

# A Strategy for Rural Development

DEPARTMENT OF AGRICULTURE\*

*Past development policies only served to stifle the role and importance of agriculture in national development. However, this sector retains the potential to propel the country's economic growth. Under the present government, the Department of Agriculture prepared a strategy to properly situate agriculture in the forefront of the development agenda. It calls for policy reforms in trade, transport and finance; increased investments in rural infrastructure, agriculture and related sectors; agrarian reform; equitable access to natural resources; and resource management and conservation. The strategy envisions a reduction of rural unemployment and poverty, and an increase in the farm family income.*

## Introduction

Rural development has been the primary focus of the Aquino administration as the logical path to sound industrialization, poverty reduction, and stable growth. This focus was recently underscored by President Aquino in her State of the Nation Address before Congress on July 24, 1989.

Because of the dominant role that agriculture has in the economy at this stage of the country's development, the Aquino administration has placed priority on the development of the sector so that it can provide vigorous base for industrialization and maximize its contribution to the country's economic recovery.

In response to the President's call to develop agriculture and the rural sector, the Department of Agriculture drew up this Strategy for Rural Development as the blueprint for achieving equitable and sound economic growth.

On August 17, 1989, the strategy was presented by the Secretary of Agriculture to the Cabinet Cluster for Rural Development, composed of the Secretaries of Agriculture, Agrarian Reform, Environment and Natural Resources, Public Works and Highways, and Transport and Communications. The basic rationale and elements of the strategy were adopted in principle by the Cluster. The views and comments of the Department of Environment and Natural Resources and the Department of Agrarian Reform were subsequently incorporated. The valuable contributions of the Cluster members in the formulation of this rural development strategy as it now stands are herein acknowledged.

This strategy represents the Department's view of how agriculture and industry can grow together in a complementary and mutually reinforcing fashion,

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and how the vast productive potential of the country's rural sector can be unleashed to serve the national goals of equity and stable growth.

### The Situation in the Rural Sector

Despite the strong bias of past economic policies in favor of the industrial sector, agriculture, fisheries, and forestry are still the main sources of livelihood for the two-thirds of the country's population who live in the rural areas. The sector produces nearly one-third of the Gross National Product (GNP), employs half of the labor force, and earns roughly 36 percent of the country's export revenues, including export earnings from processed agricultural and fishery products. The dominance of agriculture and related industries in the economy and the continuing net export earnings achieved by the sector underscore its vast potential to lead economic recovery. And yet, poverty is rife in the rural areas. Over 40 percent of rural families live on incomes below the poverty line, in contrast to only 20 percent of urban families.

What is even more disturbing is how far and how fast rural incomes have fallen behind. The average rural family income is now only 40 percent of the urban income level, compared with 60 percent in 1970 and 75 percent in 1975. Four-fifths of the households in the bottom 30 percent of the income scale are in the rural areas. These are the families of corn and coconut farmers, subsistence fishermen, and landless laborers.

The latest Family Income and Expenditure Survey (FIES) of the National Statistics Office shows that the average real income of rural families rose from ₱ 1,823 per month in 1985 to ₱ 2,041 in 1988. It should be noted, though, that this increase of 3.8 percent per year has not matched the 9.1 percent average inflation rate during the same period. Some 72.5 percent of rural families still earn incomes below the poverty threshold, down slightly from 75 percent in 1985.

Equally alarming are manifestations of environmental degradation as a result of increasing population pressure on the natural resource base. The rapid depletion of the resource base could undermine the sustainability of the country's economic development: deforestation in the uplands causes flooding and destruction of lowland farms; indiscriminate use of chemicals poses hazards to human health and ecological balance; pollution of marine waters and illegal fishing methods deprive fishermen of their catch.

It is obvious therefore that any program for economic recovery and long-term stability hinges on inducing increased incomes and employment in the rural areas and, at the same time, ensuring the sustainability of the resource base from which incomes are derived.

### Past Development Strategies

It is axiomatic that investments move into economic activities where they earn the highest possible returns. Thus, the attractiveness of rural enterprises to private investors depends largely on incentives that the government provides through economic policies and public spending on services and infrastructure supportive of rural development.

Past development policies, however, served to undermine the country's comparative advantage in agriculture, which is the principal source of income and employment for the rural populace. In general, these policies took the form of:

- (1) trade, tariff, and tax policies which stripped agriculture of its attractiveness to private investors;
- (2) monopolies and excessive government interventions, which stole from the farmer his fair share of returns from his produce and distorted agricultural markets;
- (3) macroeconomic and exchange rate policies that overvalued the peso and thus made exports less competitive than they would otherwise be in the world market;
- (4) government spending patterns which gave an insufficient share of public funds to rural infrastructure and support services needed to pump-prime the rural economy.

These policies combined to create a biased incentive structure which favored the urban and industrial sectors at the expense of agriculture and the rural sector. As a result, private investments shied away from agriculture and flowed prematurely into import-dependent, capital-intensive industrial enterprises clustered in urban centers. Starved of investments, agriculture could not provide enough jobs for the rural population. But because the output of these industrial enterprises could not compete in the world market, the industrial sector was unable to expand fast enough to absorb the surplus labor displaced from agriculture. Rural incomes thus fell behind, and unemployment grew in the rural areas. In the meantime, surplus labor flocking to the cities in search of employment strained the resources of urban centers and created problems of squatter colonies, urban unemployment, and malnutrition.

The policies that penalized agriculture and the rural sector exacerbated the inequitable distribution of income between the many who were landless and poor and those who had control over land and other natural resources. The growing pressure of a rapidly expanding population on the fixed supply of arable land worsened the problem. So did policies which failed to stop the overexploitation and degradation of the natural resource base.

In sum, the Philippine economy was unable to prosper because past development strategies suppressed rather than promoted the comparative advantage of agriculture, because economic policies attempted to promote in-

dustrialization prematurely without developing agriculture fully first, and because fundamental inequities in the distribution of wealth were not addressed

### Current Development Perspective

The basic aim of the Aquino administration is to lay the foundation for an equitable and sustainable economic growth by focusing on the development of a healthy and vibrant rural economy.

The three overriding concerns which guide this administration's Medium-Term Development Plan are: the alleviation of poverty, the generation of productive employment, and the promotion of equity and social justice.

The agriculture and rural focus of the current development perspective was articulated in the Philippine Medium-Term Development Plan for 1987-1992. It was recently reiterated by President Aquino in her State of the Nation Address before both houses of Congress on July 24, 1989. She stated that:

Our principal focus must be on rural development the liberation of economic, social and political energies of the countryside.... A people-powered revolution must aim for people-powered democracy and economy. Rural development will best realize this aim. Alleviation of poverty will come with the upliftment of the rural poor. Unless we draw our rural areas into the dynamics of the national economy, turning hinterlands of decay into frontiers of progress, our growth and equity goals will not be attained, neither in the short nor the long term....

This priority laid on agriculture and rural development recognizes two imperatives. First, that placing the well-being of farmers and the rural populace at the center of development concerns is the sound and logical path to industrialization and stable growth; and second, that the farmer's productive potential can be unleashed to serve the nation's interests if he can work within a policy environment hospitable to his interests, and if he is provided equitable access to land and the services he needs to make that land productive.

The government can facilitate the growth of the rural sector by: (1) fashioning a policy environment conducive to increased private investments in income-enhancing and employment-generating agro-based rural enterprises; (2) directing more public investments to rural services and infrastructure supportive of increased agricultural productivity and commerce; and (3) improving the delivery of government services to the rural sector.

This blueprint for rural development will lead to industrialization and stable economic growth in at least four ways:

- (1) *Larger market for industrial goods.* Higher rural incomes resulting from increases in farm productivity will raise the demand for manufactured goods, along with other goods, including agricultural products. In an economy such as ours where two-thirds of the population live in the countryside, the expansion of the domestic market for

industrial goods and services resulting from a growth in rural incomes will be enormous.

- (2) *Increased employment.* The rise in off-farm industrial activity in response to the growth of rural purchasing power creates more jobs in the rural areas. The linkages of rural industries with the other sectors of the economy further set in motion a sequence of employment and income multiplier effects on the farm, regional, and national economy. As industrialization proceeds, rising farm productivity allows labor to be released from agriculture and to be fed adequately without sharp increases in food prices or recourse to large and unsustainable food imports.
- (3) *More supply of raw materials.* Rising agricultural productivity increases the supply from domestic sources of raw materials for industry.
- (4) *Additional rural savings.* Higher farm incomes from increased agricultural productivity can generate additional savings to finance investments in industry and help meet our foreign debt obligations.

Japan's success in transforming its economy into an industrial giant is partly explained by its having mobilized rural savings in the late 1800s and early 1900s. During this period, agricultural savings financed roughly 30 percent of Japan's non-agricultural investments.

### Elements of Rural Development

Given this perspective, the following principal thrusts emerge as the basic elements which must comprise this administration's rural development strategy:

- (1) Removing the remaining economic policy and public investment biases that work against the capability of the rural sector to contribute to economic recovery and social stability;
- (2) Accelerating the pace of the Comprehensive Agrarian Reform Program (CARP) implementation to achieve equity in the distribution of wealth and boost producer incentives;
- (3) Adopting policies and programs that provide the under-privileged in the rural sector equitable access to the benefits from natural resource exploitation;
- (4) Enforcing conservation policies that protect the country's land, water, and marine resources in order to ensure the long-term sustainability of the resource base;
- (5) Bolstering support services and improving the infrastructure that increase rural productivity and expand markets, specifically research and extension services, irrigation and drainage systems, and transport and communication infrastructure;
- (6) Adopting a population control program to reduce the strain on land and other fixed resources;
- (7) Strengthening social services such as education, health, and nutrition services to enrich and sustain human capital;
- (8) Improving the efficiency and effectiveness of government agencies that provide rural development support services; and

(9) Engaging people's participation in the decision-making process.

### Policy Reforms

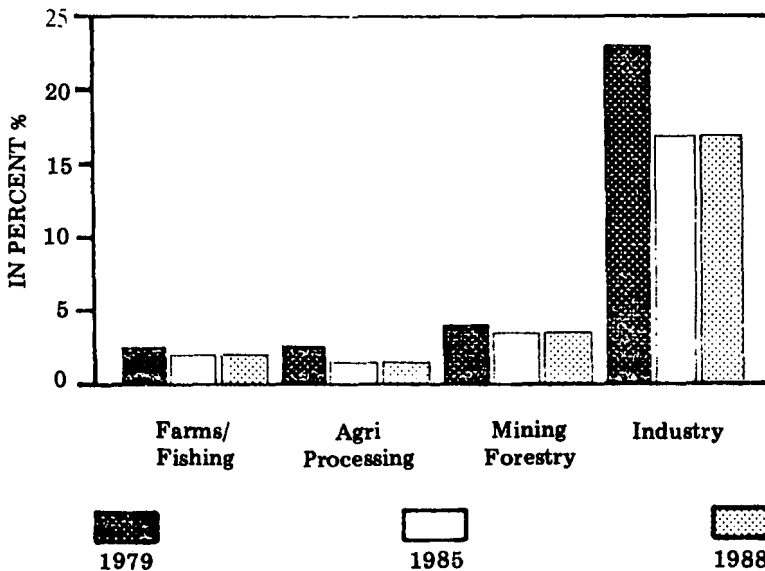
Many policies which work against agriculture still remain and have yet to be corrected, particularly in the areas of trade, transport, taxation, monetary, and resource pricing policies, as well as in public investment priorities.

#### Trade Policies

Trade protection can be implemented through high tariff rates on competing imported products and through limitations to the volume and/or value of importation of such products. Since 1981, the government has been implementing an import liberalization and tariff reform program which aimed at liberalizing the country's tariff and non-tariff trade protection policies. However, the program failed to correct the one-sided protection favoring industry over agriculture.

Before the tariff reform program, industry enjoyed an average tariff rate of about 22.5 percent while primary agriculture received an average tariff rate of about 2 percent. Under the reform program, the industrial sector currently enjoys an average tariff rate of 17.02 percent while agriculture and processed agriculture enjoy a mere 1.59 percent and 1.17 percent (Figure 1).

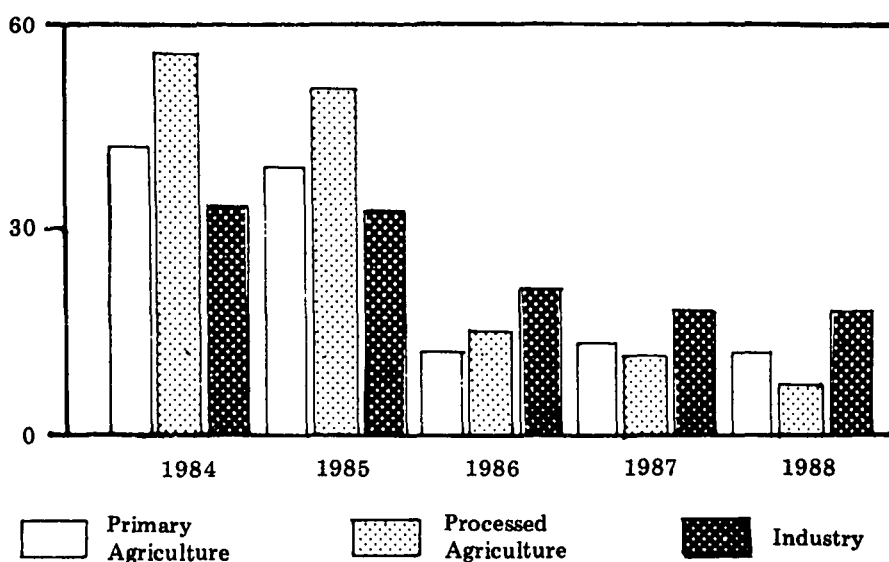
Figure 1. Average Tariff Rates by Sector, 1979-1988



Source: Department of Agriculture, Report of Secretary of Agriculture to the Senate of the Philippines (April 1989).

The agriculture sector was also liberalized faster than industry. Non-tariff measures (NTM), which are used to gauge the rate of liberalization in a particular sector, declined faster in agriculture compared to industry. Under the 1981 import liberalization program, industry's NTM coverage of 33 percent in 1984 declined to 18 percent in 1988. In contrast, processed agriculture's 1984 NTM coverage of 55 percent fell sharply to only 7 percent in 1988. The NTM coverage for primary agriculture which was 42 percent in 1984 likewise decreased to 11 percent in 1988 (Figure 2). Based on these data, the average annual rates of liberalization the three sectors had between 1984 and 1988 were 19 percent for primary agriculture, 35 percent for processed agricultural products and only 13 percent for industry.

**Figure 2. Average Number of Regulated Imports  
(in percent of total number per sector)**



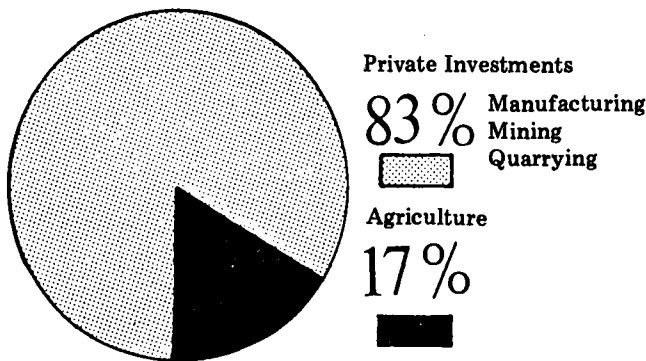
Source: Report of the Secretary of Agriculture to the Senate of the Philippines (April 1989)

An example of this one-sided trade protection policy is the liberalization of the importation of apples, oranges, and other fresh fruits which are now flooding the markets. On the other hand, the importation of vessels and spare parts as well as industrial freezers is still being restricted by the Board of Investments (BOI). Yet, these industrial products that are not produced in the country are necessary for the transport and post-harvest handling of agricultural produce. They will greatly reduce the cost of transporting and processing farm goods. Ironically, local fruit producers are now disadvantaged since aside from directly competing with imported fruits, they have to bear the burden of high transport costs and product losses due to spoilage.

Under ideal market conditions, trade liberalization will be beneficial for economic growth because it would encourage domestic industries to be competitive. Some degree of protection, however, must be given to all domestic industries until the required transport services and rural infrastructure are in place. Moreover, liberalization should be evenly applied to all the economic sectors.

The current trade protection structure on agriculture restricts the flow of private investments into the sector. Potential investors shy away from less protected areas of production and go to the more protected industrial concerns. Data on private investments from the Securities and Exchange Commission bear out this fact. From 1981 to 1987, paid-up capital investments in agriculture in newly registered domestic corporations and partnerships were about 17 percent of the total. The bigger share went to manufacturing, mining, and quarrying (Figure 3).

Figure 3. Investments by Sector



Source: Securities and Exchange Commission

To illustrate, potential investors in the local fishing industry are discouraged because of existing high tariff rate and quantitative restrictions imposed on imported fishing vessels and spare parts.

To remove these injurious effects of trade policies on agriculture, tariff rates on industrial products used as inputs in agriculture should be lowered. Specifically, tariff rates on capital goods such as agricultural machinery and spare parts,



fishing vessels and gear, as well as vital inputs such as fertilizer, feed ingredients, and livestock vaccines and medicine have to be reduced.

To entice more investments into agricultural concerns, more agricultural activities and services must also be included in the Investments Priorities Plan of the BOI.

### *Taxation Policy*

The Value Added Tax (VAT) system exempts producers of agricultural products in their original form from paying the VAT. The VAT system is based on an invoice method whereby each seller pays a 10 percent tax on his sales, less 10 percent of the cost of his intermediate inputs. When applied to agriculture, this method raises the tax rate in processed agricultural products by making the agricultural processor pay an effective sales tax instead of the 10 percent VAT (Table 1).

**Table 1. VAT Mechanics**

Agricultural Criteria	Industrial Farmers	Processor	User
(a) Price Paid	-	10	40
(b) Input VAT	-	0	4
(c) Total (a + b)	-	10	44
(d) Value Added	10	30	20
(e) Price Charged (a + d)	10	40	60
(f) Output VAT (10% of Sales)	0	4	6
(g) Total (e + f)	10	44	66
(h) Paid to BIR (f - b)	0	4	2
(i) Effective Tax Rate (f/d)	-	13.3%	10.0%

Take a coconut oil producer as an example. Suppose he pays ₱10 for the copra he buys to produce a liter of coconut oil. Since primary agricultural products like copra are exempted from the VAT, the coconut oil producer cannot claim any VAT deduction for this input. Then he spends another ₱30 as value added to convert the copra into coconut oil. The price per liter of his coconut oil becomes ₱40. He is therefore charged a VAT of ₱4 which is 10 percent of the total value of his product. This ₱4 is 13.33% of his value added. On the other hand, the industrial producer pays only 10 percent of the value added of his product since he is able to deduct an input VAT from the product's total value.

To make the VAT system equitable, the Department of Agriculture (DA) has asked the Bureau of Internal Revenue (BIR) to apply the VAT for processed agricultural products based on the value added by processors instead of the total value of the processed product.

*Macroeconomic and Exchange Rate Policy*

For years, the government has incurred budget deficits which have been financed with borrowings here and abroad. In itself, having a debt-financed fiscal deficit is a sensible economic policy, especially if the deficit is intended to cover essential public investments in economic development. But if the fiscal deficit largely finances current government expenditures or investments with doubtful social returns – which was what occurred in the latter years of the Marcos administration – then maintaining a debt-financed fiscal deficit works against the economy.

In any economy, a fiscal deficit implies a trade deficit which may, in turn, cause a balance of payments deficit. How the exchange rate is managed in the face of a trade deficit is the critical link between macroeconomic policies and agriculture.

Trade deficits do not necessarily translate into exchange rate changes because of foreign credit and direct investments. The currency will not necessarily depreciate even in the face of trade deficits if foreign capital flows are adequate. What this implies is that the country's economic managers choose to finance our trade deficit and defend the exchange rate by borrowing abroad rather than by increasing our exports. By artificially defending the exchange rate with foreign borrowing in the midst of a large trade deficit, the Central Bank penalizes all exportable goods in the country. The country's exports become artificially more expensive and therefore less competitive in the world market because of an exchange rate that overvalues the peso. Since agricultural exports constitute the bulk of the country's exports, farmers and agricultural exporters have been the hardest hit by this exchange rate policy.

To illustrate how agricultural exporters lose additional income because of an overvalued exchange rate, the computation of the foregone income of agricultural exporters in 1988 is computed assuming that the exchange rate was overvalued by about 8 percent. The total FOB value in 1988 of the top 10 agricultural exports amounted to US\$1,046.6 million. The 1988 exchange rate was ₱ 21.09 for US\$1. This meant total export revenues of ₱ 22,072.8 million. Had the exchange rate been ₱ 23 for every dollar, exporters of agricultural products would have earned an additional ₱ 1,999 million, now a foregone income for the agricultural sector.

To rectify this situation, an exchange rate depreciation must be programmed to moderate the trade deficits and increase the competitiveness of the country's exports. Current actions to reduce government spending with doubtful social returns must be sustained. Tax collection must also be further improved to reduce the budget deficits.

### *Transport Policies*

Domestic shipping regulations and port management policies hinder the speedy and efficient shipment of agricultural products or, for that matter, all types of products. Among these are:

- (1) Cargo handling monopolies in public ports spawned by the one-port-one-operator policy of the Philippine Ports Authority (PPA). Although PPA has opened up cargo handling services to more than one operator in one or two ports, monopolies still exist in most of the country's major ports. This policy has perpetuated gross inefficiencies and high costs in cargo handling.

In short distances, handling costs in public ports where PPA enforces the one-port-one-operator policy easily exceed the freight rates. For example, in the Cebu-Dumaguete run, which covers 70 nautical miles, handling costs for rice and corn exceed the freight cost by 40 percent. Moreover, handling costs in private ports where there is no monopoly are only about one-fourth of those in public ports.

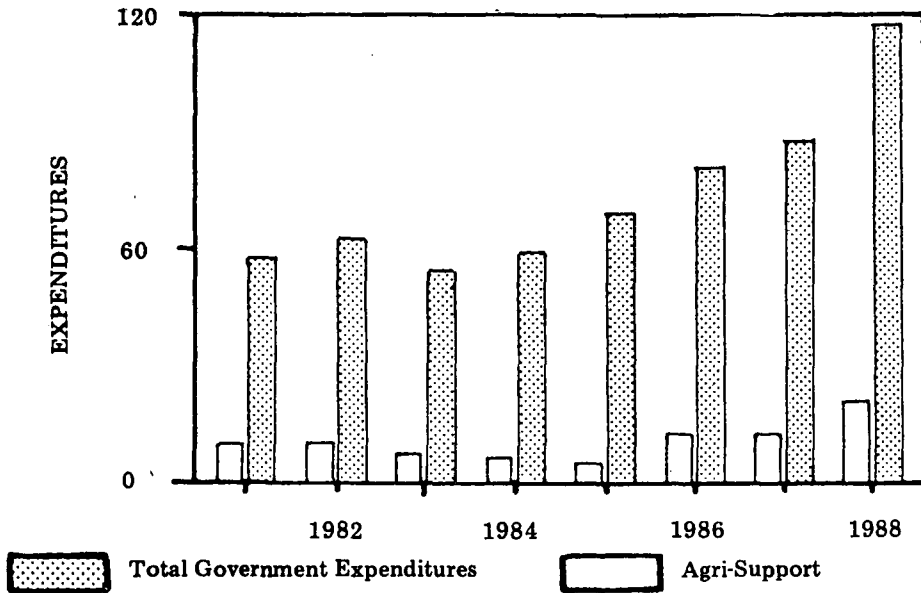
- (2) BOI restrictions on the importation of vessels, spare parts, and containers. These have severely hampered the expansion of the domestic inter-island fleet to meet the growing demand for shipping services.
- (3) The Maritime Industry Authority (MARINA) policy of allowing no more than one or two shipping lines in each route restricts the competition and increases the cost of shipping services.

To address these concerns, shipping and port services must be deregulated. The DA and private shippers must also be included in the PPA Board so that their interests can be adequately represented in the formulation of port management policies.

### *Government Expenditures*

Government spending on agriculture and the rural sector has been inadequate and less proportionate to agriculture's share in the Gross Domestic Product. Public expenditures for agriculture averaged only 10 percent of the total from 1980 to 1989. The ratio of the share of agriculture in total public expenditures to the contribution of agriculture to the Gross Domestic Product averaged only 47 percent for the period. This implies that in this decade, for every ₱100 contributed by the sector to the economy, only ten pesos went back to it in the form of government spending (Figure 4).

**Figure 4. Government Expenditures on Agricultural Support Systems as Against Total Government Expenditures (in billion pesos)**



Source: Department of Budget and Management, General Appropriations Act, 1981-1988

The government expenditures referred to here are the monies spent for building roads, bridges, ports, fish landings, and irrigation systems, as well as financial support for research and development of productivity-enhancing technologies. Government spending also covers the budgetary transfers to agricultural producers and processors, including the expenses incurred in running the DA and its attached agencies, the Department of Environment and Natural Resources (DENR), the Department of Agrarian Reform (DAR) and the National Irrigation Administration (NIA).

To improve the environment for increased productivity and incomes in the rural areas, government must increase spending for agriculture and the rural sector.

### *Natural Resources Pricing*

Inappropriate pricing systems currently undervalue natural resources and therefore promote exploitation and degradation of critical ecosystems. There is a need to correct this by increasing fees and charges on timber and mineral resources. In addition, penalties should be imposed on persons or entities that pollute environmental resources traditionally regarded as free, such as air and water, so that these are not polluted freely and indiscriminately.

A glaring example of this pricing policy which encourages indiscriminate exploitation of natural resources is the manner by which our forest resources are priced. At present, government only gets from ₱80 to ₱90 per cubic meter of timber from loggers. This is extremely low compared to the maximum possible government income of ₱400 to ₱500 per cubic meter given the current market value of ₱2,000 per cubic meter. It was established that a logger earns a total net profit of about ₱900 per cubic meter of timber which can be taxed by the government. Because of the current low timber charges, government foregoes about ₱2.48 billion every year from about 4 million cubic meters of timber products.

More important, this pricing scheme encourages excessive tree-cutting which leads to environmental degradation that costs the country billions of pesos. A recent World Bank study showed that the country loses about ₱2.15 billion every year from grassland sheet erosion caused by too much logging.

### *Rural Credit*

The pursuit of economic activities in the rural areas will be facilitated by the availability of credit. While it is recognized that financing will flow if the viability of rural enterprises is established, reducing lending costs and risks will facilitate the flow of credit to viable rural enterprises.

Lending costs and risks will be reduced by:

- (1) the abolition of the tax on gross revenue;
- (2) the abolition of Presidential Decree 717 which requires all banks to set aside at least 25 percent of their loanable funds for agricultural credit, 10 percent of those funds would be allocated for credit to agrarian reform beneficiaries. A provision in this Agri-Agra Lending Law authorizes banks to invest the unlent portion of these funds in Certificates of Indebtedness (CIs) with the Central Bank. Studies have shown that because of this provision, the agricultural sector was not assured of credit because banks opted to purchase these government-guaranteed CIs instead of lending out funds to agriculture, which poses high risks and posts low return on investments;
- (3) the liberalization of bank branching and entry into banking;
- (4) the abolition of the 29 percent withholding tax on savings; and
- (5) the reduction of reserve requirements.

### **Agrarian Reform**

It is obvious that efforts to improve the climate for growth in the rural sector cannot go far without an agrarian reform program that will ensure equitable access to land and the benefits it provides.

The following data underscore the skewed landholding structure in the Philippines. Some 77 percent of the country's coconut farms are below five hectares in size, but these farms occupy less than a third of the coconut hectareage. Of the total land area planted to sugar, 2 percent of the farms occupy nearly one-fourth of the land, while 98 percent share roughly three-fourths of the land.

Because of this, agrarian reform becomes a critical component of an agriculture-led, employment-oriented development strategy. Without it, the strategy cannot hope to alleviate poverty nor sustain the broad-based development of the rural sector. This is because land is fast becoming a scarce resource and title to land is closely linked with access to credit and production inputs, political patronage, and similar supports to livelihood endeavors. The benefits derived from new technology, irrigation, and market infrastructure become part and parcel of ever-increasing land values. Thus, when land ownership is inequitable, the likelihood is that agricultural growth would exacerbate that inequity, unless there is a serious effort to redistribute land ownership equitably.

In order to accelerate the implementation of CARP, several steps must be taken simultaneously. As far as land transfer is concerned, selected or lead provinces should be identified where the ability to systematically transfer land in large blocks can be demonstrated. Likewise, emphasis must be laid on the transfer of large tracts of land to groups or associations of farmers who could then handle individual subdivision and titling among themselves. Aerial photogrammetry and other advanced technologies could be used to facilitate area surveys and resolve boundary disputes. There is also a need to build up farmers' organizations to facilitate the land acquisition and distribution process, as well as the provision of support services.

### Access to Natural Resources

The historical pattern of access to and control over natural resources concentrated in the hands of a privileged few has deprived the majority of the rural populace, particularly the poor, of the bounty from these resources. For instance, some 90 commercial loggers still control approximately 2.4 million hectares of public domain, while social forestry beneficiaries belonging to about 152,500 families have been granted stewardship over only 227,450 hectares. This inequitable pattern of resource distribution needs to be reversed (Table 2.)

**Table 2. Access to Natural Resources**

Sector Utilizing	Total No. of Hectares Utilized
90 Commercial Loggers	2,414,042 Hectares
152,528 Family Beneficiaries	227,459 Hectares

Source: Department of Environment and Natural Resources, 1988.

Reforms in the property rights to public domain are also needed to support sustainable development. Agrarian reform in public lands should be given more impetus through innovative, even radical approaches. In particular, government should provide special measures to define and secure the vested rights of indigenous cultural communities to their ancestral lands. Security of tenure for occupants of the public domain will not only ensure fair access to natural resources; it will also encourage the judicious use of these resources.

### **Resource Management and Conservation**

The proper management and conservation of the country's natural resources will ensure their sustainability for productive uses. This entails the promotion of cultivation methods which build in judicious use of land, forest, and marine resources, along with more effective enforcement of conservation laws. These are essential if we are to sustain the viability and productivity of the natural resource base over the longer term.

Government should also promote the use of technologies that enhance and preserve the environment such as the Integrated Pest Management method.

Special attention must also be given to the provision of alternative livelihood opportunities for landless, shifting (slash-and-burn) cultivators in the uplands, illegal occupants of forest and pasture area, and subsistence fishermen in over-fished coastal waters.

An intensive educational campaign must be carried out to motivate the citizenry to assume greater responsibility for the protection of the environment. People must have a deeper understanding and appreciation of the importance of preserving and managing the natural resources of the country in order to sustain economic growth.

### **Research and Extension**

Growth in rural productivity entails more government investments in agricultural research and development. Government expenditures in agricultural research have been less than 0.2 percent of the gross value added (GVA) in agriculture. In comparison, other Asian developing countries, including Pakistan and Bangladesh, have spent between 0.4 percent to 0.9 percent of their agricultural GVA on agricultural research. NEDA recently proposed an agricultural research target of 0.8 percent of agriculture's GVA by 1992. This would bring the Philippines closer to the level of research expenditures allocated by our more progressive neighbors like Thailand and Malaysia (Table 3.)

**Table 3. Investments in Agricultural Research by Selected Asian Countries**

Country	1980 Expenditures (million \$)	% Gross Domestic Produce
PHILIPPINES	9.5	0.16
Indonesia	12.0	0.29
India	33.2	0.44
Thailand	21.6	0.26
Pakistan	29.9	0.41
Bangladesh	27.6	0.48

Source: University of the Philippines, Los Baños-Philippine Institute for Development Studies, *Agenda for Action for the Philippine Rural Sector, October 1986.*

By simple interpolation, the target allocation for 1990 should be 0.4 percent of agriculture's GVA or about P800 million.

The research and extension system must focus on the quick transfer of indigenous, location-specific, low-cost technologies, that is, technologies adapted to the specific conditions of each location and drawn from the practical experience of farmers in that location. Emphasis should be laid on technologies that will broaden farmers' options for diversifying into higher value crops.

A concrete example of low cost and location-specific technology is the Integrated Pest Management method promoted by the DA. Farmers are trained to use the best mix of natural and chemical pest control methods for a particular field in a particular season. The program calls for farmers to apply pesticides only when the number of pests increases beyond certain thresholds, which they can determine for themselves based on simple rules of thumb, and to rely as much as possible on natural enemies that prey on the harmful pests. By saving on pesticide costs, the farmers can expect increases in their incomes.

### Irrigation and Drainage

With rising demand for food and raw materials and the growing pressure of population on land, growth in agricultural production will have to come increasingly from intensive cultivation. Improved irrigation and drainage systems will bring about increased cropping intensities and higher yields per unit of land cultivated. Moreover, since irrigation greatly reduces the risks from bad weather and pest infestation, increased availability of irrigation will contribute substantially to more stable food supplies.

In order to maximize these benefits, investments should give priority to the repair of existing systems communally maintained and operated by farmers'



groups and the establishment of Small Water Impounding Projects to support crop diversification in the uplands. Irrigation fees paid by farmers for the use of systems built and maintained by the NIA should also be reduced. This will require additional budgetary appropriations for NIA by some ₱276.3 million in 1990 to cover maintenance costs of NIA systems.

### Market Infrastructure

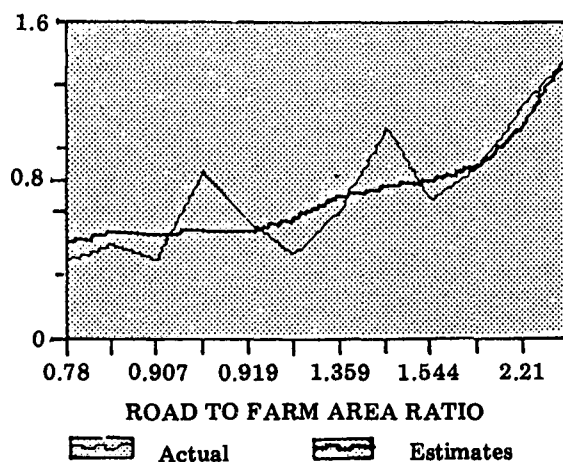
Roads and bridges, ports, port handling facilities, shipping services, as well as power and communication infrastructure provide the following benefits:

- (1) they facilitate the movement of products from farm to market;
- (2) they reduce post harvest losses;
- (3) they result in better and more stable prices received by farmers and lower prices paid by consumers; and
- (4) they integrate rural markets with one another and the rural sector with the rest of the economy.

Because of these, agricultural incentives will improve, thus attracting more private investors. More government investments in rural infrastructure will give rise to a wide variety of economic activities in the rural areas that generate more employment and raise household incomes.

The importance of roads around a farm area was proven by a DA study which established that the higher the road density, the bigger the value of agricultural production in an area (Figure 5).

**Figure 5. Farm Production Value and Road Density**



Source: Department of Agriculture, Impact of Rural Roads on Agricultural Productivity, September 1989 (Preliminary Report).

Thus, priority must be given to the construction of asphalt roads, macadam or gravel roads, and earth surface or dirt roads which serve as farm-to-market roads. The DA specifically recommends a growth rate of at least 3 percent in the total length of these roads for the next year of about ₱750 million based on the DPWH estimate of ₱1.5 million per kilometer for flat or moderately sloped areas. This amount, however, does not include infrastructure in the corn areas of Mindanao as well as the maintenance of those road links that are serviceable.

With regard to ports development, the improvement of facilities and services in the ports of General Santos, Cagayan de Oro, and Polloc in Mindanao; Iloilo and Cebu in Visayas; and Manila's South Harbor must be given priority. Bulk grain handling facilities should be established for major port links.

### **Social Services**

An effective population program must be implemented to stem the growing pressure of a rapidly expanding population on the fixed supply of land and other natural resources. This is critical in order to sustain the productive capacity of the resource base and to increase per capita access to the benefits of economic and social development.

### **Service Delivery**

Finally, rural development requires that government improve its delivery of services to the rural sector. This means: (a) unclogging the project funding pipeline, (b) decentralizing authority down to the provincial and municipal levels, (c) engaging the full participation of the rural populace in the decision-making and development process, and (d) strengthening coordination within and among government agencies whose activities bear directly on the welfare of the rural sector.

### **Prospects**

This strategy for rural development, if it succeeds, should mean a reduction of the incidence of rural underemployment from 40 percent in 1988 to 30 percent by 1992. The incidence of poverty among rural families should also be reduced from 72.5 percent in 1988 to 50 percent by 1992. It is likewise projected that the average farm family income will increase to a level above the poverty line by the end of this administration's term of office.

Rural development is more than just a growth strategy in a society weakened and fragmented by an insurgency. It is commonly recognized that the insurgency is rooted in widespread rural poverty. Thus, a rural development

strategy that is broad-based and anchored on the mutually reinforcing complementation of agriculture and industry is certainly a sound and pragmatic route to the attainment of social stability. Such a strategy, if it succeeds, would give those who are discontented and alienated a stake in building peace and unity in what otherwise would be a divided nation.