pesos were paid as compensation to farmer landlords.

3. Land Acquisition, Distribution and Development

This phase of the program is undertaken to convert lessees in private agricultural lands not covered by Presidential Decree No. 27 into owner-cultivators; to clear, survey, and develop public agricultural lands for the settlers to cultivate and improve; and grant land patents and/or landlease to said settlers. Simultaneously, the beneficiaries shall be provided with the essential services to improve their productive capabilities. Included in this program are the following aspects:

a. Land Capability and Classification Survey

This covers aerial photography, reproduction of aerial photographs, photo-interpretation, land use capability, map publication and reproduction. Some 30 million hectares are planned to be covered.

OPERATION LAND TRANSFER: TARGETS AND ACCOMPLISHMENTS BY ESTATE SIZE  
AS OF JUNE 14, 1974

Estate Size (Ha.)	LAND TRANSFER											
	Targets <sup>1/</sup>					Certificates Issued					Targets FY 1974-75	
	Area (Thou. Ha.)	(%)	Farmers (Thou.)	%	Landowners (Thou.)	%	Farmers (Thous)	% of tar- get	Area (Thou. Ha.)	% of tar- get	Farmers (000)	Area (000)
100.0 & over	410	30.6	164	15.2	1.5	0.7	71.1	43	135.2	33	29.4	149.2
50.0 - 99.9	139	10.4	70	6.4	2.1	0	33.8	49	58.0	42	24.4	71.8
24.0 - 49.9	134	10.0	89	8.3	4.1	1.9	26.1	29	43.8	33	43.3	81.8
12.1 - 23.9	190	14.1	189	17.6	12.0	5.4	16.7	9	26.9	14	—	—
7.1 - 12.0	154	11.4	171	15.8	18.1	8.2	7.8	5	12.6	8	—	—
7.0 & below	<u>316</u>	<u>23.5</u>	<u>395</u>	<u>36.6</u>	<u>183.2</u>	<u>82.9</u>	<u>23.4</u>	<u>16</u>	<u>29.6</u>	<u>9</u>	—	—
	1343	100.0	1079	100.0	221.0	100.0	179.0	17	305.8	23	57.1	302.8

<sup>1/</sup> Updated December 1973

<sup>2/</sup> 1st Priority

<sup>3/</sup> 2nd Priority

<sup>4/</sup> 3rd Priority

Source: Department of Agrarian Reform, 2nd and 3rd Quarter Reports, Operation Land Transfer, FY 1973-74.  
Annual Program FY 1974-75, June 30, 1974.

*b. Land Acquisition*

This involves the acquisition of private agricultural lands not covered by P.D. 27 for redistribution to bona fide farmers and public lands for rural settlements. Programmed to be acquired from the public domain are some 299,500 hectares in four (4) regions which shall be developed into agricultural settlements.

*c. Land Surveys*

This involves the boundary, topographic and subdivision survey to be undertaken by the Department of Agrarian Reform on acquired public and private agricultural lands. It is aimed at establishing economic family-size farms and developing the area into a comprehensive and well-balanced community.

Targeted in FY 1975 are some 149,200 hectares for topographic survey and the subdivision survey of 76,700 hectares in landed estates and settlement projects. These would entail an estimated cost of ₱10.13 million.

*d. Land Development*

To pursue the objectives of establishing cooperative-cultivatorship among those who live and work on the land as tillers and establishing economic family-size farms as the basis of Philippine agriculture, the establishment of pilot projects on land consolidation has been planned and shall be initially pilot-tested in the landed estates and settlement projects.

**B. Food Production Programs**

Food production programs in rice, corn, feedgrains, poultry and livestock, fish, fruits and vegetables are undertaken as a group effort and coordinated by the National Food and Agriculture Council. Eleven regional action officers, mostly political leaders, were appointed to assist in the monitoring and implementation of the food drive.

The specific objectives of the food programs as delineated by the NFAC are:

- (1) Continued expansion of rice production in which efforts shall be made to attain and maintain rice self-sufficiency by spreading the high-yielding rice strain on gradually expanding irrigated areas.
- (2) To bridge the protein gap and improve the intake of protein in the diet through the encouragement of production of high protein foods.
- (3) To help expand exports by developing export manufacturers who will utilize anticipated surplus in yellow corn, sorghum, cornstach, poultry and pork.

Generally, the food program concentrates resources in priority areas, by using new production techniques, farm extension activities designed to educate the farmer, applied research and supervised credit, agricultural diversification or multiple cropping.

In terms of physical targets, planned production growth rates for the cereal crop is 5.5 percent, 7.3 percent for meat, and 5.8 percent for fish.

1. Rice Production Programs

The main thrust of the food production effort is focused on rice. This includes two nationwide programs -- Masagana 99 coordinated by the NFAC, and the Palayan ng Bayan coordinated by a national advisory council, under the chairmanship of the Undersecretary of the Department of Agriculture.

a. Masagana 99

Launched in 1973, this program aims at removing production constraints. Areas that are to receive support are identified; and credit, purchased inputs, and technical supervision are made available to rice farmers. Price and marketing support are provided by the NGA. Areas with better than average production potential

are selected after identification by the provincial technicians. For immediate impact, the main criterion is irrigation under lowland conditions; some 75 percent of total irrigated crop areas are included in the 1974/75 crop year program.

Covering about a third of the cropped rice area, roughly 65 percent of total production for crop year 1974-75 is expected to come from the programmed areas. During crop year 1973-74, about 60 percent of total production was attributed to Masagana 99. The self-sufficiency target in the four-year agricultural plan is envisioned to be attained in 1977.

The FY 1975 Masagana 99 program features a direct seeding scheme (Sabog Tanim) utilizing a new disease-resistant variety (IR-26) developed at IRRI. This technique enables two croppings for the wet season in some areas. Harvests from the first crop can be timed to coincide with the low supply months.

Farmer-participants are generally assured of certified high yielding seed varieties and fertilizer inputs at subsidized prices. Financial agencies, participating in the supervised credit lending, are the PNB and its 101 branches/agencies, 120 jeeps and 2 helicopters; the rural banking system through some 443 rural banks; and the Agricultural Credit Administration through its 29 branches.

It is noted that planning for the program is made on a short-term basis, and projections of input and credit requirements are made on a season to season basis.

b. *Palayan ng Bayan*

A project established in 1973 by virtue of PD No. 262 (August 2, 1973), Palayan ng Bayan aims to contribute to production by opening up uncultivated lands. The project involves the provincial governments selecting sites and implementing the projects.

Unlike the Masagana 99, this program is not a beneficiary of the fertilizer subsidy program, and provincial governments are generally left to their own devices for the distribution and marketing of the harvests.

Participating provinces, numbering 65, get the funding from the PNB, the relending institution for some ₱200 million raised through the cereal bonds procured by government financing institutions. Loans are for a maximum of 300 hectares, financed at the rate of ₱1000 per hectare for rice and ₱800 per hectare for corn production, land, and are payable in two years at zero interest rate.

Infrastructure built in support of the projects includes some 340 kms. of new roads and 40 irrigation systems.

The amount of cultivable lands actually located as of June, 1974 is small in relation to the total rice area. Some two months after the start of the program a target area of 77,000 hectares was identified.

The inclusion of areas that are mountainous, steeply hilly and thickly forested provides some justification for a review of the target areas. In view of the government objective to conserve and develop the country's forest resources as a measure to prevent calamities brought about by typhoons, e.g. flooding, silting, soil erosion, and drying up of agricultural lands, indiscriminate land expansion might ultimately lead to more negative results than good.

## 2. Intensified Corn and Feedgrains Production Program – Masaganang Maisan

Receiving the second major emphasis, the production of white corn and feedgrains under the program involves programmed areas in 43 provinces. The program is geared primarily to meet the growing need of the animal feeds industry, to supply potential export markets, and to provide for the growing industrial uses for corn. Though not specifically mentioned in the program objectives, the program does not lose sight of the nutritive value of white corn and its substitutability for rice.

A modest start has been made in the production of sorghum and soybeans which have traditionally been imported in considerable quantities. Like the Masagana 99 program, the program package includes supervised credit, provision of cash inputs, and a fertilizer subsidy, as well as marketing support. Credit is provided by financial institutions participating in the rice program – the PNB, rural banking system, Agricultural Credit Administration and the Development Bank of the Philippines.

## Livestock and Poultry

The meat production program aims at increasing meat and egg supply to meet effective demands and to raise the level of protein intake of the population. For the initial two years of the program (1974-75 and 1975-76), the specific objective is to maximize production of fast multiplying animals like swine and poultry. In the succeeding two years, cattle and carabao production will receive greater attention. Exploration for the production of toned and evaporated milk will be continued within the period.

In the light of the production objectives, the Bureau of Animal Industry (BAI) and cooperating agencies will undertake programs in (1) integrated cattle development development; (2) dairy development; and (3) animal dispersal. In addition, support programs in the areas of animal disease control, artificial insemination, and forage development are being pursued.

### *a. Integrated Cattle Development Program*

The Integrated Cattle Development Program aims at increasing beef production by rationalizing present production techniques.

Three types of cattle-raising projects are envisioned:

- (1) Opening of large-scale ranches (8,000-20,000 hectares) in idle grassland areas. Joint ventures between Filipinos and foreigners will be encouraged to meet the capital requirements of the project. This is hoped to facilitate the development of large tracts of potential pasture land.
- (2) Opening medium-sized (500-2,000 hectares) ranches for which some 20 possible locations have been identified. These ranches will be encouraged to engage in seed grass production for commercial disposition.
- (3) Promoting backyard cattle raising/fattening as a supplementary source of income to small farmers. The project is designed whereby farmers shall purchase one breeder and two fatteners which can be sold in two to three years time. The breeding stock will be retained on the farm. This project is thought to be suitable for the rice/corn farmers to supplement the major produce. Initial priority areas will include land reform areas.

The Government will provide assistance in the form of technical assistance (BAI) in the dispersal of feed breeders, veterinary services; and arrange for credit facilities. The later is available from the DBP, PNB, the rural banks, and even from the ACA in the case of backyard raisers.

#### 4. Dairy Development Program

The program involves the following:

- a. Controlled breeding to improve the genetic make-up of cattle and carabao by which yields of milk per head can be considerably increased. Cross-breeding of native stock with selected bulls will be made which might hopefully result in increases in yields from between 400 to 500 kgs./head/year to at least 3,000 kgs.
- b. Technical assistance directed at improved feeding and management practices through: (1) educational campaigns on sanitary milk production including modern and simplified techniques for farmers; (2) involvement of the Samahang Nasyon in an effort to integrate the cooperative approach in the milk production.
- c. Improved milk collection, processing and marketing through encouragement of linkages between small dairy farms, bigger private dairies, and through promotion of filled milk industries. This is aimed at solving existing marketing problems as well as filling the need for storage systems required to minimize spoilage.

#### 5. Animal Dispersal Program

The program's main objective is to improve the farmer's capabilities to produce meat and fill in the basic production requirement by providing animals at liberal credit terms.

##### a. *Cattle and Carabao*

Breeder cattle and carabao will be distributed to farmers. The second and fourth offspring are to be returned to the BAI as a repayment to allow for a continuous increase in the

supply of animals available for dispersal. Artificial insemination and disease preventive measures are complementary activities in the program.

In the distribution, initial concentration will be in the Muslim Mindanao area to help rehabilitate farmers there. Areas suffering from natural disasters merit priority attention.

b. *Swine*

To broaden the base of swine production, a "piggy bank in your backyard" project has been started in which duly certified sows are distributed to government employees enlisted to participate in the project. The stock is paid on installment within a period of 6 to 8 months. Meanwhile, the BAI extends technical and veterinary services.

The project is being expanded to include about 15 to 20 percent of the employees in government agencies. This scheme might be extended to include the private sector. Around 9,000 head of swine are targeted for dispersal, initially concentrated in the Greater Manila area.

6. *Animal Disease Control Program*

To lower the mortality rate in the animal population, currently averaging 15 percent for livestock, and between 40 and 50 percent for poultry, the BAI activities in four areas will be intensified. This includes vaccination, establishment of regional diagnostic centers for closer surveillance of diseases, and the pursuance of a more effective quarantine program by establishing more quarantine stations in densely animal populated areas.

7. *Vegetable Production Program*

In order to reduce the vegetable deficit in the national requirements of 2.5 million metric tons, a vegetable production program was drawn up by the BPI to produce about 1.0 million metric tons of vegetable for the year 1974-75 and to increase the annual production target by 10 percent. For the fiscal year 1974-75, the program seeks to cover 162,100 hectares in 22 provinces and one city. The targeted production of 1.0 million metric tons is about 25 percent of the sufficiency level.

To implement the commercial vegetable production program, extension activities will be intensified, seed production and distribution will be undertaken, pest and disease control will be emphasized, composting and the use of inoculants will be encouraged; credit assistance will be made available; marketing tie-up with the Food Terminal, Inc. shall be arranged, and periodic price information shall be disseminated.

For FY 1975, the commercial vegetable farming program involves, among others, 9 regional coordinators, 21 provincial program officers, 22 supervisors, 185 production technicians and includes 7 U.S. Peace Corps Volunteers.

A parallel program in backyard vegetable growing has been designed by the Green Revolution Committee as a supplementary measure to bridge the gap between protein intake and nutritional requirement. The program seeks to encourage households to produce vegetables, rootcrops and fruits, to utilize idle lots and labor, and earn additional income. The implementation of this program consists of four categories namely, (1) backyard gardening for home consumption involving lots of 50 square meters or less with one or two plantings each of malunggay, papaya and banana, (2) backyard gardening (surplus production for preservation and for market) involving lots of 100 square meters or more plantings each of malunggay, papaya, and banana, (3) intensified campaign in the planting of rootcrops particularly in areas where planting of other crops is risky due to frequent occurrence of typhoons and other calamities, and (4) emphasis will be made on the planting of fruit trees having high nutritional value.

8. Expanded Fish Production Program

a. *Objectives*

The objective of the program is to accelerate the pace of fish production in order to meet the effective demand for fish by 1976. It also aims to encourage

processing of import substituting products, e.g., canned fish, recently averaging ₱20 million in foreign exchange annually. The development and expansion of exports of fishery products by 1977 onward is a longer term objective.

In light of those objectives, incremental production has been programmed to reach 84,200 m.t. in 1976.

*b. Strategies*

The major strategy for increasing effective production involves:

- (a) increasing the yield per hectare of inland waters and/or increasing the catch per vessel in marine waters.
- (b) increasing the area of fish pond and/or increasing the number of fishing vessels.
- (c) eliminating wastage in processing, marketing and distribution.

The Bureau of Fisheries and Aquatic Resources (BFAR) will intensify efforts in pursuing extension and research work. Special attention will be given to processing and marketing.

While the Bureau of Fisheries and Aquatic Resources is the major implementing agency of the Program, certain aspects such as financing and marketing are coordinated with the ADB, DBP, CB and other government institutions. Full decentralization of functions of the BFAR will be effected as the over-all organizational set-up will be the basis carrying out the program.

*Proposed Program Package*

The program package consists of four specific programs:

- (a) Fishpond Development Program to accelerate fish production;
- (b) Commercial Fishing Development Program to develop deep sea water fishing and create systematic marketing and

distribution of fish; (c) Municipal Fishing Program to maximize use of inland resources; and (d) Fish and Fishery Products Utilization Program to upgrade fish quality standards and processing.

### C. Infrastructure<sup>2/</sup>

#### 1. Irrigation Development Program

The area under irrigation almost doubled from 620,358 hectares in 1960 to 1,022,225 in 1970. Yet, the percentage of irrigated area for the rice crop remains relatively low, constituting only 34 percent of total rice growing area of 2,632,000 hectares. On the other hand, irrigated cropped area of a little more than one million hectare represents about 40 percent of the total area harvested. The completion of the Upper Pampanga River Project (Pantabangan Dam) will generate an additional 77,000 hectares to the present area under irrigation, or an effective crop area of about 150,000 hectares more under double cropping.

All irrigation activities of the government are under the responsibility of the National Irrigation Administration (NIA). The agency has prepared a ten year development program accelerating the generation of irrigated rice areas that is expected to solve rice production shortage before 1977. Under the program, about 1.35 million more hectares will be irrigated in the next ten years which would generate an estimated 2.14 million hectares of crop areas. The accelerated program is expected to increase the irrigated areas by 134,000 hectares for FY 1975, and by about 125,000 hectares every year for four years thereafter. The program would cost the government about ₱292.8 million in 1974 and ₱415 million every year for the next four years. The primary thrust of the irrigation program is understandably

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<sup>2/</sup> Infrastructure relating to irrigation and feeder roads are discussed more fully in the Infrastructure Sector Study. The present discussion has therefore been limited accordingly.

in rice areas. There are plans, however, to expand the irrigation facilities to benefit other crops such as sugar and feed grains, once potential irrigable areas for rice crop have been served.

a. *Ground Water Resources Survey*

The NIA notes the principal constraint on irrigation development is the lack of reliable water supplies in relation to land areas suitable for development. Reliable data on water resources are unavailable making it difficult to determine with accuracy the potential for irrigation development.

A top priority of the Bureau of Mines is to survey the nation's groundwater resources. During FY 1975, eight surveys are proposed to be completed.

b. *Water Drainage and Flood Control*

While water supply is important, proper drainage is equally important. To further effective irrigation, NIA altered its policy from activities of constructing a system simply to make irrigation water available in an area to an integrated approach. The construction of proper drainage structures, adequate farm ditches, and even farm-to-market roads have been included. Flood protection and river control are as highly essential particularly in areas which have been severely hampered by frequent and intensive typhoons and floods. Flood control projects are components of major irrigation projects in the Bicol River Basin, Pantabangan Dam, in Tarlac, Pangasinan and Cotabato.

2. *Feeder Roads*

The infrastructure program for FY 1974-75 gives priority to "projects directly supportive of food production and distribution." In addition to irrigation, the construction of feeder roads gets special attention.

The construction of developmental and feeder roads totalling 5,478 kilometers is scheduled for the fiscal year 1974-75 in selected production areas, such as Bicol, Mindanao, and Zamboanga del Sur.

Work is to be continued on the improvement of inter-regional and intra-regional trunk lines linking major population centers and production areas. A total of 2,112 kilometers are programmed for completion this fiscal year.

#### D. Agricultural Research Program

High pay-offs have been evident in the Philippines from technological research conducted on experiment stations of agricultural colleges, the International Rice Research Institute, and field demonstrations. The high yielding varieties of cereals easily come to mind when technological breakthroughs are mentioned.

Research continues to be undertaken to improve the strains of cereal and other crops, livestock and poultry as well as to control and prevent pest and diseases. Continuing emphasis must be placed on adaptive investigations that are addressed towards producing varieties that can thrive under adverse conditions and produce profitable yields; that minimize the use of the purchased inputs. Research for the most part receives support from public funds. With more developed export crops such as sugar, private research is being undertaken by milling companies on their own experimental farms.

Agriculture research is not only concerned with the technological aspect, but runs the gamut of crop and livestock management; farm business management; the marketing, storage and transport of farm products; the development of effective farm inputs; pricing of both inputs and products; projection of demand for and the supply of individual farm commodities; the economic impact of land tenancy; socio-economic studies of large irrigation systems; water-resource development management; agriculture and the ecosystem; multiple-cropping; and others.

##### 1. Philippine Council for Agricultural Research (PCAR)

In order to coordinate all research endeavors supported with public funds, the Philippine Council for Agricultural Research (PCAR)

was created in 1973. It has very recently become an agency attached to the Department of Agriculture by virtue of P.D. No. 547 (September 1974).

The agency has the responsibility of defining the goals, purpose, and scope of a national program for agricultural research deemed necessary to support the progressive expansion of the agricultural sector. It approves on all public supported agricultural research studies. More important, it is a vehicle for effectively conveying to government planners and decision makers results obtained from such researches.

Agricultural research has been divided into five major sub-groupings: (a) socio-economic research (macroeconomic), (b) livestock research, (c) fisheries research, (d) soil and water resources, and (e) crops research. Priority areas within each sub-group have been defined and encompass the major areas of agricultural activities including the evaluation and review of policies affecting the sector.

It should be noted that biological and ecological studies have been pointedly included under the forest research group. Ecological research, especially on the effects of chemical fertilizers, herbicides and pesticides to the biological composition of the soil and, on a larger view, the ecosystem — is of particular interest.

## 2. National Science and Development Board

The National Science and Development Board's research and development program in agriculture for FY 1973-1976 places emphasis on varietal improvement, cultural aspects, plant protection and control of pests in crop research. Livestock and poultry research includes cross breeding and strain development, efficient production methods as well as the evaluation of the feed value of locally available feedstuffs. Similarly, a broad array of research

topics in aquaculture has been included in the NSDB's research and development program that includes studies in the ecology of fish ponds, swamps and coves, as well as production, handling and marketing.<sup>3/</sup>

3. Bureau of Agricultural Economics

The Bureau of Agricultural Economics (BAEcon) serves as the main source of data for production, hectarage and yields. It also occupies a special place in the design and undertaking of nationwide and regional studies in agriculture economics. There are currently four on-going research projects by the BAEcon.

Supplementing the BAEcon activities is a special unit within the Department of Agriculture, the Marketing Research Unit which is turning out an impressive number of studies, mostly commodity specific.

Other Public Research Institutions

Other government agencies engaged in mostly technical research for specific crops are: The Philippine Sugar Institute, the Philippine Coconut Research Institute, Philippine Tobacco Administration and the Philippine Virginia Tobacco Administration.

**E. Programs and Projects Related to Marketing, Storage, and Processing**

To assure farmers of a fair price for their produce and to assure the availability of supply to consumers, the government takes an active hand in the marketing, storage and processing of the basic foodstuffs. This involvement is particularly pronounced in the cereal

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<sup>3/</sup> See National Science Development Board (NSDB), *National Research and Development Program, FY 1973, January 1973*, pp. 33-119.

industry in which the National Grains Authority is authorized by Presidential Decree No. 4 to engage in activities towards the promotion of a more stable and integrated development of the grains industry. Among the programs and projects it undertakes are:

**Buffer Stocks Program.** Buffer stocks will be maintained in strategic places throughout the country to stabilize consumer prices especially during low-supply months. Buffer stocks consisting of locally procured or imported cereals are injected into the market when and where conditions warrant.

Local procurement is done either directly from farmers or through procurement agents consisting of private millers and warehouse operators. The NGA has been active in support of the Masagana 99 and the Corn and Feedgrains Program. For the current crop year, the aim is to build up rice buffers amounting to at least 10 percent of expected production. Corn, sorghum and soybeans are included in the agency's procurement list.

In distribution, innovations introduced during the rice crisis in 1973, utilized local government units, the barangays, in addition to usual marketing channels. NGA's general thrust is to strengthen marketing channels with particular regard to development of an integrated cooperative distribution system that would operate parallel to the private marketing channels. Violations of the retail price ceiling decree, black-marketing, diversion of rice, non-display of price tags, and hoarding are dealt with through moral suasion and apprehensions or detentions. Assisting in this drive are the various armed services, e.g. the Metrocom, Philippine Constabulary and local police forces.

#### Grains Storage and Facilities Program

In anticipation of rice production increases to be brought about by the expanded food production program and irrigation, the development and rehabilitation of warehouses, mills and driers are receiving due consideration. The NGA has procured 23 new cono-type mills,

ten of which have been installed. A few things might be taken into account in any program to expand and develop the milling facilities for the cereal industry:

- a. The availability of locally produced cono-type mills, which can have rates of recoveries of rice close to those of imported large rubber-roller mills with simple improvements in design along with better management. Likewise, improvements in quality of output have been shown by milling experts to be highly possible with only nominal additional investments.
- b. Caution must be exercised in planning for additional large imported mills which require relatively large foreign exchange outlays, and which might present difficulties in maintenance, as experienced by early adopters of foreign-made rubber-roller mills.
- c. Elimination of Engelberg type mills must not be considered at all in view of the essential, economic and useful social function they perform for the smaller farmers due to their close proximity to farms and their small scale operations. The latter makes possible processing of small lots of palay (from a few cans to a few cavans) for the farmers and other villagers. This is something not possible with bigger cono and rubber-roller mills since they are geared toward bulk processing and operations are done on a continuous basis.
- d. A milling expert<sup>4/</sup> has reported that a small hulling/whitening mill which has bright prospects as substitute for the Engelberg type mill has been developed in the country. Recovery rate is between 68 and 69 percent and has lower energy and maintenance cost requirements. These rates compare with recoveries of existing cono mills of 66 to 69 percent, and rubber-roller mills' 68 to 71 percent.

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<sup>4/</sup> Harry Van Ruiten, 'Recent Developments in the Rice Milling Industry of the Philippines,' Paper No. 71-80, Agricultural Engineering Department, IRRI.

Other prospects drawn up by the NGA include:

1. The increase of drying facilities in Luzon by 40 units of driers, 10 of which will be distributed in Central Luzon, the rest to other provinces.
2. Expansion of terminal warehouses in provinces, particularly in Central Luzon where harvests are rice is expected to materially increase. In addition, some 20 units for up-country warehouses or bulk silos shall be turned over to the NGA.
3. National grains service centers equipped with modern facilities and equipment and serving as training and demonstration sites for farmers, traders and millers for loss-minimizing methods of post-harvest operations.

Meanwhile, the Terminal Food Market, Inc. has developed a number of programs that are geared towards improving the marketing, processing and storage of meat, fruits, vegetables and fish as well as rationalizing the flow of marketable surplus. The Terminal Food Market complex in the south approach to Manila includes a two-hectare control refrigeration system that can accommodate 12,000 cubic meters of all types of agricultural goods.

4. Demonstration in the Bicol Basin of a viable agribusiness environment directed at benefiting small producers. This initially focuses on strengthening small rice millers' operations through the training of millers and introduction of modified equipment for rice hulling and milling to increase milling yields. The improved hulling technology alone should increase milling rates by ten percent and allow eventual development of a brown rice marketing system as well as other improvements that can be replicated elsewhere in the nation.

**F. Integrated Rural Development Programs<sup>5/</sup>**

Integrated area development programs are viewed within a systems context, where each component of the natural and human resource base

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<sup>5/</sup> Outside of the Bicol River Basin Program other integrated area development programs are currently coordinated by a cabinet coordinating committee of which the Secretary of the Department of Agriculture is Chairman.

is seen in light of its technical and economic and social interrelationships with the others.

To increase per capita income in the programmed area is the major objective. The opportunities for increased production are made possible by providing the necessary support services such as irrigation facilities, roads, flood control, credit, marketing, and suitable rural institutions. The supporting objectives thus include: (1) the increase of agricultural productivity and employment opportunities, (2) the provision of a more equitable distribution of wealth, (3) the promotion of agro-industrial development in the project area, and (4) the improvement of the health and social aspects of development in the area.

Integrated area development programs are envisioned to reinforce and complement the land reform program and the food production programs like Masagana 99. Currently, two programs are in the "implementation" stage while two are in the planning stages.

1. *The Bicol River Basin Program*

The pioneer integrated area development program supported by the USAID started two years ago. Pre-feasibility studies in the areas of water resource development, water management, agribusiness development and industrialization, among others, have been undertaken. The provinces of Camarines Sur, Albay and Camarines Norte are the areas included in the program.

2. *Mindoro Integrated Project*

The project aims to promote rural development. Appraisal and feasibility studies have been completed. A loan of \$25.0 M from IBRD was approved in 1974 and actual implementation has started.

3. *Cagayan Valley Integrated Project*

The development of integrated projects in Cagayan Valley outside of the assistance being sought from IBRD and Canada

calls for a loan from OECF. A Japanese technical mission started studies on project possibilities in August 1974. The project is still currently under study.

4. *Cagayan Valley Regional Cooperative Development Project*

The Cagayan Valley Cooperative Development Project, with a loan of \$6.7 M approved in July 1974, involves the organization of cooperatives at different levels to improve the standard of living of farmers and facilitate the implementation of the Agrarian Reform Program. Project implementation is awaiting the signing of the agreement between the Philippine and Canadian governments.

G. **External Donor Assistance**

Foreign assistance has come in the form of loans for relending to specific projects in the sector, grants-in-aid, advisory services, equipment and training.

The International Bank for Reconstruction & Development (IBRD) has been the major source of funds for relending for specific developmental projects including an irrigation project, the grains industry's processing and storage development, livestock and poultry, fisheries development, and farm mechanization.

Substantial amounts of foreign loans with counterpart financing have funded irrigation and water resources development, which is currently receiving the priority in infrastructure building.

Foreign assistance in terms of outright largesse has been provided principally by the USAID and the UNDP.

1. UNDP Grant Assistance

In consonance with the objectives of the Four-Year Development Plan, the United Nations Development Programme has outlined its future assistance activities in the Country Programme which covers the five calendar years, 1972-76. This refers to the programming of UNDP assistance amounting to \$20 million at the

country level which involves the identification, in advance, of the use of UNDP inputs in relation to the country's development objectives.

Assistance in support of the basic goals of the overall agricultural development programs of the country has been reflected in the Country Programme. The projects identified under the agriculture, forestry, and fisheries sub-sectors can be classified into five, namely: agrarian reform, crop production, land and water use, forestry, and fisheries.

The share of the agriculture, forestry, and fisheries sub-sectors to total programmed UNDP assistance to the Philippines has been substantial. For 1972, it was about 25 percent. It dipped slightly to 22 percent in 1973 but gained momentum in 1974-75 as its share rose to 31 percent and 40 percent, respectively. For 1976, agricultural projects are anticipated to reach completion such that the agricultural sector's share is anticipated to account for only about 30 percent.

The activities which have been completed so far consist of soil fertility, plant production, grain drying, seed production, agrarian reform, watershed management, deep-sea fishing, fresh-water fisheries, and a cadastral survey. The Mindanao Institute of Technology and the Central Luzon State University have also been recipients of UNDP assistance with the latter accounting for as much as \$270,904.

On-going projects, on the other hand, involve inland fisheries biology, soil and land classification, control of fruit flies through the sterile male technique, training for multi-use of forest management, planning the development of multi-purpose cooperatives, assistance to the agrarian reform program, establishment of disease-free zones for cattle at Visayas and Mindanao and soil and land capability appraisal and training. On-going activities which had the major share were the improvement of irrigation through ground water development, the Coconut Research Institute

and the Fisherman's Training Center which accounted for \$282,751, \$80,747, and \$29,778, respectively, for the duration of the country's program period.

2. USAID Grant Assistance

The agricultural sector has been the main recipient of USAID assistance since the 1950's. The agriculture program under the USAID has sought to assist the government in its program to increase and diversify agricultural production and improve the economic well-being of the small farmers. Total assistance valued at \$46.3 million for the period FY 1952-74 consisted of advisory services of USAID technicians, participant training, and provision of equipment. Such assistance was channeled to the Bureau of Plant Industry, Bureau of Animal Industry, Bureau of Agricultural Economics, Rice and Corn Administration and the College of Agriculture of the University of the Philippines (Los Banos) and other government agencies. Activities supported under these projects include the establishment of seed testing laboratories, integrated livestock production projects, agricultural marketing and news service, and a rodent research center. In addition, agricultural experimentations and seed farms were upgraded; agricultural produce marketing associations were developed; farm machinery and grain storage and handling facilities were introduced.

For FY 1975, assistance is provided through four projects basically concerned with increased income and food production by small farmers. These projects include: Small Farmer Income (\$441,000), Agrarian Reform (\$423,300), Bicol River Basin Development (\$324,000) and Aquaculture Production (\$237,000). In addition, a \$5 million loan to train manpower and upgrade facilities at four research stations under the administration of PCAR is under consideration.

3. Other Donors

Other donors providing grant assistance to the agricultural sector for training and technical services include: Japan, Germany, Australia, New Zealand, Israel.

## VI. GOP COUNTRY STRATEGY FOR AGRICULTURAL DEVELOPMENT <sup>1/</sup>

The overall strategy of the GOP is to take advantage of the greater speed and flexibility with which things can be done under the "New Society", particularly in implementing such improvements in the economic and social mechanism as may be necessary for long-run development. Specifically, the following are being undertaken:

- A. The GOP provides full support for the speedy implementation of the agrarian reform program. The emphasis will be on the building of support services and institutions such as credit, price support, processing and marketing, extension and data collection.
- B. The GOP relies heavily on the participation of the private sector, especially in organizing farmers and providing credit and marketing services. However, it shall continue to provide incentives, guarantees, and additional resources in a few well-defined priority areas.
- C. There is a shift in program development and implementation. Priorities shall still be determined at the national level, but the preparation of programs will be done at the provincial level, with the participation of the local government and the community.
- D. There is full use of the coordinated approach, the efficacy of which has been successfully demonstrated in priority areas of the food production program. The National Food and Agriculture Council will continue to provide general policies and supervision. However, various action committees are formed to oversee field implementation and to solve bottlenecks. These are composed of key policy-makers in the different agencies directly involved in the programs.
- E. The agri-business approach continues to be utilized, focusing attention on forward linkages to industry. In addition, the concept of an integrated approach to planning and implementing rural development program is being initiated in a few key areas.

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<sup>1/</sup> Source: *Four-Year Development Plan 1974-77*, *op. cit.*

- F. For projects directed at increasing production, the GOP employs a commodity approach, rice being of first priority, feedgrains of second priority (corn, sorghum, soybeans), fast breeding animals (poultry and hogs) of third priority, vegetables of fourth priority, and lastly, cattle for power, meat and milk.

## VII. AID AND OTHER DONOR AGRICULTURAL SECTOR ASSISTANCE STRATEGY

Within the broader context of the role of external donors in assisting the GOP in its total economic development effort (see Part I of the DAP), other external donors and AID expect to continue to provide major support to the sector - within the framework of the GOP strategy for agricultural development: as stated in the preceding section of this paper.

The U.S. assistance strategy in the agricultural sector will continue to focus on relaxing the constraints to attainment of the agrarian reform and food production objectives of the GOP by the demonstration and testing of selected approaches and technologies that benefit small farmers and may be later replicated elsewhere in the nation as the GOP's institutional capabilities increase.

The U.S. strategy requires that the U.S. assistance program be continually formulated in close collaboration with the GOP as well as other external donors that it be focused on support of those programs given the highest priority by the GOP. Therefore the current U.S. Program in the agricultural sector is concentrated on assistance in reaching the agrarian reform and food production objectives, the two most important sectoral goals in the GOP's Four-Year Development Plan.

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FOREIGN LOANS EXTENDED TO THE AGRICULTURAL SECTOR

<u>source</u>	<u>Date Approved</u>	<u>F u r p o s e</u>	<u>Amount (in M U.S.\$)</u>
(1) IBRD	1965	For relending to rural banks	5.0
(2) USAID	9-14-67	To finance purchase of irrigation equipment	4.7
(3) IBRD	6-4-69	For relending to rural banks	12.5
(4) IBRD	6-18-69	To finance the Upper Pampanga River Irrigation Project	34.0
(5) ADB	11-18-69	To finance the foreign exchange cost of the Cotabato Irrigation Project	2.5
(6) IBRD	2-4-71	To finance rice processing and storage projects	14.
(7) ADB	3-12-71	To finance the Navotas Fishermen's Wharf Project	5.5
(8) Denmark	3-19-71	To finance the purchase of machinery and equipment for irrigation projects	3.9
(9) IBRD	5-25-72	To finance the country's cattle, poultry, and swine production program	7.5
(10) USAID	2-26-73	To finance the economic development program, including agrarian reform projects	20.
(11) IBRD	5-21-73	To finance fisheries credit project	11.6
(12) ADB	6-29-73	To finance the Angat-Magat Irrigation Project	9.6
(13) Belgium	9-10-73	To finance the implementation of agrarian reform and food production	1.3
(14) ADB	11-26-73	To finance the Davao del Norte Irrigation Project	4.2