

David, Cristina C.; Inocencio, Arlene B.

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Key Indicators for Public Expenditures in Agriculture, Natural Resources and the Environment

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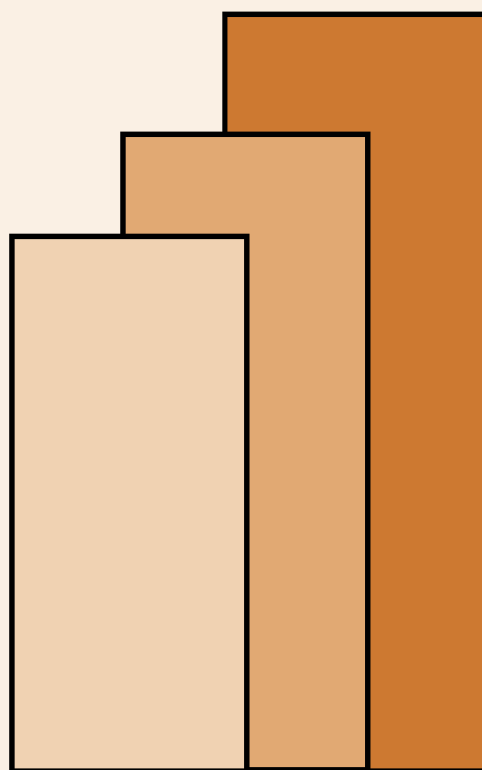
Cristina C. David and Arlene B. Inocencio

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For comments, suggestions or further inquiries please contact:

The Research Information Staff, Philippine Institute for Development Studies
3rd Floor, NEDA sa Makati Building, 106 Amorsolo Street, Legaspi Village, Makati City, Philippines
Tel Nos: 8924059 and 8935705; Fax No: 8939589; E-mail: publications@pidsnet.pids.gov.ph
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Abstract

This paper develops key performance indicators of public expenditure allocation for monitoring and evaluating the implementation of the Medium Term Philippine Development Plan (MTPDP) with respect to the agriculture, natural resource and environment (ANRE) sector. To do this, the study reviews and analyzes the historical trends and patterns of public expenditure allocation and identifies strategic directions for public expenditure and related reforms. The observed faulty allocations of public expenditures, coupled with weaknesses in the budgetary process suggest major potential gains for improving the efficiency and effectiveness of public expenditure program in ANRE. These areas of reform relate to whether: (a) public expenditures are being used to perform/provide public roles/goods vs. private ones; (b) choice of policy instruments (i.e., expenditure program vs. other market-based instruments) is most cost-effective; (c) public expenditures are optimally allocated across policy instruments, agencies and levels of government, regions, and type of expenditures; (d) mechanisms for funding and other related budgetary procedures promote efficient and effective allocation of public expenditures; and (e) cost-effective mechanisms for timely monitoring, evaluation, and impact analysis of public expenditures are adopted. The study finds that a thorough analysis, monitoring and evaluation of expenditure programs are therefore crucial in ensuring that policy objectives are attained through efficient and effective public resource allocation. The paper concludes with a list of key public expenditures indicators recommended for monitoring and evaluation of the MTPDP.

Key Indicators for Public Expenditure in Agriculture, Natural Resources, and the Environment*

*Cristina C. David and Arlene B. Inocencio***

Introduction

The public sector has a critical role in promoting efficient, equitable, and environmentally sustainable growth of the agricultural and natural resources sector. Because of its unique features, market failures are pervasive in the sector. The private sector will underinvest in the key factors to accelerate agricultural growth, such as modern technologies, irrigation, and market infrastructure which are generally characterized by public good attributes, strong economies of scale and scope, and long gestation period. Land cultivation, forest logging, fisheries and aquaculture activities, water resource development, as well as use of agricultural chemicals and other modern inputs, often generate externalities that require regulations and/or market-based policy instruments to protect the environment and people's health.

Agricultural production is inherently risky due to vagaries of weather and pest infestations, while world commodity markets are frequently perceived to be unstable. Moreover with modernization, agricultural production has become increasingly more capital (also working capital)-intensive. Yet, credit markets are imperfect and the market for insurance to minimize risks and uncertainties in agriculture has not proven viable due to asymmetric information, moral hazard problems, and covariance of risks.

Economic rents from the ownership of land and natural resources continue to be a major component of factor income from the sector; and thus, the distribution of land

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** Senior Research Fellow and Research Fellow at the Philippine Institute for Development Studies, respectively. The authors gratefully acknowledge the invaluable assistance of Majah Leah Ravago, Debbie Gundaya, Elbe Daguplo, and Lucita Melendez in the preparation of this paper.

ownership and access to publicly-owned forest, fishery, and water resources are important determinants of income distribution and poverty levels. Historically, the distribution of land ownership and access to natural resources have been highly unequal; and imperfect credit markets together with the lack of insurance markets tend to exacerbate income inequalities.

To address market failures, spur private investments, alleviate poverty, and achieve other developmental and social goals in the sector, a wide variety of policy instruments, public investment programs, regulations, and institutional mechanisms have been employed that require public expenditures to finance their design, implementation, monitoring, and evaluation. The relevant public expenditures, however, relate not only to those programs, projects, or activities specific to the agriculture and natural resources sector, but to broader public roles in the development of market infrastructure, education, and health. These support services for the rural areas are relevant, not only because they raise allocative efficiency and labor productivity within the sector. But also important, these public expenditures ease the burden of adjustment by the rural people in the process of structural adjustment when employment and income opportunities shift away from agriculture towards the industrial and service sectors in the course of economic development.

It should be emphasized that while market failures exist, government interventions may not always be wise or may also fail because the cost of intervention turns out to be greater than its benefits. Often, the wrong choice of policy instruments leads to government failures. Efficiency and effectiveness of government expenditure programs in addressing market failures may also be constrained by weaknesses in the institutional structure of governance (including the organizational structure and budget process) which increase transactions cost of operations, lower labor productivity, and misallocate budgetary resources.

Several recent studies have attributed the poor economic performance and declining competitive advantage of agriculture, rapid degradation of natural resources, and high poverty incidence in the rural sector to a variety of factors including the highly distorted price incentives, misallocation of public expenditure programs, underpricing of natural resources, weak property rights, and so forth (David 1999, Balisacan 2000; de los Angeles 2000). The Philippine Medium Term Plan and Development Program (1999-2004) or MTPDP aims to reverse the poor performance of agriculture over the past two decades, halt the degradation of natural resources, promote a more equitable distribution of land ownership and access to other natural resource, and ultimately reduce poverty. These objectives are supposed to be achieved through policy and institutional reforms, and expenditure programs that will increase productivity and competitiveness, promote a more diversified production and resource use, and complete the agrarian reform program. The MTPDP also identified various policy measures and expenditure programs to promote environmental sustainability by strengthening regulations, expanding the use of market-based instruments, and implementing rehabilitation programs. Finally, the MTPDP recognizes the need to improve the overall governance of the agriculture and natural resources sector by empowering the stakeholders and streamlining the bureaucracy.

The purpose of this study is to develop key indicators of public expenditure allocation for monitoring and evaluating the implementation of the MTPDP with respect to the agriculture, natural resource, and environment sector (ANRE) according to the five key result areas underlined above. The first section briefly describes the institutional structure governing the sector and the nature and sources of public expenditure data. In the second section, the historical trends and patterns of public expenditure allocation are analyzed to infer their efficiency and effectiveness. The third section identifies strategic directions for

public expenditure and related reforms. Finally, some key indicators for monitoring and evaluating the progress of the MTPDP are proposed.

Organizational Structure and Data Sources

The Organizational Structure

The agricultural, natural resource, and environment sector has been governed at both the national and local levels since the passage of the Local Government Code (LGC) in 1991, which devolved among others most front-line support services related to ANRE to municipalities, cities, and provincial government units (see Appendix A for list of devolved functions).

Governance at the national level is mainly the responsibilities of the Department of Agriculture (DA), Department of Agrarian Reform (DAR), and the Department of Environment and Natural Resources (DENR) together with their respective attached agencies and corporations (see Appendix B for more details). In addition, the DOST's two councils, Philippine Council for Agricultural Resources Research and Development (PCARRD), Philippine Council for Agriculture and Marine Research and Development (PCAMRD) are engaged in research management and funding; whereas its Food and Nutritional Research Institute (FNRI) and the Forest Production Research and Development Institute (FPRDI) directly undertake research and development activities. Several major state colleges and universities engage in R&D and extension type activities in ANRE which are directly funded by budgetary allocations or external grants from other government agencies, foreign donors, and sometimes the private sector. The Land Bank (LB) handles land valuation and financial transactions related to the land acquisition and distribution aspects of the CARP; it also implements rural credit programs related to the agrarian reform program as well as other special projects. Certain agencies/corporations attached to other departments also perform

ANRE-related functions such as the Philippine Crop Insurance Corporation (PCIC) under the Department of Finance or the National Food Authority which was recently transferred from the DA to the Office of the President. And to a very limited extent, some ANRE-related projects may sometimes be implemented by non-ANRE departments such as the DPWH, DTI, DOLE, and so forth.

More than 90,000 staff (regular, contractual, and casual) are employed by the government to carry out policies and programs in the ANRE sector (see Table 1)¹. Based on the number of devolved personnel, the local government employs about 19 million or almost 20% of the total. The devolved personnel of DENR was only about 900 or 3% of its personnel, whereas almost a third of the DA was devolved.

The DA continues to be the largest organization employing about 35,000, despite the more extensive devolution of its functions. About 70% of its work force belong to the attached agencies/corporations (Appendix Table I.1). NIA alone employs more than 10,000 and NFA almost 6,000. The personnel of commodity-based agencies such as PCA, SRA, NTA, and FIDA range from 200 to 2,000 each. The bureaus and other offices under the OSEC at the headquarters have a total staff of about 5,000, while the regional offices have more than 6,000.

The DAR employs over 14,000 staff and 86% of those are located in the regional offices (Appendix Table I.2) The DENR is a relatively large organization, with more than 24,000 staff (Appendix Table I.3). About 20% of its staff are in the central office; 80% are assigned in the regions, up from 65% before the reorganization in the late 1980s. The proportion of staff engaged in environmental management at the headquarters and regions is

¹ This number excludes the personnel of the various government agencies involved in ANRE (SCUs, DOST, etc.) but are outside the three agriculture-specific departments at the national level and the LGU units. It is comparatively a small number in the order of 3,000 to 4,000 in total.

only 5% of the total, as the vast number of DENR staff are involved mostly in forestry management.

The Data

At the national level, total available budget of a government unit for any given year consists of the new appropriations approved under that year's General Appropriations Act (GAA), the automatic and continuing appropriations, as well as the net transfers from various special funds and to other government agencies. Automatic appropriations include grant proceeds (including customs duties and taxes derived from monetization of commodity grants), retirement and life insurance premiums of government personnel, proceeds from the sale of unserviceable equipment, and conversion of interest in advances into subsidy and special account (P.D. 1234). Continuing appropriations cover the unobligated or unreleased appropriations for maintenance and operating expenses (MOE) and capital outlays (CO) of the previous two years, and any long-term funding from special fund sources created by law. The actual public expenditures during the year are approximated by the obligated funds to the various government agencies published annually as the Budget of Expenditure and Sources of Finance (BESF). A summary of all the above items for each government unit is also reported in the Expenditure Program (EP) submitted by the President to Congress each year.

In this paper, obligated funds are used to represent aggregate trends and patterns of public expenditure by departments and attached agencies. The obligated funds are often less than the total available appropriations, particularly for allocations to major capital outlays such as irrigation and other infrastructure that requires a complicated process of bidding or contracting. Actual expenditures, on the other hand, may be somewhat less than obligated funds, either because the agency/unit was unable to spend the budget within the year, or the DBM was not able to release the allocated funds.

For certain government corporations with other sources of funds besides the government treasury, actual expenditures may be higher than obligated funds. For example, the NFA frequently derives profits from the domestic sale of its tax-free commodity imports; while the NIA obtains additional revenues from irrigation fees paid by farmers, management fees charged for technical assistance rendered, rental of equipment, and interest earnings.

Although the data on obligated funds are closer to actual public expenditures, no detailed information on budgetary allocation by program, projects, and activities are reported. Thus, these are complemented by data from the GAA which specify approved budgetary allocations by various units within each department and by special funds created by law. The GAA also provides detailed allocations by programs, activities, and projects broken down by type of expenditures, i.e., personnel services (PS), maintenance, operating and other expenses (MOOE), and capital outlay (CO). When substantial lump-sum budgets are allocated to certain programs such as the Makamasa Rice and Corn, High-valued Crops, Livestock, and Fisheries, or with regards to the proceeds from commodity grants administered by NAFC, detailed breakdown of expenditures were obtained from the relevant offices.

For the local government units, actual public expenditure figures for agriculture and natural resources are based on the annual reports of the Commission on Audit (COA). These refer to expenditures for agricultural, veterinary, and natural resources services and reported as aggregates for all provinces, all municipalities, and all cities and by type of expenditures. LGU unit-specific expenditures and revenue data for 1998 recently became available that facilitated some regional analysis comparable with regional expenditure allocation of national government agencies.

Organizing a consistent, detailed time series data on government expenditures is a complicated process. First of all, hardly any details in actual obligations/expenditures of the national government are found in the BESF or EP. Neither are programmatic details easily

available from the department/office concerned. To analyze how the government allocated its resources by functions, programs, activities and projects, only the approved allocation under the GAA can be used to obtain a comprehensive picture.

Second, changes in the organizational structure of the bureaucracy, in the budgeting method, and reporting format over time made it difficult to construct a consistent time series data by unit within a department. For example, the NFA was transferred to the DA in 1987; but returned to the Office of the President in 1999. Some agencies were converted from government corporations or projects to regular bureaus, authorities or other units under the department such as the NAPHIRE to BPRE, the CRDI (formerly under an SCU) merged with the Philippine Cotton Corporation and constituted as CODA.² The breakdown of budget allocations within each department changed significantly after 1994. With the devolution of the extension and some regulatory functions of the DA, the budget and organizational structure of regional field units of the DA shifted from functional to commodity grouping.

Third, differences in the organizational structure and hence budget reporting limited comparability across departments. For example, the fragmentation of the Department of Agriculture among many attached agencies is also reflected in the regional operations. The budgets of the DA regional field units cover only the functions directly under its OSEC, but not the regional operations of PCA, SRA, FIDA, NTA, and other attached agencies or corporations. Furthermore, the extension and other regulatory functions of these attached agencies were not devolved, though in principle all front-line agricultural support services are to become the responsibility of the LGUs. Extension and other support services for coconut, sugar, tobacco, and fiber crops continue to be under their respective national agencies.

² To construct a consistent time series, the expenditure of any agency/office which has been attached to DA, DAR, DENR, or DOST at any time within the period of study was kept in that department, even if it was under a different department or office for some time.

Fourth, inconsistencies exist between the detailed expenditure data obtained directly from the relevant agencies such as the DA-OSEC, NAFC, or secretariat of special funds (specifically the Agrarian Reform Fund or the ARF) and the more aggregated data reported in the GAA, EP, or BESF. Some inconsistencies may therefore be found in the total expenditures based on data reported in these publications and those computed from itemized or disaggregated figures compiled from data provided by agencies concerned because data on actual, obligated, and programmed expenditures were combined in some analysis. While some inaccuracies may be involved, the distributional patterns and trends portrayed across policy instruments, regions, and commodities will still be relatively reliable.

Fifth, special funding mechanisms established by law to support projects and activities across several departments for certain purposes were often difficult to track and interpret. For example, the Agrarian Reform Fund (ARF) has disbursed more than ₱50 billion since 1987 to finance land ownership transfer activities, as well as support services for the beneficiaries. In 1995 and subsequent years, special fund allocations have been made to finance “safety net” measures following the country’s entry into the WTO.

Historical Trends and Patterns of Public Expenditure

Aggregate Trends and Patterns

Public expenditures for agriculture, natural resources, and the environment reached a total of about ₱ 35 billion in 1998, ₱ 10 billion lower than that of 1997, when the highest level was spent for the sector (Tables 2a). In the late 1990s, these expenditures constituted about 8% of total public expenditures (11% of total public expenditures net of debt service) and represented about 8% of the gross value added in agriculture. These ratios are comparable to other ASEAN countries (Appendix Table 2).

The DA together with its attached agencies/corporations spent the largest amount, i.e. about ₱20 billion in 1996 and 1998 and as high as ₱28 billion in 1997, accounting for about 55% of total public expenditures for the sector. This is followed by the DENR with an average expenditure of about ₱6 to ₱7 billion in the late 1990s, or 16% of total. Expenditures by DAR are lower (about ₱4 billion), but when the budgetary allocations to the LBP which manages the financing of land distribution and some credit programs to CARP beneficiaries are added, the total has been comparable with DENR's. The other national government agencies involved in ANRE including DOST, SCUs, PCIC, and others account for only 3% to 4% of total expenditures. LGU's share in total public expenditure for ANRE has steadily grown since the devolution, reaching 11% by 1998.

Over the past three and a half decades, public expenditures for the sector in real terms and as a ratio to gross value added and total government expenditures fluctuated widely (Figure 1). Public expenditures increased sharply between 1973 and 1983 in response to the high world commodity prices, shortfalls in rice production in 1973/74, and the introduction of the modern rice varieties in the late 1960s that raised social profitability of irrigation investments.

Agriculture bore the brunt of contractionary policies in the early 1980s, but expenditures for the sector quickly recovered in the late 1980s. After reaching another peak in 1991, public expenditures again dropped followed in 1993 by another cycle of sharply rising and declining trends after 1997. By the late 1990's, public expenditures in real terms and as ratio to GVA were already higher than the high levels of the 1970's.

Figure 2 and Table 2b show that the recovery in public expenditures in the late 1980s were initially allocated for redistributive purposes (i.e., the agrarian reform program and rice price stabilization) and strengthening of natural resource management and rehabilitation of forest and fishery resources. Much less of the increase in public expenditures were allocated

to productivity-enhancing investments. Irrigation, the single largest item of public expenditures between 1977 and 1984 when it accounted for close to half of agricultural public spending and 20% of total infrastructure budget, fell dramatically since about the mid-1980s, and only levelled off by the mid-1990s. Public expenditures for agriculture increased in 1996 and 1997 as the government provided “safety net” programs for the sector in the aftermath of the ratification of the GATT-UR Agriculture Agreement. Irrigation expenditure increased, but much greater allocation were made in the category “others” which includes subsidies to credit, postharvest facilities, farm machineries, seeds, and other agricultural inputs.

Strategic Directions and Priorities

The strategic directions and priorities in the ANRE sector may be inferred from a detailed analysis of budgetary allocations by policy instruments, commodities, and regions (analysis by region is made in a later section). The distributions of public expenditures based on these three dimensions are, of course, quite interrelated. At the DA and to some extent also at the DAR, strategic directions tend to be identified by commodities, which in turn affect regional budgetary distribution and choice of policy instrument. Empirically, only the analysis of the budgetary allocation by policy instruments covered the whole ANRE sector. The breakdown of budgetary appropriations by commodity was limited to the DA; whereas the regional analysis pertained to the expenditures of the LGU and regional offices of the DA, DAR, and DENR.

Allocation by Policy Instrument

A more detailed disaggregation of public expenditure for ANRE by policy instrument is reported in Table 3. The top 5 policy instruments with the largest budgetary allocations in the late 1990’s are irrigation (averaging about ₱ 5 billion a year), land redistribution (₱ 4.1 billion), extension (₱ 3.9 billion), forest management (₱ 3.4 billion), and price stabilization (₱

1.4 billion). It should be noted that public resources devoted to price stabilization and irrigation are, in practice, significantly higher when other sources of revenues of the government corporations involved in these programs are added. In recent years for example, annual revenues derived by NIA from irrigation fees, interest earnings, management fees and others averaged ₱ 1 billion a year. Since 1995, NFA has accumulated substantial revenues from the significant difference between the buying and selling prices of the unprecedentedly large imports of rice, corn, and sugar that are not reflected in these figures.

The expenditures for these five policy instruments together with the allocation for beneficiary development under the ARF and other natural resource and environmental programs constitute two-thirds of the total budgetary allocation for ANRE. Public expenditures for R&D accounts for only about 5% of the total, and less than half the allocation for extension. Expenditures for market infrastructure mainly farm-to-market roads constitute about 3-4%; but although critically important for economic development in general, development of roads and other market infrastructure is principally the responsibility of DPWH, LGUs, and DOTC. The other major item of expenditures are the various input subsidies for credit, seeds and planting materials, farm equipment and postharvest equipment and facilities, and so forth. Relatively small budgets are allocated to regulatory functions (except perhaps on meat inspection), data production, policy and planning, market development and other support to operations.

Allocation by Commodities

The overriding historical concern for food security commonly understood as rice self-sufficiency has led to a disproportionate share of public expenditure for the rice sector (about half), which presently accounts for about 15% of gross value added of the sector (Table 4). The share of rice is even higher when public expenditures for agrarian reform programs are taken into account. Aside from the budgetary allocation for irrigation and price stabilization,

rice dominates public expenditures for extension, credit programs, and subsidies for seeds, farm machineries, and postharvest facilities. Yet, the transition problems encountered with the introduction of modern rice technology in the late 1960s and the implementation of land reform in rice in the mid-1970s that would have justified subsidies for credit and modern inputs are long over. With respect to production credit for rice, traders, millers, and input dealers have successfully replaced landowners and rural banks as the major sources of credit.

Budgetary allocations for the exportable agricultural subsector have been quite meager. An exception is the major effort to address the falling productivity of the coconut industry by financing fertilization and replanting through a foreign-funded program. Whereas the distribution of subsidized fertilizer was on schedule, very little progress was made on the replanting program where public support is most needed. Because of uncertainties about land reform, landowners hesitate to make long-term investments; they prefer to convert land use to non-agricultural purposes thereby avoiding the land reform program.

There has also been very little effort, thus far, to address the problem of declining competitive advantage of major import-competing commodities, particularly corn and sugar through productivity-enhancing public expenditure programs. Although irrigation investment may not be socially profitable for these commodities, technology generation in sugar and corn has been clearly underfunded. Budgetary allocation for sugar research has been only about 0.5% of its contribution to gross value added; and for corn, it has been miniscule at less than 0.1%. Since the mid-1990s, sugar producers have begun to contribute funds for its research and development through the operations of the Philippine Sugar Institute (Philsurin).

The Case of R&D

Only about 30% to 40% of public expenditures for the sector (representing about 3% of gross value added of crops and livestock) have been allocated for productivity-enhancing

expenditures which the market will fail to provide. Agricultural research or technology generation, in particular, is severely underfunded with public expenditures representing only 0.4% of gross value added in contrast to an average of 1% among developing countries and 2-3% among developed countries (Table 5). In fact, only 5% of total public expenditures for agriculture have been allocated for agricultural research and 10% for extension. The opportunity cost of under-investing in public agricultural research and development in the sector is high as reviews of social rates of return estimates worldwide report this to be in the order of 40-60% (Evenson, 1996). The problem, however, is not only with the low level of public expenditure, but equally important are the inefficiencies caused by the misallocation of research resources within the sector (e.g., across research program areas and ecological regions) and weaknesses in the institutional framework of the research system, including the organizational structure, lack of accountability, fragmentation of research, incentive problems, and weak linkage between research and extension.

Allocation of research expenditures across commodities and regions have been highly incongruent to their relative economic importance in terms of gross value added contribution to total agriculture of the commodity (Table 6). Estimated research intensity ratios range from less than 0.01% for cattle, hogs, and chicken as a group and 0.05% for corn to an extremely high ratios of 3.6% for carabao and 25% for cotton. In general, relatively higher allocations are provided to minor commodities not commensurate with their economic contribution, where the country has no historical comparative advantage nor is there any clear indication of greater scientific potential, or strong future comparative advantage or market potential. Among major crops, corn research has been the most neglected with the research expenditures not exceeding ₱10 million a year since 1992. While the private sector conducts corn research, this is limited to hybrid corn which would be suited primarily to the favorable production environments, accounting for no more than 30-40% of corn areas. National and

regional mandates for corn research have been assigned to specific SCU's/DA RIARC's, but there has been no regular budgetary allocation for that purpose.

Fishery research is also significantly underfunded (RIR is only 0.35%), especially if the international funding commitment to the SEAFDEC-AQD is excluded (0.12%). Except for carabao, R&D in other major animals is also very much underfunded. While private sector research in hogs, chicken, and eggs has been quite strong, there may still be socially profitable R&D investments for the other livestock, especially in cattle and backyard hog production. R&D on carabao is justified; but it should be noted that increasing scarcity of labor, more intensive cropping, and growing water shortages are increasingly raising the profitability of mechanization over the use of carabaos as draft animals. There is also a need to evaluate whether or not the country can be competitive in carabao production primarily for meat, given the market preference for beef as per capita income increases and the more rapid rate of technical change in cattle production internationally.

The highest research intensity ratios are found among fiber crops. Ironically, significant resources have been devoted to cotton and sericulture, where the country has no inherent (nor potentials for developing) comparative advantage as evidenced by the negligible level of domestic production. By contrast, research intensity ratio for abaca is much lower despite its historical importance as an agricultural export, growing world market demand, and suitability to the high rainfall, typhoon prone and economically depressed areas.

Efficiency and other Management Indicators

Degree of Decentralization

Agriculture and natural resources activities are widely dispersed geographically and issues and concerns of the sector are highly location-specific. Moreover, public support required is largely in the nature of services, more than goods. Unlike goods, efficient and effective service provision requires the participation of both provider and recipient, e.g.,

irrigation, research, extension, and so forth (Siamwalla et al, 1999). Thus to be effective, governance of the sector must be decentralized and participatory; starting from the program or project design up to the implementation and the evaluation stages.

Yet, the literature is replete with examples of failed programs and projects, mainly because they were imposed from the top, with hardly any participation by the various stakeholders. The research and extension system continues to be criticized for not being problem-oriented or demand-driven. A recent assessment of the safety-net measures adopted after the ratification of the GATT-UR Agreement show many of these to have been of limited value to farmers (Montemayor, ____).

The problem of overcentralization of the bureaucracy has been long recognized. In 1987, the reorganization of the bureaucracy decentralized government operations down to the regional field units. And in 1992, the LGC devolved the provision of front-line services in agriculture and natural resources to LGUs. As reported earlier, the devolution of DENR personnel and functions was quite limited. It was more extensive at the DA, where nearly a third of total personnel or about 70% of the DA-OSEC's regional staff (principally the extension force) were transferred to the LGUs. But note that it was not complete since the extension force of the DA commodity-based attached agencies were not devolved. Despite these organizational changes, however, a genuinely participatory approach in planning and operations have not been successfully institutionalized. Most of the programs continue to be largely designed at the central level, and existing mechanisms for local and regional feedback to influence program design and allocation at the national level have not been effective. Many factors cause that state of affairs, including the patterns of budgetary allocations.

The allocation of public expenditures according to levels of governance, as summarized in Table 7, suggests that central level offices continue to have dominant control

over budgetary resources appropriated to the sector.³ Before the devolution, about 82% of total available appropriations were held at the central offices; while 18% was directly allocated to regional offices. The devolution reduced the share of the central level government only slightly to about 80% of total available appropriations; as LGU's accounted for 8% and regional offices' share declined to 12%.

In the early 1990s, DENR had the highest ratio of regional budgets at more than 30%, followed by the DA and DAR with less than 20% (Table 8). Over the past decade, the regional offices' share in available appropriations of the DAR and DENR rose even though some of the regional functions and personnel of DENR were devolved. Indeed, no reduction in the DENR's regional budget in nominal and real terms can be observed following the devolution.

Not surprisingly, the impact of the devolution was much more apparent in the regional budget of the DA which decreased to only a third of its 1992 levels and has stayed at only about half of that in real terms by 1998. Interestingly, total available appropriations of the whole DA was fully recovered by 1995, just two years after the devolution.⁴

DA regional offices and LGUs have also been involved in commodity programs such as the Makamasa Rice and Corn program where the appropriation is assigned to the OSEC or the central office; but partly disbursed through the regions. However, the central level office designs these programs and control their budgetary allocation. As will be reported in a later section, public expenditures for agricultural services of the LGU are mostly spent for personnel services. This is also the case for the regular budgets of the DA's regional offices, after the allocations for the commodity programs on livestock, high value crops, and fisheries

³ Includes appropriations to DOST, LBP, and other national agencies.

⁴ It should be noted that the budgets of the DA attached agencies' regional offices were not included in the regional expenditures because of limited data availability; but that should not change the patterns observed over time.

directly allocated to them are excluded. And thus, the ability of the LGUs and regional offices to influence the strategic directions and program designs developed by the central office have been extremely limited.

Table 8 indicates that municipalities contribute the highest share of LGU expenditures (41%), followed by provinces (33%), and cities (26%). Almost three-fourths of LGU expenditures are for agricultural services mainly for extension, while veterinary services accounted for about 20% and natural resource service 6%. ANRE expenditures by municipalities are almost exclusively for agricultural services. At the provincial level, agricultural services also receive the higher allocation (71%), followed by veterinary services (18%), and natural resource services (11%). Whereas municipalities/cities are directly involved in support service provision, provincial level activities are primarily concerned with coordination of programs linked with national agencies and some on-site research activities

LGU's expenditures for ANRE represent only a small proportion (3.7%) of total expenditure of local governments, less than half of its share in the total expenditure at the national level. That proportion is only somewhat higher among municipalities (4.4%), compared to provinces (4.2%), and the cities (2.4%); these ratios have not significantly changed over the past five years.

These allocations seem to reflect the low priority placed by local governments to ANRE, compared to expenditures for infrastructure (15%), health service (13%), and education (8.6%) (Appendix Table F.1).

On the other hand, that may be a rational political decision on the part of the local executives, as ANRE expenditures will benefit only a segment of their constituencies, and part of the benefits (e.g. in natural resource services) accrue to the rest of the economy. LGU's may be expected to underinvest in ANRE, and provision of counterpart funding by

the national government to promote interest in ANRE activities or earmarking of IRA contributions to LGUs may be justified.

Regional distribution

The distribution of public expenditures across regions may reflect differences in priority accorded the regions directly and indirectly through priorities conferred across commodities and objectives, i.e., efficiency, equity, and environmental objectives. It may also be influenced by differences in the cost of support service provision on the supply side and their potential benefits on the demand side. Tables 10a to 10d present the 1998 ratios of LGU's, DA's, DAR's, and DENR's regional budgetary allocation to gross value added, rural population, number of farm households, and farm area across regions, respectively. Note that the LGUs expenditure for ANRE and DENR's regional appropriations were about equal in the late 1990's, contributing about a third each to the regular budget directly spent outside the central offices of national government units. When the commodity program budgets are added to DA's regional budget.

In general, the regional allocation of budgetary resources relative to their contribution to gross value added or as ratios to rural population, number of farm households, and farm area varied widely across regions. LGU's expenditures in relative terms tended to vary less than regional budgets of national government departments except in the case of DA's regional expenditure as ratios of rural population, farm household, and farm area. As may be expected, budgets for DENR and LGU's natural resource service are significantly more unequal because they are compared with agriculture-related variables that are distributed quite differently from regional size and/or degree of degradation of forest, mines, and other natural resources.

The distribution of LGU expenditure for agricultural services in relative terms tended to be more equal than veterinary services and natural resources (Appendix Table F._). Since municipalities provide most of the agricultural services, the distribution of their expenditures across regions is likewise more equal in relative terms than the provinces. It is interesting to note that the regional distribution of LGU expenditures for veterinary services relative to the GVA of livestock and poultry is also more unequal than agricultural services. This is not surprising as the bulk of the budget for veterinary services are spent by cities which generally receive relatively more of the IRAs, and therefore can afford to provide more support services.

In nearly all cases, the Cordilleras or CAR obtained the highest budgetary allocations in relative terms. This may be partly due to economies of scale in public service provision. CAR has the lowest GVA contribution, rural population, number of farm households, and farm area; and yet a region would necessarily have the minimum contingent of local and regional government personnel and level of physical facilities and budget for MOOE. Moreover, CAR is a mountainous region with poor infrastructure facilities and where farms are most widely dispersed; thus the cost of government operations would be the highest.

Consistently, regional and LGU expenditures in relative terms are higher than the average in CAR, Cagayan Valley, and Bicol; whereas those for Southern Tagalog, Western Visayas, and the Mindanao regions tend to be lower. Relative allocations to Central Luzon and the Ilocos region are close to the average. However if support to irrigation were included, Central Luzon would be considered a highly favored region in terms of public support.

The relatively low allocations for Southern Tagalog and Western Visayas may be also a matter of scale because these two regions are the two top largest contributor to GVA. On the other hand, there is reason to believe that Mindanao has been generally neglected. The

recent study on R&D likewise indicated that the Mindanao regions received the lowest budgetary allocation relative to their GVA contributions among the DA-RIARCs and the SCUs (Table 11). Luzon had been the most favored, and the allocation for Visayas was slightly above the average.

Project vs. Program Funding

Project vs program-based budgeting structure have their own strengths and weaknesses. Project-based structure is generally believed to improve transparency and accountability. Donors of external grants or loans prefer to fund projects that have a clear output and relatively short gestation period, rather than programs that would only generate incremental outputs over longer periods of time. On the other hand, program funding allows for greater stability of financial support, more flexibility in allocation of funds, implementation of longer-term projects, and lower transactions cost of operations. The issue is not so much which is superior to the other, but rather what is the appropriate balance between program and project funding given the nature of the various functions.

The budgetary allocations to each department are grouped into regular programs and projects under the OSEC and appropriations (or subsidies) to attached government corporations. In addition, funds have been designated by law to support special programs participated in by several departments/government units, but under the overall supervision of a commission created for a particular purpose. The most important of these is the Agrarian Reform Fund established in 1987 to finance the land acquisition and distribution, beneficiary development, and part of the operational cost of the CARP under the administration of the PARC.

Appropriations for regular programs are provided to each government unit within a department to support the performance of its mandated functions. At the DA, lump-sum appropriations for commodity programs – rice and corn, high-value crops, livestock, and

fishery – have also been included under regular programs.⁵ These are largely under the control of the OSEC-proper, but projects are implemented by the various units within DA. The total budget of the rice and corn commodity program is under the OSEC. Less than 30% of the other commodity program budgets are allocated directly to regional offices.

For purposes of this analysis, the budgetary allocation under the special funds and the commodity programs have been grouped together with locally-funded projects specified under projects in the GAA. As with projects, these budgets are to be used for a specific short-term activity; and unlike regular core programs, implementing agencies do not have flexibility to reallocate these funds within its own budget. Budgetary appropriations for projects then refer to that broader coverage of locally-funded projects plus foreign-funded projects which consists of loan proceeds, grant proceeds, and local counterpart funds. Regular programs pertain only to budgets for core activities of the various agencies/units of departments.

Tables 12a and 12b show the combined appropriations of the DA, DAR, and DENR in nominal and real terms, respectively, classified into regular core programs and projects. Tables 12a and 12b present the same categories of budgetary appropriations separately for the three departments also in nominal and real terms. The share of project funds to total appropriations increased sharply from only about 30% around the 1990's up to 75% by 1998. The ARF has been the largest single source of project funds accounting for about two-thirds in the early 1990's. Its share declined over time to about 30% in the late 1990's; though the absolute level continue to be substantial at around ₱6 billion. About a third of the total ARF from 1987 to 1999 was allocated to operational support to the CARP, 40% to land acquisitions and distribution, and 27% to beneficiary development (Appendix Table G.1)

⁵ Prior to 1994, these types of allocations were considered locally-funded projects.

Other locally-funded projects, mostly allocated to the DA, have increasingly become even more important as their combined share of total project funds reached 40% in 1998 (₱ 8 billion), from only about 5% in 1990. More than half of these are lump-sum appropriations to the four commodity programs with a combined annual average of about ₱ 4.2 billion between 1996 and 1998. About 70% of the so-called Makamasa commodity programs are for rice and corn (₱2.8 billion), and the remainder are for livestock (₱650 billion), high-valued crops (₱400 million) and fishery (₱400 million). The other locally-funded projects largely support irrigation and other agriculture-related infrastructure such as fishing ports, R&D and training facilities, multi-purpose drying pavements and others.

The foreign-funded component of total project appropriations averaged 30% or an absolute level of about ₱ 5.2 billion in the late 1990s. Irrigation has received about half of foreign loans, followed by forestry-related projects (30%). The other two major foreign loan funded projects were used for the development of the coconut and fishery sectors. Grant proceeds consist largely of commodity grants administered by NAFC averaging about (₱400 million a year).⁶

The DENR has had the highest rate of core program funding of about 60% in the late 1990s; and though fluctuating that ratio rose slightly over the past decade (Tables 12a and 13b). Project funding has been mainly in terms of foreign loans reflecting the high priority accorded by external donors to environment and natural resources issues since the 1980s. In contrast, these ratios (Tables 14a, 14b, 15a, and 15b) were much lower for DAR (30%) and the DA (20%). Almost 70% of DAR's new appropriations are contributed by the Agrarian Reform Fund. In the case of DAR, that ratio of project funding may be reasonable, because

⁶ A listing of the projects funded by NAFC show a wide variety of activities, including livelihood credit programs, farm and post-harvest mechanization, R&D, training, animal dispersal, market development, and so forth (Appendix Table B).

its primary mandate is to implement the CARP within 10 years through the special ARF established by law.

In the case of DA, the share of regular core program funding dropped sharply from about 70% in the late 1980's, down to only about 20% over the past decade. Although foreign-funding of agricultural projects has been significant (about equal to the appropriations for the regular core program), the locally-funded projects were even more substantial, about twice as much that of foreign-assisted projects by the late 1990s. Irrigation development dominated the use of foreign loans, but foreign loans for coconut and fishery development projects were also significant in the 1990s. Grant proceeds from commodity grants administered by NAFC were also a major source of lump-sum project funds.

The locally-funded projects have been largely in support of commodity programs for grains, high value crops, livestock, and fisheries,⁷ though substantial project funds were also granted separately for irrigation and roads. These commodity programs fund projects and activities related to market development, irrigation and other market infrastructures, production support (seeds, planting materials), farm and postharvest equipment, credit, animal dispersal, as well as cost of program management.

It should be stressed that not only had the proportion of project funding increased dramatically at the DA, the level of regular program funding in real terms have decreased. In sharp contrast, the appropriations for projects increased more than ten-fold in real-terms. Such heavy reliance on project funding results in highly unstable and unpredictable expenditure patterns, further delays cash releases, increases transaction costs, promotes short-term vs long-term projects or activities, complicates planning, monitoring and evaluation of

⁷ These have been labelled by different titles depending on the Secretary of Agriculture. For example, for rice and corn these were known as Grains Production Enhancement Program during the term of Roberto Sebastian, Gintong Ani Rice and Corn under Sonny Escudero and the Makamasa Rice and Corn under the Estrada Administration.

projects and programs, and leads to underfunding of the regular core functions which are vital to the effective governance of the sector.

Indeed as will be argued in the next section, only a handful of the agencies of the DA can operate effectively without the project funds, because payments for regular core programs is dominated by payments for personnel services.

Allocation by type of expenditure

The distribution of public expenditures across personnel services (PS), maintenance, operating, and other expenses (MOOE), and capital outlays (CO) affects efficiency of governance. Limited budgets for MOOE and CO have frequently been cited as a major cause of inefficiencies in the performance of many public functions in this sector. Mandatory salary increases further raised the proportion of budgets for salary support against the operational budget. Consequently, manpower and physical infrastructure are often underutilized and physical facilities deteriorate faster. Although substantial MOOE and CO funds are provided through project funding, these are very unevenly distributed across agencies, and in many instances a poor substitute for regular program support due to the accompanying problems of unpredictability, instability, and unsustainability.

The appropriate distribution of budgets across PS, MOOE, and CO would differ according to the nature of the activity and the relative input or factor prices. Nonetheless, an attempt is made to evaluate trends and patterns of these distributions based on some notion of what may be appropriate. Tables 16 to 19 present the distribution of new appropriations of regular core programs and projects by type of expenditure at the DA, DAR, and DENR. The distribution of R&D budgets of the various government agencies by type of expenditure are also shown in Tables 20a to 20c. An analysis of budgetary allocation for a specific function such as R&D minimizes the problem of comparing agencies with different single and multiple functions. Furthermore, inter-country comparison is facilitated; e.g., the agricultural

research system of the US allocates 40% of its budget on personnel salaries, 40% for MOOE, and 20% for CO.

Several patterns emerge from the tables. With very few exceptions, the share of the wage bill increased significantly in the various government units over the past decade. By 1998, these ratios have become generally high, the highest being 95% for the regional offices of DAR. In comparison to central offices, regional offices tend to have higher ratios of wage bills, around 70% for DA and DENR. LGU expenditure for ANRE has also been used mostly to pay for salaries and wages, as PS accounted for 90% of budgetary allocation for agricultural services, and over 80% of natural resource service. Veterinary services show relatively high allocation for MOOE (47%) and only 52% for PS; but that is true only for cities, which receive relatively higher IRA and generate more local revenues. Among provinces, wages also take up nearly 90% of their budget. The very low budgets for MOOE and CO are hardly enough to properly maintain or upgrade offices and other facilities at the local level. There is practically no MOOE budget to effectively perform the devolved functions of extension, on-site research, and communal irrigation development which require expenditures for travel, supplies, and contractual labor.

At the central levels of governance, the DENR tended to have lower ratios of wage bill, ranging from 25% to 35% for three bureaus; while the four other offices ranged from 40% to 70%. Apparently the DENR was able or opted to incorporate the funds required to perform their regular core functions directly into the regular program budget. In contrast, DA agencies tended to rely on locally-funded projects, much of which are managed by the OSEC. The share of PS in the regular program of the DA averaged 60% for the bureaus and other

offices under the OSEC and 46% for the attached agencies. In some agencies such as the ATI and the BAS, the ratios of wage bills were as high as 73% and 82%, respectively.⁸

In the R&D system, the budget allocation for personnel services is also disproportionately high, averaging 61%, while MOOE is about 32% and CO only 7%. In several commodity research agencies and SCUs, the shares of PS can be as high as 80%-90%. An exception is Philrice with a distribution of PS (40%), MOOE (50%), and CO (10%), that allows a more efficient utilization of its manpower and physical facilities. In addition, the relatively high share of its regular core program funds promotes more systematic and long-term research planning.

The opposite extreme are the R&D budgetary appropriations for the SCUs. In the case of UPLB, the average share of PS is 73%; and in some of its institutes that share is as high as 90%. Since project funds account for more than half of its R&D expenditures, research directions are primarily driven by external donor priorities. As a consequence, effectiveness of its research has been constrained by the uncertain, fragmented, and short-term nature of funding.

Fund Utilization

One measure of efficiency of governance is the timeliness in the utilization of budgetary appropriations. Timeliness is important from the viewpoint of the users and beneficiaries of these funds as the efficiency and effectiveness of public support services provision are affected. It is also important from the viewpoint of the government, in general, because of the opportunity cost of public funds which could have been spent for other valuable economic and social services, such as market infrastructure, education, and health.

⁸ The attached corporations of DA were not included in this table because most of their expenditures for PS are derived from other sources of funds, rather than from the new appropriations from the national government.

Undoubtedly, problems in timeliness of public expenditures are caused both by bureaucratic and allocation problems at the user end and by cash-flow constraints on the supply side.

One indicator of timeliness that can be readily measured is the yearend rate of fund utilization as presented in Table 21 for the late 1990s. Among the four departments primarily involved in ANRE, the ratio of unused/unobligated funds to total available appropriations averaged 20%. DAR had the best record (10%), followed by the DENR with an average that is slightly higher than 15%. The DA has had the lowest absorptive capacity with rates of unused or unobligated funds ranging from 20-30%. Its unused or unobligated funds reached almost ₱7 billion in 1996, an amount almost equal to the highest total available appropriations for DENR.

A closer examination of budgetary data indicates that the rate of fund utilization is directly related to the rate of increase in the budget, the relative size of project vs regular core program funding, the size of allocations for capital outlay, and the degree of centralization of the budget. The longest delays in fund utilization occur in the use of the irrigation budget which is project funded and primarily for capital outlay that require a complicated contracting process. Bidding does not usually start until after the appropriations are approved; but frequently only long after, when cash allotments are authorized because project cost may change significantly if cash releases are delayed.

Sharp increases in budgetary appropriations due to the inception of large local or foreign-funded projects overstretch the capacity of the regular bureaucracy to effectively implement these projects. Ad hoc project management staff would usually need to be established and would take time to set up. The centralization of project funds at the OSEC, despite the fact that substantial are disbursed at the regional levels has meant long delays in the liquidation of cash advances by the regional offices. Even when these budgets have already been spent, they appear as unused funds due to the long process and delays in the

liquidation of these cash advances. Not surprisingly, because of the larger absolute and relative amounts of project funding, greater capital outlays from project funds (irrigation, farm equipment, post-harvest facilities, road, etc.), and the high degree of budget centralization, the DA has had the lowest rate of fund utilization.

Directions for Public Expenditure Reform

The MTPDP identified a whole range of policy reform initiatives, public expenditure programs, and directions for institutional strengthening to increase the sector's competitive advantage, alleviate poverty and equalize access to natural resources, protect the environment, and improve governance of the sector. Many of the measures identified such as increased investments in irrigation, R&D, post-harvest facilities, rehabilitation of natural resources, completion of the land distribution program, and so forth, all require the use of scarce budgetary resources. Calling for ever increasing budgetary allocation for ANRE may be politically appealing. It should be emphasized, however, that the opportunity cost of public expenditures is high; and thus, social rate of return of additional budgetary allocations for ANRE-specific activities should be evaluated vis a vis alternative public investments in other social and economic sectors such as roads and other market infrastructure, education, and health which could have even greater pay-offs in terms of economic growth and poverty alleviation in the rural sector.

A responsible public expenditure program is critical in minimizing the country's chronic fiscal imbalance problem. Permissive policies with respect to fiscal management typically leads to unstable funding of rural programs as clearly evident in the trends of public expenditures for ANRE described in the previous section (Simwalla, et al. 1999). Equally problematic, fiscal imbalances raise the real value of the domestic currency since deficits in the current account generate an offsetting capital inflow. When the real exchange rate

appreciates, competitiveness of the agricultural sector which produce largely tradeable commodities, declines relative to the non-tradeable sector. Moreover, fluctuations in the real exchange rate worsen price instability of agricultural commodities.

The challenge, therefore, is to ensure that the public expenditure program, including those identified in the MTPDP, allocates scarce budgetary resources efficiently and effectively. Efficiency and effectiveness of the public expenditure program depends on the rationality of allocation decisions, transactions cost of the budgetary process, and a host of institutional factors. The MTPDP highlighted the need to improve the quality of governance in the sector by addressing organizational weaknesses, particularly the overlapping and fragmentation of responsibilities across agencies that raise the transactions cost of coordination and management and obscure accountability. Following the AFMA, the Congressional Commission on Agricultural Modernization is sponsoring a bill aimed at streamlining the agricultural bureaucracy. Indeed, the Department of Agriculture has already initiated efforts to reorganize its organizational structure along functional lines to the extent allowed within the executive powers of government. Other institutional problems related to the design and implementation of the devolution process, inadequacies in the incentive structure and qualification of the staff, instability in leadership positions, and pervasive use of political patronage, rather than merit-based recruitment and promotion policy also need to be addressed.

This section focuses on the implications of the earlier analysis on directions for reform in the allocation of public funds and budgetary process. The level of public expenditures for ANRE relative to GVA in the Philippines was found to be similar with other ASEAN neighbors. However, faulty allocation of public expenditures coupled with weaknesses in the budgetary process indicate major potential gains for improving the efficiency and effectiveness of public expenditure program in ANRE. These areas of reform

relates to whether or not: a) public expenditures are being used to perform/provide public roles/goods vs. private ones, b) choice of policy instruments (i.e., expenditure program vs. other market-based instruments) to achieve goals is most cost-effective, c) public expenditures for ANRE are optimally allocated across policy instruments, across agencies of government, across levels of government, across regions, and across types of expenditures; d) mechanisms for funding and other related budgetary procedures (e.g., project vs. program funding, local vs. foreign-funded, etc.) promote efficient and effective allocation of public expenditures; and finally, e) cost-effective mechanisms for timely monitoring, evaluation, and impact analysis of public expenditure are adopted.

Public vs. Private Goods/Services

The distinction between public vs. private goods/services is clearly defined in the literature.⁹ In practice, government interventions in markets for private goods and services may be justified by the presence of externalities in production and consumption, economies of scale and scope, high risk and uncertainty, imperfections in the market, and concerns for equity, nutrition, food security, and other social objectives. The issue becomes whether or not the choice of policy instruments to address those concerns is the most cost-effective.

Much of the public expenditures have been devoted to performing public sector roles by providing public goods and services, addressing externalities and other market failures, and redistributing private and public lands. These are, among others, public expenditures in gravity irrigation development, implementing regulations to protect plant and animal health, food safety; managing natural resources; research, development, and extension; land acquisition and distribution, and so forth.

⁹ Public goods and services are characterized by non-rivalry (one person's consumption does not reduce availability for another person to consume) and non-excludability (if the goods have been produced, it is impossible to prevent people from consuming them).

It should be noted, however, that allocation for some public goods and services may be higher than socially optimal. For example, substantial investments in gravity irrigation, almost exclusively for rice, are typically justified in terms of rice self-sufficiency goals and the apparent existence of large irrigable areas defined solely by their physical characteristics and not by their social or economic rates of returns. Because of low world rice prices since the 1980's and the rising cost of irrigation development per hectare, irrigation investment projects for rice have generally showed low social rates of returns. Investments in rehabilitation were found to have higher pay-offs, but that approach begged the question of how to improve operation and maintenance, which may be more cost-effective than periodic rehabilitation investments to address poor or delayed maintenance. Too little effort has been devoted to strengthening irrigators' associations that can take over maintenance and operations of national systems and in raising the collection rates of irrigation fees to recover at least the cost of operation and maintenance.

Calls for increasing public expenditures for extension has been often made, but allocation for extension services, quite apart from production support, is already very high, about twice the public expenditures for R&D. Questions may be raised about the balance in funding between technology generation and extension, the effectiveness of the linkage between research and extension and other institutional issues, the methodologies adopted in technology transfer activities given dramatic changes in information technologies, and the increasing role of private sector in R&D and consequently in extension activities to sell new technologies embedded in machineries, seeds, veterinary medicines, animals, chemicals and other agricultural inputs sold in the market.

By developing country standards, budgetary allocation of R&D relative to the sector's contribution to GVA is low. Increasing budgetary allocation, however, must be used to correct the misallocation of research expenditures and to address organizational weaknesses.

Reallocation of resources should occur across commodities/programs (i.e., favoring commodities of greater economic contribution, market and technological potential), types of expenditures (more MOOE and CO and less of PS_), and between program and project funding (increase share of program funding to reduce transactions cost and promote long-term research).

Many of the public expenditures have been devoted to providing private goods and services such as marketing, seeds and planting materials, animals, boats, farm and post-harvest equipment, agro-processing centers, credit, tubewell irrigation, and others to address a variety of developmental and social concerns. To stabilize grain prices and presumably protect farmers and consumers from the so-called unscrupulous traders, the government's NFA has monopoly control over international trade of rice and engages in domestic market operations. Studies by Unnevehr (1985) and Bouis (1983) have reported that government rice trade monopoly and direct marketing interventions of NFA have worsened seasonal price instability. Umali (1990) also found that while "paddy trading and retail level markets were competitive, the structure of the milling industry and government policy creating barriers to entry both worked against competition at the mill level." In fact, a number of analysis have already pointed out that the price stabilization goal may be achieved without incurring huge marketing costs through the use of variable import levies (David 1998, 1999; Clarete 1998; Siamwalla 1999; Roumasset 1999). To effectively reduce marketing margins and contribute in the food security of the poor, NFA domestic marketing operations should be suspended and the fiscal savings reallocated for developing market infrastructure and implementing highly targeted food subsidy for the poorest segment of the population.¹⁰ Prudent monetary

¹⁰ The proposed NFA reforms under an ADB loan package which transfers the agency's domestic marketing operations to a public/private sector joint venture scheme will unlikely to significantly improve efficiency of its marketing operations. The only incentive for the private sector to engage in this joint venture is if rents are to be made at the time of purchase and beyond. And thus, political pressures will be strong to protect those rents either through drawdown of assets or profits from special import privileges.

and fiscal policies would also contribute to reducing marketing (especially storage) costs by lowering interest rates.

In water development and management, the private sector will increasingly be more important and the public sector's role will have to gradually shift from direct provision of water service towards establishing the appropriate regulatory, policy, and institutional framework for allocating and managing water resources. As the cost of gravity irrigation becomes prohibitive and demand for irrigation in non-rice crops increases, the use of groundwater by the private sector will expand. The appropriate public sector role is regulation of groundwater extraction to ensure sustainability, aquifer characterization, and other research, development and extension to lower the private sector's cost of water extraction and increase water use efficiency. Moreover, with growing scarcity of water, continued population growth, and the closing of the land frontier, the opportunity cost of using water for agriculture is rising sharply. Yet, the policy, regulatory, and institutional framework for efficient, equitable and sustainable allocation and management of competing use of water is not in place. And no concerted effort is being made to increase efficiency in water provision and use at the system and farmers' level through R&D, extension, and other means.

Because of the reportedly large post-harvest losses, and the desire to promote agro-processing, provide opportunities for farmers to get involved in grain milling and processing, significant public expenditures have been devoted to addressing these concerns and more are being programmed. It should be pointed out that much of the post-harvest facilities funded by the government, such as grain dryers, farm-level grain centers, agro-processing centers, and cold storage facilities are basically private and not private goods and services. Not surprisingly, these projects which are frequently managed by cooperatives and sometimes by the government directly have generally failed as evidenced by the low or negligible rates of

utilization. And yet, private sector activities in these areas can be observed to succeed without any government assistance.

In the case of subsidies to seeds, planting materials, animals, and fish fries, there is a need to clearly understand the efficiency vs the poverty alleviation aspects of these programs to design more cost-effective measures. For example, from an efficiency standpoint there is no justification for subsidizing the purchase of hybrid seeds since private companies are able to charge users the full cost of seed production and marketing. The appropriate strategy for government intervention in the production and distribution of self- and open-pollinated seed and planting materials should also be carefully considered so as not to discourage (through unfair competition) but rather support the development of the private seed industry and plant nurseries. There is a clear public sector role in R&D and extension including related functions such as: a) germplasm collection, maintenance, and evaluation; b) minimizing risks and uncertainty in adopting new technologies; and c) protecting farmers, consumers and the environment against poor quality seeds and planting materials, unsafe food, spread of plant and animal diseases, and so forth.

Poverty alleviation as an objective has often been used to justify many failed multiple-objective programs – from government marketing operations to subsidies for post-harvest facilities and animal dispersal. Clearly, there is a need to evaluate the trade-offs in using such policy instruments to address poverty alleviation vs land acquisition and redistribution, education, health, and market infrastructure which may be more cost-effective policy instruments. Redistribution of private lands and publicly-owned natural resources in favor of the poor is a powerful instrument for poverty alleviation. However, steps should also be taken to lower the cost of inefficiencies due to accompanying regulations. For example, land transfers must be freely allowed to facilitate efficient land market operations and retain collateral value of land. Share-tenancy must also be permitted to enable landless

rural workers to climb up the agricultural ladder by graduating from being share-tenants or leaseholders to land owners.

The persistent and strong bias of public expenditures in favor of the rice sector has been justified in terms of food security goal. That bias runs counter to the MTPDP's objective of promoting diversification, and ultimately, to the goal of food security. Food security is often confused with rice self-sufficiency, forgetting that the goal of food security is for the benefit of all. It means ensuring that for all households, particularly the rural and urban poor households, food is affordable, i.e., household incomes are sufficient to purchase the necessary food at reasonable prices. Rapid, sustainable, and equitable agricultural growth is a necessary condition for the attainment of food security because a large proportion of the poor are based in the rural sector and depend directly or indirectly on agriculture-related economic activities as their major source of livelihood.¹¹ It is therefore critical that public resources are allocated in activities where social rates of return are highest. Although quantification of *ex ante* social rates of return is difficult, our analysis has revealed several areas of allocative inefficiencies that need to be addressed.

Expenditure Allocation and Management Efficiencies

Despite decentralization of the national government structure and devolution of front-line services to LGUs, the central level (national) government continue to have dominant control over budgetary resources, particularly in the DA. In most cases, the LGUs cannot afford to effectively carry out their responsibilities to the sector and indeed, studies have shown that the IRA transfers were much less than commensurate to the responsibilities devolved to the LGUs.

¹¹ Increasing price protection on rice, corn, and sugar as has been adopted thus far will not lead to overall food security. High food prices hurt the food security of the large majority of the poor, including fisherfolks, non-rice and corn farmers, landless rural households and poor urban households who are net buyers of food and for whom the cost of food constitute a high proportion of their total expenditures.

Not only is the share of ANRE expenditures in total LGU very low on the average, wide variations exist across LGU units. And the problem is exacerbated by the bias in IRA allocation in favor of cities, barangays, and more urbanized LGUs, against the poorer rural provinces and municipalities which carry the bulk of responsibilities related to agriculture and natural resources (Manasan 1995). Moreover, poorer regions which have a greater proportion of population dependent on agriculture, particularly upland agriculture, also have lower total budgetary resources and relatively fewer devolved personnel due to the same bias in the original personnel allocation of DA regional officer (Cabanilla 1995).

Clearly, these misallocations in the level and distribution of IRA across LGUs must be corrected. Using central/regional ANRE budgetary allocations to correct those distortions is a second or even third-best solution. National government resources are better used as counterpart funding for the cost of LGU-mandated ANRE responsibilities that have positive externalities or spill-over effects outside their units because LGUs will underinvest in these activities. These activities would include adaptive or on-site research, natural resource management (fisheries, forest, etc.), farm-to-market roads, communal irrigation, and so forth. The national government may also support the strengthening of LGU manpower resources, linking research and extension, national and local programs of provinces and municipalities, and other networking activities.

At present, the DA is focusing on how to institutionalize effective mechanisms for linking national and local concerns and supporting local programs through counterpart funding. It should be stressed that LGUs also need sufficient funds to effectively participate and influence the design of national level programs. In other words, governance of the sector will be improved if the LGUs can afford to offer counterpart funding for national agencies concerned with R&D, irrigation, market development to focus on problems and issues relevant to their localities. Such an approach will definitely strengthen research and

extension linkage and reorient R&D and other nationally provided support services to be more demand-driven.

Mechanism for Funding

Program vs Project funding

The mechanisms for funding have had pervasive influence on expenditure allocation, predictability of funding, accountability, efficiency, and effectiveness of governance. The increasing dominance of project vs program allocations has led to more unstable and unpredictable funding, promoted short-term vs long-term projects, and favored redistributive rather than effective, public good type productivity-enhancing and other essential regulatory and other support activities. It has also perpetuated the centralized nature of ANRE governance as local and foreign-funded projects are generally controlled by OSECs or national level units.

Clearly at least at the DA, the on-going reorientation and restructuring of the bureaucracy must be accompanied by budget realignments to correct the weaknesses in the allocations by policy instruments, central vs regional, program vs projects, and type of expenditures. Specifically, the appropriate levels of program funds to perform essential functions effectively must be allocated to the designated unit and not continually lumped in large multipurpose projects such as the Makamasa commodity programs or the beneficiary development fund under the ARF. This is not to say that there should be no commodity programs or special funds, but rather limit these to strategic expenditures to influence LGUs and national level units in moving towards new directions. For example, the R&D system can be more efficient if core program funds constitute 70-80% of total R&D budgets. The agricultural statistical system can better serve the needs of the sector if the collection of necessary data, such as periodic cost and returns, technology adoption, and other information,

can be regularized rather than subject to availability of project funds. Adequate funds must also be provided to effectively carry out regulatory functions.

Allocating budgetary funds to various support services through large special purpose funds such as the ARF, commodity programs, integrated area development, etc. is not necessarily more efficient nor more effective than simpler allocation process that may be initially across objectives – efficiency, equity, and environmental sustainability, and then across policy instruments or functions. And within policy instrument/functions, cost-effectiveness must then be the predominant goal. Otherwise, it will be very difficult to properly evaluate trade-offs across objectives. For example, allocation of support services according to progress of CARP implementation may have sharp trade-offs with efficiency objectives. It may also ultimately contribute to inequities since land redistribution (except with regard to public lands) activities tend to be concentrated in the more favorable production environments or progressive areas.

Foreign funding can be a useful source of finance to increase public expenditures for the sector and more recently, this has also been used to promote certain policy directions. As Siamwalla et al (1999) have noted, however, lending policies of agencies have been strongly influenced by donor preferences and vested interests. Thus, care must be taken that availment of such foreign funding source must be conditioned by the priority needs of the Philippine ANRE sector. There should also be more careful evaluation of whether or not large project funding is suited to complex programs that are better developed in smaller incremental steps but with sustained funding over the long-term. Too often, major foreign-funded projects reflect donor's priorities, preferred approaches, and administrative convenience. And because regular essential functions of ANRE-related agencies are so underfunded and the fiscal sector is chronically in deficit, bureaucratic and donor interests coincide in pushing for inappropriate projects. This is evidenced by the many large and

costly projects which failed, including integrated area development, fishery, coconut, reforestation, and some irrigation projects.

User Charges

For a number of public goods and services, where their benefits accrue directly to users, imposition of user charges to recover cost would lead to more optimal provision and maintenance, as well as level of utilization. Some subsidies may still be justified to the extent that the general public captures part of the benefits. However, user charges of government owned irrigation, fishponds, port facilities, cold storage, and so forth are often too low and/or collection rates are also low. Much more political will is necessary to implement such cost recovery policy or privatization should be explored in cases where government operations are clearly failing.

There are other public support services where benefits accrue mostly to producers and charging cost to them is feasible. The cost of research development and extension of tradeable commodities may be financed by small levies earmarked for that purpose. Collection of such levies for exportable commodities is feasible at the border, but is a lot more difficult for importables produced by many farmers. In cases where processing is more concentrated such as in sugar, it has been possible for producers to collectively fund research and development for its industry. More effort should be devoted to developing mechanisms for imposing user charges and earmarking their revenues for provision and maintenance of public goods and services.

Monitoring, Evaluation and Impact Analysis

The ability to address the weaknesses in the budgetary allocation and process depends crucially on the extent and quality of efforts to monitor, evaluate and analyze the impact of the public expenditure program. Thus far, the regular monitoring activities have focused on financial accounting as undertaken by the DBM and the respective agencies themselves. The

regular external auditing function of the Commission on Audit is limited to ensuring that government rules and regulations related to spending are followed to minimize graft and corruption, rather than to evaluating program performance.

The extent by which progress of expenditure programs are monitored vary widely across agencies and programs with larger departments such as the DA encountering more difficulties than smaller ones. Foreign and sometimes locally-funded projects, especially larger ones are also better monitored, as specific resources are often allocated to finance their monitoring and evaluation activities. Invariably, however, only the program inputs are systematically monitored. Monitoring and evaluation of outputs, outcomes, or results are seldom conducted, and if so, are done on an ad hoc basis. Rigorous analysis of direct and indirect impacts of expenditure programs on productivity, incomes, welfare of beneficiaries, and the environment are even rarer.

There are at least four major problems encountered by these efforts. First, internal monitoring and evaluation activities within the agencies are very limited in scope and lacking in depth. Second, external evaluations are frequently kept confidential or are not widely disseminated. And thus, there is no pressure to expose/correct/improve on the shortcomings of the evaluation studies and/or the programs themselves. Third, many external evaluations especially by private consulting agencies as well as by public entities, either are not sufficiently rigorous nor frank in their assessment. Both the implementors and donors who commissioned the study prefer to show positive results, while the contractors want to remain in the business of evaluation. And fourth, evaluation and impact analysis is limited by the lack of benchmark or time-series data to quantify rigorously the project's effects separately from the other changes occurring in the economy, and the relatively short period of time typically allotted for the study.

In order to strengthen the monitoring, evaluation, and impact analysis (MEIA) of government policies and programs, as well as their influence on policy making, program planning, and overall governance, a number of principles must be followed. MEIA need to be institutionalized at several levels. The implementing agency concerned together with any other government agency with oversight responsibilities, should have internal mechanisms to monitor progress of and constraints to implementation and achievement of specific targets and objectives that are transparent and timely. These information should not just be readily used in decision making during the operational stage of the project, but should also be publicly available for further external study.

Independent funding must be regularly allocated to selected public/non-profit, non-governmental research or academic institutions to develop the capacity and specialized data base to undertake and disseminate findings of MEIA activities. Mechanisms must also be developed so that target clientele and other stakeholders may be able to participate in the whole process and at all levels of MEIA. Institutionalizing such activities and approaches will facilitate independence in funding, development of time-series, micro-level panel data bases, and cross-program, long-term evaluation and impact analysis. Furthermore, the process of MEIA – levels of analysis, choice of representative projects to evaluate, timing of activities, and dissemination of results – may be more systematically planned and designed to be more cost-effective.

Public Expenditure Indicators and the MTPDP

The MTPDP aims to achieve results in five key areas: a) increase productivity and competitiveness, b) promote a more diversified production and resources, c) complete the agrarian reform program, d) ensure environmental sustainability, and e) improve the quality of governance in the sector. The public expenditure program – its level and allocation across

several dimensions – will be a critical factor in attaining the targets set for these five key results areas. To monitor and evaluate whether and to what extent the public expenditure program is consistent with the attainment of those targets, we propose the following key indicators:

A. Aggregate trends and patterns

1. Trends in overall public expenditures for ANRE in real terms (Ga), and as a ratio to total expenditures (G and G' i.e., with and without debt service) and to gross value added of agriculture (GVA).
2. Trends and distribution of public expenditures for ANRE by major government units (DA, DENR, DAR, DOST, LBP, LGU, SCUs).

B. Strategic directions and priorities

1. Trends and distribution of overall (and departmental units) expenditures by policy instruments (i.e., irrigation, R & D, extension, forest management, environmental management, land distribution, etc.), by commodity groups, and by objective or goals (i.e., efficiency, equity, or sustainability). Specifically, the extent to which the ratio of public expenditures for R&D as ratio to GVA reaches the target of 1% should be monitored.
2. Trends and distribution of overall (and by departmental units) expenditures in absolute terms and as ratio to GVA, rural population, number of farm households, and farm area by region.

C. Efficiency and other management indicators (1989-1998)

1. Degree of decentralization/devolution (distribution) of public expenditures, by national government (separated by central and regional field units) and LGU.
2. Degree of fund utilization (ratio of unused/unobligated funds to total available appropriations).

3. Degree of utilization of public funds for undertaking basically private sector roles, as well as what may be justified for government intervention but has led to government failure due to wrong choice of policy instrument.
4. Distribution of budgetary allocation by project vs program or regular funding that may lead to bias in favor (classified into local and foreign funded) of short-term vs long-term policy instruments or projects, instability of funding and high transaction costs, underfunding of basic (but may not be politically appealing) functions, and undue influence of external donors own strategic directions and priorities.
5. Distribution of budgetary allocation by type of expenditures, i.e., personnel services (PS), maintenance, operating and other expenses (MOOE), and capital outlay (CO).

**Fn: wb key indi as of Feb 25
ccd-abi/Feb. 25, 2000**

Table 1. Number of government personnel of national and local government agencies directly involved with agriculture, agrarian reform, natural resources and environment as of Dec. 1999.^a

	Number
National	73,776
Department of Agriculture	34,962
DA (proper)	11,244
Central	5,015
Regional	6,229
Attached agencies	1,979
Attached corporations	21,739
Department of Agrarian Reform	14,339
Central	1,487
Regional	12,368
Department of Environment & Natural Resources	24,475
Central ^b	4,863
Regional	19,612
LGU	18,449
Devolved from DA	17,553
Devolved from DENR	896
Total	92,225

^a Based on filed positions.

^b Includes NAMRIA, but not NRDC and LLDC.

Table 2a. Trends in government expenditures for agriculture, natural resources and the environment by agency at current prices (Mn pesos).

Agency	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
DA	8,587 (54)	9,641 (52)	9,971 (43)	11,784 (59)	8,508 (49)	9,963 (43)	12,471 (47)	15,289 (47)	23,315 (52)	16,820 (47)
DENR	3,546 (22)	4,088 (22)	4,125 (18)	3,227 (16)	3,258 (19)	4,225 (18)	4,954 (19)	5,455 (17)	9,224 (20)	6,158 (17)
DAR	1,610 (10)	2,118 (11)	2,667 (11)	1,863 (9)	2,130 (12)	2,273 (10)	2,717 (10)	3,054 (9)	4,426 (10)	4,885 (14)
DOST	119 (1)	133 (1)	131 (1)	136 (1)	144 (1)	153 (1)	212 (1)	283 (1)	334 (1)	326 (1)
LBP	793 (5)	1,845 (10)	4,680 (20)	1,492 (7)	1,464 (8)	4,013 (17)	3,014 (11)	4,788 (15)	3,321 (7)	2,567 (7)
SCUs	216 (1)	229 (1)	225 (1)	242 (1)	230 (1)	263 (1)	315 (1)	386 (1)	412 (1)	499 (1)
LGUs	-	-	-	295 (1)	1,345 (8)	1,915 (8)	2,380 (9)	2,685 (8)	3,272 (7)	3,817 (11)
Other agencies	1,004 (6)	657 (4)	1,633 (7)	948 (5)	372 (2)	461 (2)	377 (1)	457 (1)	810 (2)	668 (2)
Total expenditures (Ga)	15,874	18,712	23,431	19,986	17,452	23,265	26,440	32,396	45,114	35,740
Ga / Total G	8 [8]	7 [7]	8 [8]	6 [7]	5 [5]	6 [7]	6 [6]	7 [7]	8 [9]	6 [6]
Ga / Total G' (less debt service)	14 [14]	13 [13]	14 [14]	10 [11]	7 [8]	9 [10]	9 [10]	9 [10]	10 [11]	8 [9]
Ga / GVA	8	8	9	7	5	6	6	7	10	8

Note: Figures in parentheses are ratios to total. Figures in brackets are based on national government expenditures only.

Sources : BESF and NEP, LGAO-COA (for LGUs), GAA (for SCUs).

Table 2b. Trends in government expenditures for agriculture, natural resources, and the environment by agency
in real terms (Mn pesos, 1985 prices).

Agency	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
DA	6,490 (104)	6,450 (103)	5,725 (91)	6,268 (100)	4,236 (68)	4,510 (72)	5,249 (84)	5,978 (95)	8,597 (137)	5,601 (89)
DENR	2,680 (156)	2,735 (159)	2,368 (138)	1,717 (100)	1,622 (95)	1,913 (111)	2,085 (121)	2,132 (124)	3,401 (198)	2,051 (119)
DAR	1,217 (123)	1,417 (143)	1,531 (155)	991 (100)	1,061 (107)	1,029 (104)	1,143 (115)	1,194 (120)	1,632 (165)	1,626 (164)
DOST	90 (124)	89 (124)	75 (104)	72 (100)	72 (99)	69 (96)	89 (124)	111 (154)	123 (171)	109 (151)
LBP	600 (76)	1,234 (156)	2,687 (339)	793 (100)	729 (92)	1,817 (229)	1,268 (160)	1,872 (236)	1,224 (154)	855 (108)
SCUs	163 (126)	153 (119)	129 (100)	129 (100)	114 (89)	119 (92)	133 (103)	151 (117)	152 (118)	166 (129)
LGUs	- -	- -	- -	157 (100)	670 (427)	867 (552)	1,002 (638)	1,050 (669)	1,206 (769)	1,271 (810)
Other agencies	759 (150)	440 (87)	937 (186)	504 (100)	185 (37)	209 (41)	159 (31)	179 (35)	299 (59)	222 (44)
Total expenditures	11,997 (113)	12,519 (118)	13,452 (127)	10,631 (100)	8,690 (82)	10,532 (99)	11,129 (105)	12,666 (119)	16,636 (156)	11,901 (112)

Note: Figures in parenthesis are index numbers where 1992=100

Table 3. Distribution of new appropriations for ANRE by policy instruments, 1989-1999 (Mn Pesos).

Policy Instruments	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Natural Res. & Environment Mgt.	2,930 (26.21)	4,428 (33.43)	3,615 (27.47)	2,930 (18.66)	3,435 (20.71)	3,850 (20.22)	3,796 (17.03)	5,564 (18.58)	6,312 (19.83)	5,357 (16.23)
Forest Management	1,859 (16.63)	3,268 (24.67)	2,572 (19.54)	1,903 (12.12)	2,302 (13.88)	2,711 (14.24)	2,593 (11.64)	4,147 (13.85)	4,513 (14.18)	3,154 (9.55)
Others	1,071 (9.59)	1,160 (8.76)	1,043 (7.93)	1,027 (6.54)	1,132 (6.83)	1,139 (5.98)	1,203 (5.40)	1,417 (4.73)	1,799 (5.65)	2,202 (6.67)
Land Acquisition & Distribution*	765 (6.84)	719 (5.43)	2,151 (16.35)	2,336 (14.87)	2,881 (17.37)	3,493 (18.35)	4,011 (18.00)	4,430 (14.79)	4,572 (14.36)	6,369 (19.29)
Irrigation	50 (0.45)	758 (5.72)	491 (3.73)	477 (3.04)	2,925 (17.64)	2,735 (14.37)	4,113 (18.45)	5,477 (18.29)	5,379 (16.90)	5,602 (16.97)
Extension	1,919 (17.17)	2,268 (17.12)	2,136 (16.23)	2,392 (15.23)	1,810 (10.91)	2,370 (12.45)	2,991 (13.42)	3,457 (11.54)	4,154 (13.05)	4,786 (14.50)
Production Support	793 (7.09)	952 (7.19)	765 (5.81)	2,199 (14.00)	1,088 (6.56)	1,911 (10.04)	2,206 (9.90)	4,525 (15.11)	2,551 (8.02)	2,138 (6.48)
Seeds & planting materials	146 (1.31)	199 (1.50)	140 (1.06)	44 (0.28)	28 (0.17)	464 (2.44)	593 (2.66)	1,536 (5.13)	174 (0.55)	206 (0.62)
Other crops (coconut)	0 (0.00)	2 (0.01)	167 (1.27)	1,320 (8.41)	460 (2.77)	365 (1.92)	653 (2.93)	942 (3.15)	858 (2.70)	95 (0.29)
Breeding Station	28 (0.25)	58 (0.44)	27 (0.20)	25 (0.16)	7 (0.04)	17 (0.09)	76 (0.34)	96 (0.32)	82 (0.26)	95 (0.29)
Fishery	19 (0.17)	6 (0.05)	4 (0.03)	532 (3.39)	354 (2.13)	694 (3.65)	119 (0.53)	528 (1.76)	785 (2.47)	638 (1.93)
Others	599 (5.36)	688 (5.19)	427 (3.24)	277 (1.76)	239 (1.44)	371 (1.95)	765 (3.43)	1,423 (4.75)	652 (2.05)	1,105 (3.35)
Post-harvest facilities	30 (0.27)	61 (0.46)	50 (0.38)	65 (0.41)	114 (0.68)	138 (0.72)	135 (0.61)	492 (1.64)	317 (1.00)	286 (0.87)
R& D	774 (6.93)	865 (6.53)	907 (6.89)	1,075 (6.84)	1,136 (6.85)	1,608 (8.45)	1,635 (7.34)	2,027 (6.77)	2,274 (7.14)	2,590 (7.85)
Price Stabilization	1,366 (12.22)	1,049 (7.92)	1,217 (9.25)	1,910 (12.16)	2,061 (12.43)	1,479 (7.77)	1,458 (6.54)	1,299 (4.34)	1,519 (4.77)	1,449 (4.39)
Credit/Insurance	1,243 (11.12)	684 (5.17)	362 (2.75)	1,446 (9.21)	255 (1.54)	263 (1.38)	298 (1.34)	1,207 (4.03)	1,596 (5.01)	855 (2.59)
Infrastructure	674 (6.03)	909 (6.86)	951 (7.23)	326 (2.07)	370 (2.23)	549 (2.88)	758 (3.40)	738 (2.46)	2,007 (6.30)	1,800 (5.45)
Regulatory	390 (3.49)	316 (2.39)	288 (2.19)	324 (2.07)	308 (1.86)	333 (1.75)	441 (1.98)	527 (1.76)	637 (2.00)	720 (2.18)
Market Promotion	27 (0.24)	33 (0.25)	39 (0.30)	33 (0.21)	40 (0.24)	75 (0.39)	161 (0.72)	240 (0.80)	212 (0.67)	240 (0.73)
Economic & Policy Planning	- -	- -	- -	- -	- -	48 (0.25)	54 (0.24)	68 (0.23)	73 (0.23)	98 (0.30)
Statistical Services	166 (1.48)	180 (1.36)	163 (1.24)	190 (1.21)	189 (1.14)	241 (1.27)	282 (1.26)	270 (0.90)	417 (1.31)	834 (2.53)
Consultation	82 (0.73)	84 (0.64)	74 (0.56)	68 (0.43)	71 (0.43)	72 (0.38)	81 (0.36)	88 (0.29)	99 (0.31)	123 (0.37)
Others	- -	- -	- -	- -	13 (0.08)	12 (0.06)	3 (0.02)	35 (0.12)	28 (0.09)	50 (0.15)
TOTAL	11,178	13,245	13,158	15,706	16,582	19,041	22,287	29,951	31,830	33,013

* Includes all of regular core program budget of DA (even those for beneficiary development). All ARF beneficiary development budgets are distributed according to policy instrument.

Note: Figures in parenthesis are percentage ratio to column total .

Table 4. Estimated distribution of new appropriation for the Department of Agriculture by commodity (Mn Peso).^a

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Rice	378 (0.2)	1,788 (0.4)	1,575 (0.4)	1,614 (0.4)	2,536 (0.4)	4,749 (0.6)	4,759 (0.6)	6,060 (0.6)	8,200 (0.5)	8,785 (0.5)	9,092 (0.6)
Non-Rice	752 (0.4)	1,605 (0.4)	1,724 (0.4)	1,753 (0.4)	2,882 (0.4)	2,157 (0.3)	1,774 (0.2)	2,462 (0.2)	3,856 (0.3)	3,568 (0.2)	3,546 (0.2)
Livestock	505 (0.3)	691 (0.2)	731 (0.2)	687 (0.2)	830 (0.1)	585 (0.1)	556 (0.1)	1,405 (0.1)	2,052 (0.1)	1,446 (0.1)	1,558 (0.1)
Fisheries	137 (0.1)	252 (0.1)	245 (0.1)	206 (0.)	768 (0.1)	574 (0.1)	930 (0.1)	386 (0.)	632 (0.)	572 (0.)	680 (0.)
Others	64 (0.)	248 (0.1)	146 (0.)	73 (0.)	130 (0.)	162 (0.)	346 (0.)	368 (0.)	533 (0.)	1,714 (0.1)	1,550 (0.1)
Total	1,836	4,585	4,421	4,333	7,146	8,226	8,365	10,681	15,273	16,085	16,425

Note: Figures in parenthesis are percentage ratio to total.

^a For budgets of agencies handling all crops or all commodities, these were allocated across this grouping based on educated judgement as summarized in Appendix Table.

Table 5 . Public expenditures for research and development in agriculture and natural resources, gross value added in agriculture including fishery and forestry, and research intensity ratios (RIR), 1992-1997.

	1992	1993	1994	1995	1996	1997
1. Research expenditures (P million) ^a						
a. w/out SEAFDEC	800 (1,027)	853 (1,121)	1,065 (1,400)	1,290 (1,638)	1,554 (1,919)	1,743 (2,152)
b. with SEAFDEC	881 (1,228)	958 (1,248)	1,184 (1,540)	1,434 (1,815)	1,707 (2,114)	1,929 (2,389)
2. Gross value added (P million)	281,748	303,415	355,612	392,954	449,080	452,546
3. Research intensity ratio (%)						
(1a)/(2)	0.28 (0.36)	0.28 (0.37)	0.30 (0.39)	0.33 (0.42)	0.35 (0.43)	0.38 (0.48)
(1b)/(2)	0.31 (0.40)	0.32 (0.41)	0.33 (0.43)	0.36 (0.46)	0.38 (0.47)	0.43 (0.53)

Note: Refers to direct budgetary outlay. Figures in parenthesis refer to total research expenditure, including external grants from local and foreign sources.

Source: David, Cristina C. et. al. "Philippine Agricultural and Natural Resource Allocation Issues and Directions for Reforms", Discussion Paper No. 99-33, Philippine Institute for Development Studies, 1998.

Table 6. Indicative estimates of research intensity ratio
by commodity 1994-1996 (%)

	RIR
Overall (excl. SEAFDEC)	0.41
(incl. SEAFDEC)	0.45
Rice	0.25
Corn	0.05
Sugar	0.5
Coconut	0.3
Fiber crops	2.5-3.0
Cotton	25
Abaca	1
Tobacco	1.1
Livestock	0.15
Carabao	3.6
Other livestock	0.02
Fishery (excl. SEAFDEC)	0.12
(incl. SEAFDEC)	0.35
Forestry	3.5

Source: David, Cristina C. et. al. "Philippine Agricultural and Natural
Resource Allocation Issues and Directions for Reforms",
Discussion Paper No. 99-33, Philippine Institute for Development
Studies 1998.

Table 7. Distribution of available appropriations for ANRE by national (central vs regional) and local level units, (Mn pesos)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
TOTAL	14,276	16,523	23,603	19,838	19,829	25,435	29,179	40,632	51,626	40,928
National	14,276	16,523	23,603	19,543 (98.5)	18,484 (93.2)	23,520 (92.5)	26,799 (91.8)	37,937 (93.4)	48,354 (93.7)	37,111 (90.7)
Central	10,989 (77.0)	13,289 (80.4)	20,547 (87.1)	15,798 (79.6)	15,643 (78.9)	20,314 (79.9)	23,082 (79.1)	33,164 (81.6)	42,613 (82.5)	30,913 (75.5)
Regional	3,287 (23.0)	3,235 (19.6)	3,056 (12.9)	3,745 (18.9)	2,840 (14.3)	3,206 (12.6)	3,717 (12.7)	4,773 (11.7)	5,741 (11.1)	6,198 (15.1)
Local	-	-	-	295 (1.5)	1,345 (6.8)	1,915 (7.5)	2,380 (8.2)	2,695 (6.6)	3,272 (6.3)	3,817 (9.3)

Note: Figures for local government are actual expenditures.
Figures in parenthesis are percentage ratio to column total.

Table 8. Distribution of available appropriation to the national (ANRE) agencies by department and by central and regional offices (Mn pesos).

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
National	14,276	16,523	23,603	19,543	18,484	23,520	26,799	37,937	48,354	37,111
Central	10,989 (77.0)	13,289 (80.4)	20,547 (87.1)	15,798 (80.8)	15,643 (84.6)	20,314 (86.4)	23,082 (86.1)	33,164 (87.4)	42,613 (88.1)	30,913 (83.3)
Regional	3,287 (23.0)	3,235 (19.6)	3,056 (12.9)	3,745 (19.2)	2,840 (15.4)	3,206 (13.6)	3,717 (13.9)	4,773 (12.6)	5,741 (11.9)	6,198 (16.7)
DA	6,633	6,636	8,348	10,472	9,528	11,044	14,461	22,025	29,543	21,438
Central	5,056 (76.2)	5,015 (75.6)	6,817 (81.7)	8,700 (83.1)	8,974 (94.2)	10,375 (93.9)	13,556 (93.7)	20,891 (94.9)	28,396 (96.1)	20,014 (93.4)
Regional	1,577 (23.8)	1,621 (24.4)	1,531 (18.3)	1,771 (16.9)	554 (5.8)	669 (6.1)	905 (6.3)	1,134 (5.1)	1,148 (3.9)	1,424 (6.6)
DENR	3,931 (27.5)	4,997 (30.2)	4,975 (21.1)	3,572 (18.0)	4,512 (22.8)	5,407 (21.3)	5,639 (19.3)	6,915 (17.0)	10,407 (20.2)	7,520 (18.4)
Central	2,547 (64.8)	3,718 (74.4)	3,747 (75.3)	2,025 (56.7)	2,691 (59.7)	3,457 (63.9)	3,492 (61.9)	4,068 (58.8)	6,672 (64.1)	3,959 (52.6)
Regional	1,384 (35.20)	1,278 (25.58)	1,228 (24.68)	1,547 (43.31)	1,820 (40.35)	1,951 (36.07)	2,147 (38.07)	2,847 (41.17)	3,735 (35.89)	3,562 (47.36)
DAR	1,783	2,202	3,819	2,916	2,466	2,455	3,051	3,408	3,884	4,459
Central	1,456 (81.7)	1,867 (84.8)	3,523 (92.2)	2,489 (85.4)	2,000 (81.1)	1,868 (76.1)	2,387 (78.2)	2,615 (76.7)	3,025 (77.9)	3,246 (72.8)
Regional	326 (18.3)	335 (15.2)	297 (7.8)	427 (14.6)	466 (18.9)	586 (23.9)	665 (21.8)	793 (23.3)	859 (22.1)	1,212 (27.2)
DOST - central	132	167	147	144	170	165	260	357	389	404
Other Agencies	1,797	2,521	6,313	2,440	1,808	4,448	3,387	5,233	4,131	3,290

Note: Figures for local government are actual expenditures.
Figures in parenthesis are percentage ratio to total.

Table 9. Distribution of LGU agriculture related expenditures by type of service and level of LGU, 1998 (Mn pesos).

	Total	Agricultural services	Veterinary services	Natural resource services
Province	1,273 [33.3] <i>4.2</i>	909 (71.4) [32.6] <i>3.7</i>	224 (17.6) [27.8] <i>0.9</i>	140 (11.0) [61.9] <i>0.6</i>
Municipalities	1,572 [41.2] <i>4.4</i>	1,549 (98.5) [55.6] <i>4.3</i>	9 (0.6) [1.1] <i>0.02</i>	14 (0.9) [6.2] <i>0.04</i>
Cities	973 [25.5] <i>2.4</i>	328 (33.7) [11.8] <i>0.8</i>	573 (58.9) [71.1] <i>1.4</i>	72 (7.4) [31.9] <i>0.2</i>
Total	3,818 <i>3.7</i>	2,786 (73.0) <i>2.7</i>	806 (21.0) <i>0.8</i>	226 (5.9) <i>0.2</i>

Note: Figures in parenthesis are percentage share to row total
 Figures in brackets are percentage share to column totals
 Figures in italics are percentage of total public expenditure of the relevant LGU unit

Table 10a. Ratio of region specific public expenditures for ANRE to GVA by the LGUs, DA, DAR and DENR by region, 1998 (%)

Region	Total**		LGU				DA*		DAR	DENR
	(1)	(2)	Total	Provinces	Muni- cipalities	Cities	(4)	(5)		
I. Ilocos Region	2.38	2.11	0.78	0.27	0.46	0.05	0.57	0.29	0.31	0.73
CAR	5.91	5.46	1.51	0.80	0.64	0.08	0.99	0.54	0.52	2.88
II. Cagayan Valley	3.45	3.00	0.97	0.34	0.47	0.16	0.90	0.45	0.32	1.26
III. Central Luzon	2.37	2.14	0.83	0.28	0.43	0.12	0.46	0.24	0.47	0.61
IV. Southern Tagalog	1.59	1.51	0.56	0.24	0.24	0.08	0.35	0.27	0.16	0.52
V. Bicol Region	3.19	2.89	1.13	0.49	0.58	0.06	0.75	0.44	0.33	0.98
VI. Western Visayas	1.75	1.61	0.59	0.21	0.29	0.08	0.36	0.22	0.29	0.51
VII. Central Visayas	3.71	3.43	1.17	0.47	0.45	0.25	0.91	0.63	0.44	1.19
VIII. Eastern Visayas	3.84	3.56	1.35	0.62	0.62	0.11	0.87	0.59	0.43	1.19
IX. Western, XII. Central Mindanao, ARMM	2.06	1.84	0.58	0.19	0.27	0.12	0.54	0.32	0.26	0.68
X. Northern, XI. Southern Mindanao, CARAGA	1.87	1.69	0.60	0.19	0.26	0.15	0.41	0.23	0.15	0.71
Total	2.30	2.09	0.74	0.28	0.35	0.11	0.52	0.32	0.27	0.77

* DA : (4) is based on the agency's total regional expenditures including MAKAMASA; (5) is based on expenditures excluding MAKAMASA.

** Total : (1) uses DA expenditures in (4) while Total (2) uses DA expenditures in (5).

Table 10b. Ratio of region specific public expenditures for ANRE to rural population by the LGUs, DA, DAR and DENR by region, 1998 (peso/capita)

Region	Total**		LGU				DA*		DAR	DENR
	(1)	(2)	Total	Provinces	Muni- cipalities	Cities	(4)	(5)		
I. Ilocos Region	232	205	76	26	44	5	55	28	30	71
CAR	597	551	153	80	65	8	100	55	53	291
II. Cagayan Valley	379	330	107	38	52	17	99	50	35	138
III. Central Luzon	231	209	81	28	42	12	45	23	46	60
IV. Southern Tagalog	245	233	86	37	37	12	54	42	25	80
V. Bicol Region	202	183	71	31	37	4	47	28	21	62
VI. Western Visayas	215	198	72	26	36	10	45	27	35	63
VII. Central Visayas	213	197	67	27	26	14	52	36	25	68
VIII. Eastern Visayas	270	250	95	44	43	8	61	41	30	84
IX. Western, XII. Central Mindanao, ARMM	216	193	61	20	28	13	56	33	27	71
X. Northern, XI. Southern Mindanao, CARAGA	339	305	109	35	47	27	74	41	27	128
Total	257	234	83	32	39	13	58	35	30	86

** Total : (1) uses DA expenditures in (4) while Total (2) uses DA expenditures in (5).

Table 10c. Ratio of region specific public expenditures for ANRE to number of farm households by the LGUs, DA, DAR and DENR by region, 1998.
(peso/household)

Region	Total**		LGU				DA*		DAR	DENR
	(1)	(2)	Total	Provinces	Muni- cipalities	Cities	(4)	(5)		
I. Ilocos Region	2,311	2,043	757	263	444	50	548	280	300	706
CAR	4,848	4,479	1,242	652	525	64	814	445	428	2,363
II. Cagayan Valley	2,782	2,424	785	276	382	126	723	365	259	1,014
III. Central Luzon	2,916	2,638	1,021	347	527	147	570	292	574	751
IV. Southern Tagalog	2,572	2,447	905	392	388	124	569	445	262	836
V. Bicol Region	1,943	1,758	687	296	354	37	455	270	204	598
VI. Western Visayas	2,011	1,850	677	245	335	97	418	256	328	589
VII. Central Visayas	1,733	1,603	546	220	209	117	426	296	204	557
VIII. Eastern Visayas	2,298	2,129	809	373	370	67	521	352	256	712
IX. Western, XII. Central Mindanao, ARMM	1,718	1,534	487	159	225	103	450	266	215	567
X. Northern, XI. Southern Mindanao, CARAGA	2,178	1,964	702	224	303	175	479	265	171	826
Total	2,252	2,050	728	277	340	111	510	308	264	750

* DA : (4) is based on the agency's total regional expenditures including MAKAMASA; (5) is based on expenditures excluding MAKAMASA.

** Total : (1) uses DA expenditures in (4) while Total (2) uses DA expenditures in (5).

Table 10d. Ratio of region specific public expenditures for ANRE to farm area LGUs, DA, DAR and DENR by region, 1998 (pesos/hectare).

Region	Total**		LGU				DA*		DAR	DENR
	(1)	(2)	Total	Provinces	Muni- cipalities	Cities	(4)	(5)		
I. Ilocos Region	2,220	1,963	727	253	426	48	527	269	288	679
CAR	3,373	3,116	864	454	365	45	567	310	298	1,644
II. Cagayan Valley	1,499	1,306	423	149	206	68	390	197	140	547
III. Central Luzon	1,645	1,489	576	196	298	83	321	165	324	424
IV. Southern Tagalog	1,068	1,016	376	163	161	52	236	185	109	347
V. Bicol Region	784	709	277	120	143	15	184	109	82	241
VI. Western Visayas	1,097	1,009	369	134	183	53	228	140	179	321
VII. Central Visayas	1,339	1,238	422	170	161	91	329	228	157	431
VIII. Eastern Visayas	1,062	984	374	172	171	31	241	163	118	329
IX. Western, XII. Central Mindanao, ARMM	639	571	181	59	84	38	167	99	80	211
X. Northern, XI. Southern Mindanao, CARAGA	771	695	248	79	107	62	169	94	61	292
Total	1,043	950	337	128	158	51	236	143	122	347

* DA : (4) is based on the agency's total regional expenditures including MAKAMASA; (5) is based on expenditures excluding MAKAMASA.

** Total : (1) uses DA expenditures in (4) while Total (2) uses DA expenditures in (5).

Table 11. Regional expenditures for agricultural research and development as ratio to its gross value added contribution, in agriculture, 1994-96 (%).

	Research intensity ratio ^b (%)		
	Total	DA RIARCs ^c	SCUs
Luzon	0.27	0.08	0.19
Luzon w/o Southern Tagalog	0.21	0.12	0.09
CAR	0.28	0.06	0.21
I. Ilocos	0.28	0.08	0.19
II. Cagayan Valley	0.29	0.25	0.05
III. Central Luzon	0.10	0.03	0.06
IV. Southern Tagalog ^a	0.36	0.03	0.33
V. Bicol	0.24	0.20	0.03
Visayas	0.15	0.09	0.06
VI. Western Visayas	0.07	0.04	0.03
VII. Central Visayas	0.19	0.18	0.00
VIII. Eastern Visayas	0.32	0.11	0.21
Mindanao	0.06	0.04	0.02
IX. Western Mindanao	0.08	0.07	0.01
X. Northern Mindanao	0.04	0.03	0.01
XI. Southern Mindanao	0.02	0.02	0.00
XII. Central Mindanao	0.18	0.03	0.16
CARAGA	0.00	0.00	0.00
ARMM	0.05	0.05	0.00
Total	0.18	0.07	0.11
Total w/o Southern Tagalog	0.42	0.25	0.18

^a Includes UPLB and UPMSI.

^b Research intensity ratio = R&D expenditure/GVA x 100.

^c Regional Integrated Agricultural Research Centers

Table 12a. Distribution of appropriations to DA, DAR and DENR by regular core program and projects at current prices (Mn pesos)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total appropriations ^a	11,378	12,711	12,934	14,591	15,172	16,322	19,632	27,303	29,902	28,860
Regular core program	6,902 (60.7)	6,936 (54.6)	6,281 (48.6)	7,594 (52.0)	7,810 (51.5)	6,990 (42.8)	7,386 (37.6)	9,084 (33.3)	10,639 (35.6)	11,893 (41.2)
Projects	4,476 (39.3)	5,775 (45.4)	6,652 (51.4)	6,996 (48.0)	7,361 (48.5)	9,332 (57.2)	12,246 (62.4)	18,220 (66.7)	19,263 (64.4)	16,967 (58.8)
Locally funded projects	2,420 (21.3)	2,239 (17.6)	4,263 (33.0)	3,901 (26.7)	2,855 (18.8)	4,256 (26.1)	7,418 (37.8)	11,932 (43.7)	12,329 (41.2)	11,975 (41.5)
ARF	2,218 (19.5)	1,950 (15.3)	3,659 (28.3)	2,725 (18.7)	2,128 (14.0)	2,140 (13.1)	2,856 (14.5)	2,752 (10.1)	2,906 (9.7)	3,177 (11.0)
Other Funds	-	-	292 (2.3)	124 (0.9)	122 (0.8)	104 (0.6)	246 (1.3)	1,235 (4.5)	895 (3.0)	261 (0.9)
Makamasa	-	-	-	-	-	753 (4.6)	2,316 (11.8)	3,121 (11.4)	5,155 (17.2)	4,560 (15.8)
Makamasa Rice & Corn	-	-	-	-	-	753 (4.6)	1,440 (7.3)	1,921 (7.0)	3,749 (12.5)	2,777 (9.6)
Makamasa HV crops	-	-	-	-	-	-	260 (1.3)	202 (0.7)	224 (0.7)	676 (2.3)
Makamasa Livestock	-	-	-	-	-	-	500 (2.5)	721 (2.6)	615 (2.1)	708 (2.5)
Makamasa Fish	-	-	-	-	-	-	116 (0.6)	277 (1.0)	568 (1.9)	399 (1.4)
Others	201 (1.8)	289 (2.3)	312 (2.4)	1,051 (7.2)	605 (4.0)	1,258 (7.7)	2,000 (10.2)	4,824 (17.7)	3,373 (11.3)	3,976 (13.8)
Foreign funded ^b	2,056 (18.1)	3,536 (27.8)	2,389 (18.5)	3,096 (21.2)	4,506 (29.7)	5,076 (31.1)	4,828 (24.6)	6,288 (23.0)	6,934 (23.2)	4,992 (17.3)
Loans	1,411 (12.4)	2,682 (21.1)	2,065 (16.0)	2,308 (15.8)	4,144 (27.3)	4,736 (29.0)	4,275 (21.8)	5,835 (21.4)	5,808 (19.4)	4,543 (15.7)
Irrigation	7 (0.1)	4 (0.0)	-	-	2,015 (13.3)	1,663 (10.2)	1,750 (8.9)	2,264 (8.3)	2,559 (8.6)	2,691 (9.3)
Forestry-related	1,057 (9.3)	2,452 (19.3)	1,746 (13.5)	876 (6.0)	1,071 (7.1)	1,711 (10.5)	1,396 (7.1)	1,936 (7.1)	1,980 (6.6)	1,227 (4.3)
Coconut	-	-	66 (0.5)	596 (4.1)	411 (2.7)	362 (2.2)	638 (3.2)	940 (3.4)	858 (2.9)	85 (0.3)
Fishery	13 (0.1)	-	-	531 (3.6)	372 (2.5)	655 (4.0)	-	-	217 (0.7)	234 (0.8)
Others	334 (2.9)	226 (1.8)	253 (2.0)	305 (2.1)	275 (1.8)	344 (2.1)	491 (2.5)	696 (2.5)	193 (0.6)	306 (1.1)
Grants ^c	646 (5.7)	854 (6.7)	323 (2.5)	788 (5.4)	362 (2.4)	340 (2.1)	554 (2.8)	453 (1.7)	1,126 (3.8)	449 (1.6)

a Includes new appropriations of DA, DAR and DENR, transfers from the Agrarian Reform Fund and other funds (namely the Poverty Alleviation Fund, Calamity Fund and Rehabilitation and Reconstruction Fund) and grant proceeds allocated to these departments as reported in NEP.

b Includes loan proceeds plus local counterpart.

c Includes grant proceeds plus local counterpart.

Table 12b. Distribution of appropriations to DA, DAR and DENR by regular core program and projects at constant prices (Mn pesos)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total appropriations ^a	8,600	8,504	7,425	7,761	7,554	7,389	8,263	10,675	11,026	9,610
Regular core program	5,217	4,640	3,606	4,040	3,889	3,164	3,109	3,551	3,923	3,960
Projects	3,383	3,864	3,819	3,722	3,665	4,224	5,155	7,123	7,103	5,650
Locally funded projects	1,829	1,498	2,448	2,075	1,422	1,926	3,122	4,665	4,546	3,987
ARF	1,676	1,304	2,101	1,450	1,060	969	1,202	1,076	1,072	1,058
Other funds	-	-	168	66	61	47	104	483	330	87
Makamasa	-	-	-	-	-	341	975	1,220	1,901	1,519
Makamasa Rice & Corn	-	-	-	-	-	341	606	751	1,382	925
Makamasa HV crops	-	-	-	-	-	-	109	79	82	225
Makamasa Livestock	-	-	-	-	-	-	210	282	227	236
Makamasa Fish	-	-	-	-	-	-	49	108	209	133
Others	152	193	179	559	301	570	842	1,886	1,244	1,324
Foreign funded ^b	1,554	2,366	1,371	1,647	2,244	2,298	2,032	2,458	2,557	1,662
Loans	1,066	1,794	1,186	1,228	2,064	2,144	1,799	2,281	2,142	1,513
Irrigation	6	3	-	-	1,003	753	736	885	944	896
Coconut	-	-	38	317	205	164	268	367	317	28
Fishery	10	-	-	283	185	297	-	-	80	78
Forestry-related	799	1,640	1,002	466	533	775	588	757	730	408
Others	252	151	145	162	137	156	207	272	71	102
Grants ^c	488	571	186	419	180	154	233	177	415	150

a Includes new appropriations of DA, DAR and DENR, transfers from the Agrarian Reform Fund and other funds (namely the Poverty Alleviation Fund, Calamity Fund and Rehabilitation and Reconstruction Fund) and grant proceeds allocated to these departments as reported in NEP.

b Includes loan proceeds plus local counterpart.

c Includes grant proceeds plus local counterpart.

Table 13a. Distribution of appropriations to DENR by regular core program and projects at current prices (Mn pesos)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total appropriations ^a	3,061	4,570	4,211	3,378	3,757	4,578	4,421	6,114	7,215	6,464
Regular core program	1,975 (64.5)	2,051 (44.9)	1,953 (46.4)	2,132 (63.1)	2,496 (66.4)	2,531 (55.3)	2,752 (62.3)	3,925 (64.2)	4,713 (65.3)	4,667 (72.2)
Projects	1,086 (35.5)	2,519 (55.1)	2,258 (53.6)	1,246 (36.9)	1,261 (33.6)	2,048 (44.7)	1,668 (37.7)	2,189 (35.8)	2,502 (34.7)	1,797 (27.8)
Locally funded projects	24 (0.8)	47 (1.0)	470 (11.2)	291 (8.6)	170 (4.5)	302 (6.6)	255 (5.8)	246 (4.0)	505 (7.0)	559 (8.7)
ARF	-	-	336 (8.0)	239 (7.1)	155 (4.1)	297 (6.5)	255 (5.8)	216 (3.5)	244 (3.4)	240 (3.7)
Other funds	-	-	95 (2.3)	-	15 (0.4)	5 (0.1)	-	20 (0.3)	242 (3.4)	150 (2.3)
Others	24 (0.8)	47 (1.0)	39 (0.9)	52 (1.5)	-	-	-	10 (0.2)	19 (0.3)	170 (2.6)
Foreign funded ^b	1,062 (34.7)	2,472 (54.1)	1,788 (42.5)	955 (28.3)	1,092 (29.1)	1,746 (38.1)	1,414 (32.0)	1,944 (31.8)	1,998 (27.7)	1,237 (19.1)
Loans	1,057 (34.5)	2,452 (53.7)	1,746 (41.5)	876 (25.9)	1,071 (28.5)	1,711 (37.4)	1,396 (31.6)	1,936 (31.7)	1,980 (27.4)	1,227 (19.0)
Forest mgt. & watershed	1,040 (34.0)	2,440 (53.4)	1,741 (41.3)	848 (25.1)	991 (26.4)	1,565 (34.2)	1,375 (31.1)	1,911 (31.3)	1,957 (27.1)	872 (13.5)
Others	17 (0.5)	12 (0.3)	5 (0.1)	27 (0.8)	80 (2.1)	147 (3.2)	21 (0.5)	25 (0.4)	23 (0.3)	354 (5.5)
Grants ^c	5 (0.1)	20 (0.4)	42 (1.0)	80 (2.4)	21 (0.6)	34 (0.7)	18 (0.4)	8 (0.1)	18 (0.2)	10 (0.2)

a Includes new appropriation, transfers from the Agrarian Reform Fund and other funds (namely the Poverty Alleviation Fund, Calamity Fund and Rehabilitation and Reconstruction Fund) and grant proceeds allocated to this department as reported in NEP.

b Includes loan proceeds plus local counterpart.

c Includes grant proceeds plus local counterpart.

Table 13b. Distribution of appropriations to DENR by regular core program and projects at constant prices (Mn pesos)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total appropriations ^a	2,314	3,057	2,417	1,797	1,871	2,073	1,861	2,390	2,661	2,152
Regular core program	1,493	1,372	1,121	1,134	1,243	1,146	1,158	1,534	1,738	1,554
Projects	821	1,686	1,296	663	628	927	702	856	923	598
Locally funded projects	18	32	270	155	84	137	107	96	186	186
ARF	-	-	193	127	77	134	107	84	90	80
Other funds	-	-	55	-	7	2	-	8	89	50
Others	18	32	22	27	-	-	-	4	7	57
Foreign funded ^b	802	1,654	1,026	508	544	790	595	760	737	412
Loans	799	1,640	1,002	466	533	775	588	757	730	408
Forest mgt. & watershed	786	1,632	999	451	493	708	579	747	722	291
Others	12	8	3	15	40	66	9	10	8	118
Grants ^c	3	14	24	42	10	15	7	3	7	3

a Includes new appropriation, transfers from the Agrarian Reform Fund and other funds (namely the Poverty Alleviation Fund, Calamity Fund and Rehabilitation & Reconstruction Fund) and grant proceeds allocated to this department as reported in NEP.

b Includes loan proceeds plus local counterpart.

c Includes grant proceeds plus local counterpart.

Table 14a. Distribution of appropriations to DAR by regular core program and projects at current prices (Mn pesos)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total appropriations ^a	1,960	2,479	3,325	3,271	2,313	2,259	2,765	3,021	3,338	3,994
Regular core program	751 (38.3)	876 (35.3)	574 (17.3)	693 (21.2)	701 (30.3)	690 (30.5)	773 (28.0)	892 (29.5)	999 (29.9)	1,387 (34.7)
Projects	1,210 (61.7)	1,603 (64.7)	2,750 (82.7)	2,578 (78.8)	1,612 (69.7)	1,569 (69.5)	1,992 (72.0)	2,130 (70.5)	2,339 (70.1)	2,607 (65.3)
Locally funded projects	1,100 (56.1)	1,376 (55.5)	2,747 (82.6)	2,276 (69.6)	1,606 (69.4)	1,563 (69.2)	1,986 (71.8)	2,129 (70.5)	2,339 (70.1)	2,607 (65.3)
ARF	1,074 (54.8)	1,352 (54.5)	2,730 (82.1)	2,259 (69.1)	1,567 (67.7)	1,431 (63.3)	1,878 (67.9)	2,052 (67.9)	2,172 (65.1)	2,552 (63.9)
Roads	-	-	-	-	1 (0.0)	51 (2.3)	70 (2.5)	45 (1.5)	160 (4.8)	55 (1.4)
Others	26 (1.3)	24 (1.0)	17 (0.5)	17 (0.5)	38 (1.7)	81 (3.6)	38 (1.4)	32 (1.0)	7 (0.2)	-
Foreign funded ^b	110 (5.6)	227 (9.2)	4 (0.1)	302 (9.2)	6 (0.3)	6 (0.3)	5 (0.2)	1 (0.0)	-	-
Grants ^c	110 (5.6)	227 (9.2)	4 (0.1)	302 (9.2)	6 (0.3)	6 (0.3)	5 (0.2)	1 (0.0)	-	-

a Includes new appropriation, transfers from the Agrarian Reform Fund and other funds (namely the Poverty Alleviation Fund, Calamity Fund and Rehabilitation & Reconstruction Fund) and grant proceeds allocated to this department as reported in NEP.

b Includes loan proceeds plus local counterpart.

c Includes grant proceeds plus local counterpart.

Table 14b. Distribution of appropriations to DAR by regular core program and projects at constant prices (Mn pesos)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total appropriations ^a	1,481	1,658	1,909	1,740	1,152	1,023	1,164	1,181	1,231	1,330
Regular core program	567	586	330	369	349	312	325	349	368	462
Projects	914	1,073	1,579	1,371	803	710	838	833	863	868
Locally funded projects	831	920	1,577	1,211	799	708	836	832	863	868
ARF	812	904	1,567	1,202	780	648	791	802	801	850
Roads	-	-	-	-	0	23	29	18	59	18
Others	20	16	10	9	19	37	16	12	3	-
Foreign funded	83	152	2	161	3	3	2	0	-	-
Grants ^c	83	152	2	161	3	3	2	0	-	-

a Includes new appropriation, transfers from the Agrarian Reform Fund and other funds (namely the Poverty Alleviation Fund, Calamity Fund and Rehabilitation & Reconstruction Fund) and grant proceeds allocated to this department as reported in NEP.

b Includes loan proceeds plus local counterpart.

c Includes grant proceeds plus local counterpart.

Table 15a. Distribution of appropriations to DA by regular core program and projects at current prices (Mn pesos)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total appropriations ^a	6,357	5,662	5,398	7,942	9,102	9,485	12,447	18,168	19,349	18,402
Regular core program	4,176 (65.7)	4,009 (70.8)	3,754 (69.5)	4,770 (60.1)	4,614 (50.7)	3,770 (39.7)	3,861 (31.0)	4,267 (23.5)	4,927 (25.5)	5,838 (31.7)
Projects	2,181 (34.3)	1,653 (29.2)	1,644 (30.5)	3,172 (39.9)	4,488 (49.3)	5,716 (60.3)	8,586 (69.0)	13,901 (76.5)	14,422 (74.5)	12,564 (68.3)
Locally funded projects	1,296 (20.4)	816 (14.4)	1,047 (19.4)	1,334 (16.8)	1,080 (11.9)	2,391 (25.2)	5,177 (41.6)	9,557 (52.6)	9,486 (49.0)	8,809 (47.9)
ARF	1,144 (18.0)	598 (10.6)	593 (11.0)	227 (2.9)	407 (4.5)	412 (4.3)	723 (5.8)	484 (2.7)	490 (2.5)	385 (2.1)
Other funds	-	-	197 (3.7)	124 (1.6)	107 (1.2)	99 (1.0)	221 (1.8)	1,196 (6.6)	646 (3.3)	111 (0.6)
Makamasa	-	-	-	-	-	753 (7.9)	2,316 (18.6)	3,121 (17.2)	5,155 (26.6)	4,560 (24.8)
Makamasa Rice & Corn	-	-	-	-	-	753 (7.9)	1,440 (11.6)	1,921 (10.6)	3,749 (19.4)	2,777 (15.1)
Makamasa HV crops	-	-	-	-	-	-	260 (2.1)	202 (1.1)	224 (1.2)	676 (3.7)
Makamasa Livestock	-	-	-	-	-	-	500 (4.0)	721 (4.0)	615 (3.2)	708 (3.8)
Makamasa Fish	-	-	-	-	-	-	116 (0.9)	277 (1.5)	568 (2.9)	399 (2.2)
Others	151 (2.4)	218 (3.9)	256 (4.7)	982 (12.4)	566 (6.2)	1,126 (11.9)	1,917 (15.4)	4,756 (26.2)	3,194 (16.5)	3,752 (20.4)
Foreign funded ^b	885 (13.9)	837 (14.8)	597 (11.1)	1,838 (23.1)	3,408 (37.4)	3,325 (35.1)	3,409 (27.4)	4,344 (23.9)	4,936 (25.5)	3,755 (20.4)
Loans	244 (3.8)	226 (4.0)	316 (5.8)	1,430 (18.0)	3,067 (33.7)	3,019 (31.8)	2,873 (23.1)	3,899 (21.5)	3,828 (19.8)	3,316 (18.0)
Irrigation	7 (0.1)	4 (0.1)	-	-	2,015 (22.1)	1,663 (17.5)	1,750 (14.1)	2,264 (12.5)	2,559 (13.2)	2,691 (14.6)
Coconut	-	-	66 (1.2)	596 (7.5)	411 (4.5)	362 (3.8)	638 (5.1)	940 (5.2)	858 (4.4)	85 (0.5)
Fishery	13 (0.2)	-	-	531 (6.7)	372 (4.1)	655 (6.9)	-	-	217 (1.1)	234 (1.3)
Others	224 (3.5)	221 (3.9)	250 (4.6)	302 (3.8)	269 (3.0)	339 (3.6)	486 (3.9)	695 (3.8)	193 (1.0)	306 (1.7)
Grants ^c	641 (10.1)	611 (10.8)	282 (5.2)	409 (5.1)	341 (3.7)	306 (3.2)	536 (4.3)	445 (2.4)	1,108 (5.7)	439 (2.4)

a Includes new appropriation, transfers from the Agrarian Reform Fund and other funds (namely the Poverty Alleviation Fund, Calamity Fund and Rehabilitation & Reconstruction Fund) and grant proceeds allocated to this department as reported in NEP.

b Includes loan proceeds plus local counterpart.

c Includes grant proceeds plus local counterpart.

Table 15b. Distribution of appropriations to DA by regular core program and projects at constant prices (Mn pesos)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total appropriations ^a	4,804	3,788	3,099	4,225	4,532	4,294	5,239	7,103	7,135	6,127
Regular core program	3,156	2,682	2,155	2,537	2,297	1,706	1,625	1,668	1,817	1,944
Projects	1,648	1,106	944	1,687	2,235	2,587	3,614	5,435	5,318	4,183
Locally funded projects	979	546	601	709	538	1,082	2,179	3,736	3,498	2,933
ARF	865	400	340	121	203	187	304	189	181	128
Other funds	-	-	113	66	53	45	93	468	238	37
Makamasa	-	-	-	-	-	341	975	1,220	1,901	1,519
Makamasa Rice & Corn	-	-	-	-	-	341	606	751	1,382	925
Makamasa HV crops	-	-	-	-	-	-	109	79	82	225
Makamasa Livestock	-	-	-	-	-	-	210	282	227	236
Makamasa Fish	-	-	-	-	-	-	49	108	209	133
Others	114	146	147	523	282	510	807	1,859	1,178	1,249
Foreign funded ^b	669	560	343	978	1,697	1,505	1,435	1,698	1,820	1,250
Loans	184	151	181	760	1,527	1,367	1,209	1,524	1,412	1,104
Irrigation	6	3	-	-	1,003	753	736	885	944	896
Coconut	-	-	38	317	205	164	268	367	317	28
Fishery	10	-	-	283	185	297	-	-	80	78
Others	169	148	143	161	134	153	205	272	71	102
Grants ^c	484	409	162	217	170	138	226	174	409	146

a Includes new appropriation, transfers from the Agrarian Reform Fund and other funds (namely the Poverty Alleviation Fund, Calamity Fund and Rehabilitation & Reconstruction Fund) and grant proceeds allocated to this department as reported in NEP.

b Includes loan proceeds plus local counterpart.

c Includes grant proceeds plus local counterpart.

Table 16. Allocation of new appropriations to DA by type of expenditures, 1990 and 1998 (Mn pesos).

	1990				1998			
	PS	MOOE	CO	TOTAL	PS	MOOE	CO	TOTAL
Regular Core Program*	1,571 (61.5)	970 (38.0)	15 (0.6)	2,556	1,961 (65.2)	911 (30.4)	131 (4.4)	2,995
OSEC	1,445 (62.1)	878 (37.7)	5 (0.2)	2,328	1,674 (70.1)	673 (28.2)	42 (1.8)	2,389
OSEC Proper	111 (50.8)	107 (49.1)	0 (0.1)	219	114 (53.8)	95 (44.6)	3 (1.5)	212
BAS	51 (65.5)	26 (33.7)	1 (0.8)	78	162 (82.3)	34 (17.3)	1 (0.4)	196
BAR	4 (45.1)	5 (54.9)	-	9	11 (45.6)	11 (47.2)	2 (7.2)	23
ATI	42 (54.4)	35 (45.6)	-	78	139 (73.1)	43 (22.6)	8 (4.3)	191
BAI	35 (35.2)	65 (64.8)	-	100	83 (61.0)	53 (39.0)	-	136
BPI	29 (43)	37 (56)	1 (1)	67	114 (60)	70 (37)	4 (2)	189
BFAR	31 (43.8)	39 (56.2)	-	70	81 (60.7)	52 (39.3)	-	133
BSWM	24 (31.3)	53 (68.7)	-	77	56 (58.4)	40 (41.6)	-	95
Regional Offices	1,138 (68.6)	517 (31.2)	4 (0.2)	1,658	882 (77.5)	253 (22.2)	4 (0.3)	1,139
Attached Agencies	97 (51.2)	82 (43.5)	10 (5.2)	189	292 (44.7)	243 (37.9)	107 (16.6)	642
ACPC	6 (44.6)	7 (49.8)	1 (5.6)	15	10 (50.4)	9 (46.7)	1 (2.9)	20
CRDI	9 (80.6)	2 (19.4)	-	11	27 (72.0)	8 (21.7)	2 (6.4)	38
FPA	7 (51.1)	7 (48.4)	0 (0.4)	14	20 (54.8)	15 (42.2)	1 (2.9)	36
FIDA	30 (64.9)	15 (32.7)	1 (2.4)	46	101 (67.5)	39 (26.2)	9 (6.3)	150
LDC	3 (24.6)	8 (75.4)	-	10	6 (54.6)	4 (41.8)	0 (3.5)	11
NAFC	25 (52.8)	23 (47.2)	-	48	29 (53.5)	25 (46.5)	-	55
NMIC	9 (79.0)	2 (17.8)	0 (3.2)	11	62 (51.0)	54 (44.5)	5 (4.5)	122
NNC	11 (40.3)	16 (59.1)	0 (0.6)	26	25 (43.5)	32 (55.4)	1 (1.2)	58
NSF	3 (46.6)	2 (35.4)	1 (18.0)	6	8 (50.6)	2 (14.1)	5 (35.3)	15
PCC	-	-	-	-	31 (17.8)	61 (34.7)	84 (47.5)	176
SDA	3 (24.8)	3 (24.0)	6 (51.2)	13	-	-	-	-
II. PROJECTS	74 (16.7)	117 (26.3)	253 (57.0)	444	173 (1.5)	2,749 (24.0)	8,551 (74.5)	11,473

Note: Figures in parenthesis are percentage ratio to row total

* Excludes GOCCs, BPHRE and Bohol Agricultural Promotion Center.

Table 17. Allocation of new appropriations to DAR by type of expenditures, 1990 and 1998 (Mn pesos).

	1990				1998			
	PS	MOOE	CO	Total	PS	MOOE	CO	Total
Regular Core Program	709.4 (81.0)	165.1 (18.9)	1.2 (0.1)	875.6	1,290.6 (93.0)	83.8 (6.0)	13.0 (0.9)	1,387.4
Central Office	483.6 (89.4)	56.9 (10.5)	0.1 (0.0)	540.6	133.3 (76.1)	39.6 (22.6)	2.3 (1.3)	175.2
GASS	469.7 (92.3)	39.1 (7.7)	0.1 (0.0)	508.9	72.8 (70.4)	28.3 (27.4)	2.3 (2.2)	103.4
Planning, Monitoring, Policy Res. and Project Mgt.	-	-	-	-	13.5 (94.5)	0.8 (5.5)	-	14.2
Agrarian Reform Info & Educ.	2.1 (38.8)	3.2 (61.2)	-	5.3	8.6 (64.3)	4.8 (35.7)	-	13.4
Agrarian Legal Assistance	4.9 (67.8)	2.3 (32.2)	-	7.2	12.5 (89.4)	1.5 (10.6)	-	13.9
Land Acquisition & Distribution	5.0 (35.9)	9.0 (64.1)	-	14.0	19.6 (92.2)	1.7 (7.8)	-	21.2
Agrarian Reform Beneficiaries Dev't	1.9 (36.5)	3.3 (63.5)	-	5.2	6.5 (71.2)	2.6 (28.8)	-	9.1
Regional Operations	225.8 (67.4)	108.2 (32.3)	1.1 (0.3)	335.0	1,157.3 (95.5)	44.2 (3.6)	10.7 (0.9)	1,212.2
Projects	1.2 (4.4)	2.3 (8.1)	24.8 (87.5)	28.4	-	-	55.0 (100.0)	55.0

Note:

Figures in parenthesis are percentage ratio to row total.

0 Values are less than a million.

Table 18. Allocation of new appropriations to DENR by type of expenditures, 1990 and 1998 (Mn pesos).

	1990				1998			
	PS	MOOE	CO	Total	PS	MOOE	CO	Total
Regular Core Programs	1,354.7 (63.0)	657.6 (30.6)	138.8 (6.5)	2,151.0	3,118.7 (63.3)	1,264.1 (25.7)	544.2 (11.0)	4,927.0
OSEC	1,296.2 (63.2)	625.7 (30.5)	128.7 (6.3)	2,050.6	2,984.9 (64.0)	1,201.3 (25.7)	481.0 (10.3)	4,667.2
OSEC Proper	502.9 (87.0)	75.2 (13.0)	0.3 (0.0)	578.4	179.9 (51.3)	133.5 (38.1)	37.4 (10.7)	350.8
FMB	15.0 (57.8)	9.2 (35.6)	1.7 (6.6)	26.0	50.4 (35.2)	40.9 (28.6)	52.0 (36.3)	143.3
LMB	17.9 (49.4)	18.3 (50.4)	0.1 (0.2)	36.3	49.8 (59.6)	33.7 (40.4)	-	83.6
MGSB	21.8 (45.4)	26.2 (54.4)	0.1 (0.2)	48.2	96.2 (73.1)	34.8 (26.5)	0.5 (0.4)	131.5
EMB	9.0 (24.5)	12.8 (34.7)	15.0 (40.9)	36.8	34.2 (30.9)	66.2 (60.0)	10.0 (9.1)	110.4
ERDB	12.3 (59.0)	8.4 (40.6)	0.1 (0.3)	20.8	46.0 (34.4)	69.0 (51.5)	18.9 (14.1)	133.9
PAWB	10.9 (48.7)	9.7 (43.6)	1.7 (7.7)	22.3	40.7 (26.8)	73.3 (48.3)	37.9 (24.9)	151.8
Regional Operations	705.0 (55.2)	463.6 (36.3)	109.7 (8.6)	1,278.3	2,487.8 (69.8)	749.8 (21.1)	324.3 (9.1)	3,562.0
Project	119.7 (4.8)	551.5 (22.1)	1,827.9 (73.1)	2,499.1	118.3 (8.5)	340.7 (24.4)	937.4 (67.1)	1,396.4

Note: Figures in parenthesis are percentage ratios to row total

* Excludes NAMRIA

Table 19. Allocation of agriculture-related expenditures of LGUs by type of service and type of expenditure, 1998 (Mn pesos).

	All LGUs	Provinces	Municipalities	Cities
Agricultural Services	2,786.0	908.8	1,548.9	328.4
PS	(90)	(91)	(92)	(77)
MOOE	(9)	(8)	(7)	(18)
CO	(1)	(1)	(1)	(5)
Veterinary Services	805.8	224.3	8.7	572.7
PS	(52)	(87)	(77)	(38)
MOOE	(47)	(11)	(15)	(62)
CO	(1)	(2)	(7)	(1)
Natural Resources	225.2	139.6	13.7	71.9
PS	(83)	(88)	(70)	(74)
MOOE	(15)	(11)	(26)	(20)
CO	(2)	(1)	(4)	(6)
TOTAL	3,817.1	1,272.7	1,571.3	973.0
PS	(81)	(90)	(91)	(54)
MOOE	(17)	(9)	(8)	(44)
CO	(1)	(1)	(1)	(3)

Note : Figures in parentheses are percentage share to column total.

Table 20a. Distribution of budgetary allocations for ANRE R&D by type of expenditures across agencies, 1997 (%).

	PS	MOOE	CO
DA	61 *	33 *	5 *
DENR	57	31	12
ERDB	61	23	16
ERDS	53	43	4
PAWB	0	100	0
DOST			
PCARRD	51 ^a	47 ^a	3 ^a
PCAMRD	40	58	2
FPRDI	51	17	32
SCUs	68	32	1
UPLB	73	27	0
UPVISAYAS	24	42	34
UPMSI	55	45	0
Others	64	35	1
SEAFDEC	73	17	10
Total	61	32	7

^a based on 1996 actual expenditure of PS, MOOE, CO.

Source: David, Cristina C. et. al. "Philippine Agricultural and Natural Resource Allocation Issues and Directions for Reforms", Discussion Paper No. 99-33, Philippine Institute for Development Studies 1998.

Table 20b. Distribution of budgetary allocation for agricultural R&D by type of expenditures across DA agencies, 1997 (%).

	PS	MOOE	CO
Regional Offices	76	24	0
Staff Bureaus	59	38	4
BAR ^a	34	66	0
BAI ^a	54	46	0
BFAR ^a	36	64	0
BPI	70	30	0
BPRE	64	24	12
BSWM	64	36	0
Attached Agencies	55	37	8
CRDI	78	20	2
FIDA	61	34	5
NFA	82	18	0
NIA	69	34	0
NTA	91	9	0
PCC	29	47	23
PCA	73	25	2
PHILRICE	39	51	10
SRA	76	24	0
DA	61	33	5

^a based on 1996 actual expenditure of PS, MOOE, CO.

Source: David, Cristina C. et. al. "Philippine Agricultural and Natural Resource Allocation Issues and Directions for Reforms", Discussion Paper No. 99-33, Philippine Institute for Development Studies 1998.

Table 20c. Distribution of expenditures for ANRE R&D by type of expenditures in selected SCUs, 1997 (%).

	PS	MOOE	CO
SCU	68	32	1
UPLB	73	27	0
UPVISAYAS	24	42	34
UPMSI	55	45	0
DMMSU	62	34	4
MMSU	72	28	0
PSU	82	18	0
BSU	94	6	0
CLSU	53	47	0
DSAC (CvSU)	-	-	0
VISCA	63	37	0
USM	16	84	0
MSU NAAWAN	89	11	0
BU	30	70	0
CSSAC	50	50	0
CMU	89	11	0
ISU	63	37	0

Source: David, Cristina C. et. al. "Philippine Agricultural and Natural Resource Allocation Issues and Directions for Reforms", Discussion Paper No. 99-33, Philippine Institute for Development Studies 1998.

Table 21. Total available appropriations and unused/unobligated appropriations by agency, 1995-1998 (P million). *

	1996			1997			1998		
	Total available (1)	Unused/ Unobligated (2)	2/1 (%)	Total available (1)	Unused/ Unobligated (2)	2/1 (%)	Total available (1)	Unused/ Unobligated (2)	2/1 (%)
DA	22,025	6,735	30.6	29,543	6,228	21.1	21,438	4,652	21.7
OSEC **	19,048	6,505	34.2	25,080	5,709	22.8	16,894	4,266	25.3
NAFC	455	159	35.0	1,142	394	34.5	871	254	29.1
PCCent	232	44	19.1	213	67	31.6	213	22	10.5
All others	2,290	27	1.2	3,109	57	1.8	3,461	110	3.2
DAR	3,408	378	11.1	3,884	359	9.2	4,459	318	7.1
DENR	6,915	1,460	21.1	10,407	1,183	11.4	7,520	1,362	18.1
DOST	357	74	20.7	389	55	14.1	404	78	19.2
PCCARD	141	18	12.8	160	16	9.8	180	50	27.9
PCAMRD	20	1	6.3	24	5	20.8	52	26	50.6
FNRI	95	30	31.2	102	13	12.6	88	0.5	0.5
FPRDI	101	25	24.6	103	21	20.5	84	0.7	0.9
TOTAL	32,704	8,648	26.4	44,223	7,825	17.7	33,821	6,410	19.0

* Agencies specified are those whose budgets are large and ratio of unused/unobligated fund are more than 10%.

** Includes for all new irrigation projects (local and foreign funded); total available appropriations for NIA, separately, are to support operation and maintenance, and amortization of foreign loans.

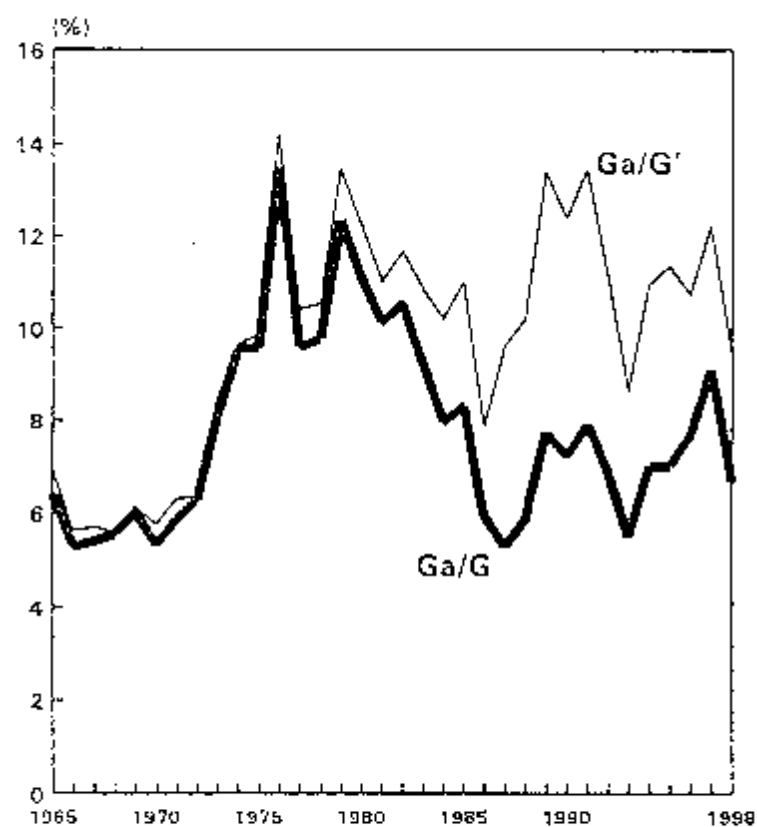
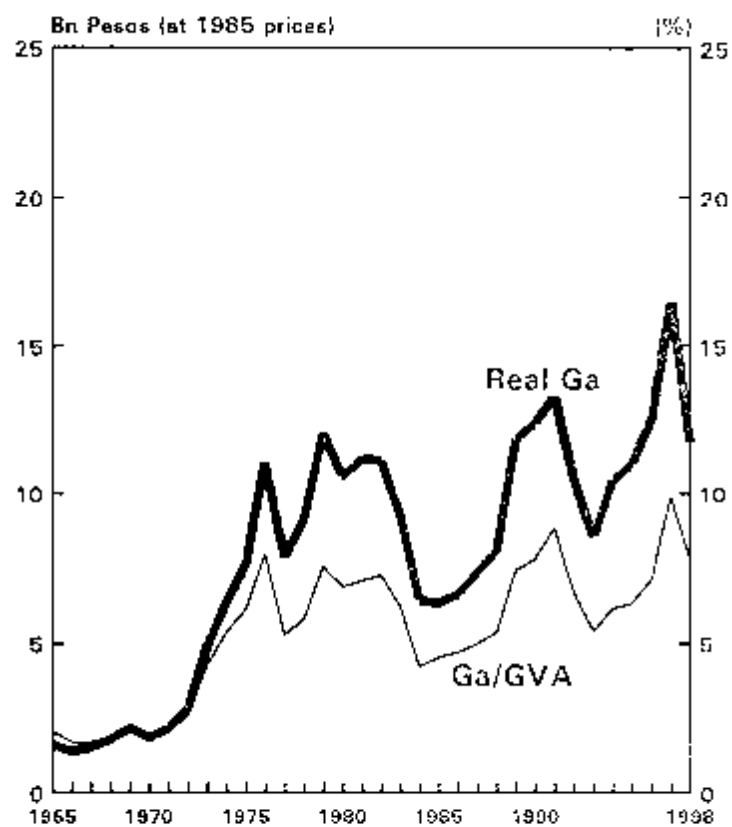


Fig 1. Trends in real government expenditures in agriculture (Ga), its ratio to gross value added in agriculture (GVA), total government expenditures (G), and G less debt service (G').

Note: Totals exclude SCUs.

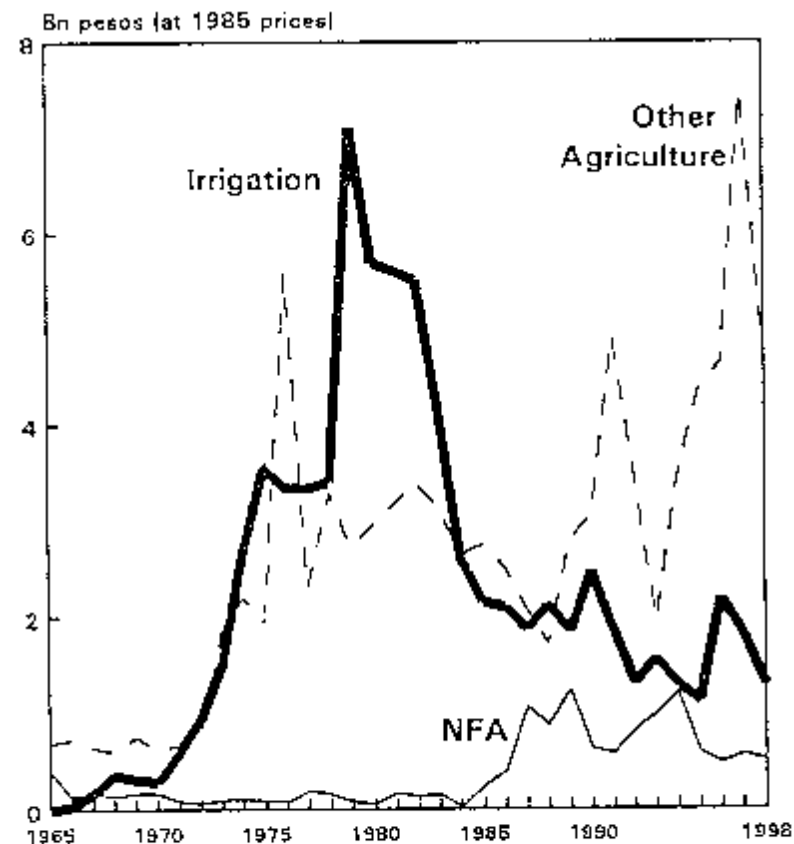
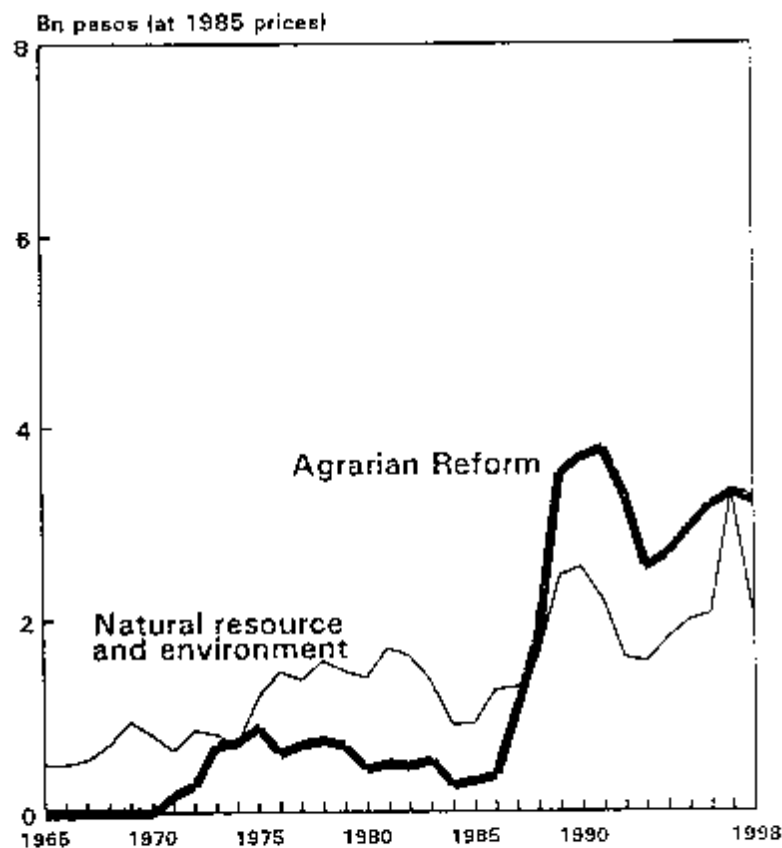


Fig 2. Trends in real government expenditures in agriculture by policy instrument.

Note: Totals exclude SCUs.