

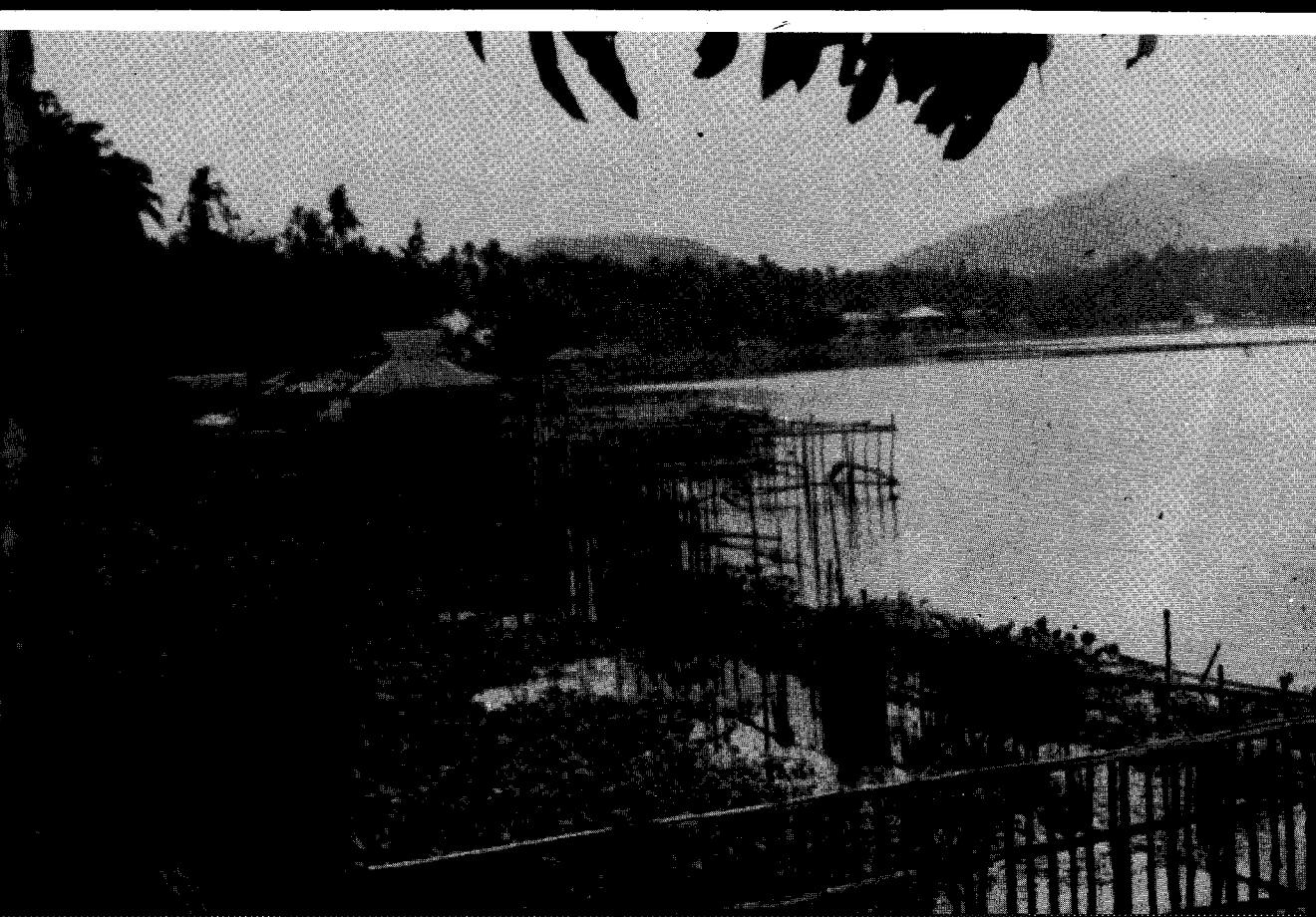
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HISTORICAL EVOLUTION OF REGIONAL DEVELOPMENT POLICY IN THE PHILIPPINES *

Benjamin V. Cariño

INTRODUCTION

In the Philippine context, the regional approach to development has been given official recognition since the early 1970s as an important element in the national development effort. Such an approach to development has been envisioned as a response to such development concerns as increasing socio-economic disparities between urban and rural areas in the country, widening inter-regional differentials in terms of various measures of welfare, and inadequate social and physical infrastructures in various "lagging" regions in the country. The regional development approach, in other words, has been viewed as a tool for rectifying the dualistic nature of the Philippine landscape and economy, i.e., reduce socio-economic inequalities among regions which have apparently emerged in the development process itself, due to self-reinforcing patterns of growth which tend to concentrate resources in certain regions, and in the hands of a select few in the country.

The regional approach to development was thus expected to correct a weakness in the planning system of the country which, in the past, has been characterized by the unfettered pursuit of higher GNPs, even with the realization that this would bring about a greater concentration of wealth. It has been observed, in this connection, that such a strategy of pursuing

higher GNPs lies in the implicit faith that with the gradual solution of the basic problems of low incomes and inadequate growth rates, it would later be easier to cope with the problem of redistribution (Burkin, 1972). As developing countries like the Philippines have painfully discovered, however, redistribution of benefits does not necessarily follow after higher levels of growth have been achieved.

More genuine commitment to the regional development approach has emerged with the assumption to power of the Aquino government. The current *Medium-Term Philippine Development Plan (1987-1992)* explicitly states as one of its objectives the strengthening of regional institutions. Moreover, concrete steps are currently being undertaken to upgrade the capabilities of key institutional foundations of the regional development planning system.

This paper aims to trace the historical evolution of regional development policy in the Philippines. In particular, it will examine the regional development planning experience of the country in the past twenty (20) years in terms of systems, concepts and approaches. Attention will also be given to the historical forces and circumstances that shaped the nature and substance of regional development policy during that period. In the process, areas for future reforms are identified.

THE BASIS OF REGIONAL DEVELOPMENT POLICY

As previously indicated, the regional development approach has been envisioned as an instrument for rectifying the increasing socio-economic disparities among regions of the

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country. Especially in the case of the Bicol region (which is the regional focus of the study) such disparities are clearly evident. As shown in Table 1 and Table 2, the disparities between the National Capital Region (NCR) and the rest of the country in the magnitude of the Gross Regional Domestic Product (GRDP) both in absolute and per capita terms are wide. Even more significantly, such discrepancies do not seem to be decreasing, undoubtedly a reflection of the relative ineffectiveness of the regional development strategy.

The evidence provided in Table 2 dramatizes the overwhelming socio-economic imbalance between the NCR (covering Metro Manila) on one hand, and the rest of the country, on the other. In 1989, the average per capita GRDP for the country as a whole was

only P1,788.90. For the NCR, the figure was P4,285.02, more than double that of the entire country. Moreover, outside the NCR, only three (3) other regions during the same year (Regions IV, VII, and XI) had GRDPs higher than the national average. The rest had GRDPs well below the average for the entire country.

The same pattern can easily be discerned when one examines data on the incidence of poverty (Table 3). Available information reveals a higher incidence for the country as a whole (49.5 per cent) than for the NCR (31.8 per cent) in 1988. The disparities are even wider when some of the more depressed regions of the country are compared with Metro Manila. In the same year, Bicol had the highest poverty incidence of 65.3 per cent among all regions in the country.

Table 1 Gross Regional Domestic Product, by Region (million pesos, at constant prices)
1972, 1975, 1978, 1981, 1983-1989

| REGION : | 1972 | 1975 | 1978 | 1981 | 1983 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---------------|-------|-------|-------|-------|--------|-------|-------|-------|--------|--------|
| Philippines : | 56464 | 68587 | 82805 | 96104 | 100317 | 89886 | 91165 | 95484 | 102198 | 107470 |
| NCR : | 16690 | 21527 | 25729 | 30521 | 32359 | 26670 | 26619 | 28432 | 31014 | 33286 |
| Kordilyera : | | | | | | | | 1460 | 1538 | 1665 |
| Region I : | 2392 | 2710 | 3021 | 3645 | 3787 | 4006 | 4264 | 3184 | 3331 | 3430 |
| Region II : | 1805 | 1788 | 2332 | 2699 | 2585 | 2372 | 2291 | 1949 | 2041 | 2099 |
| Region III : | 4824 | 5777 | 6943 | 8517 | 8731 | 7665 | 7378 | 7679 | 8139 | 8881 |
| Region IV : | 7666 | 9348 | 11886 | 13240 | 13872 | 12916 | 13610 | 13207 | 13752 | 14331 |
| Region V : | 2040 | 2403 | 2794 | 3152 | 3336 | 3117 | 3058 | 3148 | 3350 | 3455 |
| Region VI : | 5552 | 6464 | 7066 | 7970 | 8288 | 6581 | 6346 | 6615 | 6910 | 7215 |
| Region VII : | 4013 | 4900 | 5921 | 6990 | 7098 | 6280 | 6477 | 7002 | 7531 | 8127 |
| Region VIII : | 1687 | 2009 | 2097 | 2392 | 2327 | 2271 | 2297 | 2977 | 3886 | 3185 |
| Region IX : | 1437 | 1765 | 2584 | 3259 | 3323 | 3259 | 3368 | 3630 | 3749 | 3939 |
| Region X : | 2583 | 2984 | 3903 | 4302 | 4492 | 4819 | 5004 | 5279 | 5643 | 5971 |
| Region XI : | 3817 | 4768 | 5813 | 6358 | 6564 | 6419 | 6678 | 7123 | 7378 | 7725 |
| Region XII : | 1958 | 2144 | 2716 | 2979 | 3555 | 3511 | 3775 | 3799 | 3936 | 4161 |

Sources: 1972-1983 figures taken from Bicol Program Evaluation Project, 1985
 1985-1986 figures taken from the 1988 Econ. and Social Indicators, NSCB
 1987-1989 figures taken from the 1989 Phil. Development Report
 Region V figures are taken from the RPFP, Region V, 1990

Table 2 Per Capita Gross Regional Domestic Product, by Region (at constant prices)
1975, 1981, 1983, 1985-1989

| REGION : | 1975 | 1981 | 1983 | 1985 | 1986 | 1987 | 1988 | 1989 |
|---------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Philippines : | 1630.31 | 1971.20 | 1972.10 | 1643.25 | 1627.80 | 1664.79 | 1740.43 | 1788.90 |
| NCR : | 4331.39 | 4863.90 | 4947.86 | 3824.20 | 3723.98 | 3866.20 | 4101.84 | 4285.02 |
| Kordilyera : | | | | | | | | |
| Region I : | 829.00 | 1006.07 | 1008.79 | 1026.39 | 1071.63 | 785.01 | 805.95 | 814.34 |
| Region II : | 924.99 | 1204.37 | 1077.53 | 940.90 | 886.61 | 736.03 | 752.58 | 755.58 |
| Region III : | 1372.21 | 1724.79 | 1680.33 | 1404.88 | 1319.86 | 1341.08 | 1388.20 | 1479.67 |
| Region IV : | 1792.87 | 2195.32 | 2069.52 | 1821.98 | 1867.71 | 1763.76 | 1787.83 | 1814.74 |
| Region V : | 752.35 | 907.05 | 891.03 | 794.75 | 762.21 | 767.06 | 798.00 | 808.57 |
| Region VI : | 1559.09 | 1668.41 | 1703.25 | 1292.42 | 1218.74 | 1242.72 | 1270.45 | 1298.60 |
| Region VII : | 1446.71 | 1820.79 | 1760.42 | 1497.02 | 1514.03 | 1605.23 | 1693.88 | 1793.64 |
| Region VIII : | 772.69 | 836.95 | 785.09 | 739.02 | 734.10 | 934.69 | 1198.27 | 964.86 |
| Region IX : | 861.82 | 1393.33 | 1215.44 | 1138.32 | 1150.27 | 1212.42 | 1224.76 | 1259.27 |
| Region X : | 1289.54 | 1605.72 | 1491.37 | 1516.36 | 1533.09 | 1575.82 | 1641.36 | 1693.42 |
| Region XI : | 1756.17 | 1922.01 | 1800.82 | 1673.36 | 1697.51 | 1766.62 | 1785.58 | 1825.38 |
| Region XII : | 1035.75 | 1283.50 | 1441.02 | 1351.42 | 1416.51 | 1390.05 | 1404.71 | 1448.82 |

Sources of basic data: National Statistics Office

National Statistical Coordination Board

National Economic and Development Authority

HISTORICAL EVOLUTION

It is in the context of the imbalances among the regions that the regional development program of the country was formulated. The evolution of the regional planning approach in the Philippines may roughly be divided into four (4) periods: (1) the Pre-1970 period which may be described as the period before regional planning was consciously thought of as a formal approach to development; (2) 1970-1975 which may be referred to as the preparation years for regional development planning; (3) 1975-1986 which may be described as the years of integration; and (4) Post-1986 as the period of decentralization and autonomous regions. The various systems, concepts and processes that were prominent during each period are elaborated on in the sections that follow.

1. Pre-1970: Pre-Regional Planning Period

During this period, the goals, concepts and approaches of regional planning have not occupied center stage in development planning and implementation. As late as 1969, evaluation of planning efforts in the country by the Director General of the now defunct Presidential Economic Staff (PES) made no reference to a region, or indeed to the spatial dimension of development planning (Mapa, 1969). Planning during this period was heavily macro-economic in character, i.e., while plan documents were clear in defining the magnitude of investment requirements of various sectors, they were often silent on where, geographically, such investments should be made.

This lack of spatial emphasis is also repeated in the UN (1970) document making

**Table 3 Incidence of Poverty in the Philippines
by Region, 1988**

| REGION | Total No. of Households | Poverty Threshold (Pesos) | Poverty Incidence (%) |
|-------------|-------------------------------|---------------------------------|-----------------------------|
| Philippines | 10,666.2 | 2,709.00 | 48.5 |
| N C R | 1,430.8 | 4,037.00 | 31.8 |
| Kordilyera | 213.6 | | |
| Region I | 624.7 | 2,597.00 | 47.5 |
| Region II | 437.9 | 2,576.00 | 48.9 |
| Region III | 1,038.2 | 2,881.00 | 39.6 |
| Region IV | 1,421.0 | 2,832.00 | 49.3 |
| Region V | 738.0 | 2,443.00 | 65.3 |
| Region VI | 957.0 | 2,654.00 | 61.8 |
| Region VII | 829.6 | 2,173.00 | 54.6 |
| Region VIII | 598.5 | 2,263.00 | 60.5 |
| Region IX | 539.2 | 2,289.00 | 52.0 |
| Region X | 606.8 | 2,439.00 | 51.5 |
| Region XI | 737.8 | 2,763.00 | 52.2 |
| Region XII | 493.1 | 2,468.00 | 47.1 |

Sources: 1985 FIES final results
1988 FIES preliminary results

proposals for the Second Development Decade. For most countries, only sectoral plans were mentioned and area/geographic considerations within any country were not paid any attention at all. In the same year, Belinda Aquino asserts that the regional planning "concept has not been sufficiently integrated in the national planning process and has for the most part remained a separate endeavor. It is a fledgling activity and...not...a major policy issue" (Aquino, 1969).

During this period, the concept of a "region" has not been clearly defined nor consistently delineated. In some instances, a "region" is simply defined as a group of areas with geographic contiguity and ethnic and linguistic similarities (Aquino, 1969). In other instances, a region is an area with

certain resource endowments (e.g., river basin, political/economic centrality as in a metropolitan area). Still in other cases, a region is an area encompassed by a special development authority, and as such, it becomes a planning unit. Prior to 1970, however, no valid standards evolved "to fully determine boundaries of regions with due consideration to geography and natural resources, as well as political, social and economic factors for the purpose of developing viable development areas" (Samonte, 1968),

The most common view of a region during the period, however, is that of an "administrative" region. In this context, the definition of a region is a device for the administration of field operations. It should be noted, in this connection, that different

sectoral agencies used varying regional delineations often in consideration of resource and personnel constraints. However, despite the absence of a formal definition of a region and the lack of emphasis on the spatial dimension of planning, some form of "regional planning" has been going on as evidenced by the following:

1.1 *Creation of the National Planning Commission*

The National Planning Commission (NPC) was established in 1950 as the only physical planning agency of the government. Its function was broadly conceived as the preparation of "general" plans for regional areas for the purpose of coordinating the various plans of urban areas within the region. Without a clear mandate, however, the NPC quickly became a moribund agency and its accomplishments have been confined to the preparation of physical plans for a few urban areas in the country (Institute of Planning 1972).

1.2 *Proliferation of Multi-Purpose Regional Development Authorities*

The period was also characterized by the proliferation of multi-purpose regional development authorities. Prominent among these is the Mindanao Development Authority created in June, 1961 covering the islands of Mindanao, Sulu and Palawan as a "broad planning, initiating and co-ordinating agency." It may also "engage in industrial, agricultural and other enterprises of a pioneering nature, or beyond the scope, capacity or interest of private entrepreneurs" (Samonte, 1968). The creation of MDA generated a lot of expectations but of its authorized capital of P300 million, only P9.2 million has been released as of 1967. Its accomplishments are likewise limited and it has failed to produce a comprehensive plan for the region. Aquino

(1969) attributes its problems to unrealistic functions, ambiguous objectives, limited financing, ill-defined planning region and political interference.

Other special development authorities covering the Bicol region, Mountain Province, Mindoro, Southeast Samar and Ilocos Sur have been patterned after the MDA. Not surprisingly, they more or less suffered the same fate. Of these special development authorities, only the Mountain Province Development Authority became fully operational and received funds as of 1973 (Santiago, 1973).

1.3 *Creation of Resource-Based Authorities*

Also ante-dating the formal adoption of the regional planning approach are various resource-based authorities. Foremost among these is the Laguna Lake Development Authority (LLDA) which, as its name implies, has been created to manage and plan probably the most strategic natural resource of the country—the Laguna de Bay. On paper, the LLDA is a very powerful body. Its mandate includes the approval of plans in addition to its authority to reclaim or acquire bodies of land from the lake in pursuance of its objectives. It has also been given corporate functions, including an authority to engage in business enterprises. Like the MDA, the LLDA also did not receive sufficient financial and political support and its accomplishments to date fall way short of its mandate.

Another resource-based authority that was created during the period is the Central Luzon-Cagayan Valley Authority (CLCVA). Established in 1961 as an agency for river basin development, this agency is a close copy of the Tennessee Valley Authority. As such, the concern for regional development is seen in providing electric

power and irrigation, promoting navigation and engaging in flood control. Like the other Authorities, CLCVA also did not receive sufficient funds and political support, and undertook much smaller projects than originally envisioned.

There were other smaller special purpose authorities that were created during the period. These include the Tagaytay Development Commission (1955), the Hundred Islands Conservation and Development Authority (1963), and the San Juanico Strait and Tourist Development Authority (1964). The functions of these authorities were more limited and confined to the development of resources to attract tourism in the area (Samonte, 1968). None of these had received any financial releases or formally organized as of 1973.

On balance, the experience of special development authorities has been dismal. For various reasons, their accomplishments have fallen short of expectations. Echoing the findings of a report of the Senate Committee on Economic Affairs, Santiago (1973) observed that existing operations of regional development authorities "have consisted mainly of feasibility studies, surveys and pilot projects."

2. 1970-1975: The Preparation Years

This period is marked by the Philippine government's official adoption of the regional approach to development planning. During these years, systems and procedures were developed for the full institutionalization of regional development planning in the country. The major developments and activities undertaken during this period were the following:

2.1 Regional Delineation of the Country

Full commitment to regional development became clearly manifested

when the Integrated Reorganization Plan (IRP) was adopted in 1972. As observed in another report, regionalization in the country has moved in two directions: (a) regionalization of the administration of national sectoral services to bring the government closer to the people; and (b) re-gionalization of the planning process to provide a more rational framework for regional planning (ADB, 1990).

The IRP originally delineated the country into 11 administrative regions. At present, however, there are thirteen (13) regions in the country, with the two regions being added by virtue of Presidential Decrees. Several criteria were used in the delineation of the regions. These are:

- a) physical characteristics or geographic features (e.g., terrain, climate, soil fertility, land area, population, etc.);
- b) administrative and plan implementation factors (e.g., number of provinces and cities, commonality of administrative and planning regions, availability of fiscal resources, etc.);
- c) economic development factors (e.g. on-going and planned development projects/programs, transportation and communication facilities, etc.); and
- d) ethnic and socio-cultural factors (cultural and ethnic homogeneity, literacy, availability of schools, etc.)

Related to the delineation of the regions is the identification of regional capitals. These regional capitals were to serve not only as sites of regional offices but also as functional poles from which growth for the region as a whole would emanate. The following is the present regionalization scheme (see also Figure 1).

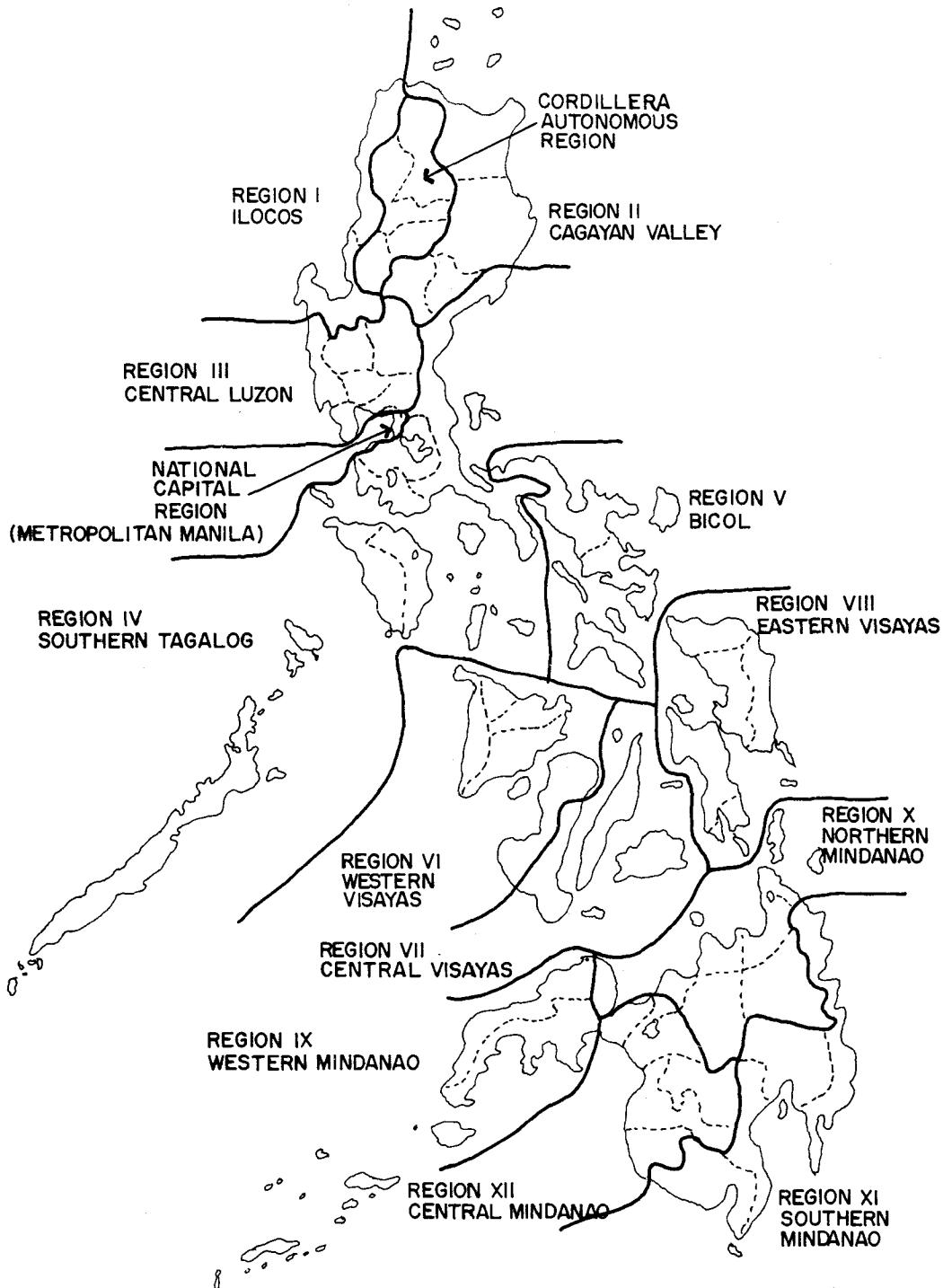


FIG. I. REGIONAL DELINEATION OF THE PHILIPPINES

| <i>Regions</i> | <i>Capitals</i> |
|-------------------------------|------------------------|
| National Capital Region | Metro Manila |
| Region 1 — Ilocos | San Fernando, La Union |
| Region 2 — Cagayan Valley | Tuguegarao, Cagayan |
| Region 3 — Central Luzon | San Fernando, Pampanga |
| Region 4 — Southern Tagalog | Batangas City |
| Region 5 — Bicol | Legazpi City |
| Region 6 — Western Visayas | Iloilo City |
| Region 7 — Central Visayas | Cebu City |
| Region 8 — Eastern Visayas | Tacloban City |
| Region 9 — Western Mindanao | Zamboanga City |
| Region 10 — Northern Mindanao | Cagayan de Oro City |
| Region 11 — Southern Mindanao | Davao City |
| Region 12 — Central Mindanao | Cotabato City |

2.2 Creation of RDCs and NROs

Easily the most significant feature of the Integrated Reorganization Plan was the creation of the Regional Development Councils (RDCs) to undertake regional planning in each region. The RDC represents a unique administrative entity in that there is no corresponding government at the regional level. As a planning and deliberative body, however, the RDC brings together directors of regional line agencies, local government executives, representatives of the private sector and others to deliberate on development problems and their solutions within the region. It may usefully be noted, in this connection, that one of the weaknesses of the RDC as originally conceived is that it had practically little or no budgeting powers. The resource allocation function remains with the national line agencies and the local government units over which the RDCs have no direct control and supervision.

The creation of the RDC has been backstopped by the co-evolution of what was conceived as its technical arm, the NEDA (acronym for the National Economic and Development Authority) Regional Offices (NROs). Significantly strengthened in recent years, the NROs constitute a critical element in the building and insti-

tutionalization of the regional development planning system. Other characteristics of the institutionalization process include the building of a Regional Development Staff within the NEDA central office which performs a policy guidance and coordinating function among NROs, and related programming and monitoring roles which the NEDA and NROs eventually acquired.

2.3 Emphasis on Physical Framework Planning

During this period, the government displayed conspicuous awareness of the spatial dimension of development planning. The emphasis was to translate sectoral objectives and programs into physical and locational targets. A clear manifestation of this emphasis was the preparation of a National Physical Framework Plan and framework plans for two strategic "regions" of the country: the Manila Bay Region, centered on Metro Manila and includes the provinces surrounding Manila Bay, and the Mindanao region which has been considered as the "land of promise" because of its rich natural and land resources.

The importance of these framework plans in the evolution of regional development planning in the country cannot be overemphasized in that they served as useful guides in the comprehensive development planning of regions and other areal components of the country. The national physical framework plan in particular provided an interregional perspective which identifies the existing imbalances among the regions in terms of resources and potentials. In the context of the framework plans, regional development planning was conceived as a process of integrating economic, social and administrative goals into a common physical framework.

3. 1976-1986: The Integration Years

During these years, planning structures, methods and systems were in place. Regional planning was recognized as a formal tool for area and national development. Also during this period, the RDCs and the NROs became fully operational. The key concepts that have characterized this period are integration and coordination, i.e., the need to relate various sectoral activities in geographic space was viewed increasingly as critical to the development process.

A number of planning initiatives and policy shifts characterized this period. These include: (1) integrated area development, (2) human settlements approach, (3) intensified industrial dispersal efforts, and (4) shift from framework planning to investment programming.

3.1 Integrated Area Development

Development plan documents that were prepared during this period gave prominence to regional development and industrialization as major development objectives. Integrated Area Development (IAD) projects were to be the major instruments to trigger the growth especially of lagging regions in the country. This approach required the integration of economic, social, physical and financial plans into a common plan for an area. For this purpose, IAD boundaries were drawn to effectively link rural production areas with market towns and urban centers, thereby enhancing access to product and factor markets.

In support of the IAD projects, the National Council on Integrated Area Development (NACIAD) was created under the Office of the President. The NACIAD was envisioned as a national coordinating body which provided technical support to the IAD projects in various regions of the country. At the field level, IAD projects were supervised by an indepen-

dent Project Management Office. One of the apparent drawbacks of this independent set-up was the tendency of IAD management to bypass regular planning bodies like the NEDA, the RDCs and the local government units. In fact, it is in recognition of this consideration that the NACIAD was abolished in 1986 and its functions transferred to NEDA. Consistent with the intensified efforts toward decentralization, the field operations of the IAD projects have now also been placed directly under the supervision of the local government units.

3.2 Human Settlements Approach

This period was also marked by the formal launching of the human settlements approach to development, following the creation of the Ministry of Human Settlements (MHS). This approach was characterized by the high premium placed on the satisfaction of man's "basic needs". Basic services were envisioned to be made available to everyone through a network and "hierarchy" of human settlements. Regional development, in this respect, was viewed as a function of the development of local communities and a region, from this perspective, was simply a system of smaller human settlements.

Emphasis on this approach gave rise to a regional policy of substantially increasing investments in urban centers outside Metro Manila (e.g., Cebu, Illoilo, Bacolod, Davao, Cagayan de Oro, etc.) with a view towards developing their infrastructure in order to encourage the location of economic activities in these areas. Various programs in agriculture, rural credit and financing, fisheries development, etc. were likewise undertaken by the now defunct Ministry of Human Settlements. More recently, the

Kilusang Kabuhayan at Kaunlaran (KKK), a program to mobilize private entrepreneurs to engage in income-generating livelihood projects throughout the country, was identified as the major support program to reduce socio-economic disparities among regions. The implementation of this program lost momentum, however, following the abolition of the Ministry of Human Settlements (MHS) in 1987.

3.3 *Industrial Dispersal Policy*

A new element in development plan documents during this period was the move to promote greater industrial dispersal. This was to be achieved through the establishment of industrial estates and export processing zones in a number of regions, and through the policy of developing alternative urban growth centers. Various incentives have been granted by the Board of Investments (BOI) to private investors and industries to locate in areas which were in need of employment-generating activities.

In more recent years, the industrial dispersal policy was somewhat modified to emphasize balanced agro-industrial development. Such a strategy implied policy reforms to mobilize the full potentials of the agricultural sector and through forward linkage effects, trigger the growth of industries which provide agricultural inputs and at the same time serve as outlets for agricultural products.

3.4 *Shift from Framework Planning to Investment Programming*

Also during this period, the regional development planning system of the country shifted from an early emphasis on the formulation of framework plans to the more recent concern for investment programming and proj-

ect development. Such a shift was facilitated by a number of administrative measures which were taken to further strengthen the RDC. Through several administrative issuances, the RDCs were given powers to coordinate program and project implementation, and to recommend budgetary priorities for the regions.

In line with this policy reform, regional line agencies were to formulate their budget priorities in conformity with the priorities established by the RDC. The RDCs could then review the budget proposals of the line agencies and submit their own recommendations to the national offices. To further institutionalize this process, the RDCs were further strengthened by Executive Order No. 589 in 1980 which gave them an official mandate to adopt a Regional Development Investment Program (RDIP). The RDIP translates the regional framework plan into a package of programs and projects which has become the basis for public sector resource allocation in the regions.

4. Post-1986: Period of Decentralization and Autonomous Regions

Despite the innovations that were introduced in the previous periods, the general perception is that the move towards regionalization was often overwhelmed by "reconcentration" processes in the Marcos regime. Indeed, while substantive progress in regionalization was made, political commitment to the concept in the old regime was questionable and that, in reality, decision-making processes were concentrated at the center.

More genuine political commitment to regionalization and decentralization is, however, now apparent. The early years of the Aquino government has, in fact, been characterized by the intensified efforts toward decentralization and the creation of autonomous regions.

4.1 Decentralization

There had been several moves to strengthen regional units. The completed reorganization of government in 1989 has generally reduced the number of personnel at national vis-a-vis regional levels. Based on raw data from the DBM-CSC Joint Report (January 1989), of 25 national government offices presenting statistics for their regional units, 18 had reduced the ratio of their central to regional personnel, three had increased it, and in four, there was no change.

In addition to change in number of units and personnel, some departments have delegated more functions to regional units. The Department of Budget and Management (DBM), for instance, has adopted a new disbursement scheme which allows direct releases of funds to its regional units. The Department of Health (DOH) has adopted an even more radical change in that it has authorized provincial and regional levels to prioritize budgets and to allow direct releases to them. In the Department of Public Works and Highways (DPWH), regional directors can approve awards and contracts up to P3 million and similar authority to lower level engineers of up to P150,000.

Devolution of authority to lower levels can also be measured by the proportion of fund allocations from central to local levels. The 1988 budget showed that 24 per cent are direct allocations for the operations of the line departments. The biggest portion of these is directed to education (87 per cent of the Department of Education budget goes to the regions), health (69 per cent) and infrastructure projects (over 80 per cent). At least for DPWH, such direct allocations are higher than they were during the Marcos period and do sig-

nal a more serious effort at decentralization (Carino and Associates, 1985).

4.2 Reorganization of RDCs

In addition to these innovations, the Regional Development Councils were reorganized through Executive Order No. 308 in 1987. Such a reorganization of the RDCs provided for: (a) streamlining of Council membership and functions, (b) institutionalization of private sector participation, and (c) greater interaction of various sectors of society through the creation of a Regional Assembly – a consultative body composed of members of Congress, representatives of line agencies, members of the RDC, and representatives of non-government organizations (NGOs). Among others, the Assembly serves as a forum for crystallizing ideas, suggestions and recommendations for regional development, including priorities for programs, projects and activities. In line with this reorganization, Provincial Development Councils, Municipal Development Councils, and Barangay Development Councils were similarly reorganized to promote active participation and support of various government agencies and the private sector at various levels.

4.3 Autonomous Regions

Following the Tripoli Agreement in 1976, then President Marcos created two autonomous regions in Mindanao out of the four administrative regions in that island. These were the two with predominantly Muslim populations: Region 9, Western Mindanao including the Sulu Archipelago, and Region 12, Central Mindanao covering the Lanao and Cotabato provinces. During the Marcos years, however, the two regions were only "autonomous" on paper because they were notably

lacking in powers and authority to make autonomy a reality.

The new Constitution of 1987 recognized not only the desire of the minorities in Mindanao but also those of the minorities in northern Luzon for handling their own affairs. Within the framework of Philippine sovereignty, the Constitution gave a mandate for organic acts for the autonomous regions in "Muslim Mindanao and the Cordilleras". In line with this mandate, Republic Act 6734 provided for an Organic Act for the autonomous region in Muslim Mindanao in 1989. Earlier, in 1987 Executive Order No. 720 created a Cordillera Administrative Region which shall administer the offices of government in that region. Both acts established the autonomous regions as a territorial and political subdivision of the state. The regions would have a presidential form of government, with a governor as chief executive and a regional legislative body.

In the plebiscites that followed, only four provinces of Mindanao and one province of the Cordilleras (Ifugao) opted to be a part of their respective regions. The government is poised to create these political subdivisions anyway, without prejudice to another plebiscite in the future under which the other qualified areas may vote to be included.

Aside from questions internal to the proposed autonomous regions, the policy raises questions affecting the rest of the country as well. For instance, it has revived the issue of federalizing the republic, a structure that may be better suited to an archipelago than the highly centralized unitary system that now exists. The question has been raised why only areas with cultural communities or those with separatist tendencies should enjoy autonomy, if indeed bringing the government closer to the people would be the way of democratic develop-

ment. Nevertheless, many observers also feel that giving autonomy may lead to the dismemberment of the nation in a weak state where centralization has not really worked. In addition, recent converts to the federalist idea seem to be pursuing it as a means of exempting themselves from national policies, notably, the comprehensive agrarian reform program.

4.4 *Autonomy of Local Government Units*

Beyond administrative decentralization and the move towards autonomous regions, a recent development which would have considerable influence on the future of sub-national planning is the proposal to grant more autonomous powers to local government units. Such a proposal basically entails the devolution of substantial planning and implementation powers to LGUs.

Such a proposal has been viewed by many as a welcome development since it will bring the planning and decision-making process even closer to the "grassroots". Scholars and policy makers alike, also see local government units as more viable and effective planning and decision-making machineries in that they (unlike the regions) represent actual levels of government. In many ways, the devolution of powers to LGUs could reduce the functions of the regional level institutions to the formulation of policy guidelines, monitoring, and the setting of planning and implementation standards for local government units.

PROSPECTS FOR THE FUTURE

As shown in the preceding historical documentation, the systems and procedures for regional development planning in the Philippines have now been institutionalized. A major prob-

lem in regional policy implementation, however, is the apparent weakness of the institutional framework for regional development. The Regional Development Council (RDC) continues to be largely a planning and "coordinative" body. Although attempts have been made to strengthen the RDC in recent years (including the structuring of its membership), it continues to have little resource allocation and implementation authority. The spatial and geographic planning orientation of the RDC has to reckon with an accounting and budgeting system that is basically sectoral in character. As sectoral priorities of national agencies are often not consistent with regional priorities, a gap between planning on one hand, and implementation on the other, exists. A complicating factor is the fact that the "region" as officially defined does not correspond to a political unit of government. It is, in fact, in this context that questions have been raised as to whether the region or a lower level political unit (such as the province) is the more appropriate level for development planning.

The above question is partly answered by the proposal to grant more autonomous powers to local government units. At the same time, questions have been raised in regard to the capacity of LGUs to effectively exercise such powers. On the whole, however, the move to further devolve powers to LGUs as a means of enhancing people participation in the planning and decision-making processes must be sustained and supported. In view of questions raised as to whether capacity now exists at local levels to warrant further decentralization, such a move must be complemented with a comprehensive support program for capacity building on various aspects of planning and implementation (e.g., budgeting, project identification, feasibility studies, investment programming, etc.) and local institutional development.

To further support the development of local government units, the national government should gradually deconcentrate most of its policy guidance and technical assistance functions to regional institutions. For most local government units, the national government in Manila is geographically too far and inaccessible.

In pursuance of this policy, national line departments must delegate to their regional offices more substantive and administrative authority. The activities of the RDCs must likewise be reoriented towards becoming the primary institution from which technical assistance to local government units and support systems for the decentralization of government functions would emanate.

We also noted in the foregoing discussion that despite the adoption of the regional development approach to development, the socio-economic gaps among regions, and especially between the NCR and the rest of the country has persisted. Many scholars in large part have attributed such a phenomenon to the impact of macroeconomic policies which have tended to negate the intent of regional development policy (see Reyes 1983; Medalla 1982). Regional policy pronouncements, on one hand, were clearly biased for the more depressed rural areas in the country. National economic policies (e.g., trade, industrial, monetary and credit policies) of the government, however, have been shown to be biased for urban areas (particularly the NCR) and the industrial sector. Beyond institutional reforms, therefore, reforms in the macroeconomic policies of the government are necessary to enhance the effectiveness of the country's regional development program.

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PARTICIPATORY PLANNING APPROACHES TO DEVELOPMENT: THE PHILIPPINE RURAL EXPERIENCE

Ruth Ammerman Yabes

INTRODUCTION

Participatory approaches to development planning have been proposed and discussed as an alternative to standard blueprint plans for over a decade. Participation and participatory planning literature includes four key perspectives: 1) liberal, 2) conservative, 3) structuralist, and 4) critical or radical. This paper examines these four viewpoints and evaluates Philippine participatory rural development through them.

Planners, as defined in this paper, include agency staff who are planners by profession and other persons involved in the planning process. This definition also considers engineers, administrators and project managers as planners. Planners act as collectors of information needed by all concerned with or affected by project development activities. They have access to data not readily available to users.

The process of project development alone involves the exchange or withholding of ideas and information between project staff and users. With participatory planning, planners can conduct activities—meetings, interviews, informal dialogues aimed at disseminating as much information to project users (as project options, possibilities, consequences and liabilities) and helping them participate in planning.

The field of development planning has extensively examined these concepts as well as the potential for participation and participatory planning.

PARTICIPATORY DEVELOPMENT SPECTRUM

As mentioned earlier, literature presenting the concept of participation and participatory planning views the phenomenon from four perspectives, namely: 1) liberal, 2) conservative, 3) structuralist, and 4) critical/radical.

The liberal view is the starting point for the discussion of the role of participation in development. One of the problems of development planning frequently discussed during the 1960s and 1970s was the lack of participation of project recipients. From this arose the school of practice and study that was interested in the lack of participation, and countering the conventional approach, it moved to involve the beneficiaries in development. In other words, "participation of all people is both the means and the end of development itself" (Owens and Shaw, 1972). Others from the liberal wing of development planners are Cohen and Uphoff (1977), D. Korten and Klauss (1984), Cernea (1985), Uphoff (1986), de los Reyes and Jopillo (1986), F. Korten (1982), Montgomery (1988), and Yabes (1990). Doubts regarding this liberal concept of participation have been expressed from the right and from two positions on the left.

A second view of participation is from the right, where Huntington and Nelson (1976) take a more political view of participation. They include "any activity by private citizens *designed* to influence governmental decision-making", whether or not such activity has that effect, in their definition of political parti-

pation. Autonomous and mobilized participation are also included. They feel that too much participation is dangerous. They fear that participation might interfere with government and its decision-making processes based on rational structure, and thus, possibly hinder development. For these political scientists, it may not be in the best interest of society to involve uninformed and uninterested men and women in political participation, because that involvement might result in instability. This was the case of the rise of Hitler, where participation existed under conditions of coercion and intimidation (Pateman, 1970).

A third perspective, which also expresses doubts about participation, is taken by those with structuralist objectives. Structuralists, including Rahman (1981, 1984), Jobert (1983), and Pearse and Stiefel (1979) argue that participation and participatory development approaches are ineffective due to structural problems such as corruption, dominance of society by elites, and vested interests. From this viewpoint, participatory approaches to development are effective only after some type of structural change, such as land reform, has taken place.

The fourth standpoint is the more radical, critical perspective of Deere and de Janvry (1979), Olpadwala, (n.d.), Spitz (1978) and Mao (1971a, 1971b). This critical position about participatory approaches to development agrees with the structuralist reasons for the failure of these participatory approaches and goes further to point out that until the overriding capitalist social system and the rules of that system are changed, improvements from participatory approaches will eventually be neutralized or reversed.

Participatory Planning Typologies

In the United States citizen participation was frequently discussed by politicians, policy-makers and planners in the 1960s and 1970s in antipoverty, urban renewal and the Model Cities programs under the rubric of "maximum feasible participation" (U.S. Congress 1966a, 1966b; Plotnick and Skidmore, 1975; Movni-

han, 1970). The idealized theory of participatory democracy conflicted with the realization that not everyone can or does participate in all decision-making activities (Burke, 1968). Arnstein tried to cut through this confusion by defining citizen participation as "a categorical term for citizen power", and the "means by which they (citizens) can induce significant social reform which enables them to share in the benefits of the affluent society" (Arnstein, 1969).

Arnstein proposes a typology of eight levels on a ladder of citizen participation. Each rung corresponds to the extent of citizens' power in determining plans and programs (Figure 1). Manipulation and therapy of "participants" by powerholders are actually forms of non-participation (levels 1 and 2, respectively). Level 3 (informing), level 4 (consultation), and level 5 (placation) are forms of "tokenism" by the "haves" toward the "have-nots", where the have-nots have a voice in the process but still do not make decisions. Citizen power increases in the last three levels (6, 7 and 8) of citizen participation—partnership, delegated power, and citizen control (Arnstein, 1969).

Hollnsteiner (1976) presents a typology similar to that of Arnstein's. She identifies the participants and the modes of people's participation in the planning and management of human settlements, and distinguishes the locus of decision-making as:

- 1) The local elites making decisions (modes 1 and 2);
- 2) People involved in an advisory capacity (Modes 3 and 4);
- 3) People share or control decision-making (modes 5 and 6).

Planners can pursue participation as social or radical reformers of society. Arnstein developed her typology of citizen participation within a liberal/social reform framework. For Kraushaar (1988), social reform seeks to rectify inequities and inequalities within the existing sets of institutional and economic mechanisms, rather than to try and change the existing structure of society. He defines radical reform as an

activity that attempts to transform society, enacting changes that substantially add to the democratic rights and power of "average" citizens in their daily lives as workers and consumers.

Kraushaar suggests that the 1960s progressive planning strategies for radical reform such as community action and advocacy planning have "lost significance" for the economic realities of the 1980s. He proposes the following features as possible directions and strategies for progressive planning:

a focus on the pernicious effects of unfettered capital mobility and the uneven development it generates; the need to avoid artificial divisions in addressing urban concerns (such divisions may include regional versus national, or workplace versus community concerns); the need to build coalitions among disparate organizations and social groups; and the sustenance, as opposed to the obstruction, of routine.

In this context participation and participatory planning by individuals and progressive planners cut across the levels of community; local, re-

gional and federal government; and embrace society as a whole. Actions are proposed and taken by these progressive planners in their efforts to transform rather than reform government and economic institutions (Kraushaar, 1988).

PARTICIPATORY APPROACHES TO PHILIPPINE RURAL DEVELOPMENT

Participatory development in the Philippines parallels the four-point spectrum of the right, liberal, structural and radical participatory planning approaches. This section of the paper focuses primarily on participatory development in agricultural and rural settings in the Philippines. Three perspectives in the participatory development spectrum are reviewed: 1) mainstream/modernization; 2) liberal; and 3) radical.

Three general categories can be used to describe and evaluate agricultural development in the Philippines: 1) mainstream approaches (as

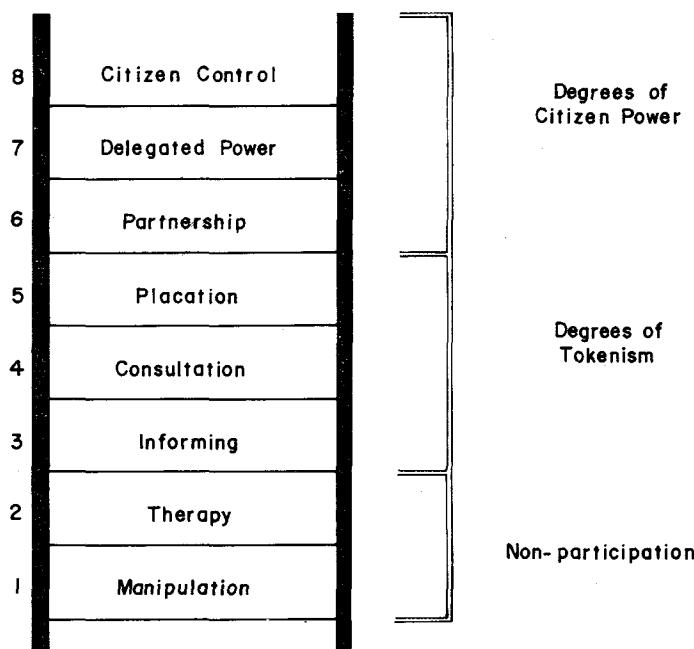


FIGURE 1 EIGHT RUNGS ON A LADDER OF CITIZEN PARTICIPATION

Source: Arnstein 1969.

seen in the modernization school) based on growth modes which describe development of the Philippines in terms of efficiency and economics, increased production and trickle-down effects in the economy from the higher to the lower income brackets; 2) liberal approaches, which seek increased production with equitable distribution of economic growth output. These approaches seek to meet the basic needs of the urban and rural poor, and to provide enough surplus production to guarantee per capita income above set levels of absolute and relative poverty; 3) radical approaches, including the dependency school, which view the development of the Philippines as a process of exploitation between the center and the periphery, the metropolitan center and the satellite poles, at both national and international levels; and Mao's Chinese agrarian reform approach, proposing a proletariat-based and-initiated revolution anchored on small cadres of revolutionaries to transform by agrarian reform the existing capitalist economy into an agrarian-based economy. The new people's government should be self-reliant, with the ultimate goal of minimizing social inequities.

The three general approaches will be compared by looking at each one's concept of development, the overall problem statement for agriculture and rural areas, and the sectors considered in the analytic framework. Finally, each approach will be critiqued according to its actual or potential impact on the agricultural/rural, urban and national sectors of the economy.

Mainstream Approaches: The Modernization School

According to the modernization school, development is a process where the economy of a less-developed country moves through stages of growth from a backward state to a modern state of development. The mainstream approach of the World Bank and the International Labor Office (ILO) to Philippine agricultural and rural development in the 1960s and 1970s described the problems of rural areas in these terms (Cheetham and Hawkins, 1976), where:

Many or most farmers are unable to participate in the modernization process because of the lack of credit, impossibility of access to modern inputs, lack of modern roads, the lack of land itself, and in which communal organization of such facilities as irrigation remains ineffective (International Labour Office, 1974).

Modernization activities by the Philippine government, international foundations, and donor agencies for agricultural development in the Philippines were numerous. Specific Philippine government agricultural and community development policies and programs in the 1950s and 1960s were greatly influenced by, and heavily reflected American bilateral development programs (the Mutual Security Agency and later the United States Agency for International Development), international donor agencies (such as the World Bank and the International Labour Office) and international foundations (including the Rockefeller and Ford Foundations). In the early 1960s, the International Rice Research Institute (IRRI) at Los Banos, Laguna, was set up by the Ford and Rockefeller Foundations in cooperation with the Philippine government (Ofreneo, 1980). The IRRI discovered high-yielding varieties (HYVs) of rice, which doubled or tripled crop harvests when these were supported with adequate fertilizer, insecticides, irrigation water, and extension education on proper application techniques and amounts of inputs to be administered.

The ILO modernization development strategy for the Philippines identified two key roles of the rural sector in the development process in the production of a surplus of agricultural commodities (ILO, 1974):

- a) as the provider of fuel for the development of the industrial sector through an increase in imports of capital and intermediate goods; and
- b) as the provider of food and agricultural raw materials directly to the urban industrial sector to provide cheap wage goods and thereby stimulate the growth of that [urban sector].

In evaluating the performance of the modernization approach to the Philippine agricultural and rural development strategies, the ILO

observed that yield improvements in rice and corn in the 1960s were a consequence of the technological change brought about by the Green Revolution i.e., the introduction of new varieties, increased use of fertilizers and insecticides, and the extension of irrigation (ILO, 1974). And yet both the World Bank and the ILO recognized that the crop intensification needed to increase agricultural production would probably benefit only a limited number of farmers (Cheetham and Hawkins, 1976).

Growing recognition, by the Philippine government officials and international agencies, that agricultural production increases alone could not solve problems of rural poverty and agricultural stagnation led to the development and practice of liberal theories and approaches to agricultural and rural development in the Philippines.

Liberal Approach

During the 1970s liberal theories of development advocated "growth with redistribution", as reflected in this statement by President Marcos (1983):

But to us obsessed with social justice, the distribution of the fruits of economic growth is just as important as the growth itself of the economy. We do not postpone the distribution of the fruits of growth to the lower classes of our people.

General agricultural development objectives of the Philippine government in the 1970s focused on self-sufficiency in food-grain production, improved income distribution and nutrition, employment opportunities, and increased agricultural exports to improve the balance of payments (Cheetham and Hawkins, 1976). Coupled with the emphasis on distribution of growth was the expectation for greater participation of people and village-level organizations in local and national development, including involvement in planning, production and marketing activities (Philippines, *Technical Annex*, 1982).

Castillo (1983) provides a summary of liberal Philippine rural development strategies.

The international development community, including the Philippines, has gone the full circle in its rural development strategies. From the holistic approach of the community development era, the Philippines, for instance, went to single commodity production programs such as rice, corn, etc. and then back to the interrelatedness of factors in integrated rural development.

Castillo's list of rural development programs in the Philippines includes community development, the human settlements approach, the river basin integrated area development approach, (Bicol and Cagayan Valley River Basins), and the programs which stressed "felt needs" and "peoples' participation".

In a liberal approach to development, one of the purposes of strengthening farmers' associations and leadership training is to enhance self-reliance among farmers (Philippines, *Five-Year Plan, 1978-1982*, 1977). Another reason for strengthening local organizations and decentralizing rural development programs is to give the local-level organizations (public and private) more responsibility in paying for the rural development programs. One example of this is the shift by the National Irrigation Administration (NIA) from large-scale, single-purpose irrigation projects to constructing and rehabilitating small-scale gravity irrigation systems, with local water user associations picking up the construction tab, as required by Philippine law to pay for the loans used to finance the construction and/or rehabilitation costs (Philippines, *Technical Annex*, 1982).

These rural development activities have not necessarily reached the intended wide audience sought by the liberal approach. For example, Masagana 99 was an agricultural credit program designed to increase rice production to 99 sacks or 4.4 tons of unmilled rice per hectare. The extended massive credit assistance without collateral was made available to small farmers on the condition that they would use high yielding variety (HYV) technology and inputs in their rice production. The key elements of the programs were a "revolutionary credit system; transfer of technology; low-cost fertilizer; good weather during the first year; and price supports" (Castillo, 1983).

However, Castillo points out that unfortunately a large number of farmers failed to repay the loans received from rural banks because of lack of capacity to pay as well as an unwillingness to pay ("the government owes us one"). Also, the Masagana 99 program benefited mostly irrigated rice farmers because of the dependency of HYVs on water as a critical production input. The rice and corn credit programs did not help those farmers with rainfed cultivation, nor those farmers who planted crops other than rice and corn.

Thus, some strategies of the liberal approach to rural development in fact do not result in an even redistribution of growth to all Filipino farmers.

Radical Approaches

The radical approach to participatory rural development looks at the underlying causes of rural problems, and defines rural development in these terms (Ofreneo, 1980):

Rural development is meaningless if it does not correct existing social inequalities in the countryside, does not solve the problem of rural poverty and unemployment/underemployment, and does not have the active support of the rural masses themselves. Thus, even if the agricultural yield in the country were to grow 10 or 100 times more than the present level as a result of technological improvements, one could still say that no genuine rural development had taken place if the rural masses remain trapped in the vicious cycle of poverty, ignorance, unemployment/underemployment and backwardness, all of which are rooted in an unjust and unequal socio-economic order.

There appear to be two schools of thought which have most influenced the Philippine radical approach to analysis of agricultural and rural development: The Dependency School and Maoist ideology. Dependency theory stresses the importance of examining the relationship of domination and dependency between the advanced capitalist countries (metropolitan countries) and the underdeveloped countries (also known as satellites or peripheral economies) as a way of accounting for the condition of poor countries' continuing underdevelopment (David, 1980).

Two comments by David and Ofreneo re-

flect the view of the dependency school on current government programs in the Philippines.

In the Philippines today, we are facing the social realities of the growing and unstoppable domination of our national economy by transnational corporations, the impossibility of repaying our national indebtedness, the increasing pauperization of the rural masses, the total degradation of our marginalized urban poor, the intensification of political coercion as our economy increasingly fails to provide for the needs of the poor majority, the intensifying participation of the military in our national life, and more aggressive intervention by the United States and Japan in our national affairs as a result of the greater need to secure and protect their investments for possible expropriation under another regime (David, 1980).

Ofreneo identifies two kinds of exploitation of the countryside, direct and indirect, historically and currently experienced in the Philippines.

The direct exploiters are landowners who appropriate a certain percentage of the fruits of the land by virtue of ownership. The indirect exploiters are those who control the marketing and pricing of the agricultural produce as well as those who profit from processing cheap primary agricultural products (Ofreneo, 1980).

The greatest influence of Maoist ideology on the radical Philippine approach to agricultural and rural development has been Mao's strategy of the "people's war", as seen in the current struggle of the New People's Army in Northern Luzon, Samar, Leyte and Mindanao. Mao's analysis stresses the very great political power and prestige of the landlord and comprador classes in China (during the 1930s and 1940s). Mao identifies the proletariat as the leaders of the revolution, and expresses faith in the effectiveness of spontaneous organization by the people. Another point of Maoist thought is that the masses, no matter how deprived and downtrodden, can be trusted to rise to the responsibilities of power.

Peasant unrest and revolt are very important aspects of Philippine agricultural development which do not receive adequate attention in the mainstream and liberal theories of agricultural and rural development. There were numerous peasant uprisings and agrarian unrest during the Spanish and American colonial periods in Phil-

ippine history, as well as during the Hukbalahap rebellion (Agoncillo and Guerrero, 1977).

The Hukbalahap (Huk) movement during World War II through the early 1950s is one of the most well-known Philippine agrarian uprisings. Agoncillo traces the roots of the Huk movement to the exploitative *encomienda* system, where the abuses, and cruelties inflicted upon Filipino peasants by the *encomenderos* led to peasant uprisings which failed because of lack of unity and leadership (Agoncillo and Guerrero, 1977). Killing, imprisonment and surrender of most of the prominent Huk leaders combined with government pacification programs and continued prosecution of and hardship in the lives of the civilian peasant communities led to the eventual dissolution of the Huk movement by 1953.

Analysis of the Huk rebellion greatly varies between the World Bank's mainstream analysis and Kerkvliet's critical review of the rebellion. A World Bank report in 1976 states (Cheetham and Hawkins, 1976):

In the early years of independence internal stability was challenged by the Huk guerilla movement, mainly in Luzon. Through a combination of military action and social reforms, however, the government was able to subdue the rebellion, which by the mid-1950s had nearly died out.

The Bank makes no mention in the report of the possible and probable causes of the peasant unrest. The Bank also does not recognize the social inequities of the patron-client system and tenancy problem which faced many peasants in Central Luzon at the time of the unrest. Many of these inequities still exist today.

Kerkvliet's analysis of the Huk rebellion contrasts sharply with the World Bank's evaluation. Kerkvliet (1979) listed eight conclusions for discussion of the Huk rebellion and the peasant movement which supported it. Two of these conclusions are reviewed here:

1) the justification people had for their protest and revolt; and 2) the meaning of a rebellion that failed.

Regarding the justifications Filipino people had for their protest and revolt. Kerkvliet comments that the Filipinos rebelled not because

landowners were wealthy and strong and peasants were weak and poor; Philippine rural society had been that way for a long time. He explains that the major, long-term cause of peasant unrest was the deterioration of the traditional ties between the local elite landlords and the peasants. During the 1930s to 1940s the elites were violating their customary obligations expected from the patron-client relationship (for example, some landlords no longer felt obligated to provide a share of harvested rice to a tenant during a poor crop season, when the tenant's family did not have enough rice to eat three times a day). Another justification by peasants for the revolt was the knowledge that they had a right to defend themselves against the abuses and repression of landlords, armed guards, government officials and soldiers, and to avenge the mistreatment, rape and murder of relatives.

In examining what the Huk rebellion accomplished, and the meaning of the failed rebellion, Kerkvliet writes:

Generally... the peasant movement's efforts to restore a fading traditional agrarian society brought some limited reprieves, while at the same time increasing the social distance between peasants and their former patrons. Class antagonism, heightened by the struggle itself, made it more difficult, if not impossible, to re-establish traditional relations. Paradoxically, therefore, the struggle that helped to form a peasant class, increase class consciousness among peasants, make peasants more powerful politically, and build new peasant associations, also hastened the decline of the old order, which peasants had set out to restore (Kerkvliet, 1979).

Unfortunately, living conditions for the people in Central Luzon villages improved little, if at all, after the Huk rebellion. And a final negative trend after the revolt was the tendency among large landowners to mechanize their agricultural production, consolidate their landholdings, and thus force tenants off the land, increasing the number of landless peasants.

The late 1960s and 1970s brought in the rebirth of the Communist Party of the Philippines which joined with the National Democratic Front (CPP-NDF). Amado Guerrero, or Jose Maria Sison, was deeply involved in the

revolutionary struggle against the Marcos government and has written extensively under both names about revolutionary struggles. In 1968 Guerrero helped re-establish the Communist Party of the Philippines (CPP) on the birth anniversary of Mao Tse Tung. Maoist ideology has greatly influenced the thought of many Filipinos of the political left.

Po provides some of the most specific recommendations regarding the radical approach to measuring and establishing goals for building rural organization effectiveness:

The effectiveness of rural organizations in promoting rural development can only be measured according to the degree to which they have promoted the interests of the rural masses by: 1) acting as a vehicle for popular participation in local decision-making; 2) developing two-way communication between the people and their leaders; 3) facilitating provision of services; 4) mobilizing local sources; 5) articulating and processing local needs and demands; 6) creating socio-political awareness; 7) developing local leadership capabilities; and 8) effecting changes in the social structure or in national policies (Po, 1980).

The challenge to the radical approach is to implement these goals for rural development.

CONCLUSION

Three major analytical and theoretical themes used to evaluate the experience of Philippine agricultural and rural development have been discussed in this paper. It has been seen that each approach has several useful applications in helping us understand the political economy of development in the Philippines. There are also a number of weaknesses and gaps in each of the themes' review of and strategy for agricultural and rural development in the Philippines.

The modernization approach to agricultural development stressed the growth of agricultural productivity based on the injection of modern technical inputs. Justification of this model at the time it was implemented (1960s) included the following reasons: 1) an agricultural surplus was needed to feed a growing, non-agricultural population, and 2) the cultivation of commercial crops was indispensable

to the national Philippine economy as source of export, foreign-exchange earnings (Po, 1980). We have seen that the discovery of HYVs at IRRI and application of other modern Green Revolution technologies led to self-sufficiency in rice production in the 1974-75 crop year, with the Philippines exporting rice for the first time in the 1975-1976 crop season. And yet, the modernization model ignored the equity issues of distribution of the growth of agricultural output, and failed to recognize the larger socio-political context in which these agricultural problems and proposed recommendations were occurring. The Green Revolution technologies assumed that most Filipino farmers farmed in a "perfect world" with access to all the required inputs and credit necessary to the successful production of HYVs. One critic of the modernization school approach points out that this approach really is a model of dependent development which has tied the national economy of the Philippines "to advanced capitalist countries in ever-increasing dependence on foreign investments, foreign products, and technology" (Po, 1980).

The liberal approach to development in the Philippines begins to recognize social inequities, including the tenancy problem, and the levels of unequal development between rural and urban areas in the Philippines. This approach pursues growth with redistribution in the agricultural/rural sector. In proposing development programs, the liberal approach seeks ways to include the local, rural population in the planning and implementation of the various programs (e.g., the Masagana 99 credit program, the Samahang Nayon co-operative movement). However, in the liberal and modernization models of development:

there are woefully few studies which integrate within one analytical or empirical framework problems and processes of the rural society with those of the society and the nation as a whole. Although social scientists consistently relate factors on the farm level to overall conditions on the labor, goods, and money markets, they do not relate those factors to other, no less important areas of exchange — the political, the societal and the cultural (Wentraub, 1973).

The liberal approach to rural programs made genuine attempts to eliminate poverty, but too often did not get to the root causes of poverty: the unequal structure of rural society. It is the rural elites who have held power and perpetuated unfair treatment of small farmers; the large farmers are the ones who benefit most from such rural development programs as land reform, and Masagana 99.

Marxist theorists and practitioners in the Philippines take quite a different view of the impact and results of the modernization and liberal approaches to rural development in the Philippines, Po (1980) states:

Economic and political policies crucial for rural development are formulated without the participation of the rural masses. In general, these programs are intended to be instruments of achieving goals other than the eradication of poverty and inequality, such as raising development productivity, controlling political discontent, and winning political support for national elites. In some cases, instead of improving rural conditions, these rural development programs aggravate conditions of inequality.

Turner points out that concentration in the 1950s and 1960s on the modernization of peasant agriculture gave rural development a "minor supporting role"; the growing army of landless Filipinos is largely ignored by the modernization school; and migration to urban centers in the Philippines merely represents a geographical transfer of the problem (Turner, 1984).

Rocamora and Conti-Panganiban observed that increases in agricultural production and agricultural surpluses generated by the modernization approach to agricultural development "go abroad as profit remittances of multinational corporations, and [are] wasted through excessive consumption of the ruling elite (Rocamora and Conti-Panganiban, 1975).

Though some mention was made of land tenure problems in the Philippines, very little serious effort from the 1950s until the present time has been made to include viable land reform programs to correct structural problems in rural areas. Thus, agricultural modernization in itself further perpetuated and aggravated the status quo of poverty in rural areas "because of the lack of institutional and so-

cial mechanisms in the rural sector to back up sustained and long term change (Weintraub, 1973).

The critical approach to reviewing and evaluating Philippine participatory development carefully uses historical analysis to examine agricultural development problems. The radical approach looks at class contradictions, and reveals the complexity of class structure which inhibits effective elimination of rural poverty through rural development programs.

The 'complexity of classes in Bukiran's [name of village] political economy inhibits solidarity among those in the same class. Villagers with similar standards of living have difficulties seeing shared interests because their sources of livelihood are often different, and vice versa. Moreover, because of the variety of occupations within many households, even those who share interests with respect to one source of livelihood frequently have conflicting interests resulting from their other sources. Finally, it is hard for those who may want to blame their conditions on others to categorize their oppressors. (Kerkvliet, 1980).

The substance of many of the program and policy recommendations of the radical platforms resembles recommendations made by liberals: land reform, better credit programs, provision of infrastructure to support agricultural production, using the surplus generated from agricultural production to provide capital for industrial development. The key difference from the liberal approaches is that the radical approach makes program recommendations and decisions that will be made by a revolutionary government which is elected and supported by the proletariat, the urban and rural masses, rather than designed by elitist leaders and technocrats. The orientation of radical programs is geared toward eliminating domination of the rural and urban poor by the national, urban leaders and by imperialist western nations. The goal is a socialist state, rather than a continuation of the capitalist economy based on market profit and the ownership of private property.

Since World War II the Filipino development experience has corresponded with the four perspectives of participatory development. In particular, the mainstream approach and mo-

dernization school of development in the rural Philippines shares the view of participation from the right, where participation in development activities is limited. The liberal approach in the Philippines has been the most visible perspective taken in rural development programs both by national and international agencies. However, research has shown that these liberal-oriented programs fall short of their own participatory goals, as discussed in the radical critique of participatory development. The radical approach prescribes the need to change the underlying social, political and economic structure in the Philippines before any genuine participatory development can occur. The past experience in the Philippines shows that the liberal approach to participatory development is not the only approach taken by Filipinos.

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TOWARD A MORE EFFECTIVE BARANGAY CLASSIFICATION SCHEME*

INTRODUCTION

To effectively deliver the national government services to the barangay it was felt that a system of classifying barangays should be adopted. With the classification scheme in place, the National Barangay Operations Office (NBOO) under the Department of Local Government (DLG), can formulate development strategies appropriate for the different types of barangays. Furthermore, the improved quality of information that the scheme will generate can furnish the DLG Secretary a more secure basis for perceptive analyses of the political and socio-economic situations of the local communities and thereby enable the said office to develop more relevant and responsive policies, programs and projects.

On the operational level, the NBOO is faced with the problem of allocating national aid equitably to the barangays. The solution considered by NBOO was to classify barangays according to levels of development. To achieve this, the NBOO engaged the services of the U.P. Planning and Development Research Foundation (PLANADES) to operationalize the concept of "levels of development" as the basis of classification and to prepare the guidelines for classifying barangays accordingly.

The study was undertaken from January to July 1989. This paper summarizes the analytical procedures and the findings of the project.

THE BARANGAY CLASSIFICATION PROJECT

The research project aimed primarily to determine the set of indicators that, taken together, would determine the level of development attained by a particular barangay at any point in time.

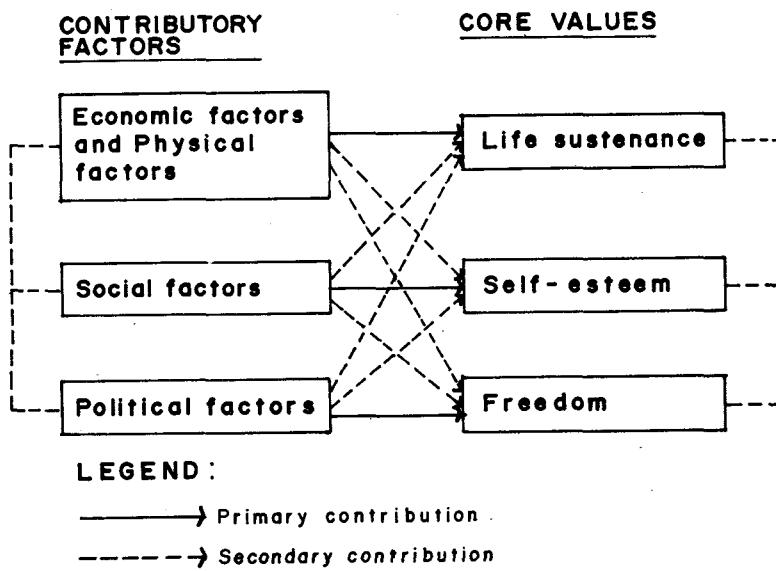
Initially applied to the more than forty thousand barangays all over the country, the classification scheme would be able to provide benchmark information about the relative position of each barangay with respect to the development yardstick. The national government would even then be able to formulate the appropriate intervention measures in accordance with certain objectives.

Periodic application of the classification scheme would enable the government to monitor changes occurring in every barangay and to assess the direction of such changes — whether a barangay is slipping downward or inching upward in relation to the scale.

To start with, the project defined the concept of development as a "multi-dimensional process involving changes in structures, attitudes and institutions as well as the acceleration of economic growth, the reduction of inequality and eradication of absolute poverty" (Todaro, 1977). The project likewise adopted Todaro's "core values" that underlie all development efforts: *life sustenance, self-esteem, and freedom*. These core values are the key to identifying the factors that contribute to development, viz. economic and physical factors contribute to the attainment of life-sustenance; social factors promote the value of self-esteem; and political factors create the climate for the cultivation of individual and collective freedom. The relationship is not unilinear; each factor also

*Based on a study prepared by the U.P. Planning and Development Research Foundation (PLANADES) for the National Barangay Operations Office, Department of Local Governments. The study team was led by three SURP faculty members: Tito C. Firmalino, Llена P. Buenvenida and Ernesto M. Serote.

**FIGURE 1
INTERRELATIONSHIPS AMONG DIMENSIONS
OF DEVELOPMENT**



contributes to the other two values as shown graphically in Figure 1.

After identifying the set of factors contributory to development, the project proceeded to determine the observable and measurable indicators for each of these factors. The indicators were then empirically tested to determine their validity as well as viability in the light of the type and quality of data already available or that can be generated at the barangay level. The empirical test involved fieldwork in sample provinces and a series of statistical analyses.

Significance of the Project

This project is the third attempt at barangay classification. The two earlier studies were the 1) "Levels of Development of Barangay" study undertaken by the Planning Service of the Ministry of Local Government and Community Development (MLGCD) in 1980, and 2) the "Barangay Development Classification Project" of the now defunct Ministry of Human Settlements in the mid-1980s.

Although the basic rationale and objectives of these projects are similar, there are a number of features that distinguish the present study from the two earlier studies:

1. A different approach

The approach adopted in the present study differs from those of the two previous studies. Whereas the earlier studies used predetermined barangay categories as well as indicators of barangays development, the current study made no attempt to pigeon-hole each barangay into preconceived typologies. Rather, it derived the clusters and the characterization of each cluster of barangays, entirely from statistical tests and analyses of the data collected.

2. Minimized professional bias

The extensive use of statistical analyses techniques such as correlation analysis, principal components analysis, cluster analysis, and discriminant analysis has reduced the need for subjective or judgmental inputs in various stages of the analytical process. The most crucial stages where statistical techniques were substituted for professional bias or consensus were in the selection of the valid indicators (correlation analysis and principal components analysis), in determining

the number of classes (cluster analysis), and in assigning weights to the valid indicators (discriminant analysis).

3. More comprehensive indicators

The development indicators adopted in this study are, so far, the most comprehensive, representing economic, social, physical and political dimensions. Fourteen (14) variables emerged from the study. However, the study team eliminated one more variable — crime incidence per capita — because this indicator is liable to ambiguous interpretation. The final list of indicators is therefore pared down to a manageable thirteen (13).

4. More meaningful indicators

Every single indicator of barangay development in the present study is expressed as a ratio, that is, the performance of a particular barangay with respect to a certain variable is compared to some meaningful aggregate say, the barangay population, voting age population, school age population, number of barangay households, total barangay income, and the like. One distinct advantage of this manner of expressing indicators is its high degree of comparability whether it be horizontally among barangays themselves or vertically, comparing the barangay performance with the municipal average, provincial average, regional standard or even national performance.

5. Easily applicable indicators

The result of the complex study process is a highly simplified procedure for classifying barangays. The study team have seen to it that the needed data already exist or can be easily generated. The computations that future users will need involve nothing more than the fundamental operations in arithmetic.

Project Objectives

The main objective of this project is to classify barangays according to levels of development in order to have a rational basis for allocating scarce national resources. This can be realized through the following specific objectives:

1. To make a comprehensive list of indicators that will capture the multi-dimensional character of the concept of development through brainstorming among project personnel and review of related literature.
2. To test the validity of these indicators by means of empirical criteria derived through actual field observation and data gathering.
3. To develop a list of key indicators that are strategic in character and manageable in number.
4. To empirically derive a manageable number of classes into which every barangay can be categorized at any stage of its development.
5. To facilitate nationwide application of the classification scheme by preparing a set of guidelines.

METHODOLOGY

In this study, four procedural steps were undertaken, namely:

1. Development of preliminary indicators.
2. Data generation from sample barangays to test and validate indicators,
3. Refinement of development indicators, and
4. Preparation of guidelines for the use of final indicators.

Development of Preliminary Indicators

The selection of preliminary development indicators was based on the following major criteria (McGranahan et. al., 1985):

1. Conceptual significance

This study takes as its starting point a clear definition of the concept of development, in terms of its structure and composition. After an exhaustive review of literature on development indicators, the team has come to support the view held by most writers worldwide that development is composite in structure. Essentially, the term "development" connotes positive change in the socio-cultural, economic and political life of the community. This change is manifested through concrete and quantifiable as well as less observable and non-quantifiable indicators. For operational

purposes, the study mainly focused on quantifiable indicators which when expressed in simple statistical measures such as averages, percentages, ratios, proportions and the like could articulate the varied aspects of the concept of development.

2. Data availability

The construction of indicators would require the most recent data on the barangay. For uniformity, the period 1987-88 was chosen as the base period for classifying barangays according to their levels of development. A survey of secondary data was then made in the National Statistics Office and in other government agencies in Metro Manila to provide the team with some baseline information on the kinds of statistics available at the barangay level. The survey enabled the team to trim down, to some extent, the number of indicators that could be constructed based on the data support available in the field.

The survey also revealed that the latest census on barangay population was in 1980. Because population and its sex-age and urban-rural distributions were important inputs in the construction of indicators, the 1980 population figures for the sample barangays were projected to the 1987 and 1988 levels using the method of proportional allocation.

3. Universal applicability and comparability

The indicators selected should be present in a large number of barangays for universal comparison but at the same time should effectively discriminate between the different levels of development of these barangays. As much as possible, there should be uniform sources of data for the same indicator to maintain consistency in comparing barangays by this indicator.

4. Balance among sectors

In as much as development is a composite of a number of factors, the indicators selected should comprehensively cover all possible areas of concern. A long list was accordingly drawn, then later reduced to some seventy (70)

indicators covering three broad sectors, namely: the socio-cultural, economic and political sectors without undue emphasis on any particular sector to maintain balance.

Data Generation in Sample Barangays

1. Selection of sample barangays

Multi-stage cluster sampling was employed in the selection of sample barangays. For convenience, the classification schemes of the 1983 Local Government Code and of the Department of Finance provided the sampling frame from which a total of ten LGUs (cities and municipalities) were chosen, each representing a particular income class. The sampling frame was later narrowed down to include only those provinces where all the classes of LGUs were represented.

Thus, one sample was chosen from highly urbanized cities; three samples from the group of component cities and first class and second class municipalities representing Luzon, Visayas and Mindanao (first category); another set of three samples from a group of third and fourth class municipalities (second category) and the last three samples from the group of fifth and sixth class municipalities (third category). All the barangays in these sample towns were included in the study.

Table 1
List of Sample LGUs

| | | |
|-----------------------|---|---------------------|
| Highly urbanized city | : | Cebu City |
| Luzon-Province | : | Batangas |
| 1st category | : | Batangas City |
| 2nd category | : | Nasugbu |
| 3rd category | : | Talisay |
| Visayas-Province | : | Negros Occidental |
| 1st category | : | La Carlota |
| 2nd category | : | Talisay |
| 3rd category | : | Moises Padilla |
| Mindanao-Province | : | South Cotabato |
| 1st category | : | General Santos City |
| 2nd category | : | Koronadal |
| 3rd category | : | Lake Sebu |

2. The survey instrument

The survey instrument was designed taking the barangay as the unit of analysis. Based on the preliminary list of development indicators, the instrument identified the data requirements for every set of indicators as well as their possible sources and embodied guide questions for eliciting the required information. Key informants were likewise identified. Dummy tables were prepared to facilitate the construction of the indicators in the identified areas of concern.

The draft survey instrument was pre-tested in Indang, Cavite on 3 April 1989 after which it was revised and refined. Some indicators were discarded or replaced by other indicators based on the observations from the pretest.

3. Field survey

The field survey was conducted to generate the data inputs required for testing the validity of the proposed indicators in the sample barangays of the highly urbanized city, Cebu City, and of the provinces of Batangas, Negros Occidental and South Cotabato.

The survey team's approach to data collection was to first concentrate on secondary sources such as the different government agencies and relevant private organizations before going after primary sources such as the interview with barangay captains who served as key informants. The offices which provided data included the treasurer's office, the assessor's office, city/municipal planning and development office, mayor's permits and licenses office, rural health units, PC/INP, CGOO/MGOO, regional NSO and certain utility companies. Key informants for the interview portion included municipal/city officials, barangay officials, and heads of national and local offices.

Refinement of Development Indicators

The amount of data collected from the field was enormous so that computer processing became necessary. With the aid of processed data, the set of development indicators for-

mulated during the initial stage of the study were then analyzed and screened for their validity to reduce their number to a more manageable one.

Techniques of Data Analysis

The techniques of data analysis used were correlation analysis, principal components analysis, cluster analysis and discriminant analysis.

Correlation analysis was initially used in further screening the indicators. Indicators which could not correlate with other sets of indicators mainly due to numerous missing observations were discarded. Indicators showing relatively very low average correlation with other indicators were likewise discarded. After this process of screening, the number of indicators was reduced to 21. This list was further pared down to 14 when more strict criteria such as evidence of duplication and data reliability were applied.

To firm up their validity, the 14 indicators were then subjected to principal components analysis. The purpose of principal components analysis was to reduce the 14 correlated indicators into fewer sets of uncorrelated principal factors which would account for a large proportion of the variability in development.

Cluster analysis was then used to classify the barangays into distinct groups based on similarities (or dissimilarities) of values of each of the 14 retained indicators. For easier classification and description of distinct group characteristics, the barangays were classified by province. The team decided to establish five (5) categories of barangays by level of development.

The discriminant analysis was conducted to combine the 13* indicators into functions that would best distinguish between the barangay categories.

Using the set of 79 barangays for which group membership was earlier established by cluster analysis, linear combinations of the indicators were formed and these served as basis for assigning the barangays to each of the five distinct groups. The coefficients of the linear combinations (also known as discriminant

*It was decided that the indicators concerning occurrences of crimes had to be weeded out to preclude misinterpretation.

functions) were chosen so as to minimize the probability of misclassification, thus resulting in the "best" separation among the groups. The accuracy of this classification rule could be tested by comparing the predicted group membership to the actual, which in this case are the barangay categories derived from cluster analysis.

The discriminant functions could now be used to classify a given barangay by conveniently substituting the scores on the different indicators on the variables of the functions and then applying the classification rule.

Preparation of Guidelines for the Use of Final Indicators

Operational guidelines were prepared detailing the use of the final set of indicators selected for barangay classification. The guidelines include the specific data to be generated, the agencies which provide these data, the procedures in the construction of indicators, and the agency which will be mandated to implement the barangay classification scheme.

FINDINGS AND CONCLUSIONS

Findings on the Final Development Indicators

1. Selection of development indicators

The selection of the final set of development indicators entailed progressive application of more and more rigid criteria through several stages.

Initially, some 70 preliminary development indicators had been constructed prior to the conduct of the field survey in the sample barangays. The data collected from the field were then evaluated and screened for their adequacy and reliability. At this stage, several indicators which could not be supported by adequate data or which could not be expressed in terms of meaningful relationships were discarded. Other indicators were subsequently modified.

The remaining set of 65 indicators were subjected to several rounds of correlation analysis. At first, the indicators classified under a broad category, i.e. socio-cultural, economic or political, were correlated with every other indicator in the same category. Indicators in the same set which would not correlate mainly due to numerous missing

observations were discarded. Furthermore, an indicator showing relatively very low average correlation with other indicators was also discarded. This process also reduced the number of sample barangays with observations on the retained indicators and over which further analysis could be applied.

After the elimination process, 21 indicators were retained. Again, correlation analysis and stricter screening criteria like avoidance of duplication and assurance of data reliability were applied to the remaining indicators; thus, seven more indicators were discarded.

The number of indicators finally retained was fourteen.

The correlation matrix of the 14 indicators is shown in Table 2.

The correlation values between pairs of indicators are generally low. This could mean that the chosen indicators are measures of distinct and separate aspects of development except for the following pairs obtaining the first three highest correlation values:

- a. Per capita barangay income (X_{13}) and ratio of assessed value of improvements to assessed value of land (X_8).
- b. Deviation of all-weather road density from the national average (X_{10}) and ratio of establishments to population (X_9).
- c. Proportion of households with sanitary toilets (X_4) and ratio of assessed value of improvements to assessed value of land (x_8).

2. Further validation of chosen indicators

To further firm up their validity, the 14 selected indicators were subjected to principal components analysis. The intention was to determine which indicator variables would group together and form the principal basis or major factor of barangay development. The analysis yielded five principal components or factors, as can be gleaned from the eigenvalues greater than one (see Table 3), accounting for 60.2 percent of the total variance of the system, i.e. extent of variation in barangay development. The correlation coefficients (component loadings) of these five major factors are shown in Table 4.

Table 2: Correlation Structure

| | X1 | X2 | X3 | X4 | X5 | X6 | X7 | X8 | X9 | X10 | X11 | X12 | X13 | X14 |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| X1 | 1.00000 | | | | | | | | | | | | | |
| X2 | .05272 | 1.00000 | | | | | | | | | | | | |
| X3 | -.15816 | -.04588 | 1.00000 | | | | | | | | | | | |
| X4 | -.20746 | -.20921 | .05682 | 1.00000 | | | | | | | | | | |
| X5 | .10634 | .12503 | .05522 | -.14254 | 1.00000 | | | | | | | | | |
| X6 | -.16446 | -.18526 | .03301 | .37517 | .16484 | 1.00000 | | | | | | | | |
| X7 | .00268 | -.22384 | .23479 | .15633 | .13332 | .20054 | 1.00000 | | | | | | | |
| X8 | -.11627 | -.05943 | .02812 | .46037 | -.05262 | .36667 | .24471 | 1.00000 | | | | | | |
| X9 | -.02302 | -.05277 | -.05747 | .02809 | .12076 | .24000 | .20883 | .15024 | 1.00000 | | | | | |
| X10 | .02697 | .01261 | -.23661 | .02927 | .32498 | .34248 | .10941 | .14036 | .40874 | 1.00000 | | | | |
| X11 | -.12122 | -.09380 | .07141 | .28222 | -.19846 | .04262 | .32547 | .36980 | .01938 | -.12834 | 1.00000 | | | |
| X12 | .07911 | .11717 | -.13015 | .03382 | .04700 | .07775 | -.15148 | -.00233 | .07266 | -.01753 | .07627 | 1.00000 | | |
| X13 | .30340 | -.00843 | -.01382 | .21629 | -.12146 | .04392 | .23111 | .52530 | .12437 | .07379 | .25624 | -.00348 | 1.00000 | |
| X14 | -.06636 | -.01538 | -.05050 | .16756 | -.11480 | .09630 | .01969 | -.04101 | -.00126 | .13086 | -.01692 | .04104 | -.10011 | 1.00000 |

**Table 3: Eigenvalues and Accounted – for Variance of Factors
Based on Correlation Matrix of 14 Indicators**

| Factor/ Component : | Eigenvalue | Accounted for % of Variance | Cumulative Percentage of Total Variance |
|------------------------|------------|--------------------------------|--|
| 1 | 2.62663 | 18.8 | 18.8 |
| 2 | 1.84948 | 13.2 | 32.0 |
| 3 | 1.50477 | 10.7 | 42.7 |
| 4 | 1.36285 | 9.7 | 52.5 |
| 5 | 1.08670 | 7.8 | 60.2 |
| 6 | .94112 | 6.7 | 66.9 |
| 7 | .91889 | 6.6 | 73.5 |
| 8 | .89233 | 6.4 | 79.9 |
| 9 | .73331 | 5.2 | 85.1 |
| 10 | .49059 | 3.5 | 88.6 |
| 11 | .47276 | 3.4 | 92.0 |
| 12 | .43801 | 3.1 | 95.1 |
| 13 | .39486 | 2.8 | 97.9 |
| 14 | .28770 | 2.1 | 100.0 |

**Table 4: Correlation Coefficients of Principal Components/
Factors of Development Indicator Variables**

| | : FACTOR 1 : | FACTOR 2: | FACTOR 3 : | FACTOR 4: | FACTOR 5 |
|-----------------|--------------|-----------|------------|-----------|----------|
| X ₁ | – .16770 | .18462 | .70328 | – .08944 | – .29798 |
| X ₂ | – .31331 | .15138 | .28369 | .14817 | .55377 |
| X ₃ | .11393 | – .32020 | – .27726 | – .57854 | .31877 |
| X ₄ | .65986 | – .21661 | – .21083 | .30820 | .03369 |
| X ₅ | – .02987 | .62546 | – .02436 | – .40146 | .33998 |
| X ₆ | .59750 | .35686 | – .33440 | .10122 | .12047 |
| X ₇ | .55903 | – .00637 | .00173 | – .53271 | – .11938 |
| X ₈ | .77713 | – .09505 | .21265 | .11049 | .17223 |
| X ₉ | .36972 | .52989 | .03282 | – .06503 | – .04950 |
| X ₁₀ | .29718 | .77579 | – .03101 | .06503 | – .15244 |
| X ₁₁ | .51995 | – .44218 | .15458 | .03314 | .16768 |
| X ₁₂ | – .01290 | .14051 | .17383 | .49527 | .49410 |
| X ₁₃ | .52435 | – .11391 | .68509 | – .01401 | – .10228 |
| X ₁₄ | .08451 | .06726 | – .35386 | .42581 | – .32572 |

The first and third principal components (factors) accounting for almost 30 percent of total system variation, are highly dominated by socio-economic indicators, with the following variables exhibiting high component loadings:

Factor 1:

- X_8 = ratio of assessed value of improvements to assessed value of land
- X_4 = percent of households with sanitary toilets
- X_6 = percent of households with electricity for lighting
- X_7 = incidence of crimes per capita
- X_{13} = per capita barangay income
- X_{11} = ratio of registered voters to total voting age population

Factor 3:

- X_1 = percent of children with 2nd degree malnutrition
- X_{13} = per capita barangay income

The above variables are interpreted to significantly comprise the socio-economic basis of development although one indicator on political awareness with correlation coefficient of around 0.52 is included in Factor 1. These confirm the validity of the types of socio-economic indicators which should be considered in assessing the development status of a barangay.

The second principal component is highly correlated with variables X_{10} , deviation of all-weather road density from national average, X_5 , percent of households with potable water supply and X_9 , ratio of establishments to population. These variables indicate the impact on development of infrastructure and utilities which generally are supportive of economic activities.

The fourth principal component has high loadings on human resource related socio-political variables. These are X_3 , divergence from the national average of enrolment participation rate in public elementary schools; X_7 , incidence of crimes per capita; and X_{12} , ratio of projects with labor contribution from residents to total projects. Because of the opposite signs, it appears that

the political awareness of citizens' responsibilities contrasts with the decline in crimes and enrolment participation rate. This decline particularly in enrolment participation could be due to the fact that some barangays have low population densities and thus do not have public elementary schools but are also generally accessible to neighboring barangays with schools, as in the case of Cebu City.

The fifth component is highly correlated with X_2 , index of divergence of infant mortality rate from the national average and, hence, constitutes the health basis of development, a socio-cultural variable.

3. Barangay Clustering

As discussed in the methodology, the barangays covered by this study were subjected to cluster analysis on the basis of the fourteen selected indicators. One indicator (ratio of crimes to population) was later eliminated because this indicator is liable to ambiguous interpretation. It is true that increase in crime incidence, as reflected in this study, is associated with barangay development. However, increase in criminality could be mistaken as a condition necessary for a barangay to advance. So, the final number of indicators recommended for adoption in the classification scheme is thirteen (13). (See Table 5.)

Only barangays with complete data on the thirteen indicators were studied for the clustering exercise. A total of 79 barangays contributed to the outcome of the analysis.

An examination of the grouping showed that barangays with similar characteristics tended to cluster together. For instance, barangays with higher per capita income from regular sources, with high proportion of households using electricity and with high ratio of assessed value of improvements to assessed value of land are generally in the same cluster. Similarly, those without establishments, without electricity and had low per capita income would fall in a separate cluster.

A matrix was constructed putting the clusters along the horizontal axis and the indicators down the vertical axis. The scores (represented by ratios, proportions and indices of divergence) for all indicators were

Table 5

**The Thirteen Development Indicators
Used in Barangay Classification
(Final List)**

| Variable | Description of Development Indicator |
|-----------------|--|
| X_1 | 2nd degree malnutrition as percent of population 0-below 7 years of age |
| X_2 | Index of divergence of barangay infant mortality rate from the national average |
| X_3 | Divergence from the national average of barangay enrolment participation rate, public elementary/primary level |
| X_4 | Proportion of households with sanitary toilets |
| X_5 | Proportion of households with supply of potable water |
| X_6 | Proportion of households served by electricity for lighting |
| X_7 | Ratio of total assessed value of improvements on land to total assessed value of land |
| X_8 | Ratio of total number of establishments to population. |
| X_9 | Deviation from the national average of the density of all weather roads |
| X_{10} | Ratio of average number of registered voters in the last 3 elections to total voting age population |
| X_{11} | Ratio of number of projects with labor contribution from residents to total projects |
| X_{12} | Per capita barangay income from regular sources |
| X_{13} | Ratio of total expenditures to total income from all sources of the barangay |

recorded for every barangay in a cluster. The averages of the scores for every cluster were then computed and ranked in relation to the other clusters. Based on these results,

the team was able to identify the five classes of barangays according to their levels of development. (See Table 6 for the result of Cluster Analysis for Cebu City barangays).

Table 6: List of Barangays by Rank of Cluster and Major Characteristics. Cebu City

| | Barangay Data | Rank | Population | Urb-Rur Distribution | Terrain | Area in hectares |
|-----------|-----------------------|-------------|-------------------|-----------------------------|----------------|-------------------------|
| Cluster 1 | Ermita | 3 | 7720 | Urban | Coastal | 7 |
| | Pahina San Nicolas | | 4874 | Urban | Plain | 6 |
| | Carreta | | 5575 | Urban | Plain | 25 |
| Cluster 2 | Sta. Cruz (Pob.) | 2 | 4275 | Urban | Plain | 22 |
| | San Roque (Ciudad) | | 4227 | Urban | Coastal | 47 |
| Cluster 3 | Banilad | 1 | 4462 | Urban | Rolling plain | 264 |
| | Apas | | 6890 | Urban | Rolling plain | 140 |
| Cluster 4 | Parian | 4 | 7602 | Urban | Plain | 14 |
| | Duljo (Pob.) | | 13602 | Urban | Plain | 17 |
| | T. Padilla | | 11629 | Urban | Plain | 18 |
| | Sambag 2 (Pob.) | | 12594 | Urban | Plain | 45 |
| | Luz | | 13049 | Urban | Plain | 28 |
| | Lorega | | 11889 | Urban | Plain | 352 |
| | Punta Princesa | | 18234 | Urban | Plain | 96 |
| | Cogon F. Ramos (Pob.) | | 5819 | Urban | Plain | 31 |
| Cluster 5 | Talamban | 5 | 7330 | Urban | Rolling Plain | 792 |
| | Pahina Central (Pob.) | | 9977 | Urban | Plain | 29 |
| | Kasambagan | | 6824 | Urban | Plain | 117 |
| | Tinago | | 6304 | Urban | Coastal | 64 |
| | Kamputhaw (Pob.) | | 21353 | Urban | Gen. Plain | 120 |
| | Sambang 1 (Pob.) | | 18500 | Urban | Plain | 69 |
| | Labangon | | 22321 | Urban | Gen. Plain | 142 |
| | Guadalupe | | 40167 | Urban | Rolling Plain | 573 |
| | Calamba | | 12218 | Urban | Plain | 62 |
| | Basak San Nicolas | | 26185 | Urban | Coastal | 140 |
| | Taptap | | 1106 | Rural | Mountainous | 1279 |
| | Quiot | | 6774 | Urban | Rolling Plain | 97 |
| | Cogon Pardo | | 4027 | Urban | Coastal | 98 |
| | Basak Pardo | | 5137 | Urban | Coastal | 52 |
| | Hippodromo | | 9691 | Urban | Plain | 79 |
| | Guba | | 3282 | Rural | Mountainous | 996 |
| | Inayawan | | 8876 | Urban | Coastal | 207 |
| | Bacayan | | 1588 | Rural | Rolling Plain | 153 |
| | Kinasang-an | | 7216 | Urban | Rolling Plain | 276 |
| | Bulacao | | 11747 | Urban | Rolling Plain | 378 |
| | Buhisan | | 3157 | Rural | Rolling Plain | 830 |
| | Paril | | 1205 | Rural | Mountainous | 316 |
| | Agsungot | | 1403 | Rural | Mountainous | 871 |

The Barangay Classification Scheme

1. Results of Discriminant Analysis

Discriminant analysis was conducted to form linear combinations of the thirteen indicators which would best distinguish between the groups earlier established by cluster analysis. These derived discriminant functions would then be used to classify a given barangay into one of the five distinct groups.

Table 7: Prior Probabilities on Barangay Allocation Among Groups

| GROUP | PROBABILITY DISTRIBUTION |
|-------|--------------------------|
| 1 | 0.10 |
| 2 | 0.10 |
| 3 | 0.25 |
| 4 | 0.25 |
| 5 | 0.30 |
| TOTAL | 1.00 |

Initially, prior probabilities (see Table 7) were estimated on the likelihood that a barangay would belong to a particular group. These probabilities were based on the proportional allocation of the barangays among the defined clusters (see Table 8), adjusted by the team's field observations on the actual distribution among classes of barangays and the municipalities they comprise.

Two methods of discriminant analysis were applied on the barangays using their scores on the 13 indicators. These were: Fisher's discriminant method and the canonical discriminant method, both yielding the same results on the classification of barangays.

Fisher's method yielded five discriminant functions, one for each of the five

classes of barangays. Each function is a linear combination of the 13 variable indicators, denoted by $X_1 \dots X_{13}$, resulting in a particular discriminant score. The coefficients of the variables (see Table 9) were selected so that the values of the functions largely differ as much as possible between the groups. Applying Bayes's rule, the analysis gives the highest estimate of probability that a barangay with a particular discriminant score, say D, correspondingly belongs to the particular group G.

Thus, to determine the classification of an "unknown" barangay, we substitute the values of the indicators in the corresponding variables of each of the discriminant functions and compute for the discriminant scores. By Fisher's classification rule, we then assign the barangay to the group for which the discriminant function yields the highest score.

The alternative method yielded two significant canonical discriminant functions, capturing over 76 percent of total variance between the classes of barangays. (See Table 10). The coefficients of the 13 variables in these two functions are shown in Table 11.

For easier application, the team recommends the adoption of Fisher's discriminant method for barangay classification.

The analysis also revealed the relative importance of the thirteen indicators in markedly distinguishing the five barangay classes and in evaluating the accuracy of this classification. The first six indicators in the order of importance in discriminating between classes are:

- X_9 Deviation from the national average of barangay all-weather road density;
- X_{10} Ratio of average number of registered voters in the last three elections to average voting age population;
- X_6 Proportion of households using electricity for lighting;
- X_5 Proportion of households with potable water supply;
- X_7 Ratio of total assessed value of improvements on land to total assessed value of land; and
- X_3 Divergence from the national average of barangay enrolment participation rate, public elementary/primary level.

Table 8: Distribution of Sample Barangays Among Groups Based on Cluster Analysis

| Group | No. of Cases | Percent Distribution |
|--------------|--------------|----------------------|
| 1 | 6 | 7.6 |
| 2 | 7 | 8.9 |
| 3 | 27 | 34.1 |
| 4 | 13 | 16.5 |
| 5 | 26 | 32.9 |
| TOTAL | 79 | 100.0 |

**Table 9: Classification Function Coefficients
(Fisher's Linear Discriminant Functions)**

| VARIABLE | Class 1 | Class 2 | Class 3 | Class 4 | Class 5 |
|-----------------|-----------|------------|-----------|-----------|-----------|
| X ₁ | 22.36785 | 25.21265 | 23.17767 | 29.31502 | 23.88775 |
| X ₂ | .6700748 | .9338278 | .7326796 | .6182421 | .6809694 |
| X ₃ | .08805189 | .1519348 | .4863905 | .1453037 | .1628275 |
| X ₄ | 10.30103 | 5.216293 | 7.578783 | 9.477886 | 6.459700 |
| X ₅ | 6.057409 | 3.403267 | 6.832444 | 4.365519 | 2.895194 |
| X ₆ | 2.902889 | .9278937 | .1349748 | 3.011212 | 6.140412 |
| X ₇ | -.8408819 | .2669504 | -.3466376 | -.2873974 | -.7833363 |
| X ₈ | 21.78215 | 65.11194 | 15.20845 | -3.202222 | 16.02807 |
| X ₉ | .09262903 | .1398662 | .07558163 | .1095515 | .01289115 |
| X ₁₀ | 13.47318 | 15.36844 | 11.84910 | 12.93019 | 10.72778 |
| X ₁₁ | 1.789877 | 2.968784 | 2.519193 | 2.640716 | .4747814 |
| X ₁₂ | .04957367 | -.07168749 | -.1294758 | -.1573760 | -.1420698 |
| X ₁₃ | .6135361 | .5031663 | .4594795 | .8274363 | .2668587 |
| CONSTANT | -20.83781 | -20.37745 | -14.09305 | -17.27097 | -11.89020 |

Table 10: Canonical Discriminant Functions

| Function | Eigenvalue | Percent | Cumulative | Canonical Correlation | After Function | Wilk's Lambda | Chi-Squared | D.F. | Significance |
|-----------------|-------------------|----------------|-------------------|------------------------------|-----------------------|----------------------|--------------------|-------------|---------------------|
| : | : | of Variance: | Percent | : | : | : | : | : | : |
| 1* | .77345 | 46.15 | 46.15 | .6603983 | 0 | .2616148 | 92.521 | 52 | .0005 |
| 2* | .50622 | 30.20 | 76.35 | .5797310 | 1 | .4639596 | 52.989 | 36 | .0337 |
| 3* | .26702 | 15.93 | 92.28 | .4590687 | 2 | .6988270 | 24.726 | 22 | .3103 |
| 4* | .12940 | 7.72 | 100.00 | .3384891 | 3 | .8854251 | 8.3964 | 10 | .5902 |

NOTE: Marks the 4 canonical discriminant functions remaining in the analysis; however, only the first two functions are significant.

In terms of accuracy of classification, the results showed 69.62 percent (or 55 out of 79 barangays) correct classification of "known" cases from cluster analysis.

2. An Illustrative Example Using the Fisher Linear Discriminant Functions

Consider Zone 4-A of Talisay, Negros Occidental, ranked as a second class municipality by cluster analysis. The scores on the 13 variable indicators are as follows:

$$\begin{aligned} X_1 &= 0.1397 \\ X_2 &= 2.9100 \\ X_3 &= 0.0000 \\ X_4 &= 0.3434 \\ X_5 &= 1.0000 \\ X_6 &= 0.6061 \\ X_7 &= 0.2380 \\ X_8 &= 0.1481 \\ X_9 &= 41.0952 \\ X_{10} &= 0.8145 \\ X_{11} &= 1.000 \\ X_{12} &= 2.9589 \\ X_{13} &= 0.8751 \end{aligned}$$

The classification assignment by discriminant analysis is shown below.

Fisher's discriminant method:

The derived discriminant functions (classification scores) for the five barangay classes are as follows:

$$\begin{aligned} \text{First class: } g_1(x) &= 22.36785 X_1 + .6700748 X_2 + .08805189 X_3 + 10.30103 \\ X_4 &+ 6.057409 X_5 + 2.902889 X_6 - .8408819 X_7 + 21.78215 X_8 + .09262903 \\ X_9 &+ 13.47318 X_{10} + 1.789877 X_{11} + .04957367 X_{12} + .613531 X_{13} - 20.83781 \end{aligned}$$

$$\begin{aligned} \text{Second class: } g_2(x) &= 25.21265 X_1 + .9338278 X_2 + .1519348 X_3 + 5.216293 X_4 \\ &+ 3.403267 X_5 + .9278937 X_6 + .2669504 X_7 + 65.11194 X_8 + .1398662 X_9 \\ &+ 15.36844 X_{10} + 2.968784 X_{11} - .071- \\ &.68749 X_{12} + .5031663 X_{13} - 20.37745 \end{aligned}$$

$$\begin{aligned} \text{Third class: } g_3(x) &= 23.17767 X_1 + .7326796 X_2 + .4863905 X_3 + 7.578783 \end{aligned}$$

$$\begin{aligned} X_4 &+ 6.832444 X_5 + .1349748 X_6 - .3466376 X_7 + 15.20845 X_8 + .07558163 X_9 \\ &+ 11.84910 X_{10} + 2.519193 X_{11} - .1294758 X_{12} + .4594795 X_{13} - 14.09305 \end{aligned}$$

$$\begin{aligned} \text{Fourth class: } g_4(x) &= 29.31502 X_1 + .6182421 X_2 + .1450337 X_3 + 9.477886 \\ X_4 &+ 4.365519 X_5 + 3.011212 X_6 - .2873974 X_7 - 3.202222 X_8 + .1095515 \\ X_9 &+ 12.93019 X_{10} + 2.640716 X_{11} - .1573760 X_{12} + .8274363 X_{13} - 17.27097 \end{aligned}$$

$$\begin{aligned} \text{Fifth class: } g_5(x) &= 23.88775 X_1 + .6809694 X_2 + .1628275 X_3 + 6.459700 X_4 \\ 2.95194 X_5 &+ 6.140412 X_6 - .7833363 X_7 + 16.02807 X_8 + .01289115 X_9 + 10.72778 X_{10} + .4747814 X_{11} - .1420698 X_{12} + .2668587 X_{13} - 11.89020 \end{aligned}$$

Substituting the values of the indicators in the corresponding X's of the functions yield the following discriminant scores:

$$\begin{aligned} \text{First class, } D_1 &= 12.64334 \\ \text{Second class, } D_2 &= 22.788139 \\ &\quad (\text{maximum discriminant score}) \\ \text{Third class, } D_3 &= 18.2589522 \\ \text{Fourth class, } D_4 &= 15.4589205 \\ \text{Fifth class, } D_5 &= 13.5394984 \end{aligned}$$

Since D_2 is maximum of the five scores, assign Zone 4-A to second class.

To simplify the procedure further a guide table was prepared by the study team. With the aid of this table users will simply fill the blanks and perform simple arithmetical operations. (See Table 12.)

3. Observations on the Existing System of Storage and Retrieval of Barangay Data

One of the side-findings of the project relates to the so-called "lack" of data. The problem about the lack of barangay-related data lies in the form of storage and purpose of retrieval rather than in the absence of data itself. In reality, a considerable amount of data in and about the barangay are continually being generated and stored at various levels, most especially at the municipal level. This observation is confirmed by all the survey teams that

Table 11: Unstandardized Canonical Discriminant Function Coefficients

| | FUNC 1 | FUNC 2 |
|----------|-----------|-------------|
| x_1 | .3136783 | 1.231349 |
| x_2 | .04979429 | -.002879347 |
| x_3 | .04050709 | -.2276357 |
| x_4 | .5169451 | .08436136 |
| x_5 | 1.121278 | -1.799073 |
| x_6 | -2.423715 | 2.127968 |
| x_7 | .2871116 | -.05035218 |
| x_8 | 8.305464 | 6.741039 |
| x_9 | .0471921 | .0059824 |
| x_{10} | 1.441524 | .7675595 |
| x_{11} | 1.046570 | -.4149177 |
| x_{12} | .03316429 | .03048618 |
| x_{13} | .1430255 | .04650504 |
| CONSTANT | - 2.47091 | - 1.355555 |

**Table 12: Guide Table for Barangay Classification
(Fisher's Linear Discriminant Functions)**

Barangay _____ Municipality _____

| A Variable | B Class 1 | C Class 2 | D Class 3 | E Class 4 | F Class 5 |
|---------------|--------------|--------------|--------------|--------------|--------------|
| X1 | 22.36785 | 25.21265 | 23.17767 | 29.31502 | 23.88775 |
| X2 | .6700748 | .9338278 | .7326796 | .6182421 | .6809694 |
| X3 | .08805189 | .1519348 | .4863905 | .1454037 | .1628275 |
| X4 | 10.30103 | 5.216293 | 7.578783 | 9.477886 | 6.459700 |
| X5 | 6.05749 | 3.403267 | 6.832444 | 4.365519 | 2.895194 |
| X6 | 2.902889 | .9278937 | .1349748 | 3.011212 | 6.140412 |
| X7 | .8408819 | .2669504 | .3466376 | .2873974 | .7833363 |
| X8 | 21.78215 | 65.11194 | 15.20845 | 3.202222 | 16.02807 |
| X9 | .09262903 | .1398662 | .07558163 | .1095515 | .01289115 |
| X10 | 13.47318 | 15.36844 | 11.84910 | 12.93019 | 10.72778 |
| X11 | 1.789877 | 2.968784 | 2.519193 | 2.640716 | .4747814 |
| X12 | .04957367 | -.07168749 | .1294758 | .1573760 | .1420698 |
| X13 | .6135361 | .5031663 | .4594795 | .8274363 | .2668587 |
| Constant | -20.83781 | -20.37745 | -14.09305 | -17.27097 | 11.89020 |
| TOTAL | _____ | _____ | _____ | _____ | _____ |

covered the pilot areas: Batangas, Cebu City, Negros Occidental, and South Cotabato. There is no reason to doubt that this situation is true in most areas of the country as well.

With the possible exception of those of affluent urban barangays, it was observed that barangay officials do not keep accurate records of their activities and transactions. Information on a particular barangay are unconsolidated and kept in various offices of the local government or national agencies in the locality. To a limited extent, the City/Municipal Government Operations Officer of the DLG keeps barangay records, particularly those that pertain to nationally-funded barangay projects, those having to do with the disposition of judicial cases, minutes of important barangay assemblies, and a few other items. In large urbanized localities a barangay bookkeeper in the office of the city/municipal treasurer handles the book of accounts of each barangay. The City/Municipal Planning and Development Office, which periodically prepares and updates the locality's socio-economic profile, is usually the only office that is in possession of information in consolidated form. No locality has been found to have prepared its Socio-Economic Profile (SEP) in such a form that reflects municipal data disaggregated by barangay. Very often city or municipal SEPs present information in municipal aggregates without indicating the spatial distribution by barangay.

Other offices and agencies simply do not seem to appreciate the value of disaggregating their data according to barangay contributions. Some of those that do are nonetheless unwilling to put up the extra manpower, time and effort to cull out barangay-specific data. Perhaps this is understandable because the purpose for which barangay data are retrieved and processed is simply to report to higher levels — provincial and regional/national. Necessarily, cities and municipalities have had to present aggregative data. Seldom, if ever, are cities/municipalities compelled to render a report to their constituent barangays and communities.

The following are some of the key municipal and national offices that have excellent potential for generating barangay information and the possibilities for maximizing their potential.

a. The Treasurer's Office

The office of the city/municipal treas-

urer is a rich source of barangay data, particularly those pertaining to barangay income and expenditure. In large urbanized localities, a barangay bookkeeper is hired as a full time employee in the treasurer's office. The remuneration of the barangay bookkeeper is taken from the barangay funds. In the case of small towns, the position of barangay bookkeeper does not exist. But this should not be taken as an excuse for not keeping track of the financial transactions of every barangay. Perhaps the barangay treasurers could be trained to update their respective ledgers at the municipal treasurer's office on a weekly, monthly or quarterly basis. This way, financial records of all barangays are regularly monitored, updated and consolidated in one place. Running summaries may even be posted in the bulletin board at the municipal hall for the townspeople and other interested persons to see.

b. The Assessor's Office

Another treasure trove of barangay information is the assessor's office. The potential of this wealth of information for planning and decision making, however, remains untapped. Hitherto, the assessor's office is regarded mainly as the source of information on the real property tax which is the most significant source of local government revenue. Yet, properly updated and summarized in appropriate format, data from the assessor's office can give an accurate physical profile of the barangay at any point in time. For example, authoritative information on barangay land area, the area coverage of specific land uses and their boundaries, the ownership — both public and private — of individual parcels, the changes in land values over time, etc. can only be derived from the assessor's office. All these information can be summarized and stored at the barangay level. Very few local government units have barangay level summaries. Most assessors' reports present the entire municipality as the lowest level of data aggregation. The task of summarizing data at the barangay level is a formidable one at the start. Once the appropriate summary

forms have been accomplished, however, incremental data recording will become routinary.

c. *The Mayor's Permits and Licenses Office*

The fact that no business is allowed to operate without a mayor's permit, among other requirements, shows that information on the number of establishments operating in the city/municipality at any time is available from the permits and licenses division of the Mayor's Office. The problem however is, beyond maintaining a log book, the said office rarely does any meaningful analysis or summary of the data. In a few exceptional cases, only a rudimentary classification of establishments according to nature of business is being done by the office chief. Alternative bases for classifying establishments, such as amount of capitalization, number of employees, location of business (by barangay), and the like, are not being used. Yet, all these data appear in the forms that establishments fill out when applying for an operation permit. A matrix cross tabulating the number of establishments by barangay distribution and by type of establishments may have to be devised to help the said office in coming out with more useful analyses and summaries, and to facilitate storage and retrieval of barangay-level data.

d. *The City/Municipal Planning and Development Office*

The local planning and development office serves as the "one stop shopping" place for practically all sorts of information about the city or municipality. From time to time, the planning office publishes an updated version of the socio-economic and physical profile (SEPP) of the locality. The SEPP is a very convenient compendium of municipal information. Some items in the SEPP are presented according to their barangay distribution. Many more items, however, are presented as municipal aggregates. The raw data, which are normally barangay based, are not carefully nor systematically stored for easy retrieval or cross-referencing. This practice tends

to reduce the usefulness of the SEPP for barangay level data gathering. Obviously, there is a need for the local planning and development office to consistently reflect in the SEPP and other relevant reporting systems the barangay distribution of data reported.

e. *National agencies*

National government agencies with field offices in cities and municipalities also generate barangay data. These data are often reported in municipal aggregates because field reports normally undergo a filtering process as they are transmitted to higher levels. In order to maximize the utility of such data, these agencies should be required to furnish a copy of the barangay-based raw data for storage by either the city/municipal government operations officer or the barangay government operations officer of the Department of Local Governments.

Alternatively, the local planning and development office should be furnished with all such barangay disaggregated data.

The following national agencies may be required to report barangay disaggregated data:

1. The Rural Health Unit (DOH)
 - Infant mortality rate
 - Extent of malnutrition by age group
 - Sanitary toilets utilization
 - Sources of water supply for drinking
 - Other health indices
2. The District Supervisor (DECS)
 - School enrolment by place of residence of pupils so that the service area of a particular school facility can be determined, and the school participation rate of certain age groups can be computed.
3. The City/Municipal Census Officer
 - Authoritative information on population such as demography and migration
 - Survey of establishments
 - Other relevant data

4. The City/Provincial Engineer
 - Inventory and condition of roads
 - Extent of service of potable water systems
 5. Utility Companies
 - Extent of service of electric power
 - Extent of service of telecommunications
 6. The CGOO / MGOO, DLG
 - Information on barangay political activities
 - Monitoring of barangay projects
 7. Local Election Registrar
 - Barangay voting-age population
 - Registered voters by barangay (not only by precinct)
- f. *Non-Governmental Organizations*

Non-governmental organizations

(NGOs) also generate micro-level information often for specific purposes. Sometimes the level of detail, reliability, and analytical sophistication is even superior to those of government agencies. This is especially true among university-based research organizations. These NGOs should be coopted into the network of barangay data generating agencies.

Based on the foregoing observations, the team is convinced that when the new barangay classification scheme gets to be implemented on a nationwide scale there may no longer be a need for massive primary data gathering. Majority of the data requirements already exist in unconsolidated form in various local and national agencies and private organizations. What remains to be done is to organize and systematize the generation, collection, analysis, retrieval and reporting of already available information.

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