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Philippines
Agricultural Sector Strategy Review
(In Two Volumes) Volume I
October 21, 1987
Asia Region

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CURRENCY EQUIVALENTS

Currency unit = Peso (P)
P 1.00 = US$0.05
US$1.00 = P20.4 (1986 average)
P 1,000,000 = US$49,070

ABBREVIATIONS AND ACRONYMS

A&D - Alienable and Disposable
ADB - Asian Development Bank
ADPA - Agricultural Development and Planning Administration
ALRP - Accelerated Land Reform Program
ASEAN - Association of South East Asian Nations
BAEcon - Bureau of Agricultural Economics
BPI - Bureau of Plant Industry
CALF - Consolidated Agricultural Loan Fund
CEDP - Community Employment Development Program
DA - Department of Agriculture
DAR - Department of Agrarian Reform
DOST - Department of Science and Technology
DPWH - Department of Public Works and Highways
FPA - Fertilizer and Pesticide Authority
GDP - Gross Domestic Product
GVA - Gross Value Added
IA - Irrigation Association
IADP - Integrated Area Development Project
IRRI - International Rice Research Institute
ISF - Irrigation Service Fee
NACIAD - National Council on Integrated Area Development
NAFC - National Agricultural and Fisheries Council
NEDA - National and Economic Development Authority
NFA - National Food Authority
NGO - Non-Governmental Organization
NIA - National Irrigation Authority
NRO - NEDA Regional Office
O&M - Operations and Maintenance
OP - Open-Pollinated
PCA - Philippine Coconut Authority
PCAMRD - Philippine Council for Aquatic and Marine Research and Development (established March 1987)
PCARRD - Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (previously Philippine Council for Agriculture and Resources Research and Development)
RDC - Regional Development Council
R&D - Research and Development
SCU - State Colleges and Universities
UPLB - University of the Philippines at Los Banos
PHILIPPINES
AGRICULTURAL SECTOR STRATEGY REVIEW

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AGRICULTURAL SECTOR STRATEGY REVIEW

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Preface

The newly-elected Congress and Government face a daunting challenge in restoring the momentum of development in the Philippine economy and making real progress in spreading the benefits of development more equally. The agricultural sector will continue to play a crucial role in the recovery process, and important strategic choices lie ahead in the immediate future that will affect the course of rural development well into the next century. This report is intended to supplement the several excellent reviews already available to the Government as it makes these choices (see Annex 2) and to assist the Bank to determine how best to support the Government in agricultural development.

For the sake of brevity the report avoids presenting too much factual material that will be well known to many in Government. For those needing more facts or supporting analysis, Volume II contains a number of annexes on selected subjects. The emphasis of the main report is on the key strategies that we feel deserve priority attention to accelerate growth, increase farm incomes and alleviate rural poverty, and the implications for government policies, institutions and resource use.

The report concentrates on those subsectors and services that are of most importance to the mass of small farmers, particularly in crop production. While it lays stress on agrarian reform as an essential element of an overall strategy, the report does not deal with the subject in any depth because it has been recently covered in a separate report. Nor does it look into the preservation of natural resources, including forest areas, because this too will be the subject of a special Bank study during the next few months.

The report is set out in four chapters. Chapter 1 briefly reviews the past performance of the sector and assesses some of the principal factors that have affected performance. Chapter II looks to the future, assesses what role the sector can play in future growth of production, incomes and employment, and examines the potential of both traditional and nontraditional commodities. Chapter III outlines the key strategies we feel are necessary to increase productivity, expand access to land and reduce rural poverty. Some of the tasks we consider most urgent are summarized in a separate appendix. The final chapter translates these strategies into the implications for institutions and the Government's use of resources.

The report is based on a desk review of the considerable available documentation and a Bank mission that visited the Philippines in March 1987. A follow-up mission returned to the Philippines in August 1987 to discuss the draft report with the Government. The mission wishes to thank the Government of the Philippines for its invitation to undertake this review and the staff of the Government and its various agencies who so willingly assisted.
Agriculture and the Economy

1. The agricultural sector's past performance has been surprisingly good, considering the adverse policy environment within which it had to operate. For many years the overall incentive structure was sharply biased against agriculture and in favor of industry. Yet since 1970, agricultural production grew at an average rate of nearly 4% a year, or somewhat faster than GDP as a whole. Since the crisis of 1982, agriculture has showed much more resilience than the rest of the economy, and was the only sector that maintained some momentum of development.

2. Many factors contributed to this performance. For much of the 1970s world prices were at historically high levels. The total area under cultivation expanded considerably, the irrigated area roughly doubled, and the spread of modern technology greatly increased production, most particularly in the staple food rice, but also in other commodities as diverse as bananas, poultry and aquaculture. As a result of these developments, the Philippines achieved virtual self-sufficiency in basic food production and diversified its production base by developing a number of new crops for domestic consumption or export.

3. Despite the economy's fairly robust growth over the past decade and a half, at least 40% of Filipino families still live in poverty. In the rural areas, the absolute number of poor have increased over the period (despite a reduction in the incidence of poverty), real wages have fallen and the number of landless rural families has steadily grown. This has been the most disappointing aspect of past performance. It reflects a combination of circumstances: a continuing high population growth rate, an increasing scarcity of land and, above all else, a failure of the economy as a whole to provide sufficient employment opportunities outside agriculture. Over the last few years, as the economy has faced a severe economic crisis and historically low world prices for its major agricultural exports, rural poverty and unemployment have increased sharply.

4. The new Government is keenly aware of the critical role that agriculture must play in economic recovery and in spearheading the attack on rural poverty. Many steps have already been taken to eliminate discrimination against agriculture and to allocate more resources to agricultural development. The recent plan expects the agricultural sector to play a major role over the 1987-92 period. Its macro-economic projections assume a 5.2% growth rate in agricultural value added and a 4.7% growth rate in agricultural employment.
5. The Bank mission's own projections, however, imply a rather lower overall growth rate of about 4% a year. The sector faces serious constraints over the medium term. On the supply side, there is an increasing scarcity of good land and limited proven technology to offer to those who are forced to cultivate marginal lands. On the demand side, Philippines has little scope for further profitable import substitution and faces continuing bleak prospects for its traditional exports. It also seems likely that Government will have to devote a much larger share of scarce resources to accelerating the agrarian reform program, which however vital for reasons of equity, may have little positive impact on production in the medium term and could result in some disruption to production in the short-term.

6. The Bank mission assumes that production of rice and corn and other domestically-consumed foods will keep pace with domestic demand; the key variable here being the rate at which the economy as a whole expands. It is cautiously optimistic that sugar can recover from its present low level of production. It also assumes that poultry and fisheries, particularly aquaculture, will continue to grow rapidly. On the other hand, it sees little immediate increase in the value of coconuts products (or intercrops), suspects that bananas and pineapples may grow at a more modest rate in the future, and projects a substantial decline in forestry production.

7. The implications of a 4% growth rate are disturbing, since the agricultural sector could not absorb the expanding labor force without a further fall in real incomes. The likely consequences would be increased rural poverty, wider rural/urban income differences, and growing number of landless, unemployed and underemployed people.

8. We see only two ways out of this clearly unacceptable scenario. The first is to try to accelerating growth in agriculture. The mission sees little prospects for accelerated agricultural growth beyond about 4% during the plan period. As one looks further ahead towards the end of the century, however, there are good prospects for further development if the Philippines can exploit its comparative advantage in world markets. There is much room for improving input use and productivity in all the major traditional crops, perhaps none more so than in the coconut areas, where the scope for intercropping is considerable. We also see a potential for continued growth in non-traditional crops, for both domestic consumption and export. The mission has not attempted to "pick winners" among the many different crops that are now grown in the country, since this is an especially difficult and hazardous task. However, we do see the greatest potential for accelerated agricultural development to be in treecrops, including not only intercropped coconuts, but also tropical fruits and oilpalm. So far treecrops look to be the only crops that could be grown and marketed on a large enough scale to significantly affect the overall growth rate of the sector. But such developments have a long gestation period and will only start to bear fruit in the 1990s, provided the Philippines uses the next few years productively in building a solid foundation for such development.
9. The other alternative is to accelerate the growth of production—and particularly employment—in other sectors such as industry or tourism. We have no doubt that this would do more than anything else to raise agricultural income and alleviate rural poverty by simultaneously siphoning off more labor from agriculture and expanding the domestic market for agricultural products.

Key Strategies for the Future

10. We see three challenges facing Government as it seeks to speed up the growth of agricultural production and reduce rural poverty: (i) to translate the slogan "making the farmer profitable" into an operational strategy for increasing productivity on existing farms; (ii) to press ahead with land reform; and (iii) develop a broader approach to the alleviation of rural poverty than now exists.

11. The key strategies for making farmers profitable are fairly obvious: to provide them with the appropriate technology, inputs, services and supporting infrastructure necessary to utilize it, and an appropriate set of incentives to make it worth their while to adopt. To translate these general strategies into a systematic set of policies, programs and institutional arrangements is an immensely complex task for any Government to undertake. The report reviews what are thought to be the most important elements of strategy.

12. There is much to do in developing appropriate technology. Agricultural research in the Philippines is in relatively good shape, organizationally and in terms of personnel. But it is seriously underfunded for the task it faces, particularly in undertaking further research on non-traditional crops, testing profitable cropping systems for more marginal rainfed zones, and developing low-cost production and processing techniques that would be of special importance to the poorest farmers.

13. A weak link is the delivery system. The extension services suffer from excessive duplication between agencies, overstaffing, poor pay, and lack of mobility, all of which results in poor morale, lack of focus and limited impact. There is an urgent need to establish a fully-professional, cost-effective service that will tell the farmers what they need to know and feed back to research. The report suggests that the means for doing this should be worked out as a matter of urgency.

14. The supply of inputs, and particularly fertilizers, has improved considerably since the domestic market was liberalized. We believe that most farmer needs will be adequately provided by the private sector in the future with minimum state intervention. However we see three priorities for Government to attend to: (i) to complete the rehabilitation of the formal rural credit system as soon as possible; (ii) to determine what impediments, including credit, stand in the way of the poor in gaining access to modern inputs, and to formulate remedial measures; and (iii) to ensure that seed production keeps up with changing demand patterns, particularly for open-pollinated varieties of corn for leamles and vegetables, and for new treecrops such as oilpalm that may assume greater importance in the future.
15. In infrastructure, the thrust of Government strategy in irrigation during the 1987-92 plan seems correct in giving priority to operation and maintenance and rehabilitation over new construction, and in favoring communal and small scale schemes. However some of the large new schemes included in the plan seem to run counter to this strategy and should be reevaluated. We also suggest that it would be useful to review the experience with self help maintenance to see whether a more successful model for handing over to irrigation associations can be derived, and also to explore the potential for developing low-cost irrigation facilities on individual holdings. Some observers feel that more and better roads is the single most important contribution the Government could make to accelerating rural growth. The new plan provides for a sharp increase in construction and maintenance of rural roads. This report suggests that a collaborative effort might be undertaken to identify the priorities for rural infrastructure, including roads, bridges and ports, to support agricultural development during the plan period, and that an expanded program might be suitable for external funding.

16. The second key strategy involves the successful implementation of the expanded agrarian reform program. Past land reform program have concentrated on tenurial reform, and therefore have done little to provide land to the landless or to supplement sub-marginal holdings. The Government has recently drawn up a proposal for an Accelerated Land Reform Program which has been reviewed by another Bank mission. The program proposes not only to accelerate ongoing land reform programs and extend them to non-rice/corn areas, but to provide land to the landless. If a substantial area of land that is now unused can be brought back into cultivation, this could have a profound effect on both production and poverty. However, land reform by itself will not substantially improve the economic welfare of the beneficiaries, and a major effort will be called for on the part of the various service agencies to meet the special needs of previous tenants and farm laborers, many of whom will be assuming full responsibility for their farm operations for the first time.

17. The final strategy for the future discussed by the report is the need for a broader approach to poverty. Even rapid growth in the past has not overcome poverty and may still not do so in the future. Faster land reform will help, particularly by giving land to the landless, but the report advocates a more systematic approach. Within agriculture there is need for both better targeting of the poor and a sharper focus on poverty alleviation in program design, for which the report offers a few suggestions. But it also recognizes that agriculture alone cannot solve rural poverty, and that a much broader approach, including a faster growth rate of other sectors, will be necessary.

Gearing up for the Job

18. All this is a challenging task for the Government. A major theme of the report is that the future shape of the sector (and hence of the economy) by the end of the century will very much depend on the vitality, capacity and leadership of the Government over the next few years. Maintaining an appropriate policy environment will be an essential part of its job, but will scarcely be enough. We see the need for Government to gear up for the job in
hand, not merely by devoting the necessary resources and political commitment to the task, but by ensuring that its strategic institutions have the necessary capacity.

19. This report is mainly concerned with the Department of Agriculture (DA) as the lead agency in the sector. Other Bank reports will deal with the equally important functions of the Departments of Agrarian Reform and Natural Resources. The DA has recently undergone a major reorganization which is a major step in the right direction. But the report feels that there are still areas in the DA that need strengthening, particularly in integrating and coordinating the functions of the various bureaus and attached agencies, in strengthening strategic planning, developing appropriate farm systems and promoting new crops for smallholder production. Beyond the DA, the report also identifies other institutional needs in support of the sector, including improved budgeting procedures, a clear definition of the scope for decentralization, and a new approach to integrated area development and settlement.

20. The report does not attempt to suggest a role for the World Bank in supporting the future development of the sector. It does however propose a priority list of tasks, most of which should lead to development activities, for consideration by Government. This might form a useful agenda for discussions with Government.
Introduction

1.1 This is a review of the Philippine agriculture sector, which is defined here to include the fisheries and forestry (logging) subsectors. Since it is difficult to assess the performance of the agricultural sector alone, the chapter first briefly reviews the performance of the economy as a whole, and the relative contribution of the agriculture sector. It then looks at the past performance of the sector and analyzes some of the major factors that have influenced sector performance.

1.2 In terms of overall growth, the Philippine economy performed well in the past, at least until the recent economic crisis. Between 1950 and 1986, gross domestic product (GDP) increased by an average of some 4.9% a year in real terms, meaning that real per capita incomes nearly doubled over that period. Since 1982, the economy has faced a major economic crisis: growth virtually ceased in 1983, GDP fell in both 1984 and 1985, and per capita income has probably fallen in real terms every year since 1981.

1.3 The least satisfactory aspect of performance, however, has been the failure of the economy to reduce the incidence of poverty or improve income distribution to any significant degree. This subject is discussed at greater length in Annex 1. Despite the relatively high rate of growth, some 40% of Filipino families fell below the poverty line in 1983, of whom about a fifth were in extreme poverty. Income distribution remains highly inequitable, with the bottom 40% of families receiving less than 10% of total income. It is now well recognized that in looking to the future of the economy it will be necessary not only to regain the momentum of past development but to ensure that the benefits of development are more equitably distributed among all the people. The agricultural sector is crucial to the achievement of both objectives.

The Role of Agriculture

1.4 Agriculture's contribution to past economic development has been surprisingly strong. In a vigorously growing economy one would expect to see a substantial change in the structure of production, away from agriculture and towards other sectors, and a rapid draining off of population from the rural areas as the impetus of nonagricultural growth builds up. This traditional pattern of growth has taken place to only a very modest degree, and has been all but reversed in the last few years of economic decline.

1.5 The agricultural sector has expanded fairly rapidly in the past. From 1970 to the economic crisis of 1982, the sector grew by well over 4% a year in real terms—or by more than 5% a year if the declining forestry subsector is excluded (see Table 1).
Table 1: GROSS VALUE ADDED BY MAJOR SECTORS

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<thead>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>14.7</td>
<td>25.4</td>
<td>27.1</td>
<td>4.7</td>
<td>1.6</td>
<td>3.9</td>
</tr>
<tr>
<td>Industry</td>
<td>16.0</td>
<td>35.7</td>
<td>27.7</td>
<td>6.4</td>
<td>-6.2</td>
<td>3.9</td>
</tr>
<tr>
<td>Services</td>
<td>21.2</td>
<td>37.9</td>
<td>35.8</td>
<td>5.0</td>
<td>-1.5</td>
<td>3.4</td>
</tr>
<tr>
<td>Total GDP</td>
<td>51.0</td>
<td>99.0</td>
<td>90.6</td>
<td>5.7</td>
<td>-2.2</td>
<td>3.7</td>
</tr>
</tbody>
</table>

The agriculture sector has continued to expand, albeit more slowly, during the recent years of economic recession. In fact, since 1982, agriculture has been the only major sector to record a positive growth rate.

1.6 This performance demonstrates the resilience of the sector, even in the face of recent political turmoil, severe financial constraints, and a drastic fall in world market prices (see below). On the other hand, it underlines the failure of other sectors, such as industry or tourism, to take over the lead role in stimulating growth. It is clear that the economy has not undergone a significant structural transformation. In fact, agriculture and industry both accounted for the same proportion of GDP in 1986 as in 1970 (see Chart 1). Despite the past emphasis on industrialization, agriculture retains a dominant position in the Philippine economy, directly generating nearly a third of GDP and domestic exports, employing nearly half the labor force, and contributing many of the resources and much of the domestic demand on which the industrial and service sectors depend.

1.7 The failure of other sectors to take over decisively as lead sectors has imposed a continuing burden on agriculture, particularly in regard to the reduction of poverty. The total labor force grew by about 3.9% a year between 1970 and 1986—significantly faster than overall population growth. Yet employment in nonagricultural sectors expanded by only 4% over the same period, implying only a modest transfer from agriculture. In 1970, total agricultural employment provided just one half of the total employment; by 1986 its share was slightly less than half. Thus agriculture provided nearly half of all new jobs created during this period—about eight times as many as manufacturing and over twice as many as commerce.

1.8 Poverty is already heavily concentrated in rural areas and in agriculture, and unless the increasing pressure on available land can be relieved, it will be difficult to make dramatic progress in eradicating rural poverty. Thus a broad strategy for poverty redressal, which goes far beyond agriculture, is called for. This subject is taken up at greater length later.
CHART 1: CONTRIBUTION of MAJOR SECTORS to GDP, 1970-86

- Agriculture
- Industry
- Services
The Structure of Agricultural Growth.

1.9 The structure of past growth in agriculture gives important clues as to what is feasible to achieve in the future. Table 2 shows the contribution of the major subsectors and commodities to the growth of agricultural gross value added (GVA) since 1970. The main thrust of development continued to be in crop production, which grew at a healthy 5% a year during the period; taken together, crops contributed 75% of the growth of agricultural GVA. The major cereals, rice and corn, comfortably kept ahead of population growth to achieve virtual self-sufficiency by 1986. The major commercial crops, coconuts and sugar, suffered most from the fall in world market prices during the 1980s, while the production of bananas, after expanding rapidly in the 1970s, grew more slowly in the 1980s.

Table 2: CHANGING STRUCTURE OF AGRICULTURAL GROWTH, 1970-86

<table>
<thead>
<tr>
<th>Gross value added</th>
<th>% share in GVA</th>
<th>Growth rate</th>
<th>Contribution to growth</th>
</tr>
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<tbody>
<tr>
<td>Rice</td>
<td>2.8</td>
<td>5.0</td>
<td>18.9</td>
</tr>
<tr>
<td>Corn</td>
<td>0.9</td>
<td>1.8</td>
<td>6.1</td>
</tr>
<tr>
<td>Coconuts</td>
<td>0.8</td>
<td>1.8</td>
<td>5.3</td>
</tr>
<tr>
<td>Sugar</td>
<td>1.0</td>
<td>0.8</td>
<td>6.6</td>
</tr>
<tr>
<td>Bananas</td>
<td>0.3</td>
<td>0.9</td>
<td>1.7</td>
</tr>
<tr>
<td>Other crops</td>
<td>2.2</td>
<td>6.8</td>
<td>14.5</td>
</tr>
<tr>
<td><strong>Total Crops</strong></td>
<td><strong>7.9</strong></td>
<td><strong>17.2</strong></td>
<td><strong>53.1</strong></td>
</tr>
<tr>
<td>Livestock</td>
<td>1.8</td>
<td>2.3</td>
<td>11.8</td>
</tr>
<tr>
<td>Poultry</td>
<td>0.6</td>
<td>2.5</td>
<td>4.1</td>
</tr>
<tr>
<td>Fisheries</td>
<td>2.6</td>
<td>4.6</td>
<td>17.5</td>
</tr>
<tr>
<td>Forestry</td>
<td>2.0</td>
<td>0.6</td>
<td>13.4</td>
</tr>
<tr>
<td><strong>Total GVA</strong></td>
<td><strong>14.8</strong></td>
<td><strong>27.2</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
1.10 Clearly the most remarkable development over this period was the dramatic expansion of "other crops", which grew at an average rate of 7.5% a year, and accounted for over 37% of growth in GVA. There are no separate data on the value added of these crops, but an analysis of the estimated total value of production of individual crops reveals that the principal components of this growth were fruits and nuts (mainly mango and pineapple), treecrops (mainly coffee and rubber) and rootcrops and vegetables.

1.11 There is another aspect to the relative importance of crops: the first three crops occupy over 80% of the country's cropped area, in almost equal proportions, yet together produce just half the total crop value. In contrast, "other crops", which occupy less than 15% of the cultivated land, now account for 40% of crop value. Not all "other crops" are high-value crops (e.g., they include the low-value root crops), but taken as a group they have the double attraction that they are both rapid-growing and generally of high value.

1.12 The other two growth points in the sector have been poultry and fisheries. Poultry production (mainly chicken) expanded very rapidly up to 1983 before leveling off in the last few years. Fisheries production grew at a more moderate rate, but accounted for nearly 16% of total growth. Aquaculture has shown the most rapid growth, with about a five-fold increase in production since 1970.

Key Factors Underlying Sector Performance

1.13 The various factors that have affected the past development of the sector--either for good or bad--have been well analyzed in recent government and other reports and it is not necessary to repeat them at length here. However, the lessons of past experience are important to guide the strategies of the future, and it seems useful to briefly restate what we see as the five dominant factors that have affected the past and may affect the future of the sector.

1.14 The Policy Framework. Macro and sector specific policies of the past have discriminated heavily against the agricultural sector. These included heavy import protection for industrial goods, an overvalued exchange rate, export taxes, price controls, trading bans and marketing monopolies. Some policies in the sector were intended to offset, at least partially, the bias against agriculture. These included credit at subsidized rates and implicit subsidization of irrigation, but both were insignificant in altering the negative incentive structure. Some subsidies were also given to fertilizer firms, but these were not even sufficient to offset the biases created by other policies in the fertilizer subsector. The combined set of all economic incentives facing the sector clearly reduced the profitability of agriculture activities.

1.15 Because of the partial failure of the industrialization strategy, which favored capital-intensive investment behind high protective barriers, and with the onset of the economic crisis 1983-85, some re-thinking took place during the previous regime and Government undertook some limited reforms. The measures included: opening up of import trade in animal feeds and wheat,

phasing out of price controls on rice, poultry, eggs and pork, deregulation of interest rates and phasing out of subsidies for agricultural credit. Also, tariff reforms in the industrial sector since 1980 reduced the implicit bias against agriculture to some extent. Reform measures were also announced for the coconut and sugar subsectors (see Annex 12).

1.16 The new Government, after assuming power in February 1986, quickly moved to reduce a number of major distortions against agriculture. Among the most important actions were lifting the ban on copra exports, abolition of monopolies, liberalization of urea and potash imports and sales, and abolition of all export taxes. All these actions represent important steps towards creating a better incentive structure for agriculture.

1.17 Given the severe biases against agriculture in the past, it is surprising that the sector did as well as it did. The adverse policy environment was not an overriding constraint, and was partly offset by some of the more favorable factors discussed below. By the same token, the various steps taken to eliminate discrimination against agriculture may not, by themselves, be sufficient.

1.18 The Land. Increased agricultural production in the 1970s was facilitated by expansion of the total land available for cultivation and by increased cropping intensity brought about by expansion of irrigation. Total alienable and disposable (A&D) land increased from 12.6 million ha in 1970 to 14.5 million in 1984, or by 15 percent. At the same time, the total area serviced by irrigation nearly doubled, from 742,000 ha in 1972 to 1,457,000 ha in 1986.

1.19 However, this period also saw land becoming increasingly scarce. While accurate data are not available, it appears that much of the expansion in A&D area has been in marginal and less productive areas, and recently the rate at which new irrigated land has been brought into production has diminished. The progressive closing of the land frontier is reflected in the land under production. The total area harvested increased by over 75 percent between 1950 and 1970, and by a further 21 percent between 1970 and 1975. However, there was only a 12 percent increase between 1975 and 1980, and since 1980 the harvested area has fallen, partly due to the general economic position.

1.20 The increasing scarcity of land has had three major consequences for agricultural development and future prospects. First, increased production must increasingly come from improved productivity, not area expansion (see below). Second, it has increased the pressure of population on the land: while the total area of A&D land increased by 15 percent between 1970 and 1984, rural population increased by 50 percent and agricultural employment by 36 percent. As a result, people have been forced to cultivate an increasing proportion of forest areas, with serious consequences for the environment.
1.21 Third, increasing population pressure has reduced average farm size and, as a result, constrained the growth of per capita incomes and blunted the attack on rural poverty. According to the 1980 agricultural census, 50 percent of farms were already less than 2 ha in size, and 23 percent were less than 1 ha. Even with advanced technology, it is difficult to provide a family with an above-poverty income level on such small holdings. Yet since 1980, as opportunities for non-farm employment have dwindled, the ratio of population dependent on farming to available land is likely to have increased further.

1.22 The problem is not just an overall scarcity of land: it is also a problem of maldistribution. The inequality in access to land is reflected by the fact that the 50 percent smallest farms comprised only 16 percent of the land. At the other end of the scale, the 3 percent of farmers who have holdings in excess of 10 ha cultivate over a quarter of the land. Yet the pace of agrarian reform since 1970 has been slow, and the emphasis of the two major agrarian reform programs has been on tenurial reform rather than land distribution. Little progress has been made in giving the rural poor access to more land (see Annex 1 for a discussion of the link between land and poverty and a brief review of the agrarian reform program).

1.23 Technology. The period since 1970 experienced rapid but uneven utilization of modern technology that helped to expand production. The most conspicuous development was in rice, where high-yielding varieties, irrigation and chemicals boosted average yields from a little over a ton per ha in the 1950s and 1960s to about 1 1/2 tons in the early 1970s, to 2 tons by the end of the 1970s and to about 2 1/2 tons by the mid-1980s. While yields are still low by Asian standards, the technical advances made in rice cultivation over the past 20 years are the most important and widespread among the major crops.

1.24 In contrast, the development of other major commodities has been disappointing (see Chart 2). Corn yields have increased by less than a quarter from the very low 1970 levels, and are still only around one ton per ha. And yields of coconut and sugar, while fluctuating with weather and prices, are still low--under 50 nuts per tree (or one ton of coconut products per ha) and 5-6 tons of sugar per ha. There has been only meager progress towards developing the potential for intercropping with coconuts.

1.25 The most dramatic advances in technology have been in commodities developed by the large commercial sector, especially bananas, pineapples, poultry and aquaculture. While they started from a small base, rapid strides in technology have helped make these commodities the most dynamic growth points in the sector. For example, a 300 percent increase in yield helped bananas to become the fourth most valuable crop by 1986 and sophisticated production techniques have been developed in such diverse subsectors as mango production and fish culture. By contrast, the development of technology suitable for adoption by smallholders in non-rice areas has lagged, both in terms of the profitability of traditional crops such as rootcrops, coffee or abaca, and in the development of potential new crops, such as oilpalm.

1.26 Markets. The performance of the agricultural sector since 1970 has been much affected by the price fluctuations of major commodities. In Chart 3, the weighted world price of Philippines five major commodities (rice,
CHART 2: CHANGES in AVERAGE YIELDS PER HA. (1950=100)
Chart 3: WORLD MARKET PRICE TRENDS - FIVE MAJOR COMMODITIES* and GVA in PHILIPPINE AGRICULTURE

*Rice, corn, coconut, sugar and bananas, weighted by their share of GVA, 1970-86

- World Price Index
- Agriculture GVA
corn, coconuts, sugar and bananas) is plotted alongside the annual growth rate of the Philippine agricultural sector. In little over a decade, prices dropped from historically high levels in the mid 1970s to the recent historically low levels. While other factors, including weather, were operating at the same time, it appears that world market price movements had a pronounced influence on agricultural performance, either directly as in the case of the major export crops, or more indirectly, as in the case of grains. On the positive side, it also appears that some of the progress in diversifying the agricultural sector was linked to these trends in the prices of traditional products.

1.27 Government Support. Finally, the performance of agriculture during this period was affected by the level and nature of support provided by government. Production is almost completely in the hands of the private sector, but government plays an important role in providing infrastructure and supporting services, and may have to play a critical role in helping to unlock the potential of smallholder agriculture, particularly in the less favorable areas. It is an underlying theme of this report that the agricultural sector would have performed even better in the past--and could be better placed to perform well in the future--had it received more support from government in the past.

1.28 Apart from the policy environment, three aspects of Government support have affected performance in the past. First, until recently the share of resources going to agriculture has tended to fall in real terms, with adverse consequences for new investments, the provision of farm-related services, and the level of expenditure for operation and maintenance. Second, the allocation of resources within the sector has not always been effective. Some important programs--including land reform, research and rural infrastructure--have been underfunded. On the other hand, other programs, with more doubtful benefits, have perhaps been allocated disproportionate resources. Such programs include Integrated Area Development Projects (IADPs), settlement schemes and some of the less well-focused uses of government subsidies. Finally, the institutional framework has lagged behind the needs of a dynamic agricultural industry. The existence of many institutions, often with overlapping functions, did not always serve farmers well. And there remain some serious gaps in the institutional capacity of Government, particularly in its capacity to develop national programs for smallholder agricultural development and appropriate strategies at the regional level. These subjects will be discussed in more detail in the final chapter.

II. AGRICULTURE AND THE FUTURE GROWTH OF THE ECONOMY

Introduction

2.1 The 1987-92 Plan accords agriculture the highest priority among all sectors and assumes a growth rate of over 5% in value added over the plan period. Other reports have suggested that the sector should be regarded as the "lead sector" or "engine of growth" in the country's recovery. This chapter seeks to test the assertion that agriculture can play a lead role over the next five years. It assesses the contribution that agriculture can make
to development during the plan period to value added, employment and the reduction of poverty, relating this to the prospects of major commodities. It then looks to the longer-term, and assesses in more general terms what the prospects for accelerating growth of agriculture in the 1990s.

The Role of Agriculture in the 1987-92 Plan

2.2 Plan Assumptions. The Plan's macro-economic projections of GDP foresee an average growth of 5.2% in agricultural gross value added (GVA) between 1986 and 1992, compared with 7% for industry, 6.4% for services, and 6.3% for the economy as a whole.1/ The agricultural growth rate is expected to accelerate sharply during the period, increasing from 3% in 1986 to 6% in 1992; these figures compare with an average growth rate of 3.9% during 1970-86, a period of boom through 1982 followed by sharply reduced growth in the last few years.

2.3 The implications of the structural growth of the economy assumed in the plan are disturbing, especially for their likely impact on employment, incomes and poverty trends. The Plan assumes that employment in agriculture will grow by 4.7% a year, or at the same rate as in non-agriculture sectors (Table 3). At the same time, unemployment is expected to fall by more than half. As a result, the proportion of the labor force employed in agriculture is projected to increase during the plan period. This would not only run counter to historical trends, but would clearly further increase the pressure of population on land and make it more difficult to reduce rural poverty.

Table 3: PLAN PROJECTIONS OF EMPLOYMENT AND VALUE ADDED

<table>
<thead>
<tr>
<th>Gross value added</th>
<th>Employment</th>
<th>GVA per worker</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Growth</td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>27.1</td>
<td>36.7</td>
</tr>
<tr>
<td>Non-agriculture</td>
<td>63.5</td>
<td>94.6</td>
</tr>
<tr>
<td>Total</td>
<td>90.6</td>
<td>131.3</td>
</tr>
</tbody>
</table>

1/ These figures are slightly different from those in the published plan because the revised estimates of value added in 1986 have been used.
2.4 At the growth rate (5.2%) assumed in the plan, a small increase in GVA per worker in agriculture could be achieved. But income distribution would deteriorate noticeably, since GVA per worker would rise five times faster in nonagricultural sectors than in agriculture. It is probable that income disparities would also increase within agriculture, since a disproportionate share of increased incomes would accrue to those who have access to the most land.

Bank Projections

2.5 A more serious problem is that the growth rate of agriculture projected in the Plan may prove difficult to achieve. The macro-economic projections of the plan do not provide a breakdown of value-added by subsector that could be used as a check on the feasibility of the overall growth assumption. To provide an alternative assessment of the likely growth in agriculture over the plan period, the Bank mission therefore attempted to project the growth of value-added by each major commodity or subsector during the plan period. These projections translate into an overall growth rate for agriculture of 4.2% between 1986 and 1992 (see Table 4), as compared to the 5.2% assumed in the Plan.

Table 4: BANK PROJECTIONS OF VALUE ADDED BY SUBSECTOR
(P billion at constant 1986 prices)

<table>
<thead>
<tr>
<th>Value added 1986</th>
<th>Projected 1986-92 Growth rate %</th>
<th>Projected Value Added 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>28.4</td>
<td>3.3</td>
</tr>
<tr>
<td>Corn</td>
<td>10.6</td>
<td>5.0</td>
</tr>
<tr>
<td>Coconut products</td>
<td>6.3</td>
<td>0.5</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>3.3</td>
<td>3.8</td>
</tr>
<tr>
<td>Banana</td>
<td>4.4</td>
<td>1.0</td>
</tr>
<tr>
<td>Pineapple</td>
<td>3.4</td>
<td>1.7</td>
</tr>
<tr>
<td>Other crops</td>
<td>38.6</td>
<td>6.0</td>
</tr>
<tr>
<td><strong>Total crops</strong></td>
<td><strong>95.0</strong></td>
<td><strong>4.3</strong></td>
</tr>
<tr>
<td>Livestock</td>
<td>11.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Poultry</td>
<td>14.9</td>
<td>7.0</td>
</tr>
<tr>
<td>Fisheries</td>
<td>32.7</td>
<td>5.0</td>
</tr>
<tr>
<td>Forestry</td>
<td>9.9</td>
<td>-4.1</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>68.5</strong></td>
<td><strong>4.0</strong></td>
</tr>
<tr>
<td><strong>Grandtotal</strong></td>
<td><strong>163.5</strong></td>
<td><strong>4.2</strong></td>
</tr>
</tbody>
</table>
2.6 The general assumptions underlying these projections are that (a) GDP grows at the rate assumed in the Plan; (b) for export crops, world market prices follow World Bank medium price forecasts; and (c) that a moderate degree of domestic protection is provided for major grains (as suggested in the following chapter). The medium-term prospects for individual subsectors are given below; where relevant, the Bank's projections are compared with the production targets given in Chapter 3 of the Plan.

2.7 World rice prices have recently been low by historical standards partly due to productivity increases and good harvests but also because of US export subsidies. With these current and projected prices it is unlikely that the Philippines will be able to export rice profitably anytime soon, but the country can and should continue producing at near self-sufficiency levels. This limits future production increases to a rate slightly above the population growth rate, considering a small positive income elasticity.

2.8 Relatively speaking world corn prices are even lower than those of rice--about half US production costs. Therefore exporting corn is not a viable option for the current or foreseeable future. While the country imported substantial quantities of yellow corn in the early 1980s, no imports were necessary from late 1985 to early 1987. For the future, we assume that price policy will maintain corn prices at a level that will ensure a substantial degree of self-sufficiency. Certainly productivity improvements are possible, particularly from the use of improved open-pollinated varieties and better cultural practices. The projections for 1992 therefore postulate that white corn can be expected to grow in line with population growth; yellow corn--used as feed--is expected to grow faster, i.e. in line with the expansion of hog and poultry production.

2.9 Only marginal increases in the production of coconut products are expected over the plan period. Greater emphasis on intercropping would have a positive impact on coconut production in the short term (particularly through the use of fertilizer on the intercrops), although the impact of long gestation intercrops would not be felt until later. The Bank takes a cautiously optimistic position on sugarcane. If the World Bank's commodity projections are accurate, world prices for sugar will recover and rise beyond 12¢ per lb by 1989, at which price some of the low cost sugar mill districts would again be able to export to the free world market. Under this scenario sugarcane output would grow at about 3.8% during the plan period, even though the US quota is assumed to disappear. If world prices do not recover, production is likely to fall, as envisaged in the Plan.

2.10 After strong growth in the 1970s, bananas have become a no-growth export crop. World markets are saturated and production is expected to increase only marginally. A faster rate might be possible if bilateral agreements with new markets, such as the People's Republic of China or the Republic of Korea, can be concluded. There was a dramatic growth of pineapples in the 1970s, but with markets becoming saturated there has been a marked slowdown during the 1980s.
2.11 Other crops have a considerable weight in sector production (more than rice and corn combined). Root crops are likely to continue growing at around 4%. Ramie growth is currently high (perhaps approaching 10%) but it is still a minor crop. Vegetable output will do better than population growth, but not dramatically so (no important vegetable exports are foreseen).

2.12 A major part of the "other crops" are tree crops, dominated by tropical fruits plus coffee, cacao, rubber, and black pepper and other spices. In recent years the area under such crops has been expanding at about 4% a year, according to official statistics. Most of this newly-planted area will only come into full production during the Plan period.

2.13 The livestock subsector has not been growing strongly in recent years and there is no reason to expect a turnaround. Even if its performance should improve dramatically, its overall weight is modest. Growth in the poultry subsector was high during the 1970s. During the crisis of 1983-86 output was curtailed by the contraction in demand. If the overall economic growth of 5.6% projected in the plan for 1986-92 materializes, the 2% production growth rate assumed in the Plan seems much too conservative. We assume that the poultry subsector will continue to grow faster than incomes.

2.14 Physical output in forestry has been declining for several years and there seems no basis for expecting the turnaround assumed in the Plan's projections (8%), especially in view of the new Government's interest in conservation. The fisheries subsector consists of the small fishermen subsector, the commercial subsector and aquaculture. We agree with the plan's assumptions of 2% and 5% for the first two but aquaculture should grow much faster than the assumed 4% rate. In our view, a 12% rate is feasible, given the present rate of expansion.

2.15 The implications of the Bank's lower projections for agriculture on the economy are significant, especially for incomes. It is clear that if value added in agriculture grows by 4.2%, while employment continues to expand by 4.7%, real per capita incomes are bound to fall. To put it another way: agriculture could not absorb the additional labor force assumed in the Plan without a fall in real incomes. On the other hand, if even the meager gains in GVA per worker in agriculture assumed in the plan (Table 3) were maintained, this could only be done at the expense of continued high levels of open unemployment.

2.16 Thus the implications of this analysis are for some combination of falling per capita incomes in agriculture, increased rural poverty, wider rural/urban income differentials, and a growing number of landless, unemployed or severely underemployed people. This is clearly not an attractive scenario. There are apparently only two ways out: one is to accelerate agricultural
growth; the other is to siphon off a larger proportion of the expanding labor force into non-agriculture sectors. These two possibilities are examined in the following sections.

Prospects for Accelerating Agricultural Development

2.17 In the short-to-medium-term we see little prospect of agriculture growing much faster than 4% a year, unless there is an unforeseen upswing in world market conditions or there is an acceleration in the rate of growth of other sectors of the domestic economy (see below). Most of the major traditional commodities are constrained by demand factors, while some of the best prospects for diversification either have a long gestation period (such as treecrops) or start off from a low base (such as ramie).

2.18 Similarly the likely potential for accelerating development through agrarian reform is unlikely to manifest itself before the 1990s; on the contrary an acceleration in the agrarian reform program during the five-year plan period could well have a negative effect on production in the short-term, in contrast to its positive impact on equity.

2.19 As we look towards the end of the century, the future prospects for Philippine agriculture look more promising. There is great potential, on the supply side, for increasing yields and for further diversification. In the longer term, too, agrarian reform could have a dynamic impact on unlocking the potential of the mass of small-scale operators. On the demand side, much will depend upon how competitive the Philippines will be in world markets. The country has the advantage of low-cost labor at present (the only positive facet of continuing rural poverty) and a relatively well educated and industrious labor force. If these advantages can be combined with technological advances to lower costs of production on the one hand, and a competitive exchange rate on the other, there is no reason why the Philippines could not look forward to a faster growth of agriculture in the 1990s, provided it uses the remainder of the 1980s to build a solid foundation for accelerated growth.

2.20 If costs could be reduced enough, the Philippines might eventually find it profitable to export labor-intensive crops, such as rice, rubber or vegetables. But the best prospects for large and widespread growth seem to be in treecrops. The Philippines should be able to retain its dominant position in coconuts, particularly if, through intercropping, costs of production can be reduced. Intercropping will also allow a low-cost expansion of coffee and cocoa. The potential for raising incomes from intercropping is great. The mission estimates that over 3/4 million ha of existing plantations could be more effectively intercropped, producing high-value additional production of coffee, cocoa, fibers, spices and meat. If 300,000 ha of this potential could be developed by the year 2000, the incremental value of production at full production could be in the order of P 10 billion a year (at today's prices) or considerably more than the present value of sugar production, for example. We also see a large promise in other treecrops, including fruit trees and oil palm. The principal uncertainty is in regard to markets, which is why in the following chapter it is suggested that the feasibility of accelerating smallholder production of treecrops, including the market prospects, should be explored as a priority task.
Expanding Other Sectors

2.21 The alternative way of offsetting a lower growth rate in agriculture is to accelerate the growth of other sectors, such as industry, tourism and other services. This would also have a double impact on the welfare of farm families and the rural areas by (a) reducing the population pressure on the land, and hence allowing a faster expansion of per capita income; and (b) expanding the market for agricultural products. The latter factor is all the more important in view of the generally gloomy prospects facing the Philippines in traditional export markets.

2.22 The 1987-92 Plan projects a growth rate of 6.9% for the non-agricultural sectors (7% for industry and 6.4% for services) and assumes that employment in these sectors increases by 4.7% a year. The mission undertook sensitivity analysis to illustrate the impact of a hypothetical acceleration of growth in these sectors on employment and incomes in the agricultural sector (see Appendix 2). This analysis suggests, for example, that if it were possible to increase the rate of growth of nonagriculture by 20% over the plan period (that is, from 6.9% to 8.3%), with a proportional acceleration in labor intake, it would be possible to slightly increase value-added per worker in agriculture in real terms, while simultaneously reducing unemployment. However, even under this assumption of faster growth in other sectors, the gap between agricultural and non-agricultural incomes would widen further.

2.23 An even greater impact might be possible if employment growth in non-agriculture could be accelerated by using more labor-intensive methods of production and thereby holding down gains in labor productivity. For example, the analysis in Appendix 2 suggests that if non-agricultural employment could grow at about 7% a year, it might be possible to hold down the growth of the agricultural labor force to less than the population growth rate thereby allowing a sizeable increase in real incomes and some reduction in the income differential between agriculture and non-agriculture.

2.24 It appears that a faster rate of growth in these sectors would not be impossible to achieve, given that most other ASEAN countries, as well as China, Korea and Hong Kong, have achieved industrial growth in excess of 8% a year over the last decade. It is clearly beyond the scope of this report to assess what rate of growth in non-agricultural employment would be feasible or how it might be achieved. However, it is appropriate to stress that an acceleration in the production and employment generated by the industrial and service sectors would do more than anything else to increase farm incomes and reduce rural poverty. In the final analysis, all attempts to increase farmer profitability and overcome rural poverty will be in the nature of holding operations as long as the pressures of population on available land continue to build. During such period the agricultural sector will have to absorb surplus labor as productively as it can. The real turning point will come when the faster growth of other sectors finally starts to siphon labor off from agriculture, so that all the gains of increasing productivity can go towards improving farm family living standards.
Conclusions

2.25 What, then, is the outlook for the future? Some factors look more favorable in the immediate future—particularly the renewed political commitment to agriculture, as illustrated by recent policy reforms. But other factors are likely to be less favorable and threaten to dampen the impact of a more favorable policy environment. These include the closing of the land frontier and rising costs of irrigation, bleak market prospects for traditional commodities, and the difficult technological challenges that lie ahead, particularly in finding profitable and environmentally sustainable farming systems for the upland and hilly areas.

2.26 The crucial balancing factor determining performance of the sector in the future may well be the speed and determination with which the Government acts in strategically important areas—particularly in agrarian reform, providing infrastructure and essential services, and in identifying and implementing programs to help smallholders change their traditional low output/low income patterns of production. This is the subject of the next chapter.

III. KEY STRATEGIES FOR THE FUTURE

A. Introduction

3.1 The Philippine agricultural sector is almost entirely in the hands of the private sector—perhaps comprising some 2½ million owners or occupiers who between them make all the production and important decisions that determine the course of agricultural development. The Government wisely wants to leave production in private hands, leaving it to a healthy set of policies and incentives to ensure the primacy of market forces.

3.2 This report has at various places given due credit to the Government for the considerable policy reforms already implemented or announced; these have gone a long way towards improving the environment for the sector. But there is still room for improvement, since some elements of bias against agriculture remain. For example, industrial protection is still relatively high in some categories, farmers face an import tariff on phosphatic fertilizers, and there is a continuing administrative fee levied on copra exports and a production tax on sugar.

3.3 There can be no question that maintaining a favorable policy framework is an essential part of any agricultural development strategy. But "getting prices right" will not be enough to ensure the pace of development we foresee during the 1987-92 plan period, let alone allow for acceleration in the 1990s. On the contrary, Government will have to play a crucial role in supporting, and where necessary steering, the pace and direction of development during the coming years. This role will be especially important in unlocking the great potential of the mass of small farmers (including those who will benefit under ALRP) and who cannot always take advantage of market signals without assistance.
3.4 It is suggested that there are three principal priorities for Government intervention in the sector during the plan period: (a) increasing small farm productivity; (b) ensuring the successful implementation of the agrarian reform program and (c) reducing rural poverty. This chapter attempts to identify the elements of a strategy to address these objectives. It is not intended as a comprehensive program, but as a set of key strategies that we consider warrant urgent attention by Government.

B. Increasing Small Farm Productivity

3.5 The new administration in DA has introduced "farmer profitability" as the principal criterion for planning, design of programs and evaluation of results. This is an appropriate focus for the new department, but it will take much time and effort to breathe life into the slogan. This section suggests a strategy for doing so. We group our suggestions under four headings: Priorities for Commodity Development, Infrastructure, Supporting Services, and Physical Inputs.

Priorities for Commodity Development

3.6 Some of the fastest growing subsector and commodities in the past have been successfully developed by the private sector with little need for Government intervention. These include poultry and pig production, commercial fishing and the promotion of such exports as shrimp and fruit. It may be assumed that the further development of these subsectors might be safely left to the private sector, with as little interference from Government as possible. Other commodities— particularly those grown mainly by smallholders— may need more support, and in some cases more direct intervention, by Government. It is these latter commodities that we discuss below.

3.7 The Staple Grains. The greatest potential for increasing farm incomes is in the staple grains—rice and corn—because of their ubiquitous nature. There are two complementary strategies to be followed: (a) to increase productivity and lower costs of production and (b) to maintain prices that are both attractive to the farmer and fair to the consumer.

3.8 The scope for increasing productivity of palay and corn is considerable. There has been a steady improvement in palay yields over the years (see Chart 2), and further improvements can be expected from continued research, improved water supply, more effective extension and other services discussed later in this chapter. On the other hand, corn yields are stagnant, despite the considerable efforts devoted to be development and promotion of hybrid (yellow) corn.

3.9 There has been a significant shift in emphasis of research in recent years towards the development of low-cost, low-risk production techniques. The results already suggest that there should be greater emphasis on the promotion of improved open-pollinated (OP) varieties of both white and yellow corn. Hybrid corn may be more profitable for the larger commercial growers but its high seed and fertilizer costs appear to make it considerably less profitable than OP varieties for most smallholders. There are also persistent reports that small farmers are doubtful whether a further intensification of
inputs on rice is profitable, suggesting that an even greater emphasis on low-cost production techniques may be called for.

3.10 The other crucial strategy relates to pricing. For many years the country has tried to promote a price stabilization scheme for rice and corn that would do justice to the conflicting interests of producers and consumers. In theory, it was a good scheme; in practice, it did not work very well. The Philippines now faces a more difficult task in stabilizing grain prices for two reasons: it has now virtually reached self-sufficiency in both rice and corn, which means that any surplus production will have to be disposed of at prices much lower than domestic prices. Second, world market prices are not only at historically low levels but they tend to fluctuate unpredictably.

3.11 For these reasons, it is suggested that Government might reassess its grains pricing policy and possibly adopt a different procedure for setting producer prices. One possibility is to introduce a variable tariff to give an element of protection against world market price fluctuations. This is discussed in detail in Annex 5. But even this would not protect the producer from falling prices if surplus conditions prevail. Given the importance of the staple grains, particularly rice, and the large investments in irrigation and other services needed to maintain self-sufficiency into the 21st century, the time may well have come to undertake a review of long-term production policy. A suggestion for a review of rice production strategy and its linkage with the investment program in irrigation is given in Appendix 1(5).

3.12 Coconut Areas. In our view, much the largest and most urgent opportunity for increasing the incomes of traditional-crop farmers is found on coconut land. Only a relatively small proportion of such land is in need of replanting; a far larger proportion needs a program of crop diversification through intercropping. The main candidates for intercrops are well known, although there will naturally be differences according to soils, typhoon vulnerability, rainfall, and elevation.

3.13 Many commercial-scale coconut producers have already planted intercrops, but only a small proportion of tenanted or sharecropping smallholders have yet done so. The Philippines Coconut Authority (PCA) has two small ongoing credit schemes designed to promote intercropping, but its resources are pitifully inadequate to the task, and there appear to be some serious problems that need attention before the program could be expanded. Major obstacles include uncertainties about the implementation of agrarian reform, access to long-term financing, and the absence of suitable institutions. So far the initiative has been taken by PCA, but we have reservations about PCA taking on major development functions in regard to such crops as coffee, cocoa, pepper or spices, that go way beyond its principal mandate (see also para. 4.22).

2/ The prospects for developing coconut areas are discussed in more detail in Annex 3.
3.14 These obstacles should not be allowed to deter action, however, since the development of this program appears to be one of the most effective steps the Government could take to increase the incomes of a large number of small farmers. The mission has suggested that preparation work for a potentially large project could be commenced immediately (see Appendix 1(1)). External assistance might be helpful in both developing and financing a major national program.

3.15 Coconuts have also suffered from fluctuating prices and, as an export crop, there is little Government can do to stabilize producer prices. There was an attempt a few years ago, when petroleum prices were high and coconut prices low, to use coconut oil ("cocodiesel") as a substitute for imported petroleum oil, thus simultaneously helping to support producer prices and save the country foreign exchange. The experiment was short-lived because relative prices soon changed. However, since the long-term outlook for petroleum prices is strongly upward, it would seem prudent to keep the possibility of substitution under review, and to study the technical and policy issues involved.

3.16 Sugar Areas. There is an urgent need for a comprehensive strategy to deal with the problems that have faced the sugar subsector since 1984, following the fall in world prices and the domestic liquidity crisis. These problems are discussed in Annex 4. There are three priorities:

(a) **Rehabilitation.** With the drastic fall in cane production, sugar mills have large excess capacity, which has resulted in increased unit costs and financial stress. Steps to rationalize the processing industry, including the closing of non-viable mills, have now been taken, but much still needs to be done. At the farm level, the lingering problem of arrearages needs to be settled. Many planters cannot obtain new loans, either for cane production or diversification.

(b) **Improved Productivity.** A wide range of measures are required to increase yields and improve processing efficiency. These might include: (i) introduction of a direct cane purchase system, (ii) abolition of production tax and other charges on sugar, (iii) various measures for institutional strengthening, including arrangements for sugar research and extension, (iv) studies of the potential for irrigation, and (iv) road improvements in sugar areas.

(c) **Agrarian Reform.** There is an urgent need to clarify the policy in regard to agrarian reform in sugar areas. Without a clear decision of the nature and scope of land provisions, it will not be possible to deal with either the urgent problems mentioned above or the even more pressing problems of unemployment and poverty in the economically depressed sugar producing areas, particularly in Negros.

3.17 Non-traditional Crops. As indicated earlier, the sector has already made considerable progress towards diversifying production. There is potential for much more, both for import substitution and for export. Agricultural imports have been dominated in recent years by wheat, dairy products, raw
tobacco, and two major animal-feed ingredients, soya products and corn. Cotton, malt, and paper pulp have also been significant. Many of these have potential for expansion for domestic consumption. In the export field, there is potential for developing several crops, including fibers (especially ramie), tropical fruits, flowers, and spices.

3.18 This report will not attempt to pick the winners among the many possibilities. Several recent studies have assessed the potential of such crops. Much can be left to the initiative of the private sector, which has served the country well in the past. But it does seem important for Government to formulate an overall strategy for the future direction of diversification, differentiating between those commodities that can be left to the private sector to promote and those which will need Government support, guidance or regulation to succeed.

3.19 One group of commodities that does stand out as a priority for Government attention is treecrops. All of the recent studies of diversification possibilities single out the potential for treecrops, with the fruits dominant among them. We concur with this assessment, and suggest that Government should move quickly to promote the development of the more promising crops, after conducting the necessary technical and market studies (see Appendix 1(2)).

3.20 Recent studies suggest that, despite low world prices, oil palm is still a sound investment where suitable conditions exist. Some large scale commercial development has taken place, including two plantations assisted by IFC. Initial results are promising, and there would seem to be considerable potential for developing oil palm as an export crop, particularly in Mindanao. There is no reason why oil palm could not also be developed as a smallholder crop, as an important part of the tree crop development program suggested in Appendix 1(2).

3.21 Fisheries. The fisheries subsector contributed a sizable P 32.7 billion to value added in 1986. Of the total output in 1984, 52% came from the municipal sector (consisting of small fishermen), followed by commercial fisheries (25%) and aquaculture (23%). From 1970 to 1984 the output of the municipal sector increased by 5.5% annually, commercial fisheries increased at 2.1% and aquaculture by 12%. Aquaculture and commercial fisheries development will continue under the leadership of the private sector with Government setting the proper incentive environment and providing proper infrastructure. Municipal fisheries, however, because of the poverty and resource issues involved, needs Government's particular attention.

3.22 Because of population pressures, the limited fisheries resources close to the shore line, and some competition between commercial and municipal fishermen, the coastal fisheries resources are overexploited. Possible recommendations for addressing this issue are: (a) limiting the access of commercial fishermen to coastal fishery resources and (b) giving municipalities full legal and administrative control over the municipal fishery resources and activities.
3.23 The Development Plan 1987-92 does not specifically lay out a strategy for the municipal fishery sector, but it says that "to support the millions of families which depend on the fishing industry and to stabilize fish supply and prices, regional fishing port complexes will be selectively developed." That is obviously not sufficient to significantly improve the lot of large numbers of fishermen. A comprehensive strategy should be developed.

Infrastructure

3.24 Irrigation. Large irrigation investments over the past two decades have played a major role in increasing farmers' profitability and expanding palay production. Despite impressive progress, the subsector faces today issues which have significant implications for productivity and efficiency, financial viability, and impact on farm incomes. First, the scale and scope of the investment program in irrigation have been questioned recently. There has been concern whether the investment "mix" between rehabilitation of existing system and construction of new irrigation systems is appropriate. A second major issue is the present financing and pricing policies in irrigation and their adverse impact on the adequate operation and maintenance of the irrigation systems.

3.25 The scale and composition of a large irrigation investment program needs frequent review to see if it is the lowest-cost method of pursuing national objectives. For years, the primary objective has been self-sufficiency in rice production, combined with equity in the distribution of irrigation investments. The 1987-92 Development Plan recommends a shift in emphasis from new irrigation projects to rehabilitation and improved maintenance of existing facilities. Accordingly, about 60% of total expenditures in the irrigation subsector will be used for rehabilitation or operations and maintenance (O&M), with the remaining 40% allotted to new irrigated areas. The Plan also gives preference to small scale and communal irrigation system development. Economic rates of return estimated for various types of systems, show that rehabilitation, O&M improvements, and construction of small scale and communal schemes are viable, while the construction of new large and medium scale systems, particularly for water storage, are not. The economic viability of alternative investment options in irrigation is analyzed at greater length in Annex 6.

3.26 While the strategy outlined in the plan is generally acceptable, the composition of the investment program is not wholly consistent with the strategy. In particular, the investment program includes two very large projects (Balog-Balog and Pampanga Delta) whose economic justification is extremely weak. And in terms of size and location (both are in Central Luzon) they do not reflect Government's stated priorities. The resources allocated for these projects could probably be better utilized in programs that would benefit more farmers.

3.27 The emphasis given to irrigation O&M in the Plan is timely as present levels of maintenance are inadequate to sustain the benefits from past investments in irrigation; and there is a danger that both the efficiency of irrigation schemes and farmer incomes could fall unless the trend is reversed.
The issues involve the sources of finance for irrigation costs, the question of cost recovery, and the sharing of responsibility for maintenance between the National Irrigation Authority (NIA) and the beneficiaries. Financing irrigation costs is addressed in the final chapter, and Appendix 1(5) suggests study of the issues of responsibility, as well as the potential for developing individual irrigation services. A program to provide low-cost irrigation to individual farmers where groundwater or surface water supplies are available, would be particularly helpful in drier areas. The Philippines appears to have given less attention to on-farm water supplies than many other countries.

3.28 Roads. Some experts contend that the single most important contribution the Government could make to improve the performance of agriculture is to improve and expand the network of rural roads and bridges. The present program seems inadequate, particularly when Government wants to generate rural employment. There are two ongoing programs: the local government road-building program, which is important for agriculture because it provides all-weather, graveled farm-to-market roads, aims to build some ___ km of road during the 1987-92 Plan period. However, the program is severely constrained by budget limitations, despite assistance from the Bank and other external sources. The second program is a labor-intensive barangay road construction/maintenance program undertaken by the Department of Public Works and Highways (DPWH) under a special employment-generation program started in 1986 -- the Community Employment Development Program (CEDP).

3.29 Both programs need to be expanded, and both warrant further external assistance. Before an expanded program can be identified, it is necessary to establish priorities for agriculture and rural poverty alleviation. For example, how much emphasis should be given to constructing simple roads (and bridges) at the barangay level to open up previously inaccessible areas, compared with upgrading provincial roads to better serve areas of existing agricultural importance? The next task is to assess the capacity of both local government and DPWH to undertake an expanded road construction/maintenance program. A proposal for undertaking this preparatory work is given in Appendix 1(6).

Technical Support Services

3.30 One the most important functions of Government is to ensure that the technical support services are available, particularly in the development and dissemination of appropriate technology to the smallholder sector. In the Philippines today, research services are in relatively good shape, but the extension services need much remedial attention.

3.31 Agricultural Research. Over the past two decades the Philippines has developed effective technical research institutions, and a well functioning system for coordinating research through the Philippine Council for
Agriculture and Resources Research and Development (PCARRD). Research is divided among general and specialized research stations run by the State Colleges and Universities (SCU), the DA and specialized agencies (e.g., the Philippines Coconut Authority, the Sugar Regulatory Authority and the Tobacco Board). While there remain problems of achieving effective coordination in some of the 12 Regions, the basic structure is sound and works well.

3.32 The most serious problem is the present scale of the research programs: several studies have pointed out that the Philippines has been spending far less on agricultural research than most comparator countries—perhaps only one-third as much, on average. Recent increases have begun to make up this deficit, but there is still substantial room for improvement. The domestic budget for agricultural research has reportedly been frozen for the next three years, with only very modest increases in the last two years of the Plan: this is difficult to understand in view of the high priority which the Government is giving to agriculture and the need to generate new technologies to increase farm profitability. There is a good case for an expanded program, provided the additional resources are used effectively to increase the productivity and profitability of farming. Some of the priorities for resource use are suggested in Annex 9. These include further research on biological nitrogen fixing and the use of low-cost organic fertilizers, farming systems for poorer farming areas, low cost post-harvest mechanization, and food technology.

3.33 One important requirement, to increase efficiency, is to align the remuneration of DA researchers more closely with scales used in the SCUs and specialized research institutions. Another need is to increase economic and social research, in order to refine and strengthen technical adoption recommendations. Post-harvest technology has also received too little attention in the past, although several ongoing programs are now gaining momentum. Fortunately external assistance for several research programs is continuing or pending, which will ease budget pressures.

3.34 Extension. The DA has some 13,000 agriculture and food technologists, most of whom are engaged in extension work. There is also a large number of extension workers employed by the agencies attached to the DA and by other institutions such as NIA, Department of Agrarian Reform (DAR) and local government, some of which offer better conditions of employment than the DA. The effectiveness of these various services varies considerably and there are overlapping jurisdictions, with little coordination. Conditions in the DA are far from satisfactory: there are far more field agents than needed, although many may be legitimately occupied on nonextension tasks; mobility is limited because few agents can afford (despite generous credit terms) the motorcycles they are meant to use; and morale is poor because pay and allowances are

3/ With the recent reorganization of the National Science and Technology Authority into the Department of Science and Technology, previous council was divided into two councils, one for agriculture, forestry and natural resources (which is still referred to by the acronym PCARRD) and one for aquatic and marine research and development (PCAMRD).
probably the lowest of any Government servants (for example, field hands on a banana plantation earn more than degree-holding DA extension agents). With low motivation and no transport, many extension agents doubtless spend more time on personal activities than on serving farmers.

3.35 A major rehabilitation effort is needed to strengthen extension services, make them more cost-effective, and improve their value to the farmer. The priorities for action are discussed in more detail in Annex 9. These include proposals to: unify many of the now-independent services; eliminate redundant staff; raise the salaries and allowances of those who remain; increase field mobility; strengthen extension links to research; and retrain and remotivate the remaining extension staff. A proposal for a feasibility study/program formulation task is given in Appendix 1(3).

Physical Inputs and Credit

3.36 The main physical inputs contributing to higher farm profitability are improved seeds and planting materials; fertilizer, pesticides and herbicides; and machinery for tilling, harvesting, and processing. The production or importation and supply of inputs is largely in the hands of the private sector and seems to be operating efficiently.

3.37 Planting Materials. In seed supply, the country has made good progress in producing certified seed for rice and corn, but less progress in legumes and vegetables. The great majority of farmers produce legume and vegetable seed from their own crops, which often gives much lower yields than certified seed. The supply of high-quality planting materials for perennial tree crops is dominated by the private sector, although the Bureau of Plant Industry (BPI) and the Institute of Plant Breeding at the University of the Philippines at Los Banos (UPLB) are also suppliers. While supplies appear to have been adequate for most crops at present demand levels, a large expansion of planting materials will be required if major new tree crop programs are adopted.

3.38 As we look to the future, there is no reason why most needs cannot continue to be met by private nurseries. The main regulatory function of Government is undertaken by the BPI in DA, which presides over a system that includes the testing of new varieties under a National Cooperative Testing Program and the evaluation and policing of seed production through 16 regional seed testing laboratories and the work of private seed producers' associations in all 72 provinces. This function is being performed well. However, it does appear that BPI should assume a greater responsibility for forecasting the likely requirements for seed, particularly for potential seed crops such as oilpalm, and to draw up plans as to how these needs might be met. In some cases it might be appropriate for Government to absorb some of the costs of developing new seed supplies, during the initial build up stage, when it may not be reasonable to expect private entrepreneurs to accept the risk.

3.39 Fertilizers. Recent developments in the fertilizer sector are analyzed in Annex 8. In the 1970s and early 1980s fertilizer importation and marketing was carried out by four firms, regulated by the Fertilizer and Pesticide Authority (FPA). Marketing margins were high and the farmers on
average were paying premiums from 10% to 86% above world prices for various grades of fertilizer. Some limited steps toward a liberalization were taken in 1984; a complete import and marketing liberalization has only been undertaken in 1986 (for all non-phosphatic fertilizers). As a result the number of fertilizer importers/distributors has increased, marketing margins and farmgate prices have declined and fertilizer usage increased. The main outstanding policy issues relate to the Philippine Phosphatic Fertilizer Corporation (PHILPHOS) and the phosphatic fertilizers produced by it.

3.40 Currently, phosphatic fertilizers are protected by a 20% tariff. No imports are undertaken; PHILPHOS is supplying the whole of the domestic market. In our view import duties on phosphatic fertilizers should be abolished in the interests of farmers. It is understood that the future of PHILPHOS will be studied by an international consulting firm under a USAID contract. FPA's role for the future should mainly include quality control of fertilizers, standard setting and information dissemination. At the farm level the efficiency in the use of fertilizer can be improved by determining the most profitable application rates; this is an important area for research and extension.

3.41 Mechanization. The industry is well served by a number of firms with international connections that sell mainly large items, a number of domestic manufacturers, often using designs developed by IRRI and other agencies, and by a considerable number of small-scale "garage" manufacturers. The constraint at present is one of demand. Sales of larger items are reported to have fallen by 70-90% in the last five years, reflecting the depressed state of the large farm sector, particularly sugar. It can be expected that the future demand will increasingly come from small and medium-term farmers, with the emphasis on harvesting and tilling equipment and post-harvest mechanization. A major move forward, however, may have to wait for an improvement in the credit system.

3.42 Credit. During the last five years the rural banking structure that had developed during the preceding two decades was virtually crippled as a result of unwise Government interest-rate policies and imprudent loan decisions. This eliminated a large proportion of formal production credit available to many farmers, forcing informal credit sources (family, friends, traders, suppliers, millers, moneylenders) to take over a much larger share.

3.43 The Government is facing the major task of rehabilitating the large number of banks with high arrearage problems ("non-performing loans") and developing new agricultural credit policies. Subsidized interest rates for commodity support loans have ceased; a liberalized market-rate policy has been adopted; the Central bank is rehabilitating the rural banks (which appears to be straining the Central Bank's administrative capacity); and the many separate government-run loan funds are being merged into a single fund (the CALF or Consolidated Agricultural Loan Fund) which, instead of making direct loans, will guarantee loans made through the commercial banking system.

4/ For further information on the structure of the credit system, an analysis of issues and the suggested priorities for action, see Annex 7.
3.44 These are welcome developments, which should result in gradual restoration of the bank-supplied or formal credit that was available 5-7 years ago. However, we do not see the rehabilitation of the formal credit system as central to a strategy for smallholder agricultural development. Only about 10-15% of agricultural production credit is currently provided through the formal credit system, and most of this goes to major agricultural enterprises or to small farmers with collateral. Thus very few small farmers have had access to formal credit in the past; most of them have financed their production from their own savings or through the extensive informal credit system.

3.45 Over time, as the pace of land reform accelerates and more small farmers have land to use as collateral, access to formal credit will increase. But for a long time most smallholders will continue to rely on the informal market for their credit needs, and this should be explicitly recognized in any development strategy. Past Government actions have already indirectly improved the working of the informal system, including the elimination of credit subsidies and the liberalization of the input supply market, which has done much to increase competition. Further steps should be considered under the umbrella of CALF to give informal lenders more access to the formal credit system (See Annex 7).

3.46 In the final analysis, of course, it is not credit itself that is important but the ability of the small farmer to utilize modern inputs or to make desirable on-farm investments. Given the capacity of the private sector and the recent liberalization of the market, there are now no significant constraints to farmers--at least medium or large-scale farmers--getting all the inputs they require at competitive prices. However, there is good reason to question whether the market works as well for the average smallholder and particularly for the poorer farmer in the more remote areas, who may have difficulty in gaining physical access to certified seed, appropriate chemicals, or suitable tools. Yet if the incomes of small farmers are to be increased, it is essential that they should have ready access to appropriate inputs and, where necessary, the credit to purchase them. We therefore suggest that Government should investigate what use smallholders now make of such inputs, what problems they face in gaining access to them, and what needs to be done to improve access. Such a study might point to a residual role that Government might need to play in ensuring an adequate supply of inputs (see Appendix 1 (4)).

C. Agrarian Reform

3.47 The Government has announced an Accelerated Land Reform Program (ALRP) that not only seeks to accelerate completion of the ongoing land reform programs in rice and corn areas, but will extend land reform to other areas and make available idle, abandoned, expropriated and foreclosed land available to smallholder use. The program has been reviewed in another recent report by
the Bank and it is therefore not proposed to review it further here. However, it does seem necessary to comment on two implications of the ALRP that have particular relevance to the strategy for agricultural development outlined in this report.

3.48 The elements of strategy discussed above would go a long way towards increasing the productivity of the land and hence the incomes of farmers. But there is a large and growing number of rural families, with no land, who could not benefit from this strategy. There is little that the DA, for example, can do for the landless, except to hope that some of the enhanced profitability of farmers will trickle down to them through increased employment opportunities. There is also a limit to how far the incomes of very small farmers can be increased. According to the 1980 census, nearly a quarter of all farms (and 50% of coconut holdings) were less than 1 ha. There is no technology in sight that could be applied to such small holdings that would make farming profitable in any real sense of the word.

3.49 There will come a time, as suggested in the previous chapter, when the pressure of population on the land will ease and greater gains in per capita income can be hoped for. In the meantime, an essential part of agricultural development strategy must be to expand the total area under cultivation, for reasons of growth as well as equity.

3.50 The land reform programs of the past have been important social and political programs, that have had a significant impact on the distribution of income in rural areas. For these reasons, there is a strong argument for accelerating the pace of implementation. But neither of the major programs (Operation Land Transfer or the Leasehold Program) was designed to increase the area under smallholder cultivation; the emphasis was on tenurial reform. Moreover, although there is evidence from other countries that giving tillers title to the land increases production and employment, this does not occur in the short term, and, with increasing rural population, pressure on land is likely to continue.

3.51 There remains, therefore, an underlying need to identify all possible arable land that is either idle, abandoned or under-utilized, to make it available to the landless or to supplement the size of uneconomic holdings. Thus, from the viewpoint of finding all possible means to accelerate the rate of growth of agricultural production, incomes and employment during the five-year plan period and afterwards, the emphasis given in ALRP to bringing more land under cultivation is very appropriate.

3.52 The second point refers to the implications of ALRP for government support services. The Bank's recent report on agrarian reform recognizes that land reform, by itself, will not substantially improve the long-term economic welfare of the beneficiaries, and emphasizes the crucial need for follow-up services, particularly credit, extension and assistance in developing appropriate models of post-reform organization.

3.53 This report strongly endorses these views. The earlier parts of this chapter outlined the magnitude of the task facing Government in improving rural infrastructure and technical support services for the existing farming community. As the pace of agrarian reform builds up, the need for support services from Government, especially DA, DAR and NIA, will increase sharply, as previous tenants or farm laborers who used to rely upon landlords or employers for support will in future look to the Government instead.

3.54 We do not suggest establishing special programs for agrarian reform beneficiaries: their needs should be provided by the regular service agencies. But these agencies will clearly need to gear up to meet the special needs of those who may be assuming full responsibility for their farm operations for the first time.

D. A Broader Approach to Rural Poverty

Agriculture's Contribution

3.55 Since the incidence of poverty is particularly high in agriculture, a large burden of responsibility falls on the agricultural policy makers and implementing agencies to seek out and help the poor. All of the strategies suggested in this report would automatically benefit the rural poor, either directly or indirectly, through stimulating incomes and employment in the rural areas. But, judging from past experience, this will not be enough; it cannot be assumed that development programs will automatically benefit the poor. A more systematic approach to poverty alleviation in agriculture would seem necessary.

3.56 Two steps might be suggested as a start:

(a) First, the target groups and their needs should be identified more specifically. The general typology of the agricultural poor is already well known—small corn and coconut farmers, families in marginal upland areas, agricultural laborers, and so on. But these groups are too broad to be operationally useful. A more detailed breakdown (by geographical area, land use and potential, tenure status, etc.) might be a first step to formulating an appropriate strategy.

(b) Second, the general agricultural development strategy and its major constituent programs should be reviewed to see how they could have a greater impact on the poor. Major sector-wide programs, such as extension, research, credit or irrigation can be reviewed and where necessary revised to make sure that they reach the poor.

3.57 Such an approach might well identify areas where policy or operational programs could be revised to provide a sharper focus on poverty alleviation. Some suggestions along these lines are given in Annex 1 (see para. 25).
The Need for a Broader Approach

While agriculture must perhaps lead the attack on rural poverty, it is clear that agriculture alone cannot solve the problem, and that a much broader approach is needed. We shall suggest, in the next chapter, that in the long run other sectors must take over the lead growth role in the economy. But in the meantime it seems possible to redirect the structure of both ongoing and new programs so that they will have greater impact on poverty per peso spent.

A three-pronged strategy is suggested. First, there is need for a sharper focus on poverty alleviation as a major goal of all people-oriented government programs. The same approach suggested above for agriculture could also be applied to other sectors; in other words, all programs could be reviewed and if necessary revised to ensure that they more effectively reach the poor. To complement the production-oriented activities undertaken in agriculture, a review of social services such as education and health, for example, could ensure that they reach and are affordable by the poor.

Second, it is suggested that it might be useful to progressively work out feasible minimum service standards that could be used as a reference point for reviewing ongoing programs. These would not be optimum targets but rather minimum acceptable levels of access to basic services and infrastructure. They might, for example, determine a minimum school enrollment ratio, a minimum ratio of physicians to the population, or define a maximum distance that any Filipino family should be from an all-weather road, telephone, potable water supply or health clinic. If such minimum standards were available, a high priority could be given to bringing every barangay in the country up to at least these levels of service within a given time period.

Finally, measures could be devoted to a concerted effort to reduce poverty in the poorest areas of the country. The poorest provinces have already been identified, while local governments should know fairly accurately where the most needy areas are within each province. The application of the minimum standards suggested above could further narrow the focus of attention. What would then seem to be needed is a collaborative effort combining the resources and commitment of the national government, the local knowledge and implementation capacity of local governments and a maximum degree of participation of local people and organizations into a coordinated attack on the many causes of poverty.

The combination of these three approaches could provide the basis for a more systematic approach to rural poverty alleviation and to the identification of broad-based poverty programs for local and foreign financing (see Appendix 1(8)). Some of the institutional problems that might stand in the way are addressed in the following chapter.
IV. IMPLICATIONS FOR PUBLIC SECTOR FUNDING AND INSTITUTIONS

A. Introduction

4.1 The previous chapter outlined a set of priority tasks that face Government as it strives to accelerate agricultural development, increase farmer profitability, and intensify the attack on rural poverty. We have no illusions about the magnitude of the challenge facing the Government and the new Department of Agriculture in particular. This final chapter addresses the need for Government to gear up for the job in hand. It discusses some of the implications of the proposed agricultural development strategy for (i) the allocation of financial resources to and within the sector, and (ii) strengthening the institutional framework.

B. Public Expenditures on Agriculture

Introduction

4.2 We have attempted to estimate how much money the Government spent on agriculture and to see if any useful comments can be made on the volume and distribution of these expenditures. However, determining the level of Government expenditures which benefit the sector directly or indirectly proved to be quite a difficult task. Data limitations, both in terms of availability and in the way the figures are presented in the budget accounts, enable us to provide only rough and somewhat partial estimates of the distribution of expenditures. A few interesting observations can be made, however.

4.3 We defined the sector to include all agencies directly involved in land, forestry, and fisheries, plus rural roads, an activity so intimately related to agriculture that we consider it an indirect form of agricultural expenditure. All other forms of rural infrastructure expenditures (e.g., telecommunications, electricity, domestic water supply) have been excluded. The estimate thus includes the three agricultural Departments (Agriculture, Agrarian Reform, and Natural Resources), NIA, the rural roads activities of the DPWH, and the expenditures of several semi-independent agencies (most of which have recently been attached to the DA).

Past Trends

4.4 Government's expenditures in agriculture have accounted for between 6% and 13% of total Government expenditures during the past decade and a half, with the figure averaging around 10% (see Chart 4). However, two distinct trends characterize that period. Real expenditures in the sector expanded strongly during the 1970s—particularly in the second half of the decade—reaching a peak of 12.7% of total Government expenditures in 1979. Most of the increase was accounted for by large investments in irrigation and rural roads. That trend was reversed in the beginning of the 1980s as the massive investment in irrigation slowed down. When the national economic crisis came in late 1983, forcing sharp reductions in budgetary support for development projects and recurrent expenditures, agricultural expenditures declined sharply. From a peak level of P 1.7 billion in 1979, agricultural expenditures fell to P 0.7 billion in 1985 (constant 1972 prices).
Chart 4: NATIONAL and AGRICULTURAL EXPENDITURE

- Ag Exp/Ag GVA (%)
- Ag Exp/Net'l Exp (%)

% 14
12
10
8
6
4
2
0
4.5 Government expenditures in the sector in the last decade were dominated by NIA: nearly 43% of expenditures between 1976 and 1982 were in irrigation (Table 5). Expenditures for extension (12%), rural roads (10%) and agricultural research (9%) lagged far behind. During the crisis years expenditures levels have declined in all major categories, particularly in irrigation, research, extension and rural roads, but for the most part the distribution remained the same. The most significant change in the distribution of expenditures has been the sharp decline in the share of irrigation (down to 34%) and the corresponding increase in equity support and subsidy for Government corporations and Government supported entities.

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<th>Table 5: Expenditure Distribution by Subsector (Average, %)</th>
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<td>Subsector</td>
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<tr>
<td>Extension</td>
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<tr>
<td>Research</td>
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<tr>
<td>Irrigation</td>
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<td>Agrarian Reform</td>
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<td>Forest Development and Management</td>
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<tr>
<td>Rural Roads</td>
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<tr>
<td>Price and Income Stabilization</td>
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<td>Other Equity Support and Subsidies</td>
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<td>Total</td>
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Source: Staff estimates.

4.6 While all public expenditures were cut back during the crisis years, the decline in agricultural-related expenditures was sharper than the overall decline. The share of agriculture expenditures fell from 9.6% of total Government expenditures in 1983 to only 5.4% in 1986—the lowest share in a decade (see Chart 4). Thus the sector, which had already suffered from the biases of the policy environment, was also discriminated against in the allocation of public resources. In real terms, the 1985 expenditures on agriculture were back at the 1972-73 level.

4.7 As a result, the overall allocations to agriculture in the 1980s have been inadequate to finance new development, operation and maintenance and an efficient level of services. Both capital and current operating expenditures have been reduced since 1981 (see Chart 5); capital outlays declined by 15% p.a. and current expenditures by 4.5% p.a. The fall in capital expenditures was very sharp between 1983 and 1985 mainly as a result of the drop in new irrigation investment and in the activities of DPHW in implementing rural roads projects. The budget stringencies also resulted in large cuts in
In the Agricultural Sector, 1981 - 1986
Chart 5: Current and Capital Expenditures
maintenance expenditures. The Government's O&M expenditures fell by 10.5% p.a. between 1983 and 1985, resulting in a serious decline in the quality and amount of resources provided by the major ministries and agencies. The cuts affected staff numbers only marginally but the operating expenditures and equipment purchases very heavily. The number of extension staff, for example, has been largely unchanged but they lack fuel, vehicles or spare parts and other essentials to perform their duties in an adequate manner. Another example is the rural roads situation. The most urgent problem in virtually all segments of rural transport is inadequate maintenance. Years of neglected road maintenance have resulted in the deterioration of a large parts of the network making transportation and distribution of agricultural produce and inputs unreliable, time consuming and expensive.

4.8 Particularly costly have been the declining levels of maintenance of irrigation systems by NIA. Drastic cuts in NIA's O&M expenditures threaten the viability of these investments; in 1986 the level of O&M expenditures was just over one-half the level considered necessary to keep past investments from deteriorating and becoming unproductive. Increasing O&M levels in irrigation systems is an urgent priority. The problem is related directly to the sources of finance for irrigation and the recovery of irrigation costs. Government sharply reduced its support for irrigation expenditures forcing NIA to cut its O&M expenditures as a cost-saving measure. At their present level, irrigation service fees would only be enough to cover O&M costs, even with 100% collection efficiency. The present collection rate is only about 50%, better than any other country in the region, but not good enough to cover all irrigation costs. A change in Government policy is required to gradually raise Irrigation Service Fee (ISF) levels (particularly in the high-cost storage systems) and improve collection efficiency (See Annex 6).

Implications for the Future

4.9 Several implications arise out of this and earlier discussions. First, the allocation of resources to agriculture has clearly been inadequate in recent years; and expenditure levels should be restored, in real terms, to at least the pre-crisis levels. Second, the allocation of resources within the sector has not been as effective as it might have been. Some important programs—e.g., agrarian reform, research and rural infrastructure—have been underfunded. On the other hand, other programs, with more doubtful benefits, have perhaps been allocated a disproportionate share of resources. Such programs include IADPs, settlement schemes and some of the less well focused uses of Government subsidies.

4.10 Government plans to increase the sector's share in total expenditures and to sharply increase total investment in the sector. This is reflected in the 1987 budget and in the Medium Term Development Plan and Public Investment Program 1987-92. The 1987 budget calls for a substantial increase in total agricultural expenditures. However, the 1987 appropriations level is still 7% lower in real terms than the level of 1983 and 37% lower than the peak year of 1979. Agriculture's share of total national expenditures is expected to increase to 7.4% (assuming, of course, that the appropriations are indeed implemented); but, again, it is still well below the levels achieved between 1979 and 1982. Despite a substantial increase in the
amounts allocated to the maintenance of rural roads and some increase in the allocations for irrigation maintenance, the 1987 budget still falls short of the required levels.

4.11 In the future there will be many competing demands on resources. Some areas will clearly need a larger share of resources. The most dramatic shift in resource allocation will be in the funds needed to implement ALRP. The forthcoming Forestry, Fisheries and Agricultural Resources Management (FFARM) Study is also likely to indicate the need for greater expenditures on the management and rehabilitation of the resource base. The priorities of these urgent programs will have to be weighed against those in agriculture and rural infrastructure (including those needed to follow up agrarian reform) and the need for a broader program of rural poverty alleviation. There are strong arguments for Government to sharply increase the overall allocation of resources to the rural sector and for external agencies to support this move with greater financial assistance, including a higher proportion of local cost funding.

4.12 Within agriculture, some of the priorities for resource allocation have been alluded to earlier or discussed in Volume II. In irrigation, our analysis suggests (see Annex 6), that the Philippines should devote increasing resources to O&M improvement as this yields the highest economic rates of return. Irrigation investment should also emphasize rehabilitation of existing systems, subject to careful choice of systems with respect to water availability and system design. Construction of new system should give preference to small scale run-of-river and communal systems. Medium and large scale systems, particularly of the storage variety do not seem to be economically viable. It is therefore suggested that the economic viability of the new projects proposed in the investment program, specifically the Balog-Balog and Pampanga Delta, be reexamined. Both are large scale projects with question-able viability (see Annex 6).

4.13 Agricultural research expenditures in the Philippines are very inadequate. International comparisons of agricultural research expenditures as a percentage of agriculture GVA show that the Philippine level was amongst the lowest in Asia. Furthermore, agricultural research suffered the most from the budgetary outbacks and registered a negative growth rate of almost 18% a year between 1984 and 1986. Recent increases in allocations have begun to make up for this deficit but there is still a long way to go. Allocations for research must increase if technologies that will increase farm productivity and profitability are to be developed. Specifically, increases in funding are required for research on nontraditional crops, cropping systems for marginal rainfed zones, post-harvest technology and in the remuneration of DA researchers (see Annex 9).

4.14 The overall objectives and order of priorities of the rural roads program are in line with Government's development strategy and represents an important improvement in the resource allocation in this area. However, more and better roads are judged to be one of the most important contributions the Government could make to accelerate rural growth. The present scale of the program seems inadequate, particularly at a time when the Government wants to generate rural employment opportunities. Given past serious underfunding of
rural roads construction and maintenance, expansion and acceleration of the rural roads program seems highly desirable.

4.15 The report has pointed to the potential for smallholder commodity development programs, particularly for coconut area intensification and other tree crop development. Such programs could generate considerable benefits, but would also require considerable resources during the investment period (see for example, Annex 3, Table 4). It has also suggested that specific programs should be identified for poverty alleviation, where the need is both great and growing in urgency. Some of these could possibly be in place of existing programs, such as IADPs; but there is obviously a need for a greater allocation of resources, in total, to the most needy.

4.16 Finally, the difficulties we have encountered in obtaining the data for public expenditures in agriculture have highlighted some serious flaws in the budgeting process. If the sector is to make the best use of available resources it is important that the programming and budgeting process be improved. We take up the institutional needs of the sector in the following final section of the report.

C. Major Institutional Issues

Introduction

4.17 If Government is to perform the critical role that was outlined above in steering the sector towards more rapid and more equitable growth, it is essential that the key public agencies are well equipped for the job. The Philippines has a complex set of institutions engaged in agricultural development activities. Apart from the core agencies such as the National Economic and Development Authority (NEDA), Finance and Budget, four major departments (Agriculture, Natural Resources, Agrarian Reform and Public Works and Highways) determine crucial policies and share responsibility for implementing programs. There is also a bewildering array of bureaus, agencies, authorities, councils and corporations with varying degrees of autonomy, and 12 regional offices that have primary responsibility for the formulation and implementation of development programs.

4.18 The report does not attempt to review the whole institutional framework for the sector: this would have to be a separate exercise on its own. At the time of the mission, the whole Government was in the throes of a major reorganization, and the new order should be given time to settle down before any overall assessment of what has been achieved or what still remains to be done could be usefully undertaken. Nevertheless, preliminary indications suggest that the reorganization will probably not be sufficient to resolve some of the most pressing institutional constraints that have faced the sector for some time or that have recently emerged. The following paragraphs draw attention to four such problems that warrant further review in our judgement: (a) the need for the Department of Agriculture to forcefully take over the lead role in the sector; (b) the need to clarify the nature and extent of decentralization; (c) the need to review the future approach to integrated development; and (d) the need to institutionalize an enhanced focus on poverty redressal.
The Executive Order No. 116 establishing the new Department of Agriculture (DA) recognizes its central role in promoting agricultural development (see Annex 10). It also recognizes that the previous Ministry needed to be strengthened and its functions realigned to perform this central role. The Order seeks to achieve this through four basic changes:

(a) by creating several new functional units within the Office of the Secretary—notably a Bureau of Agricultural Research;

(b) by integrating the major bureaus and services into an expanded senior management structure;

(c) by attaching to the Department three key agencies (the National Food Authority, the Philippine Coconut Authority, and the Sugar Regulatory Administration) that previously fell under the Office of the President; and

(d) by merging a number of agencies that had previously had overlapping functions, particularly those dealing with tobacco and training, and abolishing a number of agencies as a result.

The new organizational structure of the DA is shown in Chart 1 of Annex 10.

The reorganization of the DA is a bold and necessary step. It goes a long way to overcome the dispersion of responsibility and duplication of functions that existed before. But it seems to leave three major problems still to be solved. The first relates to the role of the seven bureaus. Under the 1978 regionalization of the then Ministry, the bureaus lost their functions as line agencies with control over field staff, and became instead staff bureaus or divisions of the Ministry at the national level. This system has been continued under the new organization. However, the process of shedding the bureaus of their line functions encountered difficulties, particularly in the exercise of regulatory functions. To some extent the bureaus now fall between two stools: they have lost the power to directly control programs and activities at regional level, yet they have not yet been fully integrated into the Department proper as purely planning/advisory divisions of the Department (with a total of more than 4,000 personnel at headquarters, they clearly still have more than staff functions).

It is suggested later that there may be limits to how far decentralization can and should go, and in particular that there is a continuing need for strong central agencies, not only to provide policy guidelines but also to formulate and oversee the implementation of major national programs for agricultural development. In this context, it may be timely for DA to review the appropriate role of the bureaus, and to assess whether and to what extent they should continue to exercise certain line functions.

A second problem concerns the attached agencies. Most of the relevant institutions (with the major exception of NIA) have now been made responsible to the Secretary of Agriculture. But this measure, while necessary and
timely, will not be sufficient to integrate and coordinate their various
functions. In the first place, the various functions themselves are not well
delineated. There is still a great degree of duplication and overlapping,
particularly in the proliferation of extension services, but also in other
areas such as statistical or personnel services. There is also an unclear
delineation of functions between the various agencies and the department
proper. For example, for historical reasons, recently attached agencies such
as NFA, SRA and PCA, have played a major role in policy formulation which, in
principle, should now be absorbed into the policy-making levels of the
department proper. But, as suggested below, the Office of the Secretary is not
at present equipped, in its organization and staffing, to take over these
functions or to integrate the diverse functions of the various agencies. All
of the agencies now fall under a single Under-Secretary; this is an acceptable
management structure for the administrative control of the agencies, but not
for their functional control and integration (see para. 4.24).

4.23 A third and most serious problem are the gaps that still exist in
the organization, staffing and procedures of the department. Some problems--
such as the statistical data system—are now being attended to. But four
deficiencies warrant urgent attention:

(a) There are serious weaknesses in the planning capacity of DA
particularly in policy analysis and overall strategic planning for
the agricultural sector. Policy review and formulation is a
continuous process of adjustment to changing needs, problems and
opportunities, and it is essential that the policy environment
facing agriculture should receive continuing attention. We feel
that it is especially important that the Department of Agriculture
should be a major participant in macro-policy formulation: not just
in traditional areas of agricultural policy but in overall economic
policy areas too, such as trade policy, the exchange rate, or the
priority to be given to rural roads and communications, since they
strongly affect the prospects for agricultural development. The
newly established Planning and Monitoring Section is responsible for
these functions, but it is under staffed and overburdened. It will
need considerable strengthening to perform these important functions
effectively.

(b) The DA at present has no project development and evaluation system
that can be used to facilitate and process new project proposals.
The present limited capacity is used primarily for preparing
foreign-assisted projects. This function is also expected to be
handled by the Planning and Monitoring Section, but it will be
important in our view to rapidly develop a project planning
procedure and discipline that will be applied to all bureaus,
agencies and regions falling under the policy guidance of the
Department.

(c) The lack of any organic responsibility within the new structure of
the DA for certain key functions of development administration.
Perhaps the most serious deficiency is the absence of a commodity
development division that would formulate policies, strategic plans
and, where appropriate, integrated development programs for major commodities. This report has suggested that commodity development planning will be particularly important if the Philippines is to take full advantage of the potential for diversification. Yet, at present the responsibility for this function is fragmented among many bureaus and agencies, there is no level of control or coordination below the Secretary, and some key planning functions (including the development of such potentially important commodities as oil palm, rubber, coffee, cocoa, fruits and vegetables) seem to be no one's job.

(d) The lack of an integrated, department-wide system for programming, budgeting and monitoring ongoing programs. The DA seems to be particularly weak in this respect. There is no unit, for example, that has the capacity to analyze the recurrent cost implications of the investment program in agriculture, to identify areas where operating funds are seriously deficient, or to ensure cost-effectiveness. Moreover, with the large number of agencies involved in the sector and the different budgeting practices employed, it is even difficult to determine what resources are actually being used in the sector or how they are allocated among major programs such as extension, research, price support or other budget categories. The operations of the Philippine budget process are outside the scope of this report, but clearly the process needs to be reviewed. The mission concluded that the planners and managers in the sector do not now have the basic financial data needed to make the complex decisions that the job demands.

4.24 In short, it is felt that there is much still to do before the DA is fully equipped to carry out its difficult task. This is not to suggest that there should be a further major reorganization; the priority task now is clearly for the DA to get on with the job of promoting agricultural development. But it would be desirable—if the residual shortcomings of the DA are recognized—to have a clear concept of the direction in which further institutional adjustments can be made over time.\footnote{A possible conceptual framework for this is given in Appendix 3.} The priorities for action, as suggested above, are to unify and strengthen the extension services, to fill major planning gaps in the department proper, to integrate the attached agencies more effectively into the Department by placing them under the appropriate departmental managers, and to review the extent to which functions of the bureaus can be realistically delegated to the regions. Several external donors are already actively engaged in or considering helping to strengthen the DA in its new organization. Further help would surely be available if requested.

Decentralization

4.25 The Philippines has long espoused the policy of devolving decision making and resources to the local level. However, with wavering national
commitment and limited local capacity, progress was generally meagre. The Aquino Government has committed itself to more forceful action, including the reestablishment of the Regional Development Fund and the promulgation of regulations for institutionalizing the devolution process. The 1987-92 Plan sets out the policy that "local governments shall be given greater and more authentic autonomy in exercising initiative, making decisions, and taking action in the conduct of community affairs." It envisages the transfer to the local level of "an increasingly wide range of powers and responsibilities for the planning and administration of development and services and of commensurate financial, manpower and other resources" (Chapter 3.4.1).

4.26 The decision to institute a more effective process of decentralization raises two important issues. The first relates to how far it is desirable to decentralize decision-making. There seems little doubt that major policies and the broad programs for implementing them should continue to be determined at national level, and this is recognized in the policy on decentralization. In agriculture, for example, it would be important to strengthen not weaken the capacity of the national government to formulate and oversee the implementation of a unified extension service, a national research network, or a uniform system of plant and seed certification.

4.27 On the other hand, it is clearly desirable to give regional and provincial authorities a substantial consultative role in the formulation of national policies and programs and a large degree of flexibility in implementing them. There is also a range of activities that can be wholly delegated to the local level. But it seems necessary to define the appropriate division of responsibility between national and local governments on a program-by-program basis, and to adjust the institutional responsibilities of the various agencies accordingly. For example, in extension, the broad priorities may need to be set at national level (in compliance with national commodity and regional development strategies), but regional and provincial offices should have the principal role in determining the impact points of extension, on the basis of local research and verification trials. In other cases, the local authorities may be given a degree of autonomy to choose an appropriate mix of national program activities from a predetermined list.

4.28 The second issue concerns the constraint to effective decentralization imposed by the limited capacity of local government units. A ten-year program to strengthen regional planning capacity, has helped to develop planning techniques and train local staff to undertake regional planning work. The Government also intends to double staff in the Regional Offices of NEDA (NROs). But the capacity of the Regional Development Councils (RDCs) and provincial authorities is still very limited; a full range of planning procedures for project formulation and approval, programming and budgeting has not yet been institutionalized; and many staff still lack the training and experience to undertake a substantially expanded planning function.

4.29 Thus the rate at which decentralization can proceed must be guided by the speed at which local planning capacity can be built up, not only in RDC/NROs, but also in the regional offices of line departments. (In this respect it is significant that the reorganized structure of the regional offices of the DA does not provide for any planning unit). But even more crucially it
depends on the strengthening of national planning capacity, because local planning initiatives can only prosper if there is the capacity at the national level to draw up clear policy guidelines, to formulate key strategic programs and projects for extension to the local level, and to maintain healthy planning, programming and budgeting systems without which local initiatives are unlikely to be sustained. Thus, paradoxically, the strengthening of development administration at the center may well be the first and most important step towards meaningful decentralization.

**Integrated Approaches to Development**

4.30 Many resources have been devoted over the years to the implementation of "integrated" development projects. The largest of these are the integrated area development projects (IADPs) administered by the National Council for Integrated Area Development (NACIAD), but there are many others, including resettlement schemes and other projects administered by the Department of Agrarian Reform (DAR). These schemes share two common features: a relatively lavish allocation of financial and human resources to a selected group of farmers and the creation of a separate project management entity either to run the whole project (as in DAR) or to coordinate and monitor the work of line agencies (as in IADPs).

4.31 A recent Bank review of public expenditure in the Philippines has questioned whether the considerable expenditures on IADPs can be justified by their incremental benefits. While some form of integration of development activities is clearly necessary, the issue is whether it is appropriate to set up an independent planning and coordination mechanism (separate from the normal channels) as in NACIAD/IADPs. From an institutional viewpoint, IADPs reveal several problems:

(a) They tend to duplicate the functions of provincial or regional bodies. The main function of IADP offices is to coordinate programs of line agencies. But this applies to every area in the country, and it would seem more appropriate to strengthen local government capacity than to set up separate ad hoc planning bodies for selected areas.

(b) IADP offices tend to perpetuate themselves. By not strengthening local government capacity, IADPs make it more difficult to phase out their activities.

(c) Despite their size, IADPs have not been very successful in integration, partly because they do not control the funds of line agencies.

4.32 The Government is considering plans to abolish NACIAD and integrate its staff with that of NEDA. It also intends to double the staff of the NEDA's regional offices (NROs). If this is done, it would seem appropriate to phase out IADP offices and transfer their functions to local governments as follows:

(a) For new IADPs covering more than one province, the responsibility for planning and coordination should be with the NRO from the
start. It might be necessary to establish a separate project coordination unit within the office, but such a unit would be available to progressively work on other similar purposes in the region as its experience and capacity grow.

(b) For new IADPs covering one province only, the responsibility should be given to the provincial government. It too might need to set up a coordination unit, with assistance from the NRO, but this could also be used for the benefit of the province as a whole.

(c) In ongoing IADPs, the IADP staff and their functions might be integrated, in the least disruptive way, into the appropriate regional or provincial bodies and the IADP office subsequently abolished.

4.33 Rather similar issues face DAR in the administration of its various land schemes: duplication of functions, a doubtful return to investment, and the perpetuation of DAR's involvement. Although most of its schemes are classified as "resettlement" projects, DAR's principal role in land schemes has been the intensive development of existing areas, including the provision of integrated packages of infrastructure and services and the introduction of new systems such as land consolidation. Although DAR is supposed to phase out of such activities over time, the 1987-92 plan provides over P 1.6 billion for the continuation of existing and for new schemes, including a proposed new semi-collective land ownership approach.

4.34 We consider it urgent for Government to reconsider DAR's role in land settlement and development. DAR will be extremely hard pressed to fulfill its expanded agrarian reform role under ALRP, which could involve a much larger program of transferring public land to the landless. There is also an obviously urgent need to provide a more efficient program than now exists to accommodate returnee rebels. There is a strong argument for DAR to concentrate its limited settlement capacity on these major priorities and to phase out of activities that other agencies should do and of other peripheral schemes, such as land consolidation schemes. In particular, there is a good case for confining DAR's settlement role to the narrow and strictly time-bound activities of settler selection, land survey, allocation and titling, and initial relocation and settlement activities. All services would then be provided by line agencies from the start, and coordination provided by local government planning staff, as in any other area.

4.35 If DAR's settlement functions were redefined in this way, it should also phase out of existing schemes. DAR has already started assessing which schemes could be phased out, but this process needs to be accelerated. This would call for a detailed program that addresses two problems: (a) the likely need to complete or rehabilitate many of the schemes before they could be "weaned" from DAR and (b) how to ensure that other agencies (including local government) will have the resources to take over from DAR. A more detailed outline for such a program is suggested in Appendix 1 (7).
Institutionalizing the Focus on Poverty

4.36 This review has emphasized the need for a more systematic approach to rural poverty alleviation in the Philippines, and several means for sharpening the focus on poverty have been suggested. These include measures to ensure that developmental activities and ongoing services actually reach the poor, as well as the formulation of special programs or projects that are specifically targeted at selected poverty groups.

4.37 The issue addressed here is that if general economic development is to have a greater impact on poverty in the future than it has in the past, it will be necessary to institutionalize the functions of identifying the poor, developing strategies for poverty alleviation, and formulating and implementing specific programs designed to alleviate poverty. Unless this is done, it will be all too easy, as in the past, for poverty-alleviation concerns to be swept aside by production/growth targets, and for every agency to think that poverty is someone else's responsibility.

4.38 We think that the task of institutionalizing the focus on poverty should start with NEDA. This is not to say that only NEDA should be concerned with poverty; on the contrary, poverty alleviation should be a major goal of every development agency at all levels of Government. But NEDA must play a critical leadership role, not only in a policy planning capacity, but also in helping line agencies to translate the rhetoric of policy statements into effective operational programs to reach the poor. It is understood that NEDA is considering setting up a poverty unit, as part of its proposed reorganization, and also to add poverty as a variable in its macro-economic unit. It is suggested that such a unit should have a strong operational focus, providing leadership, technical assistance and direction to line agencies and local governments to sharpen the focus on poverty.

4.39 It may also be appropriate for NEDA's regional offices and provincial governments to have a small unit specifically responsible for poverty eradication strategy and for the formulation and coordination of poverty alleviation programs. If IADP offices were to be merged into local government planning bodies, as suggested earlier, they might perhaps take over the poverty planning function for the whole region or province.
Outline of Priority Tasks

The main report has indicated some of the strategic choices facing the Government as it looks to the future development of the agricultural sector. This appendix suggests some of the operational tasks that, in the view of the Bank mission, warrant urgent attention by Government in pursuing its development strategy. It covers a number of separate tasks, including both project preparation work and pre-project studies, in the following areas:

1. Coconut Intercropping
2. Treecrop Development
3. Agricultural Extension
4. Rural Credit and Inputs
5. Priorities in Irrigation
6. Rural Infrastructure
7. Future of Land Settlement Schemes
8. Poverty Area Development

The first four areas relate primarily to DA; the remainder are matters for attention by other departments of Government or that need to be undertaken jointly.

It is suggested that this list of tasks might also be useful to identify possible areas for external assistance.1/

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1/ During the discussions held in the Philippines during August 1987, the Government indicated that it would be interested in obtaining assistance from the World Bank in conducting some of these tasks (particularly Nos. 1, 3 and 5) and is now preparing suitable TORs.
1. Coconut Intercropping

Increasing productivity and farmer/tenant income in existing coconut areas by means of intercropping with perennial crops appears highly promising. Incomes from the intercrops should easily double the present proceeds from coconuts. It appears very likely that a large program could be developed for intensifying production in coconut areas that could make a major contribution to both faster growth and the alleviation of poverty. Important problems would have to be resolved first, however, particularly in regard to the location of suitable areas and intercrops, land tenure issues, and institutional arrangements. It is suggested that preparation work should be initiated to:

(i) Identify areas of fairly homogenous coconut lands whose climate, topography and soil types are suitable for intercropping;

(ii) Propose the most suitable intercrop or mix of intercrops for the identified areas and determine the financial and economic viability of different cropping patterns;

(iii) Determine the land tenure status of coconut holdings in the identified areas, and propose on what basis intercropping could proceed (a) on the basis of existing ownership/tenancy arrangements; and (b) after implementation of Program C of the Accelerated Land Reform Program;

(iv) Review the various means for landowners/operators to participate in coconut intercropping, including individual participation, group/cooperative farming and contract production for a private or group-owned nucleus estate. The study would assess landowners/operators willingness to participate in any of the organizational forms and propose suitable draft agreements of associations between growers, processors, traders and/or nucleus estates to ensure maximum benefits and safeguards for growers;

(v) Make recommendations for the organization(s) which should be responsible for implementing the program, providing the necessary services to growers and for processing and marketing of possible intercrops, such as coffee, cocoa or pepper;

(vi) Prepare a 5-7 year phased development program for the most suitable areas, with a detailed design of the technical, financial and organizational aspects of the program.

It could be expected that a large project (or series of projects) could be identified that would be suitable for external financing.
2. **Treecrop Development**

Treecrops are high on the list of potentially most profitable crops for future development. The previous task proposed to formulate a program for coconut intercropping which, apart from coconut itself, would be expected to lay the foundation for accelerated production of such intercrops as cocoa, coffee and pepper. But the potential for treecrops is not confined to those grown under coconuts: there is need to assess the potential for production of other treecrops, particularly for smallholders. Some of these commodities, like fruittrees and rubber, are already established, although not necessarily poised for accelerated development. Other treecrops—most noticeably oilpalm—have not been developed as smallholder crops, although their potential appears to be very good.

It is suggested that a feasibility study of smallholder treecrop development should be undertaken to complement the coconut intercropping study. The study would be implemented in two phases:

**Phase 1 would:**

(i) Review the status of existing treecrops produced by smallholders and assess the potential for increasing production, improving quality and increasing farm incomes;

(ii) Assess the technical and market potential for developing new treecrops, with special reference to oilpalm, identify the areas most suitable for production, and assess the profitability of such crops under smallholder production;

(iii) Draw up a long-term development strategy for expanding smallholder treecrops production covering the feasible scope of a program, the most suitable forms of farmer participation (individual/group/outgrower), and the organizational arrangements within Government for implementing a program, providing the necessary services to growers and for processing and marketing of the recommended crops.

**Phase 2 would** formulate a development project for approval by Government for possible external funding.
3. **Agricultural Extension**

Extension services are provided to the farming and fisheries communities by several departments and agencies resulting in duplication of activities. This has led to a very large number of differently trained, remunerated and motivated staff who contact farmers individually or in groups in an uncoordinated manner. Supervision, technical support, and staff mobility vary significantly and generally do not take account of the variations in locality (remote or close to major towns), terrain topography, farming/fishery systems and farming/fishery community composition. DA extension staff constitute the lowest remunerated graduate public servant, and morale is low.

There is an urgent need to strengthen extension services, to make them more cost-effective, and to improve the services rendered to the farmers. It is therefore suggested that a feasibility study be commissioned to:

(a) determine the existing extension services for agriculture, livestock, fisheries, soil conservation and specific crops by agency with staff numbers at all levels, staff remuneration, qualification and training, mobility, and method of farming community contact;

(b) determine the duties of these various services, specifically distinguishing between agriculture and non-agriculture duties and between advisory and regulatory roles, and assess their effectiveness in carrying out such duties;

(c) review alternative methods of strengthening extension, with special reference to the possibility for establishing a unified extension service;

(d) propose an organizational framework for a modified service and determine staff requirements (with job descriptions) at regional, provincial and municipal levels, having regard to different geographic and agricultural conditions;

(e) propose an affordable and equitable reward system for all staff levels sufficient to attract, maintain and motivate a fully professional service;

(f) make recommendations for financing the service (from national, provincial, barangay, individual farmer);

(g) establish additional requirements for offices, staff housing, transport, extension and communication equipment and staff training needs; and

(h) if excess staff is indicated, propose an acceptable severance scheme.
If the proposed study leads to acceptable recommendations, a substantial reorganization may be required, as well as a new system of reward, recognition and promotion. The Government may wish to request external financing in the form of policy-based assistance to support the implementation of such a program.
4. Rural Credit and Inputs

A. Program to Rationalize and Strengthen the Formal Rural Credit System

As a consequence of structural weaknesses and deteriorating loan portfolios, a large number of banks became insolvent/illiquid during the economic crisis of 1983-85. The Central Bank has provided assistance to a number of failed commercial banks, and more recently the Monetary Board approved a rehabilitation package which allows rural banks with rediscount arrearages to convert the arrearages to Government equity in exchange for owners' equity infusions.

While the rehabilitation package is a step in the right direction, it may only affect a limited number of rural banks. To effect a more complete rehabilitation of the rural credit sector other steps are needed, including:

(a) schemes to address other "weak" rural banks;
(b) defining the role of the Central Bank with regard to rural banks and strengthening supervision;
(c) reduce rediscounting ceilings of rural banks; and
(d) abolish restrictions for opening of rural banks and commercial banks.

A consultant study under the ongoing Agricultural Credit Project (Loan 2570-PH) is looking into these issues and is expected to provide (by September 1987) a basis for an overall rehabilitation program that might be suitable for external funding.

B. Inputs Supply Review for Smallholder Sector

To increase their productivity, smallholders need access to improved seed, fertilizer and other inputs, and (appropriate) technology. However, many smallholders do not use those inputs or use them only sporadically. The proposed review would attempt to find out why. Possible reasons are: poverty, lack of land security, lack of access roads, lack of knowledge of improved production technology, disappointing experiences with modern inputs, higher risks associated with modern inputs, defaults on earlier loans (in credit and in kind), etc. Access to credit, the terms of credit and the degree of competitiveness in the informal credit sector would be analyzed as a sub-issue. The survey would determine the main factors affecting input use by interviewing smallholders as well as traders, input dealers, etc.

It is hoped that this review would assist Government to promote smallholder development more effectively. Depending on the outcome of the survey, three alternative strategies might be indicated:
(a) further measures to promote competition in the supply of inputs;

(b) measures to provide easier access of the informal credit sector to the formal credit system, thereby increasing liquidity and competitiveness; and

(c) special measures (including possible grants or other forms of assistance) for the poorest smallholders who might not be reached by the normal market mechanism.
5. Priorities in Irrigation

Given the strategic importance of irrigation for rice self-sufficiency and the scale of investment involved, it is essential that the best use should be made of this national resource. Three separate tasks are proposed to address problems identified in the report, which suggest resource use could be improved.

(i) Sharing the Responsibility for O&M. The report has drawn attention to the problems of falling maintenance standards and cost recovery. The best hope for tackling these problems in the long run is to devolve responsibility to beneficiaries, through the promotion of irrigators' associations (IAs). But there are signs that IAs are not always willing or able to sustain an adequate level of maintenance, especially for components that are large, complex or far from farmers' fields. It is suggested that Government might evaluate the considerable experience with self-help efforts on communal and NIA schemes to determine: (a) how adequate communal maintenance has been and (b) what have been the most important factors (e.g., engineering design, degree of beneficiary participation in design, IA leadership, etc.) affecting maintenance standards. This might then enable Government to determine the appropriate division of labor between NIA and IAs, assess the range of options for determining ISFs, and identify possible design changes that would facilitate faster, more effective and more sustainable handover to beneficiaries.

(ii) Future Rice Production Strategy and Irrigation. In the past, continued new investment in irrigation has been justified primarily as a means of achieving self-sufficiency in rice. The Philippines has now achieved self-sufficiency (at present consumption levels) at the same time as it has run out of easily irrigable land. It therefore seems timely for Government to look ahead 20 years to see where to go from here. Major strategic decisions are at stake: (i) as demand grows with population, should the policy of 100% self-sufficiency be maintained, even at increasing cost?; (ii) to what extent should increased production be sought from increasing the command area (implying investment in new irrigation works) or from intensifying production (implying investments in better water management as well as research, extension, inputs, etc.)?; (iii) should the future of irrigation continue to be tied to future consumption of rice only, and if not, what is the potential for diversification? This kind of strategic commodity planning is a good example of the function we suggest DA should be doing. If DA's planning capacity were suitably strengthened, this policy review would be a high-priority task, perhaps supplemented by local or foreign consultants.

(iii) Promotion of Individual Irrigation. At least a quarter of farms are less than 1 ha in size. Many of these are in rainfed areas where only one crop a year is assured. The best single strategy for increasing the incomes of these farmers is to give them water so that they can grow 2-3 crops a year, including a proportion of high-value crops. But although only a minority of farmers can be served by NIA or communal schemes, mainly in the lowlands, there has been limited attention given to providing low-cost water supplies to individuals outside traditional irrigation command areas or organized group schemes. The potential for ground water development has not been adequately
assessed, little work is being done to disseminate appropriate technology for small-scale irrigation, and there is an inadequate institutional setup for servicing the farmer. The subject seems moribund, perhaps because of past poor experience, and there is good reason to be cautious about launching any major new initiative. But the potential benefits to small farmers are too great to ignore. It is therefore suggested that Government should determine the feasibility of launching an individual irrigation program. This would require an evaluation of past experience, a review of available technology and technical potential, an assessment of financial and economic viability, and the identification of a possible program, including the institutional and financial requirements.
6. **Identifying Rural Infrastructure Needs**

The mission was impressed by the frequently expressed view that rural infrastructure, and particularly roads, is a major constraint to accelerated agricultural development. But the problem needs to be defined more precisely before an affordable solution can be readily worked out. It is not clear, for example, whether the priority lies with the provision of more simple barangay road or bridges to give basic access to farm areas that are now isolated, to upgrade existing infrastructure to lower transport costs, or to devote more resources to maintenance of existing structures to prevent deterioration. Nor is it clear what criteria should determine how resources should be allocated between regions, provinces, districts or barangay.

It is suggested that the problem is sufficiently serious to warrant a collaborative effort between the Departments of Agriculture, Public Works and Highways and Local Government and local authorities to (a) define the priorities for agricultural roads and other infrastructure; (b) draw up appropriate technical and economic criteria; (c) review institutional capacity; and (d) identify a national agriculture roads program. Both the initial review and the ensuing program would be suitable for external assistance.
7. Future of Land Resettlement Schemes

The brief review of DAR resettlement schemes undertaken in connection with the Public Resource Management Review has identified an urgent need to review the policy and future programs. The review suggests four types of problems that need to be addressed: (i) the high costs and apparently meagre benefits of the schemes; (ii) the slow pace of implementation; (iii) the appropriate role of DAR in providing services normally provided by other agencies; and (iv) the rate at which DAR should phase out. (This latter problem is particularly urgent, in view of the increased pressure being put on DAR to accelerate its primary agrarian reform programs).

The proposed review would be designed to assist Government in addressing these problems. It would focus on two key issues:

(a) What should be the future of existing settlement schemes, some of which have been ongoing for 20 years or more? DAR is presently considering which schemes can be phased out over the next 3-5 years, but there does not appear to be an adequate conceptual framework or set of guidelines for doing this. Given that there is a large sunk cost in these schemes, the review would consider alternatives for rehabilitating ongoing schemes prior to phasing out.

(b) What should be the pattern for new settlement schemes? Two developments can be expected to increase the need for settlement: an accelerated agrarian reform program and the need to accommodate returning rebels. However, the past performance of DAR schemes does not suggest a secure foundation on which to build. Nor does it appear desirable for DAR to take on a major expansion in long-term coordination functions, given the priority of land reform. The review would examine present proposals for new settlement and possibly suggest alternatives.

It is hoped that the review would be helpful to Government in reformulating its policy towards resettlement, in determining appropriate programs and in identifying institutional arrangements for successful implementation. If the review resulted in a well-focused program for dealing with ongoing and/or new settlement schemes, it might be suitable for a broad-based external loan.
8. Poverty Area Development

Four general issues have emerged from the current review that go beyond the agricultural sector itself. These are:

(a) the need for a more systematic approach to the alleviation of rural poverty;

(b) the need to clarify the extent, nature and operational implications of the proposed decentralization of planning and budgeting to the Regions;

(c) the need to strengthen planning, coordination and monitoring at the regional, provincial and municipal levels; and

(d) the need to review the future of integrated project management entities such as IADPs and DAR settlement schemes.

It might be possible to combine all of these concerns into a single program to focus the planning mechanism of government on rural poverty alleviation. The program could include some or all of the following components:

(a) measures to strengthen the focus on poverty in NEDA (at both national and regional level) including the setting up of a poverty unit to identify poverty target groups, review program design and to help set standards in key line agencies (see Annex 2);

(b) measures to strengthen the capacity of local level planning, including systems development, training, equipment and the supervision of staff;

(c) budget supplementation for selected ongoing programs which have a major impact on poverty;

(d) funding for local level projects specifically targeted at poverty alleviation (in place of IADPs).

It is suggested that Government might undertake a preliminary review of the feasibility of such a program. If a satisfactory program were developed, it would be suitable for a coordinated package of financial and technical assistance from multilateral, bilateral and private sources.
PHILIPPINES

AGRICULTURAL SECTOR STRATEGY REVIEW

Sensitivity of Agricultural Incomes to
Alternative Growth Rates of Nonagricultural Sectors

This note seeks to illustrate the potential impact on agricultural employment and incomes of faster growth in nonagricultural sectors. For sensitivity purposes, we explore four scenarios: (i) the Plan assumptions; (ii) the implications of the lower (4.2%) growth in agriculture discussed in Chapter 2; (iii) a 20% acceleration in nonagricultural growth; and (iv) a faster rate of labor absorption in nonagriculture. In all cases, we assume for simplicity that the unemployment rate falls from 12.6% in 1986 to 4.9% in 1992, as projected in the Plan, and that any acceleration in nonagricultural employment therefore has the effect of drawing down the agricultural labor force.

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<tr>
<th></th>
<th>Value added</th>
<th>Employment</th>
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<tr>
<td></td>
<td>Growth rate</td>
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<td>9.3 12.3</td>
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<tr>
<td>Nonagriculture sector</td>
<td>63.5 94.6  6.9</td>
<td>9.5 12.5</td>
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<tr>
<td>Total</td>
<td>90.6 131.3 6.4</td>
<td>18.8 24.8</td>
<td>4.7</td>
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<td>II. Rate Implied by Plan Production Targets</td>
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<tr>
<td>III. 20% Higher Growth in Nonagriculture</td>
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<td>IV. 20% Higher Growth in Nonagriculture Plus Faster Employment Growth</td>
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<td>4.7</td>
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## Analysis

<table>
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<tr>
<th>Assumptions</th>
<th>Implications</th>
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<tr>
<td><strong>I.</strong> These are the assumptions built into the 1987-92 Plan</td>
<td>Small increase in agricultural value-added/worker; further deterioration in urban/rural income differential.</td>
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<td><strong>II.</strong> Assumes (i) lower rate of growth (4.2%) for agriculture; (ii) non-agriculture value added and employment grows at same rate as in the Plan</td>
<td>Agriculture value-added/worker falls in real terms; even greater deterioration in income differential.</td>
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<td><strong>III.</strong> Assumes nonagricultural value added and employment grows 20% faster than projected in the Plan</td>
<td>Agriculture value-added/worker increases by 5% during the Plan; further deterioration in income differential.</td>
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<tr>
<td><strong>IV.</strong> Assumes (i) nonagricultural value added grows 20% faster and (ii) growth in nonagricultural value added/worker over Plan period is limited to half that projected in the Plan</td>
<td>Agricultural value-added/worker increases by 15% during the Plan; urban/rural income differential is narrowed</td>
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PHILIPPINES

AGRICULTURAL SECTOR STRATEGY REVIEW

Organization For Agricultural Development Planning and Administration: A Conceptual Framework

Introduction

1. This note attempts to present a conceptual framework against which the new organization of the Department of Agriculture can be reviewed. The Department as a whole (including all its bureaus, attached agencies and regional offices) is faced with a daunting challenge of fostering agricultural development through a complex and interrelated set of functions and activities including overall sector policy foundation, short, medium and long term planning, the determination of priorities and allocation of resources between competing uses, managing the project cycle and perhaps more complicated than anything else, integrating the contribution of its many bureaus, agencies and regions into a unified, coordinated and consistent program. All these various functions of the Department might be subsumed under the single term "Agricultural Development Planning and Administration" (ADPA).

Dimensions of ADPA

2. There are three ways in which these functions might be organized:
   (a) By subsector or the major commodity groups falling under the Department (e.g. foodcrops, commercial crops, livestock, fisheries). The Department should have the capacity to analyze the potential for all major commodities, to formulate suitable strategies for their development, and to prepare and implement national commodity-specific programs or projects (e.g. a coconut intercropping program or smallholder livestock development program).

   (b) By the various services that the Department provides. The Department should have the capacity to analyze the inputs and services needed to make the farmer profitable, to formulate suitable strategies for each service, and to prepare and implement nationwide programs or projects for their effective delivery, with special reference to research, extension, input supply, credit and marketing.

   (c) By the geographic location of its development activities. The Department should have the capacity to analyze the development potential and needs of the various natural regions and administrative regions of the country, to identify appropriate land use patterns and to formulate and oversee the implementation of regional agricultural development strategies.

3. There are often arguments over which of these perspectives of ADPA should be dominant in the structure of an agricultural ministry. The fact is
that all three types of ADPA are required if the Department is to do its job well, and none is intrinsically superior to the others. It should also be noted that each type has to embrace the full range of functional specializations—from policy formulation through strategic planning, project identification, preparation and implementation, to monitoring and evaluation.

4. To illustrate the multi-dimensional nature ADPA:

(a) A commodity development program (e.g. coconut intercropping) identifies what services are required to develop the commodity; it also, by necessity, has to be location-specific. Thus a commodity program will both affect and be affected by the design of both service and regional development programs.

(b) A service program (e.g. research) will have to identify the research needs of each commodity and determine the best technology for each area, and will therefore both affect and be affected by the design of the other two.

(c) A regional program will have to identify both the optimum mix of commodities in a particular area and the services required to support farmers, and will therefore both affect and be affected by the design of both commodity and service programs.

5. Looked at another way, any particular component of the Department's total program can be located by three reference points. Thus a proposal to expand corn research in Leyte should be consistent with and form part of three broader strategies or programs—a national development strategy for corn, the national research program, and the regional development program for Region VIII.

6. Thus there is need for the Department to have specialist functions in all these three areas. It also has to have a strong sectoral planning function to undertake the complicated, iterative process of amalgamating and harmonizing all three approaches into an integrated program.

Implications for Organization Structure

7. If one were designing a department from scratch, it might be desirable to translate these functions of ADPA into the basic structure of the department which gives equal ranking to each of the three dimensions as follows:
8. From this first simple structure, it would then be an easy next step to reach the third tier of the structure by disgregation, e.g.:

(a) the commodity development group might be divided into foodcrops, commercial crops, livestock, fisheries

(b) the farm services group might be divided into research, extension, farm inputs, marketing services and perhaps rural infrastructure

(c) the regional development group might be divided by either agro-climatic zones or administrative regions.

9. Finally, most of the bureaus and agencies then fit naturally within the structure, depending upon whether they are primarily commodity-oriented (e.g. the Coconut Authority, Bureau of Animal Industry, or Fiber Industry Development Authority) or service-oriented (e.g. Bureau of Agriculture Research, Agriculture Training Institute, or Bureau of Plant Industry). The regional development branch of the department would serve a crucial staff function of monitoring both horizontally within the Department and vertically with the regional offices to ensure that regional programs are consistent with national planning and vice versa.