

**ORGANIZING FOR RESULTS:
THE PHILIPPINE
AGRICULTURAL SECTOR**

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WORKING PAPER SERIES NO. 92-08

July 1992

Philippine Institute for Development Studies

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ORGANIZING FOR RESULTS: THE PHILIPPINE AGRICULTURAL SECTOR *

*Cristina C. David, Eliseo R. Ponce, and Ponciano S. Intal, Jr. ***

Introduction

Philippine agriculture performed poorly in the 1980s. The average annual growth rate declined from 4.8 percent in the 1970s to 2.1 percent, lower than the population growth rate. As a result, export surpluses dwindled and agricultural imports rose. Although depressed world commodity markets undoubtedly lowered agriculture's growth performance, other Asian countries managed to grow faster, and most of them at a rate even higher than in the 1970s (Table 1). The country's poor performance can be largely attributed to the slow growth of crop productivity, eroding Philippine competitive advantage (Fig. 1a). Among the traditional commodities, only yields of rice and, to a lesser extent, corn grew significantly. As Philippine coconut and sugar yields stagnated, Malaysian oil palm and Thai sugar expanded their shares of world markets.(Fig. 1b).

With the closing of the land frontier and continued high population growth, agricultural development will have to come from technological change and irrigation expansion that can increase productivity and effective crop area. Yet government interventions in agriculture over the past four decades have relied primarily on short-term price and trade regulations to lower food prices, raise farmers' income, and achieve food self-sufficiency; regulations are easier to implement, have short-term impact, and generate resources for the agency concerned. Market regulations, however, have often protected consumers at the expense of farmers, raised production costs, distorted incentives against commodities where our comparative advantage lies, and misallocated government resources from growth-enhancing investments to unproductive bureaucratic costs without achieving their stated objectives. On the other hand, too few resources have been allocated to the more cost-effective, sustainable long-term policy instruments that raise agricultural productivity and lower unit cost of production, such as agricultural research and irrigation, to attain these conflicting objectives.

*Prepared for the "Crisis of Poverty," a set of studies under the Micro-Impact of Macroeconomic Adjustment Policies (MIMAP) Project financed by the International Development Research Center (IDRC).

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Table 1. Average annual growth rates (%) of agricultural gross value added at constant prices for selected Asian countries

	1970-1980	1980-1990
Bangladesh	1.8	2.9
India	1.1	3.4
Indonesia	1.3	5.3
Malaysia	3.8	3.8
Philippines	4.8	2.1
Thailand	4.9	2.5

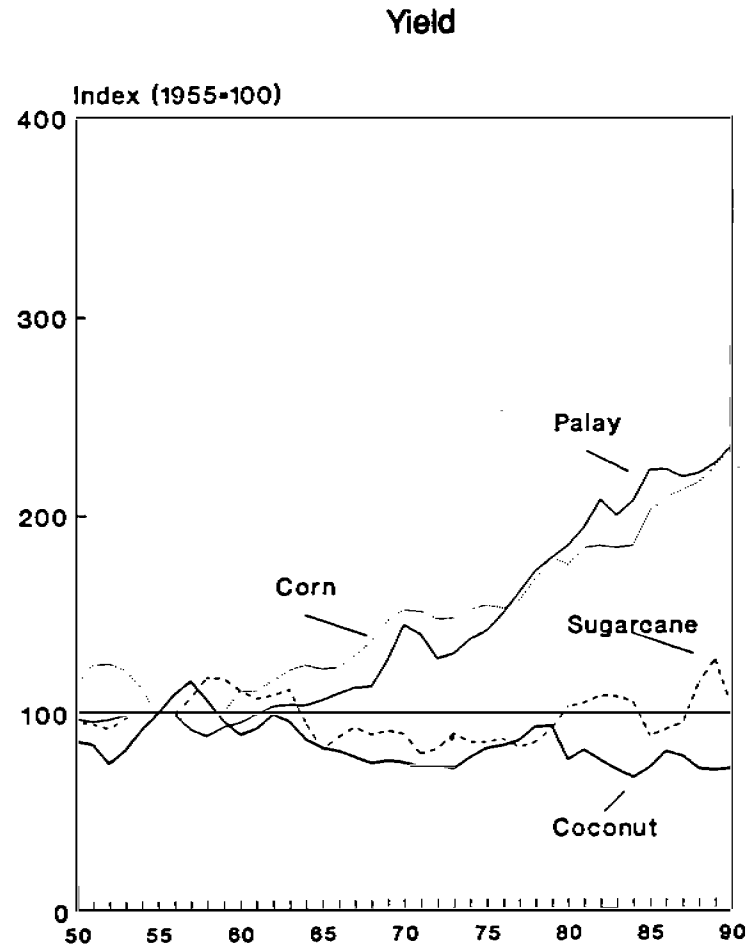
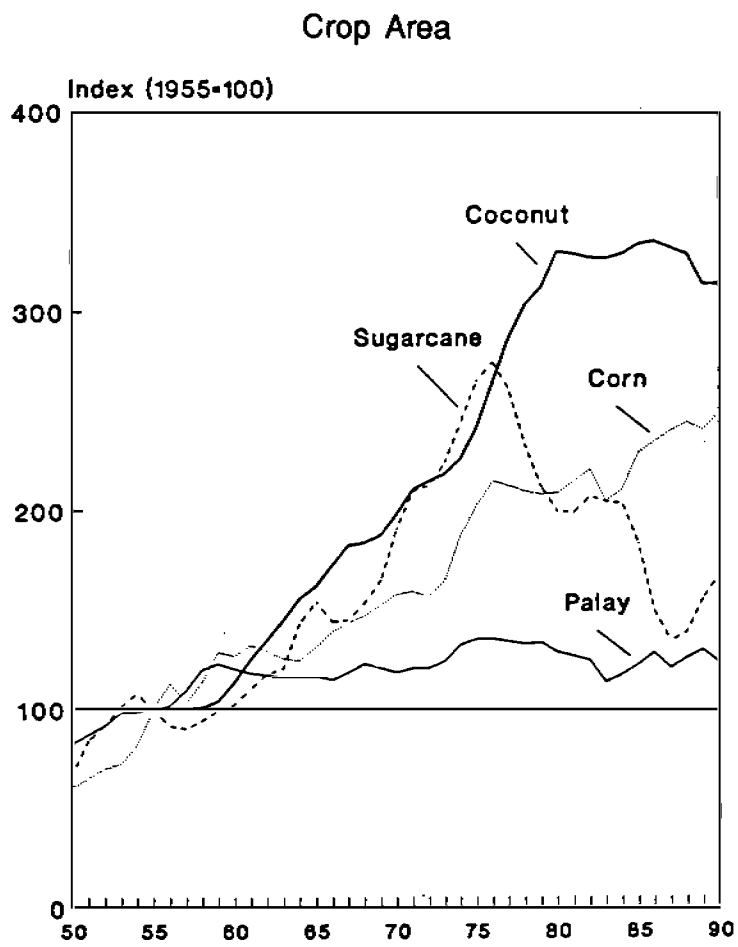
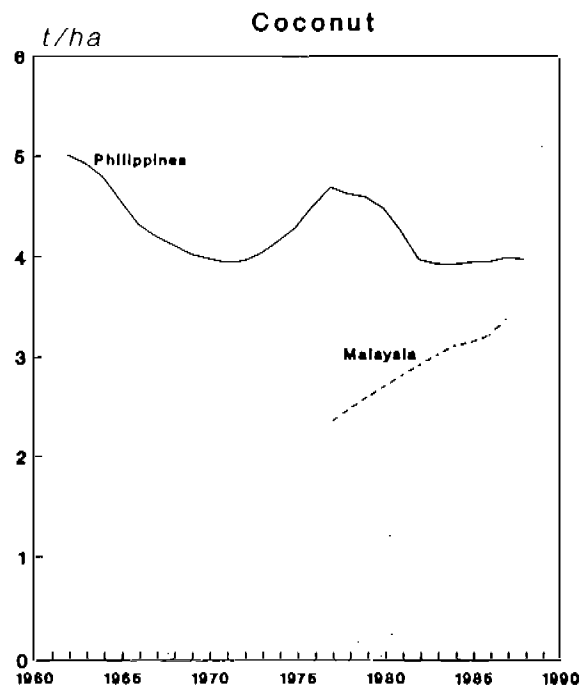
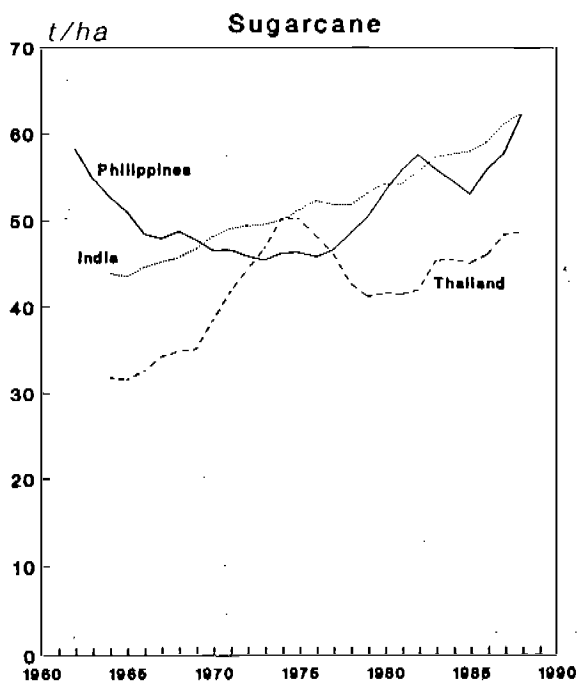
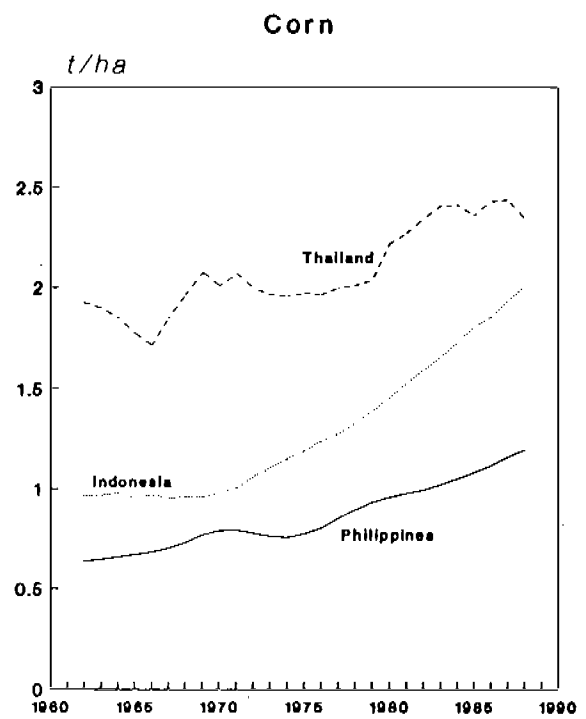
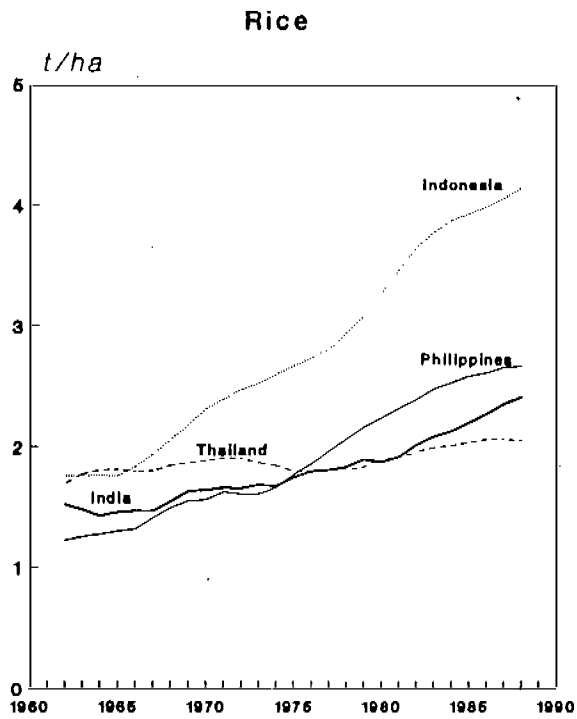


Figure 1a
Trends in Crop Area and Yield of 4 Major Crops, 1950-1990

Figure 1b
Trends in Yield of 4 Major Crops in
Selected Asian Countries



This paper proposes a set of policy and institutional reforms to reverse the weak performance of agriculture in the 1980s. Our reform proposals focus on three aspects: (1) completing the deregulation of the sector; (2) improving the allocation of public funds across policy instruments; and (3) restructuring the agricultural bureaucracy. These agricultural reforms will lay the foundation for an efficient incentive structure and institutional structure of support-service delivery, leading to rapid and sustained long-term growth.

Our reform proposals are intertwined and self-reinforcing. The further deregulation of the sector forces the agricultural bureaucracy to focus its talents and energies on the provision and/or encouragement of productivity-enhancing services to agriculture, allows the organizational streamlining and institutional restructuring of the agricultural bureaucracy, and releases scarce resources for productive investments in agriculture. The end result is greater effectiveness of government expenditures and an agricultural bureaucracy better organized for "results" in the agricultural sector.

Deregulation

Many well-meaning government interventions in the agriculture sector use up scarce resources with almost no tangible positive impact; rather, they impose heavy and unnecessary transactions costs and uncertainty on farmers, and distort agricultural production and the marketing systems. For example, National Food Authority (NFA) has spent billions of pesos over the years in rice purchases without successfully stabilizing rice prices or raising farm prices to NFA support prices (Table 2). Similarly, despite NFA's monopoly control of corn imports, the average implicit tariff rate on corn imports is below the 50-percent book tariff rate (Table 3). Had importation of corn been open to any private trader without NFA control, domestic corn prices would have been 50 percent higher than imported corn and the government would have earned corresponding customs duties rather than spend scarce public resources. The import regulations on seeds raises costs of production to farmers and prices to consumers, particularly for vegetables.

Deregulation is an important means of improving the effectiveness of government agricultural administration by eliminating or streamlining unnecessary, distortionary, and unduly expensive administrative tasks. Deregulation can become a means of "people empowerment" and improving incentives for agricultural production and productivity.

The Aquino administration started deregulation in agriculture by dismantling a number of counterproductive regulations and monopolies: export taxes on selected agricultural commodities, copra export ban, sugar and coconut monopolies, quantitative controls on fertilizer imports, and the NFA monopoly on imports of wheat and animal feeds. It is high time to complete deregulation by abolishing more counterproductive interventions and by modifying regulations that should be retained. Deregulation need not be undertaken as part of the

Table 2. Comparison of government support to farm price of paddy and ceiling to retail price of rice, 1960-1991.

	Support/ Farm price	Ceiling/ Retail price	Retail/ Farm price	Ceiling/ Support price
1960-64	0.94	0.74	2.04	1.59
1965-69	1.09	0.76	2.21	1.53
1970-74	0.94	0.81	2.04	1.78
1975-79	1.13	1.00	2.15	1.90
1980-84	1.22	1.02	2.15	1.81
1985-89	1.16	0.91	2.11	1.66
1990-91	1.23	-	2.18	-

Table 3. Trends in nominal protection rate of rice and corn, 1960-91, (%).

	Rice	Corn
1960-64	43	-43
1965-69	11	3
1970-74	4	9
1975-79	-13	22
1980-84	-13	11
1985-89	16	48
1990-91	16	-

Note: Nominal protection rate is the % difference between domestic and border price. Domestic price is wholesale price of rice and corn (yellow). Border price is CIF import unit value for corn and Thai 35% broken plus 15% to arrive at landed cost for rice.

bargaining process, and industry over the pace of trade liberalization; rather, it should be undertaken because it improves the efficiency and efficacy of government support to agriculture.

To complete deregulation of agriculture, the following should be abolished:

- * NFA monopoly on international trade and domestic market operations in rice and corn;
- * hectareage limits on banana production;
- * import bans on garlic, onions, potatoes, cabbage, coffee, and seeds;
- * import controls on sugar;
- * quantitative import controls on cattle feeder stock;
- * export bans on buntal and ramie planting materials;
- * slaughter ban on carabaos;
- * export restrictions on animal and animal products;
- * licensing/registration of rice retail trade and warehousing, sugar trade, coconut-industry participants, fiber traders, processors, manufacturers, livestock and poultry traders, livestock auction markets, feed establishments, fertilizer warehouses.

The fear that abolishing the NFA trade monopoly and domestic market operations in rice and corn will remove government subsidies to farmers and consumers and leave the market vulnerable to price manipulation is unfounded. Allowing private imports will increase competition among rice traders. Because domestic prices can be influenced indirectly by tariff policies, budgetary allocations to NFA simply subsidize inherently inefficient government market operations. In other words, subsidies to NFA largely benefit the bureaucracy rather than the target beneficiaries. Special targeted food-subsidy programs -- in the case of calamities, for example -- can be more economically accomplished by the Department of Social Welfare and Development (DSWD).

High protection of corn means high input costs for the livestock industry, resulting in high prices of meat products and an internationally uncompetitive domestic livestock (and corn) industry. This implies that encouraging domestic corn production with high tariff protection is not a socially optimal strategy. The best strategy would be to raise farm productivity, allowing higher farm profits, lower corn and meat prices, and eventual corn and livestock export competitiveness. Yet the recent budget for corn research averaged only P10 to P15 million, much lower than the P18 to P20 million research budget for tobacco which contributes less value added to the economy than corn.

In the long run, quantitative import controls must be replaced by tariffs equivalent to 20 to 30 percent. However, tax-free importations of agricultural commodities -- such as possible for cooperatives that have tax-free privileges for importing raw materials and capital equipment -- must not be allowed. In selected cases, these tariffs may initially be higher (40 to 50 percent) during a two- to three-year adjustment period. Higher tariffs, as with import bans, will only

promote inefficient production. It should be emphasized that import controls or high tariffs on agricultural commodities do not generally help the poor, particularly in the case of the sugar sector which is dominated by large landholdings and has historically benefited from the United States premium-sugar market. The poor are the landless, including the sugar workers, who have to pay for the policy-induced higher prices.

For rice and other commodities that have widely fluctuating world prices, a variable tariff scheme may be adopted to protect the domestic market from secular world-price instabilities. Because the world market is less subject to seasonal price variation, international trading by the private sector, in addition to private storage, will help stabilize domestic supply and price seasonally, minimizing seasonal domestic price fluctuations in a more cost-effective manner than direct government marketing operations. Varying tariffs seasonally is unnecessary and distortionary for products that are not highly perishable (e.g., corn). Administratively, a variable tariff scheme can be implemented by setting a reasonable tariff range per commodity (agreed upon with Congress) and a set of clear criteria and rules allowing automatic tariff adjustments within the tariff range.

Hectareage limits, export restrictions, and slaughter bans on carabaos are clearly counter to the objective of higher agricultural growth. On the other hand, special licensing/ registration requirements for certain agricultural products/ inputs do raise cost of production and promote graft and corruption. In most cases, these requirements were instituted to collect information that could be obtained in a more cost-effective manner. If these were required to strengthen controls, revoking ordinary business permits rather than special licences for violations of trade regulations would have been a more severe penalty.

A number of regulatory functions that raise overall efficiency of the sector, extract monopoly rents for public gain, and protect human health and the environment should be continued with some modifications in procedures.

* Shares in export premium markets in sugar (US), fresh coconuts (Taiwan), and coffee, as well as permits to establish and operate fishponds, fishpens, and commercial fishing vessels, must be distributed either through open bidding or by imposing fees that reflect their true long-term scarcity value. This is based on the principle that benefits from natural resources and external policies must be shared with the general public. Although fishing permits will have to be issued by the local government, the central government must continue to coordinate the setting of fees or bidding procedures to ensure correct and consistent pricing. Proceeds should then be shared between local and central government to motivate local governments to manage their natural resources efficiently and share the benefits of abundant natural resources with the rest of the population.

* Certification for quality standards of seeds, fiber, tobacco, feeds, coconuts, fertilizers, and others, is a public service that should continue to be provided for a fee that covers variable cost, but availed of on a voluntary basis.

* Export restrictions on endangered species or raw materials on which the country has some degree of monopoly control in the world market should be maintained.

* Quarantine service, meat inspection, pesticide regulations and monitoring, which have health, safety, and environmental benefits, must be strengthened.

Strengthening Support Services

Although the public sector should largely leave domestic and international marketing of agricultural commodities to the private sector, the government should strengthen its support services. Support services are aimed at increasing productivity (agricultural research, extension, irrigation), enhancing market efficiency (market-promotion policy and development, agricultural statistics), and efficient, sustainable management of natural resources and the environment (proper pricing and other regulations).

Most support services cannot be devolved to the private sector because of their public-good nature, pervasive externalities, and large investments. For example, the private sector will underinvest in the development of agricultural technologies; it will invest only in technologies that can be embodied in purchased inputs and/or where ownership of the new technology can be effectively protected by patents, such as hybrid seeds, farm machineries, pesticides, and fertilizers. It will not invest in a wide range of biological technologies -- high-yielding cultivars, improved farm management, integrated pest management -- where their use cannot be effectively limited to those who pay for them. Moreover, agricultural technologies are highly location-specific; relatively little can be directly borrowed from abroad without some measure of testing and adaptation.

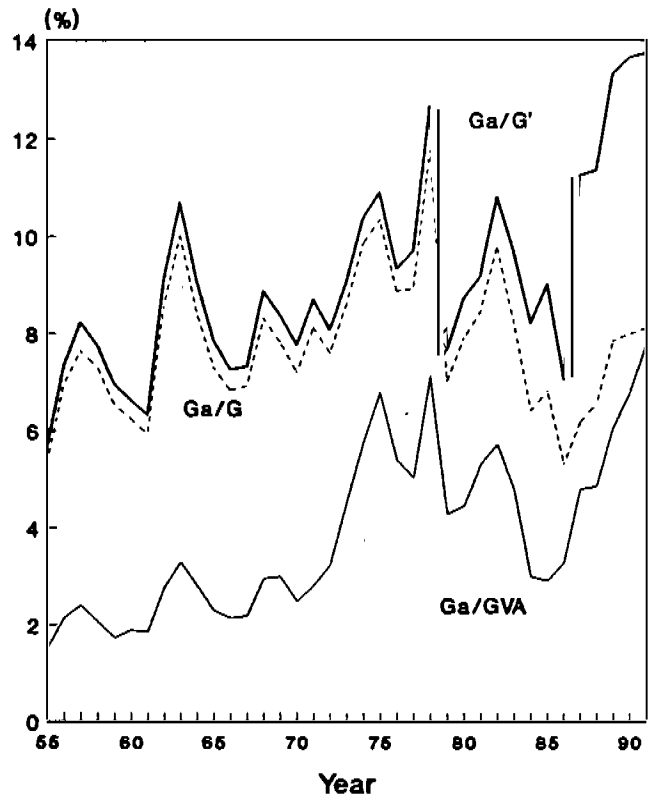
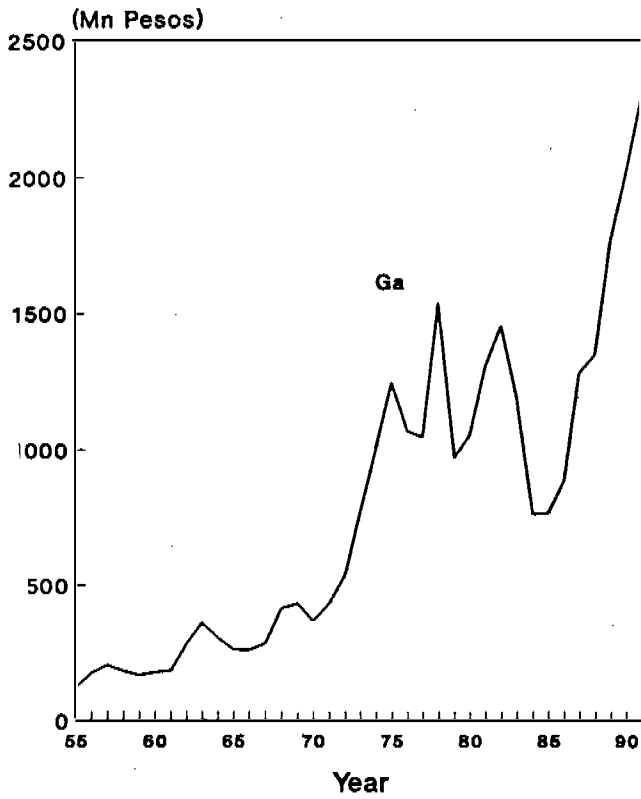
The public sector will also have to play a major role in irrigation investments because of their large size, long gestation period, and complementarities with power and road infrastructure. Forestry and fishery resources, which have pervasive externalities, must likewise be publicly managed to ensure long-term sustainability of their production and minimize negative intertemporal and interregional effects on agricultural productivity.

Strengthening agricultural support services will require raising budgetary support for agriculture, improving budgetary allocation within agriculture, and restructuring the agricultural bureaucracy.

Raising and Improving Budgetary Allocation

The agricultural sector bore the brunt of the contractionary policies in the early 1980s. Relative to gross value-added in agriculture and to total government expenditures, public expenditures for agriculture in the mid-1980s were only about equal to 1955 levels (Fig. 2).

Figure 2
Public Expenditures in Agriculture (Ga) as Percent of
Gross Value Added in Agriculture (GVA) and
Total Expenditures including and excluding
cost of debt service (G and G')



While expenditures for agriculture recovered by the late 1980s, the Philippines continued to have the lowest ratio of public expenditure for agriculture to total public expenditures and gross domestic product among ASEAN countries (David 1991).

It should also be noted that the increases in public expenditures in the late 1980s went mostly to agrarian reform, environmental protection, price support, and other support services rather than to growth-enhancing investments such as agricultural research and irrigation (Fig. 3). Although most of the agrarian-reform expenditures were for support services such as extension, the linkage to land reform rather than to technological opportunities reduced cost-effectiveness of such expenditures.

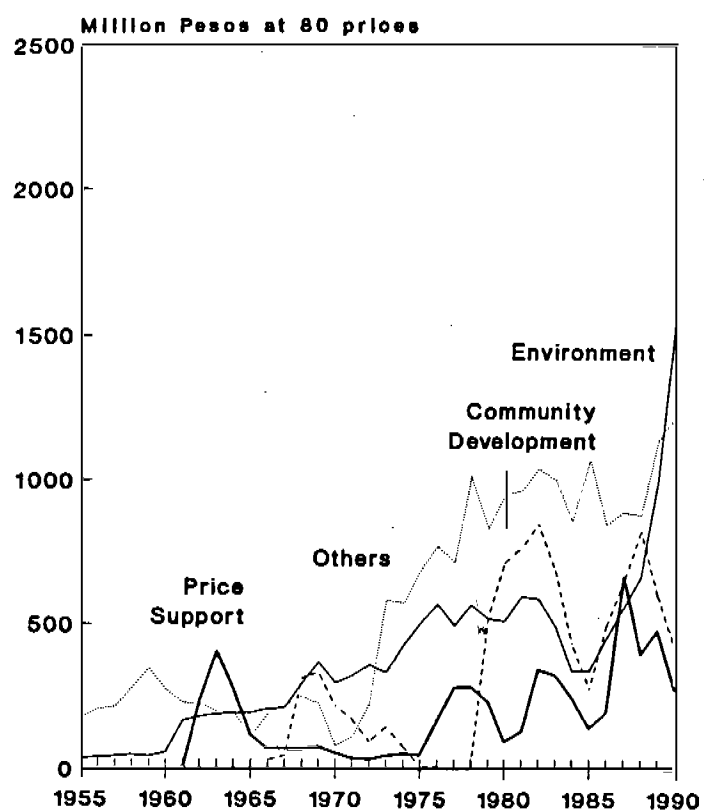
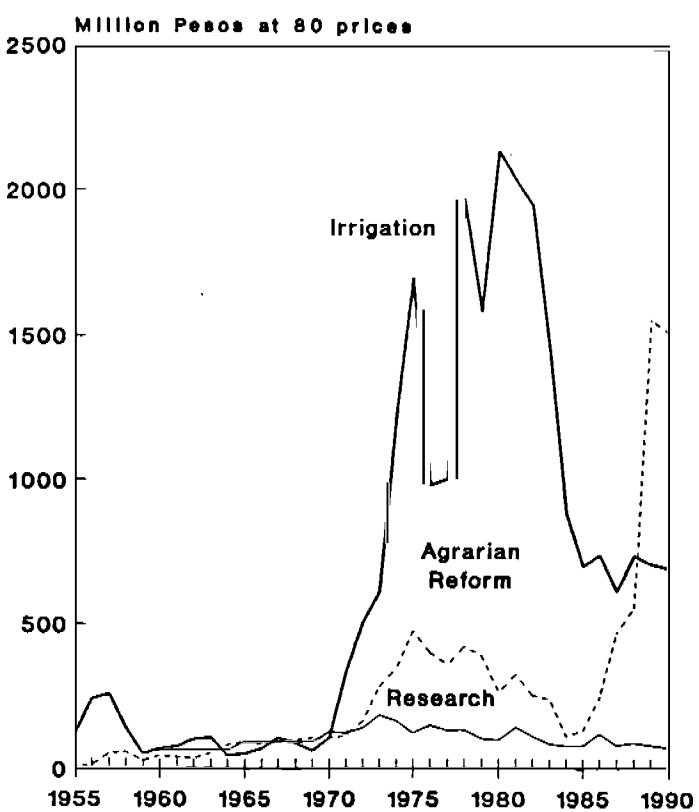
In the 1960s, the country's ratio of expenditure for agricultural research to gross value-added in agriculture was about average among developing countries; it is now the lowest among major Asian countries (Fig. 4). The relatively weak support to agricultural research explains the decline in the competitive advantage of Philippine agriculture, particularly for traditional crops. The generally high estimated rates of returns of agricultural research reported worldwide and in the Philippines clearly indicate that the country is underinvesting in the development of agricultural technologies (Table 4). Those rates of returns, even if discounted by half, are higher than estimates for infrastructure investments, which typically range from 15 to 25 percent. Therefore, raising public investments for agricultural research must receive equally high priority as public infrastructure. Limiting the regulatory functions in agriculture as recommended above will free significant resources for growth-enhancing investments, as the NFA budget alone is about three to four times the total public support for agricultural research.

Restructuring the Bureaucracy

Efficient delivery of agricultural support services has been greatly slowed by weaknesses in the institutional structure of governance. Whereas the Department of Agriculture (DA) assumes the responsibility for accelerating agricultural development, the mandates, authorities, and budgets for performing the various agriculture-related activities are spread over several different agencies belonging to at least four other departments. Further, the key instruments for raising agricultural productivity -- technological change and irrigation investments -- are largely outside the purview of the DA.

The mandates for technology generation in agriculture, fisheries, and natural resources still officially belong to the Philippine Council for Agriculture, Forestry and Natural Resources Research Development (PCARRD) and Philippine Council for Agriculture and Marine Research and Development (PCAMRD) under the Department of Science and Technology (DOST). Irrigation development belongs to National Irrigation Authority (NIA) as an attached agency of the Department of Public Works and Highways (DPWH). The Department of Agrarian Reform (DAR) allocates nearly 90 percent of agrarian reform funds and manpower resources for

Figure 3
Trends in Public Expenditures in Agriculture
by Policy Instrument, 1955-1990



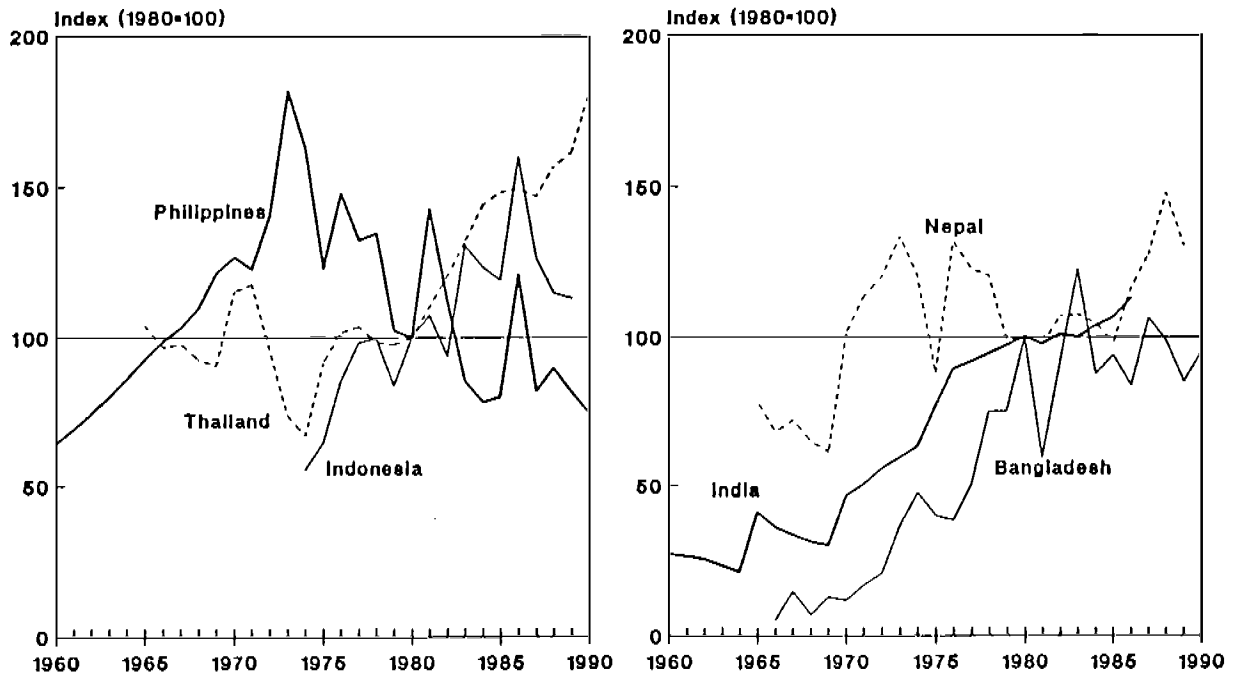


Fig 4a. Trends in agricultural research expenditures in real terms

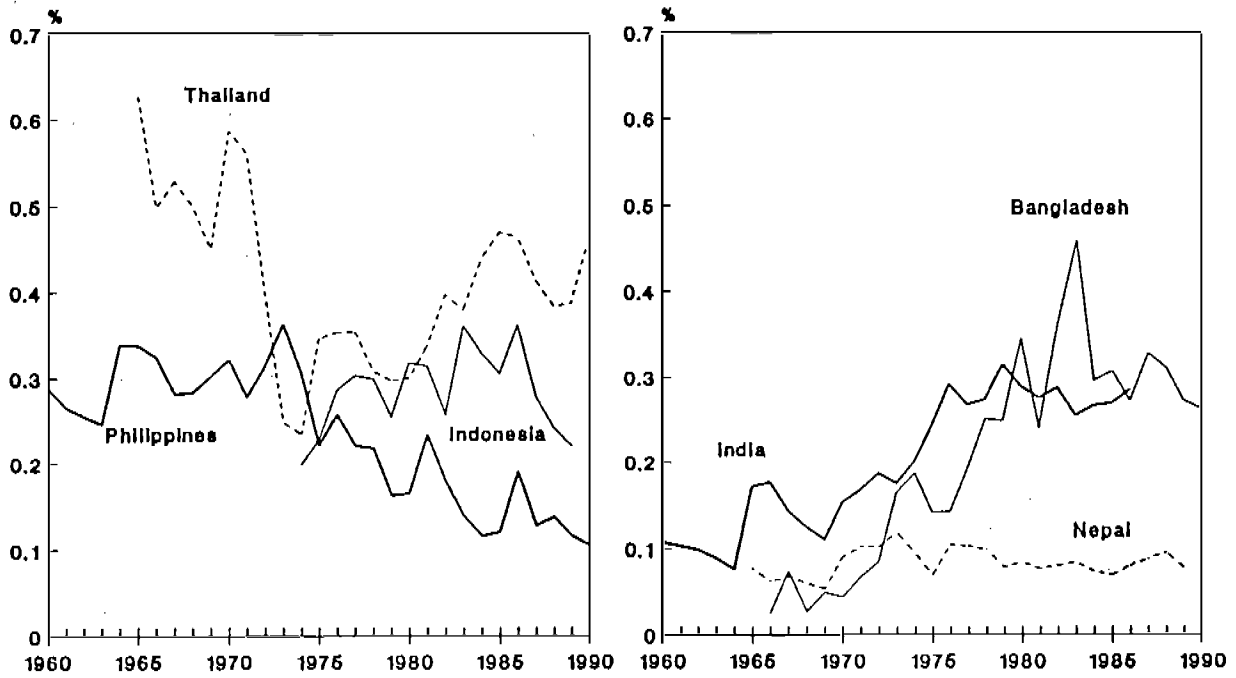


Fig 4b. Trends in agricultural research intensity ratios (% of agricultural research expenditures to gross value added in agriculture)

**Table 4. Summary of rates of returns estimates
of public agricultural research**

	Percent
Developing Countries (Evenson and David, 1992)	
5 studies	0
8 studies	0 - 20
28 studies	30 - 50
37 studies	50+
Philippines	
Rice (Flores, Evenson, & Hayami, 1978)	75
Corn (Librero and Perez, 1987)	29 - 48
Sugar (Librero, Perez, and Emlano, 1987)	51 - 71
Poultry (Librero and Emlano, 1990)	100+

provision of agricultural support services. The Department of Environment and Natural Resources (DENR) also similarly delivers agricultural support services in the upland areas.

The problem stems not only from the dispersion of responsibilities across several departments but, equally important, from the defects in the organizational structure of the DA. Although the Aquino administration brought most of the autonomous agriculture-related agencies -- NFA, Philippine Coconut Authority (PCA), Sugar Regulatory Administration (SRA) -- under the DA, they have remained largely intact as attached agencies. Thus, the organizational structure adopted after 1986 is a mixture of attached commodity agencies and a set of bureaus, councils, and offices concerned with other commodity groups and functions outside the purview of attached agencies (Charts 1a and 1b).

Attached commodity agencies may have solely research functions (Philrice, Naphire, etc.), regulatory functions (NFA, Fertilizer and Pesticides Authority, etc.), or the whole range of research, extension, marketing, and regulatory functions (PCA, SRA, Fiber Industry Development Authority, National Tobacco Administration). Bureaus and other offices similarly perform a single or variety of functions. For regional operations, the attached agencies are separate and independent of the integrated operations of the regional offices of the DA. As a result, there is considerable overlapping of functions and activities, particularly in relation to extension. On the other hand, the essential interactions among the various support services throughout the whole process, from planning to delivery, such as between research and extension, is largely missing.

The commodity-based structure of the DA not only exacerbates the fragmentation of the bureaucracy and the overlapping of functions, it also makes the department prone to greater instability and inflexibility. Historically, the DA has been divided among more and more specific commodities, based mainly on political-economy factors rather than consistent, sound, and logical criteria. Why, for example, is there a commodity agency for fiber or cotton but not for corn? In the 1970s, several DA agencies became autonomous, severely weakening controls and accountability in their bureaucracies and constraining coordination of research and extension within the DA.

The commodity-based structure favors regulations against growth-enhancing activities -- research, extension, irrigation -- which have longer-term pay-off. Regulations are easy to implement, have short-term impacts, generate resources for the agency and rents for the employees allocating import/export permits, issuing licenses, and so forth. In contrast, well-documented justifications and a record of performance are necessary to raise budgetary resources for productivity-enhancing activities. Furthermore, heads of commodity agencies are typically nontechnical persons who may not fully appreciate the potential contributions of technological change or the scientific skills and different type of management style required for productive research. The multi-functional commodity-based organizational structure has inadvertently lowered the priority of productivity-enhancing activities.

Chart 1a
Department of Agriculture Organizational Chart 1987-1990

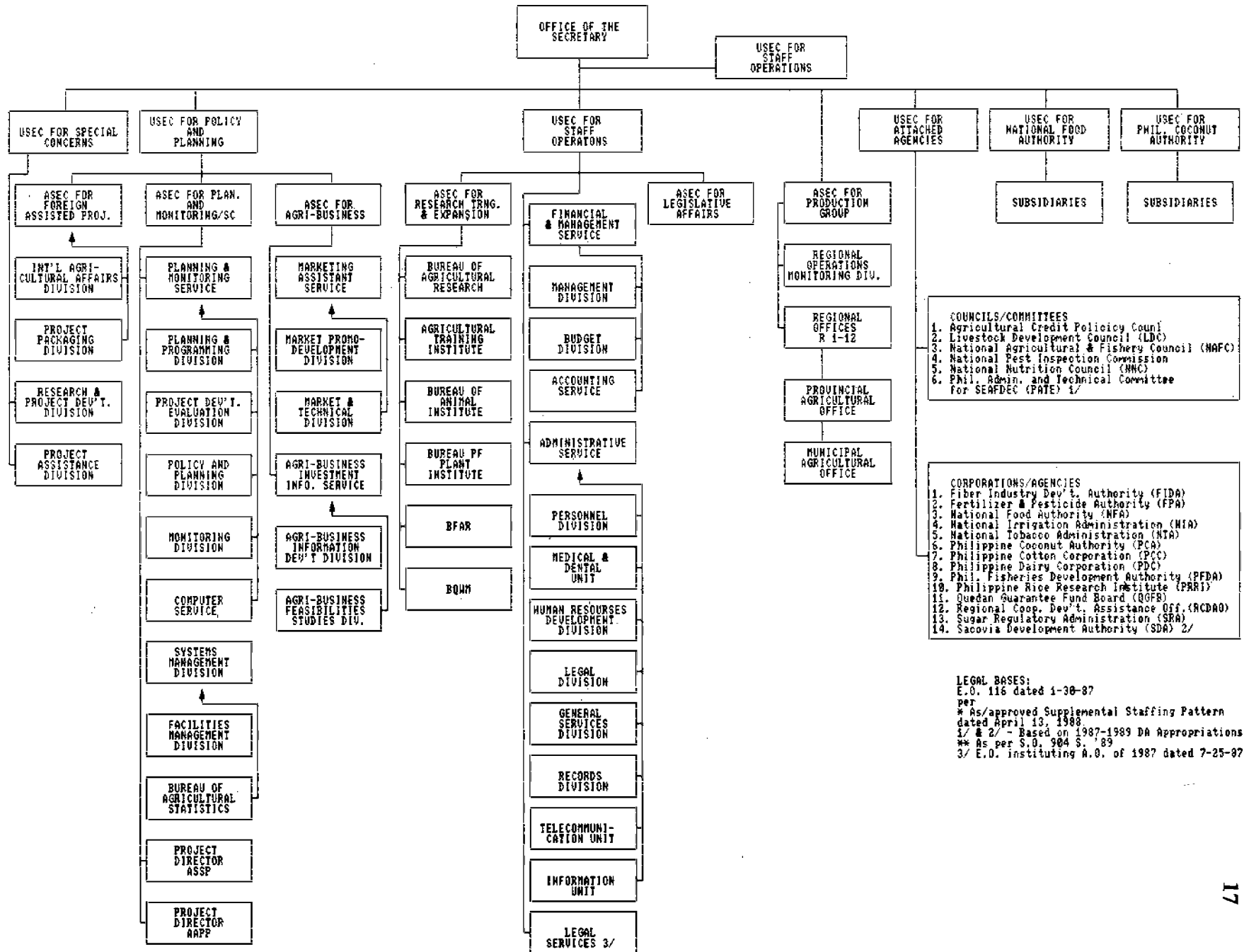
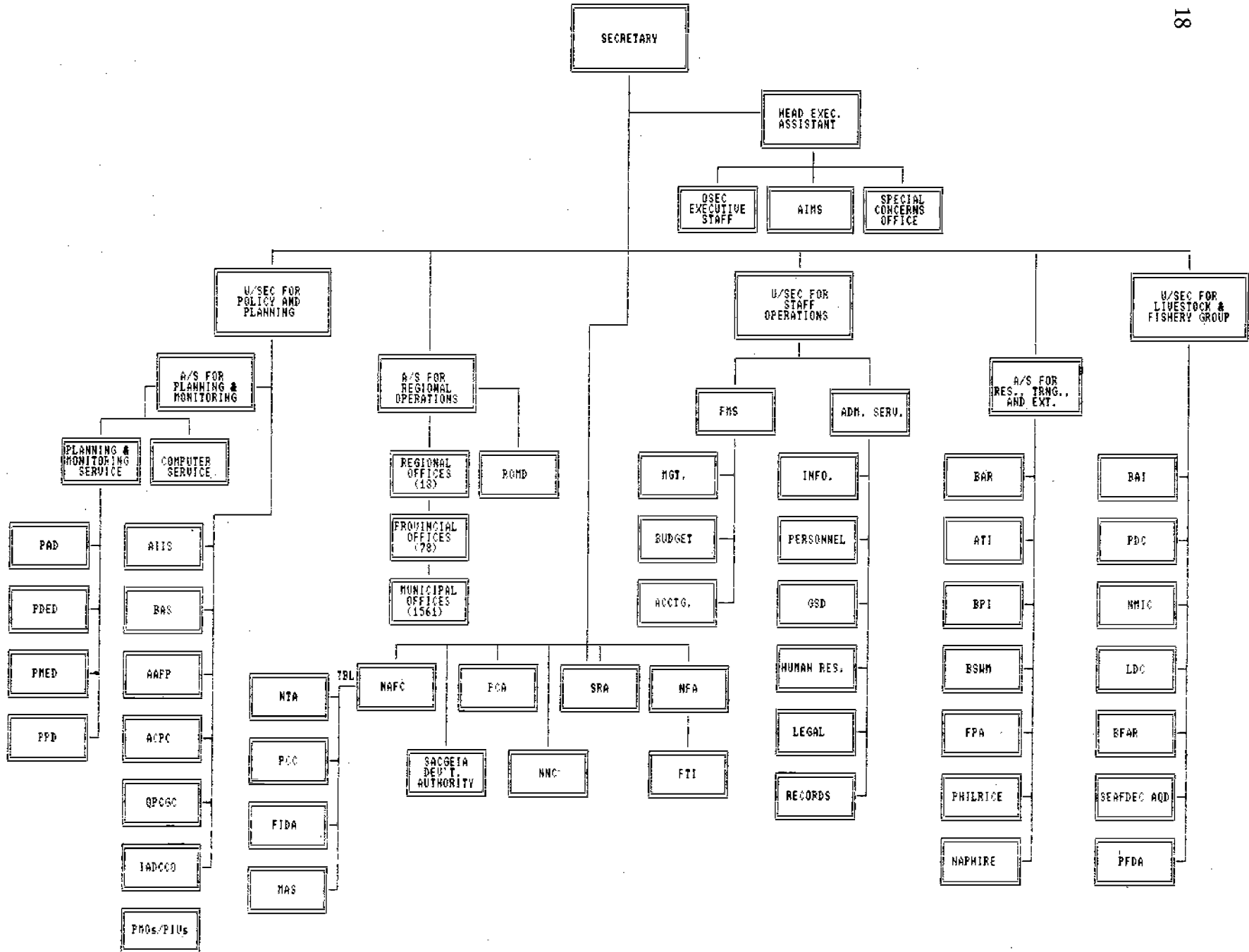


Chart 1b
Department of Agriculture Current Organizational Chart



Research and Extension

The weakness of the overall organizational structure for agricultural governance has adversely affected the support, efficiency, and effectiveness of the research and extension system, fragmenting it and leading to the following problems.

* *Extremely weak linkage between research and extension arising from the separation of the mandates between the DOST and DA.* The designation of the Secretary of Agriculture as Vice-Chairman of PCARRD and PCAMRD is not a sufficient mechanism of linkage, because the necessary interaction is not merely at a policy level, but at a working--scientific and grass-roots-- level. Effective linkage requires that both research and extension be accountable to the same office.

* *Unbalanced allocations between research and extension, across commodity groups, and across agencies.* While the Philippines has one of the lowest expenditures for research relative to gross value-added in agriculture in Asia, a recent study (PAES 1991) indicates that the extension budget and manpower resources are among the biggest among developing countries. This suggests that the country's budget allocation for technological development is biased against research in favor of extension. Such imbalance may be explained by the widespread belief that there are a substantial number of mature technologies on the shelf (developed locally or to be borrowed abroad) and it is the weak and underfunded extension system that is a constraint. Thus, budgets for extension activities continue to grow and wasteful duplication of efforts persist. The extension forces for sugar, coconut, tobacco, fiber, cotton, and other commodities are separately administered by the different units of the DA, not to mention the extension force of the DENR in the uplands, NIA in irrigated rice, DAR in agrarian reform areas, and DOST's efforts to coordinate the dissemination of "trichoderma." Yet within a single region, even within a single farm, a whole range of crops will be grown and intercropped or planted in rotation. This clearly indicates that consolidation of efforts could save resources, which is all the more imperative to efficiently carry out the decentralization of the delivery of basic support services under the Local Government Code.

The scientific community itself promotes and reinforces the idea of having many available new appropriate or mature technologies and a weak extension system, as research performance is evaluated in terms of studies completed or new varieties released, rather than rates of technology adoption. In fact, there are too many extension agents but too few appropriate technologies to extend. When a new technology is clearly profitable, as it is with modern rice varieties or chemical spraying of mangoes, it does not take too many resources to have it widely adopted. Studies completed and new varieties released do not constitute mature technologies unless proven to be adopted. It is only through a strong working linkage between research and extension that the pace of technology generation and adoption can be greatly accelerated because it will bring scientists closer to farmers.

Within the research system, imbalances in the allocation of research funds and manpower resources significantly lower the productivity of the research system. Limited research funds are allocated thinly to too many commodities. Moreover, as Table 5 indicates, the allocation across crops is incongruent with their economic importance: more resources are allocated to minor crops, and too few on major crops. The research-priority ranking of commodities according to degree of economic importance generally conforms to measures of rates of return to research, as the benefits to research are higher, the greater the value of production, while the cost of producing new technologies across commodities may not differ as widely as gross value added.

The distribution of public funds and manpower resources between the DA and PCARRD/PCAMRD/SCUs is imbalanced, particularly in light of distribution of responsibilities in research implementation and overall accountability. The establishment of PCAR in 1972 "to establish, support, and manage the operations of a national network of research centers/programs in agriculture and natural resources" also involved the policy decision to shift the major task of technology development to the state colleges and universities. While the DANR received 17 percent and the SCUs 23 percent of public resources for research in the early 1970s, the MAF had 23 percent and SCUs 49 percent by 1985 (ISNAR 1988). In addition, most of the research investments funded by external sources (e.g., USAID and World Bank) during this period were made in the university sector. As a result, the research capability of the DA declined as reflected in its scientific manpower resources relative to the SCUs, which increased significantly (Table 6).

The 1990 distribution of public research allocation indicates a higher research budget for the DA compared to PCARRD and the SCUs (Table 7) due mainly to the establishment of the Philippine Rice Research Institute (Philrice) and strengthening of the DA's research capabilities, as recommended by an ISNAR review mission (1988). Allocations of external grants to the SCUs/PCARRD/PCAMRD group, however, remain substantial, possibly still more than the total research budget of the DA.

Despite the dramatic turnaround in the DA's agricultural research resources, the scientific manpower resources in agriculture are still overwhelmingly located in the universities. Assuming that only 30 percent of Ph.D. man-years in the SCUs were devoted to agricultural research, this would still be equivalent to three or four times that of the DA.

PCARRD supposedly leads in planning, prioritizing, and coordinating the agricultural research program of the country. However, not only was the planning process faulty, PCARRD does not have effective control over the research budgets of state colleges and universities or DA research units. Although PCARRD's endorsement of agricultural research budget request is required for DBM's approval, it has become a mere pro forma process as SCUs and DA directly defend their research budgets to DBM. PCARRD does not have sufficient clout to argue for higher research budgets and its competitive research grant is too small to influence research thrusts significantly. The establishment of regional research consortia to strengthen PCARRD's

Table 5. Estimated research expenditures and gross value added of selected crops, 1990.

	Research (P million)	GVA (P million)	Research/GVA (%)
Rice	^a 50.2	36416	0.14
Corn	^b 15.0	16469	0.09
Coconut	^a 54.8	12515	0.44
Sugar	^a 39.8	6962	0.57
Tobacco	^a 18.0	2646	0.68

a/ Based on GOP budgets of Philrice, PCA, SRA, and NTA.

b/ Estimated research budget for corn (including external grants) in USM, IPB, and Ilagan Experiment Station.

Table 6. Number of PhD and MS holders in the agencies conducting/coordinating agricultural research

	PhD				MS			
	1970	1977	1986	1991	1970	1977	1986	1991
DA	3	4	11	60	51	39	138	313
SCU's/PCARRD/PCAMRD	143	195	588		292	428	990	
UPLB				252				190
VISCA				69				124
CMU				42				108
UEP				5				5

Sources of data: 1970, 1977 ISNAR
1986 PCARRD
1991 Specific Agencies

Table 7. Distribution of research budgets
by agency, 1990 (₱ million)

Department of Agriculture		DOST - SCU		b
		a	b	
BAR	7.7	PCARRD	62.9	130.2
REG'L OFFICE	85.3	PCAMRD	9.4	9.4
PHILRICE	50.2	UPLB	143.8	149.1
PCA	54.8	VISCA	19.9	30.6
SRA	39.8	CLSU	6.9	6.9
BPI	22.9	USM	5.7	10.2
NTA	18.0	MMSU	5.0	5.0
BAI	8.5	CRDI	6.7	6.7
BFAR	5.7	BSU	4.7	4.7
BSWM	6.5	ISU	2.2	2.2
NAPHIRE	5.0	CSU	2.2	2.2
		CSAC	2.0	2.0
		PAC	1.3	1.3
		CMU	1.3	1.3
Total	₱ 304.4		₱ 274.0	₱ 361.8

a

Includes only government funds.

b

Includes government funds and external grants
for selected institutions.

Sources of data: Bureau of Agricultural Research
Government Appropriation Act
Individual Agencies

coordination cannot make the research system more efficient because budgetary and management controls are not unified, there is no economic framework in research prioritization, and the weak linkage between research and extension is not addressed. Moreover, DOST's move to undertake technology-transfer activities introduces further inefficiencies by duplicating the DA's function and by increasing transaction costs.

The above problems persist because the overall organizational structure obscures accountability. The Secretary of Agriculture is ultimately responsible for the performance of the sector, yet he does not control the key instruments for agricultural productivity -- agricultural research and irrigation development. The research community blames slow technological progress on the weakness of the extension system, not realizing that the weakness stems from the lack of profitable new technologies to extend and the consequent focus on delivering subsidized inputs and credit. Since neither the DOST nor the SCUs are held accountable for agricultural development and are independent of the DA, there is no effective pressure on the research system in general to improve its performance through more efficient allocation of resources. Even within the DA, the multi-functional commodity-based structure and autonomy of several major commodity agencies make it extremely difficult to effectively manage and monitor performance of the research units under its umbrella.

Reorganizing Agricultural Bureaucracy: A Proposal

Because the underlying institutional problem is structural, restructuring the organizational framework for the delivery of agricultural support services is necessary to increase efficiency. It is time for change not only because there is a new administration, but because the implementation of the Local Government Code makes restructuring imperative. The central government must reorganize to efficiently develop the services that provincial governments must deliver.

Principles and Results

In developing the proposed organizational structure, we followed a number of principles.

* Limit public involvement to the following:

- Delivery of basic services that have public-good attributes and externalities such as research, extension, and irrigation;
- Allocation of fishery resources, and export premium markets (US sugar quota, coffee, etc.);
- Market promotion, development, information collection, analysis, and analysis, and dissemination;

- Regulations necessary for the protection of human health and the environment to ensure long-term sustainability of agricultural production;
- Devolve extension, irrigation management, and certain regulations to provincial government;
- Integrate responsibility of all public functions related to agriculture under the DA, except for redistribution of land (DAR) and management of forestry and mineral resources (DENR);
- Reorganize a consolidated, but greatly trimmed DA along a *functional* rather than a commodity-based structure.

Greater overall efficiency, effectiveness, and accountability are expected because such a structure will:

- * minimize duplication of functions,
- * minimize need for outside coordination,
- * simplify lines of responsibility, authority, and accountability,
- * clarify indices of performance,
- * remove unnecessary and counter productive regulations and minimize incentives to create new ones,
- * strengthen linkages among research, extension, irrigation, and other productivity-enhancing activities, and
- * free resources available for efficient delivery of growth enhancing support services.

Proposed Institutional Structure

Charts 2a-d and 3 present both the "ideal" organizational structure and the transitional organizational structure of the DA. The "ideal" structure assumes that the legal mandate on the ceilings on the number of undersecretaries and assistant secretaries are revised. The transition structure takes as given the current stipulation of three each at most for undersecretary and assistant secretary positions in the DA. In both "ideal" and transition structures, we attempt to hew the organizational structure according to functions broadly defined: production support services (research and development, irrigation, regional operations) and planning, policy, and other support services (planning, policy and external affairs, marketing and inspection service).

The new structure proposes that irrigation, technology generation, and technology transfer to the provincial governments be the responsibility of the DA under the overall leadership of an assistant or even an undersecretary. This will involve the transfer of the mandate and the corresponding resources for irrigation from DPWH and applied agricultural research from the DOST to the DA, and the separation of research and extension from the marketing and regulatory functions in the attached agencies. Such a structure facilitates the crucial linkage among production-related support services, especially between research and

Chart 2a

Department of Agriculture Proposed Final Organizational Chart

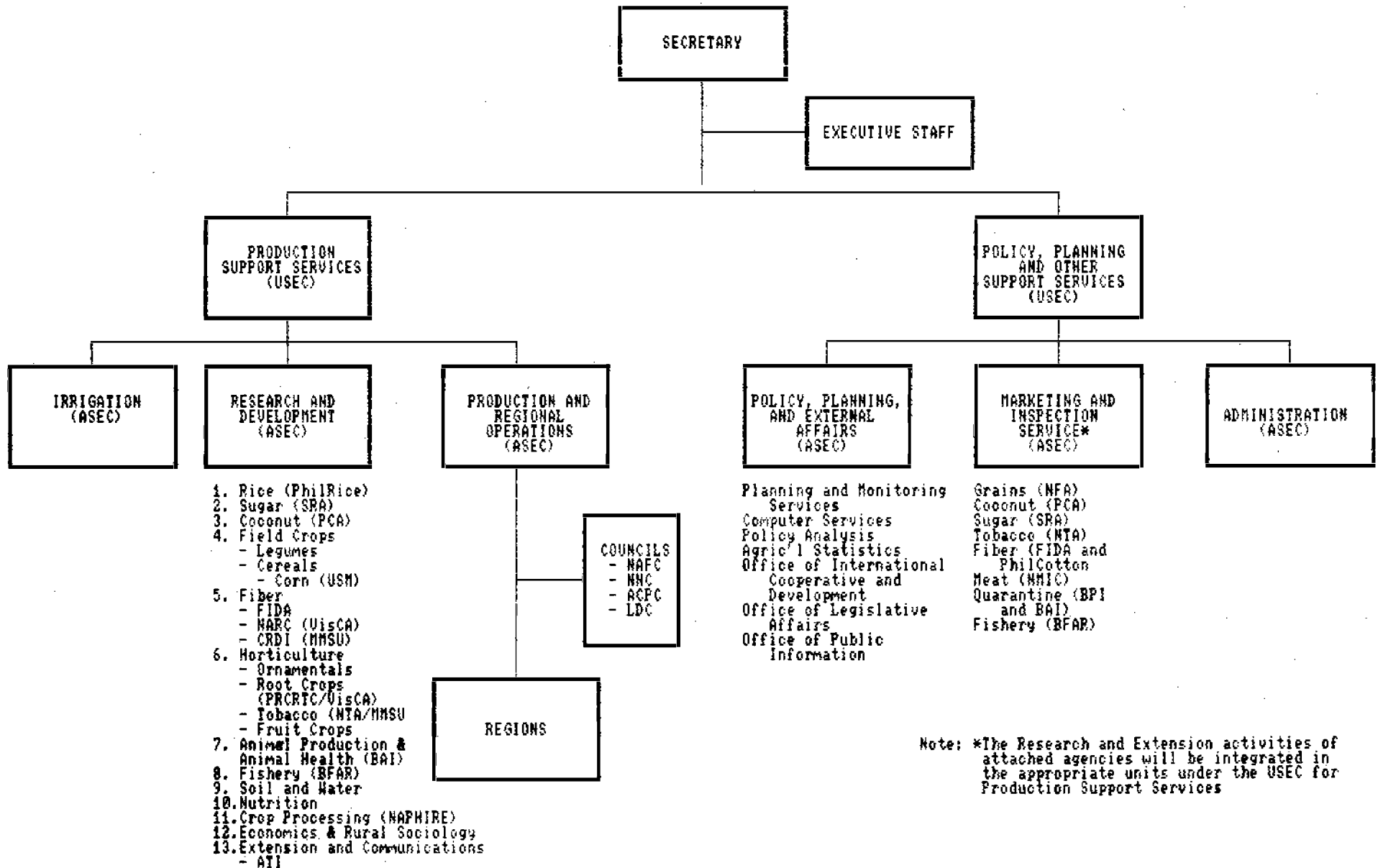


Chart 2b
 Research and Development Proposed Organizational Chart

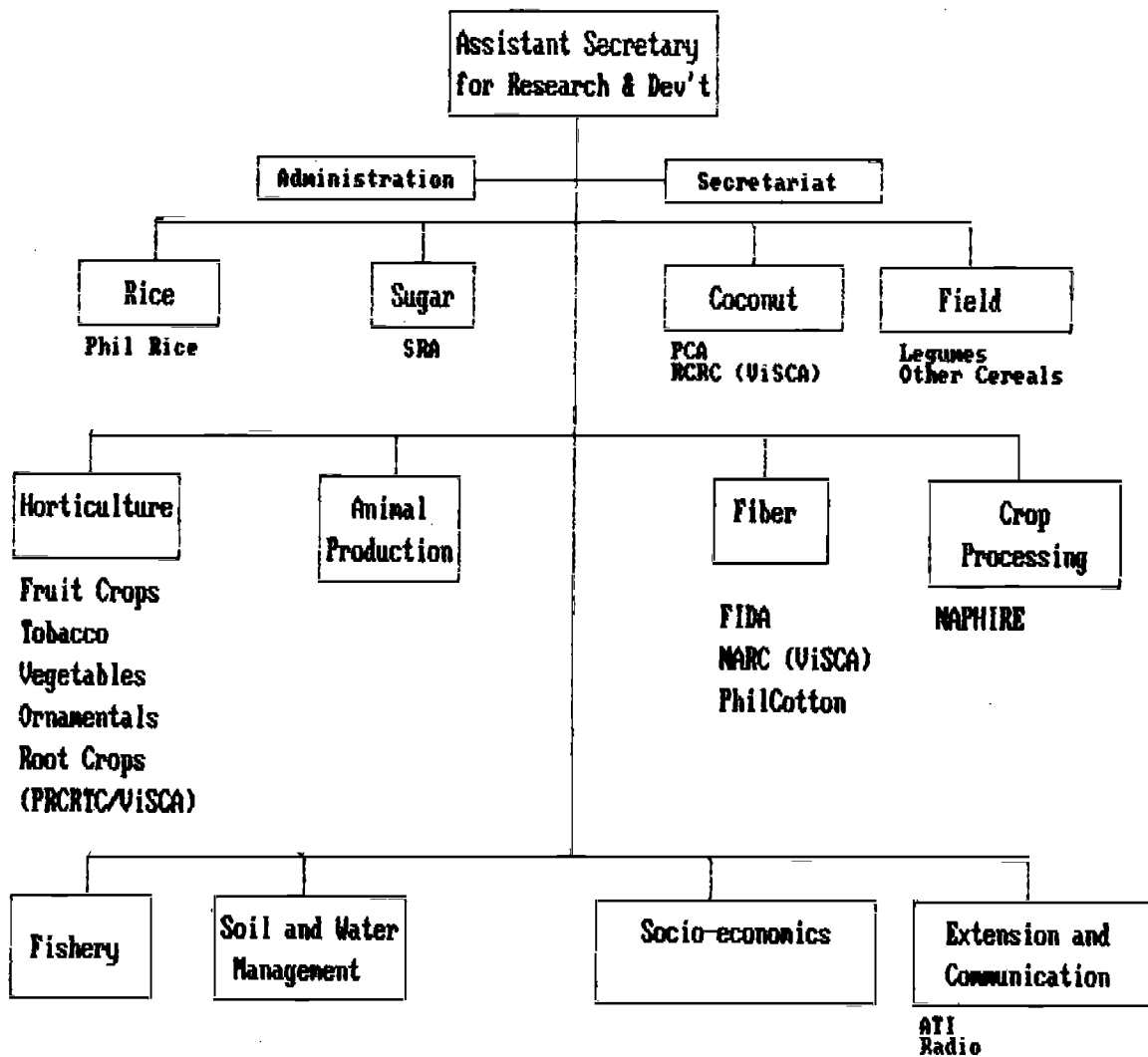


Chart 2c

Department of Agriculture Regional Office Proposed Organizational Chart

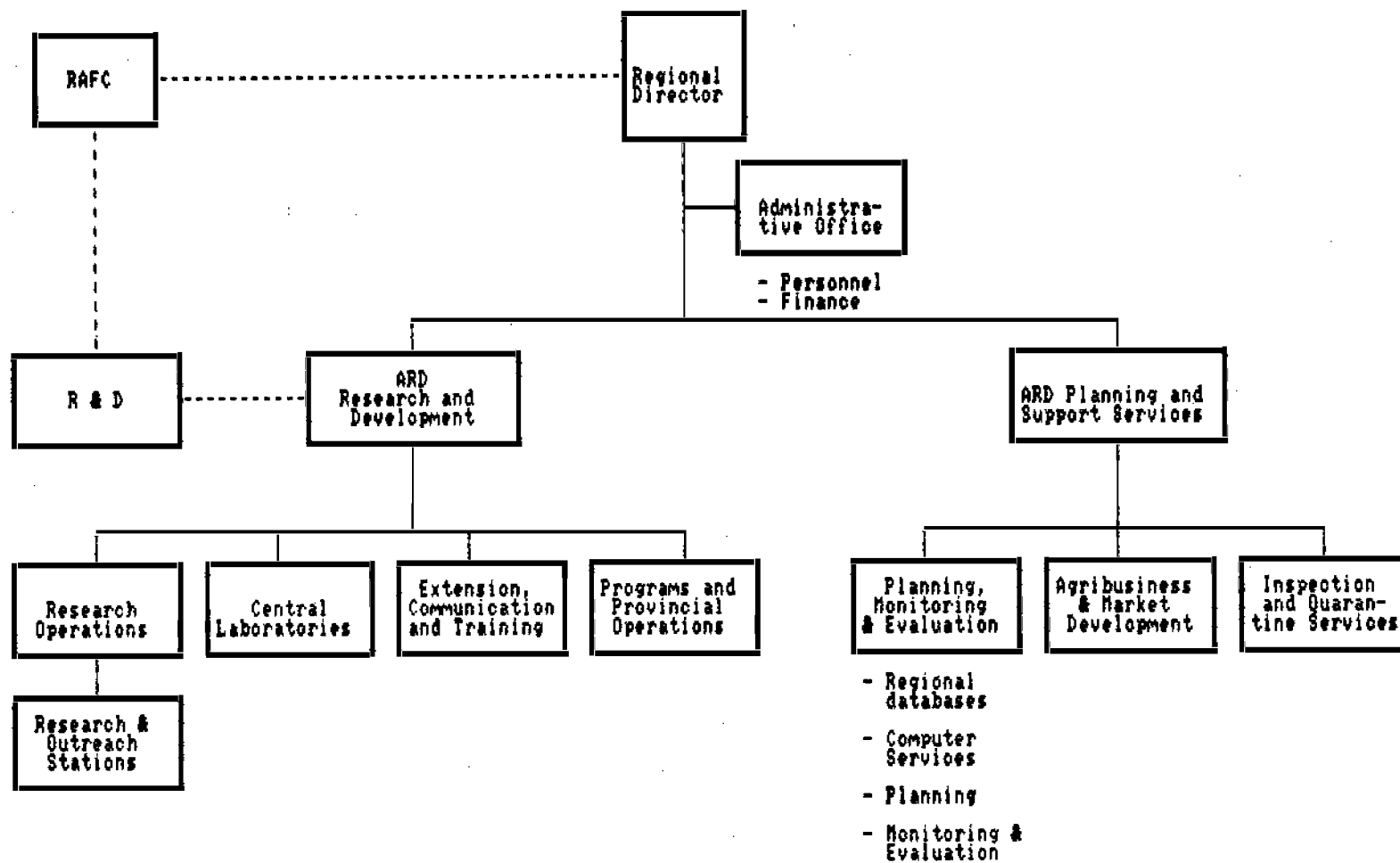


Chart 2d
Integrated Agriculture Research Center Proposed Organizational Chart

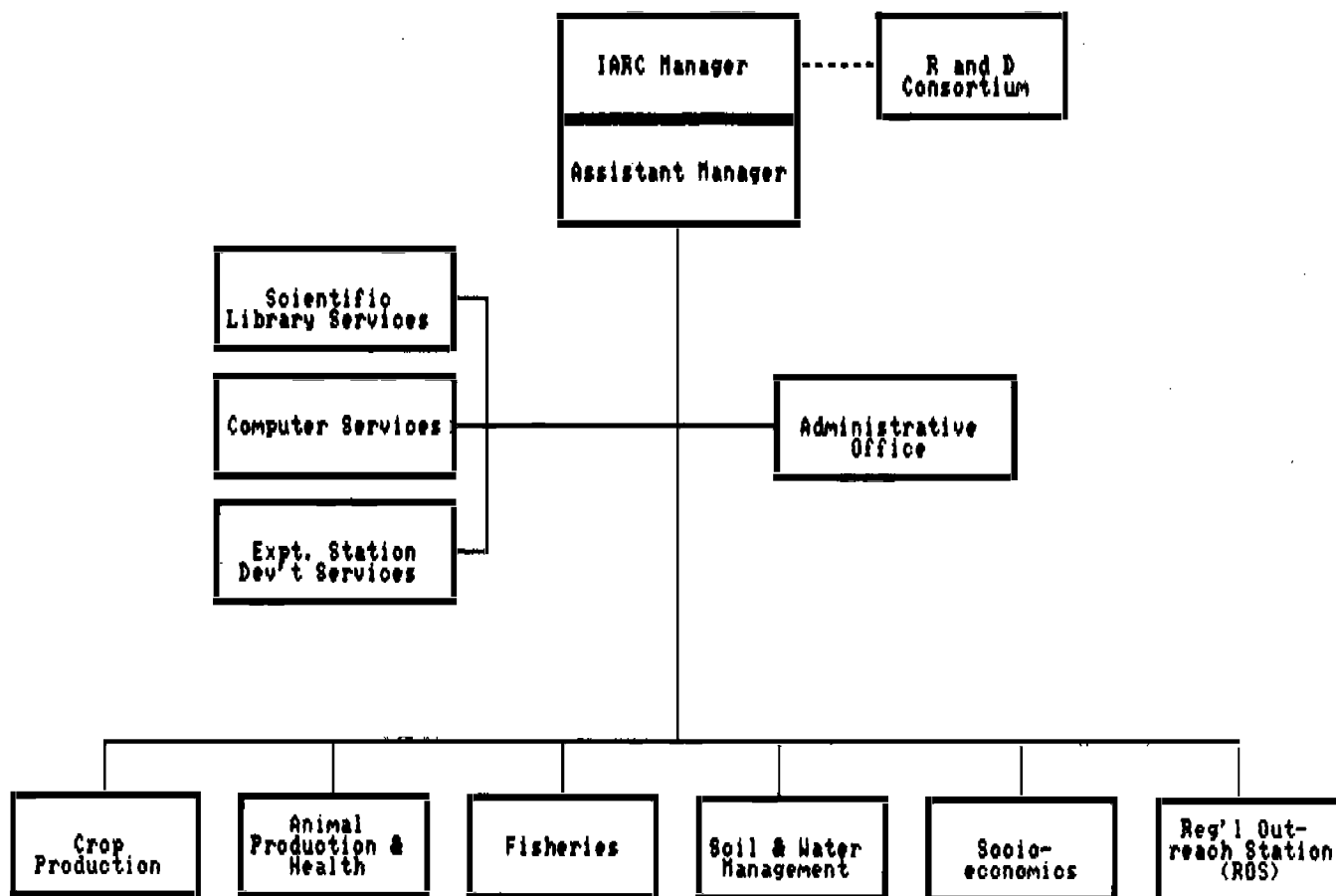
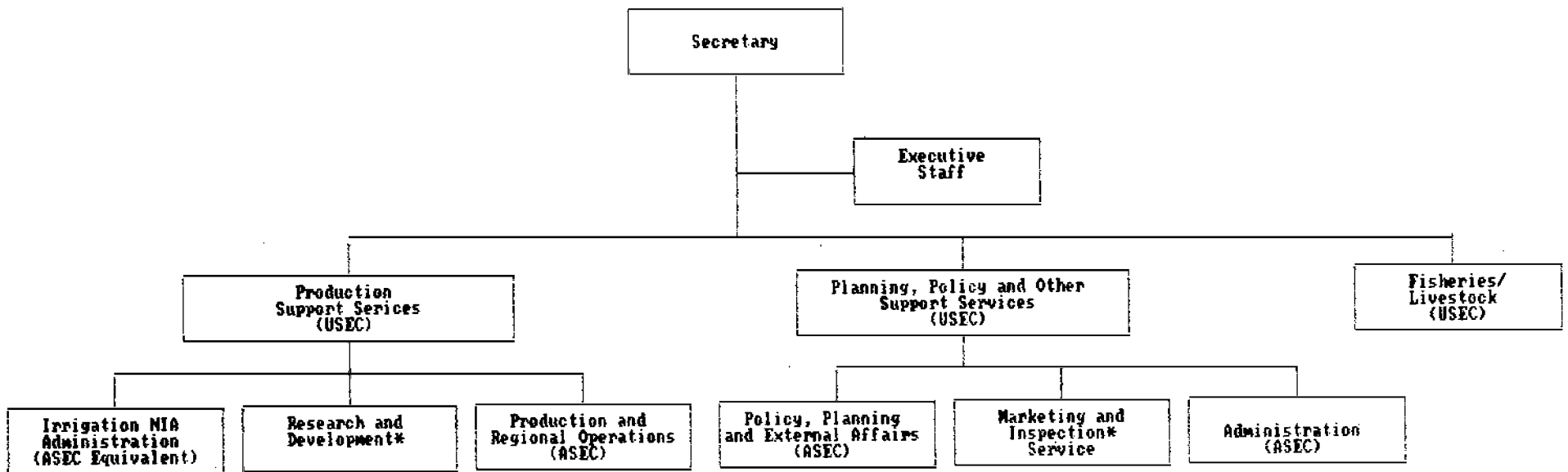


Chart 3
Department of Agriculture Proposed Interim Organizational Chart



* directly under the undersecretary

extension, and eases the rationalization of both financial and manpower resources of the research system along economic importance of commodities/problem areas.

The SCUs will remain a major sector in applied agricultural research and extension, but the DA shall assume control over government appropriations and general direction and priorities for applied agriculture research and extension activities of SCUs. However, the general administration and supervision, including appointments, salaries, and business operations, must remain with the SCUs. A council-type of structure can manage the applied-research and development system, but must be under the DA. The mandate to promote basic research in agriculture should continue to be with the DOST.

Such an organizational structure for agricultural research and extension will be similar to that of other countries -- such as Indonesia, Thailand, Japan, the European Community -- where ministries of agriculture are directly responsible for and conduct most agricultural research. In the US, the land-grant universities are directly responsible for research and extension to the state legislature, but the US Department of Agriculture maintains substantial influence through a system of counterpart funding and its own administered research programs and institutions. The Indian research system is also university-based but managed by a semi-autonomous council (ICAR) responsible to the Ministry of Agriculture. PCARRD as originally conceived and established was attached to the DANR; it was transferred to DOST only because the DANR split into the DA and DNR in 1976.

The International Service for National Agricultural Research review (ISNAR 1988) stated that "it would seem more logical that the universities and the colleges of agriculture should be moving more and more into areas of strategic research, while a large part of applied research for technology generation would become the responsibility of the DA research service and commodity institutes." Given the concentration of scientific manpower in the SCUs at present, a major part of the applied agricultural research will have to be performed by SCUs in the short and medium term, but the general direction and priorities should be under the overall control of the DA.

Interactions between basic and applied agricultural research can be fostered by professional organizations with financial support both from DA and DOST. On the other hand, the DA not only will have greater clout in raising public expenditures for agriculture, but will be able to reallocate existing resources in favor of agricultural research over extension and other market and regulatory functions. Overall, therefore, such a restructuring will be expected not only to raise efficiency and effectiveness of the research and extension system through better prioritization, stronger linkage of research and extension, and greater accountability, but also to raise the public-expenditure budgets for agricultural research.

In the proposed organizational structure, there will be greater synergy in the functions and activities of planning, policy, and other support services. Bringing both market development and regulatory functions under one assistant secretary will encourage more enlightened and

market-friendly regulations. Similarly, putting together planning, policy, and external affairs functions under one assistant secretary will strengthen the DA's public-advocacy functions and strategic planning. The DA will also step up the collection and analysis of relevant agricultural statistics in the regions, thereby supporting the regional operations group.

Concluding Remarks

The proposed policy and institutional reforms are bold and far-reaching. The details of restructuring the agricultural bureaucracy will have to be worked out, modifications made, and other issues, such as incentive structure, considered. New legislations must abolish many of the regulatory functions, recast semi-autonomous agencies, and redistribute functions and resources among departments. However, we are convinced of the validity of the underlying principles behind the proposed reforms.

The previous administration took the first step toward organizational reform by bringing many agriculture-related agencies -- NFA, PCA, etc. -- under the DA. DPWH recently agreed to shift NIA to the DA. Steps have been taken to remove the autonomy of certain government agencies -- such as the PCA -- to allow the DA's reorganization along functional rather than commodity lines. Nevertheless, there will be great resistance to completing the process of restructuring because of the following:

- * political power of autonomous agencies such as PCA will be reduced;
- * independence of PCARRD and SCUs with respect to agricultural research and extension will be diminished;
- * budgets and manpower resources for regulatory functions will be trimmed; and
- * rent-seeking will be greatly minimized.

The proposed changes, however, will not need additional resources for the sector. Indeed, the short-run savings can pay for the early retirement of redundant employees; long-run savings will meet the increased need for agricultural research and infrastructure. What is required is a strong political will and an active information campaign to muster the political support for the changes.

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