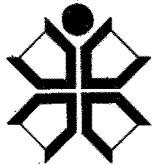


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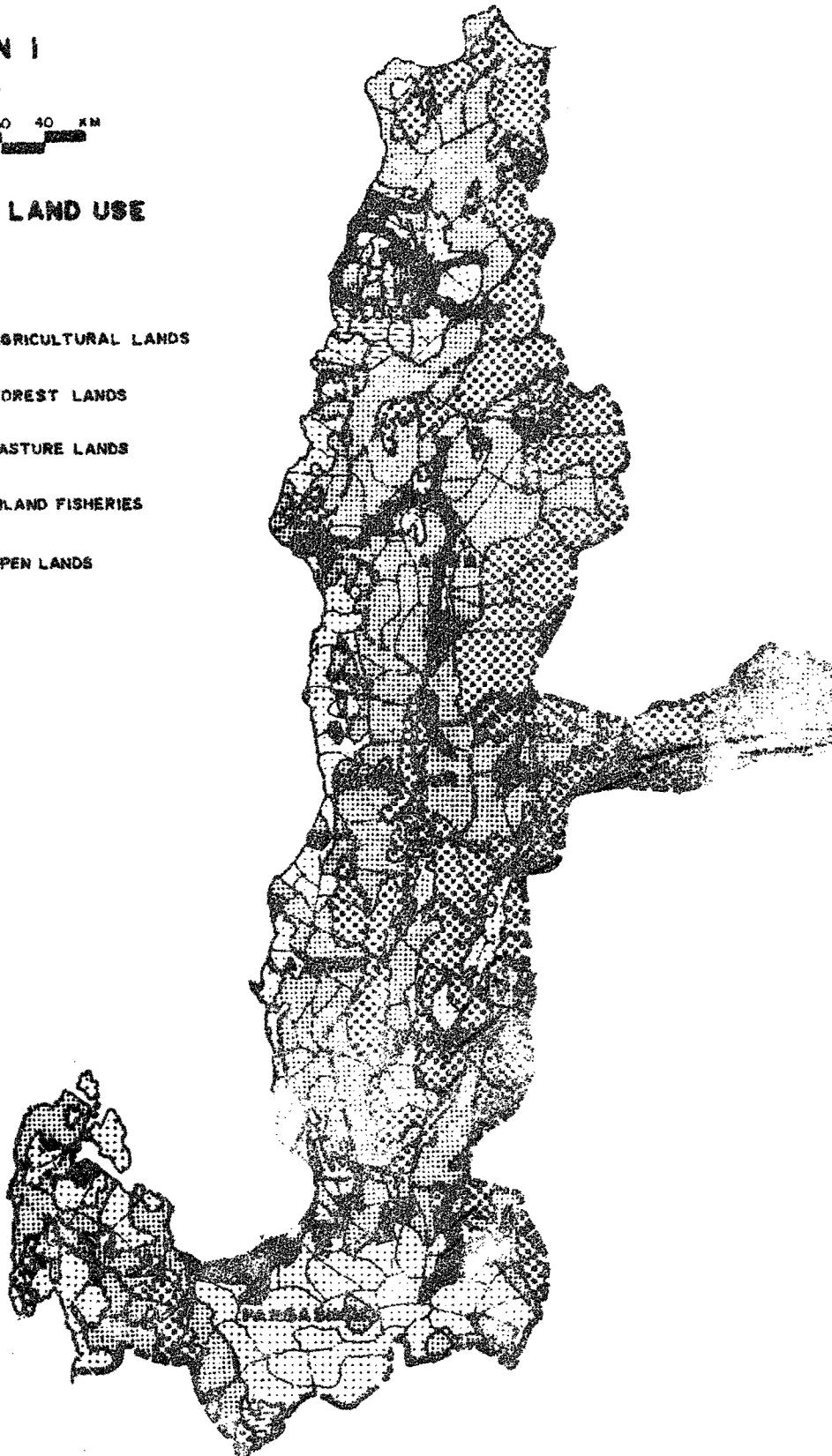
REGION 1



EXISTING LAND USE

LEGEND:

[Agricultural Lands pattern]	AGRICULTURAL LANDS
[Forest Lands pattern]	FOREST LANDS
[Pasture Lands pattern]	PASTURE LANDS
[Inland Fisheries pattern]	INLAND FISHERIES
[Open Lands pattern]	OPEN LANDS



Source: *Regional Multi-year Human Settlements Plan: 1983-1987 — 2000 (A Physical Development Framework)*, Region 1, Ministry of Human Settlements.

THE REGIONAL DEVELOPMENT INVESTMENT PROGRAM (RDIP) OF THE ILOCOS REGION

Joseph M. Alabanza
Regional Executive Director
NEDA Region I

Background

The Regional Development Investment Program (RDIP) is the second phase of the Regional Planning Assistance Project of the Philippine Government and the World Bank/UNDP. The first phase was the preparation of the macro Regional Development Plan (RDP) in each of the twelve (12) administrative regions in the country. Hence, the RDIP Project aims at complementing the indicative regional plans with a more operational framework. It is also designed to strengthen the regional development planning process by firming up the linkages between macro planning, programming and budgeting.

The formulation of the RDIP was piloted in the Central Visayas Region (Region 7) in 1978, and its replication in the rest of the regions began in 1979. All regions now have an RDIP for CYs 1981 to 1985. By virtue of Executive Order No. 589, the RDIP of each region becomes the basis for resource allocation and budgeting of all line agencies and government corporations.

In Region I, the 1981 to 1985 RDIP has been used as the basis for the annual regional budgeting program. However, with the formulation of the 1983 to 1987 Regional Development Plan for the Ilocos Region, this RDIP is now undergoing revision in consonance with the requirements of this new plan.

BASIC CONCEPTS AND APPROACHES OF THE RDIP

Purposes

As conceived, the RDIP is the implementing instrument of the Regional Development Plan

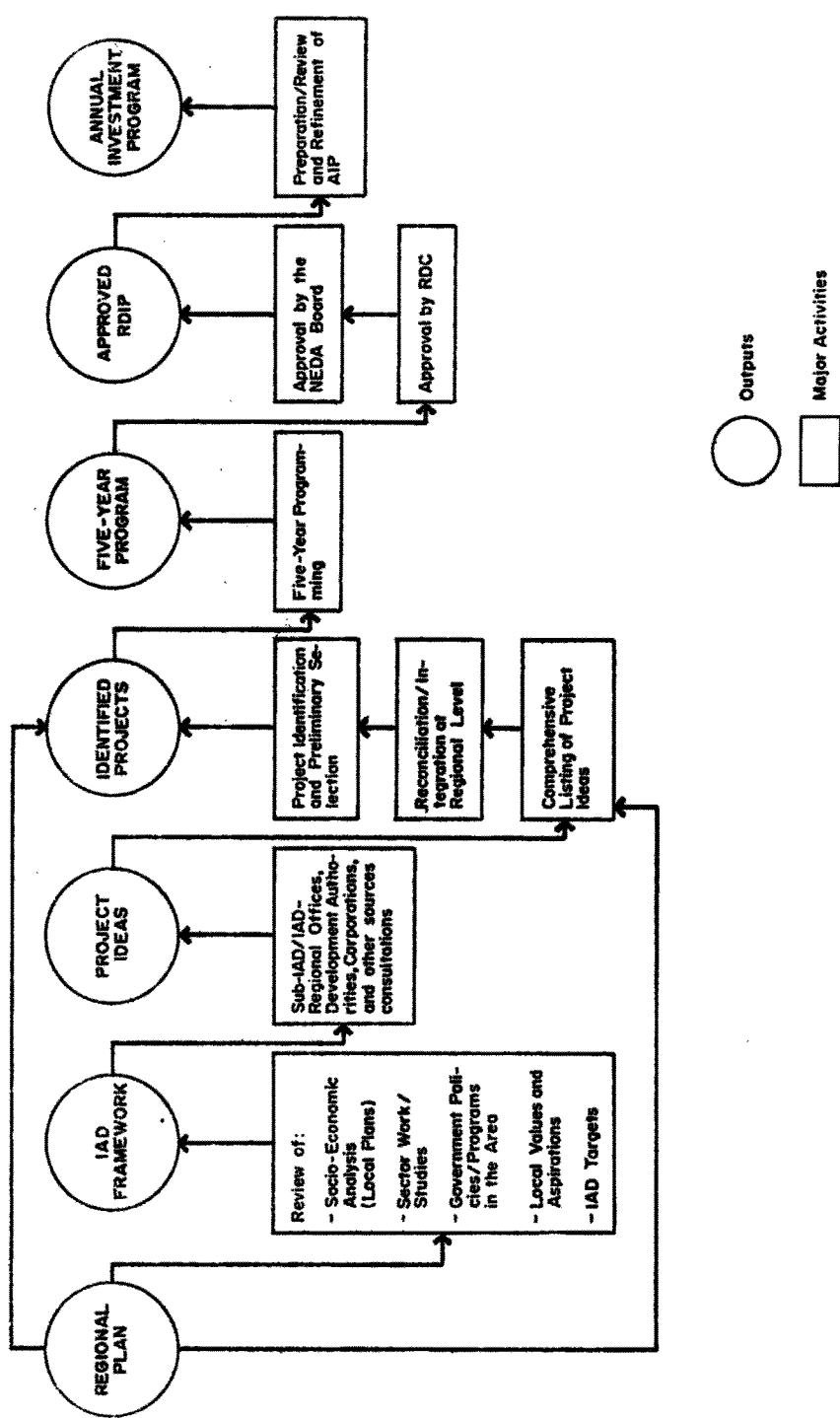
(RDP). It contains packages of operational programs and projects designed to help achieve the targets and strategies of the regional plan. The RDIP systematically aligns programs and projects of national, regional, local and private entities in the region to achieve planned levels of development; and provides a viable scheme for efficient and effective resource allocation.

Project Components

The RDIP consists of two types of programs/projects (PPs)—the traditional and non-traditional packages. The first consists of PPs emanating from national line agencies including those to be undertaken by local government units (LGUs) and by special bodies operating in the region. This traditional type of PPs would rely mainly on public funds for implementation.

The non-traditional project package includes (1) the region's own programs or those identified and formulated by the RDC designed to fill in the gaps in the traditional component, supplement the projects contained therein and add projects in areas and sectors neglected by the integrated area development (IAD) units and line agencies, and (2) the private sector interface component, which consists of profit-making projects engaged in by the private sector and which have been actively promoted by the region and/or local governments. The region's own package would be funded from resources available or made available to the Regional Development Council (RDC), while the funding resources of the interface component will come largely from outside the public purse.

RDIP FLOWCHART



The IAD Concept as a Basic Approach in the RDIP Formulation

There are four (4) basic reasons for the adoption of the IAD concept as an approach for implementing the existing regional plan prepared by the Regional Development Council (RDC), namely:

- 1) The ineffectiveness of the project-by-project approach in responding strategically to the complex sub-regional systems;
- 2) The need to establish spatial coherence and functional integration from the relatively broad and indicative nature of existing regional plans;
- 3) The necessity of developing an operational approach for understanding how spatial organizations in a sub-regional system influence the structure and rate of socio-economic growth and particularly how the location and ordering in infrastructure affect the economy, land use, and local attributes, among others, of an area; and
- 4) The need to provide an effective mechanism for effecting coordination and synergy among various line agencies, the LGUs and private sector representatives in the task of identifying, developing, packaging, and prioritizing PPs.

There are at least three (3) criteria for IAD delineation as suggested by the Regional Development Staff (RDS) of the NEDA, namely: *contiguity* (the areas should be adjoining the maximize complementation of PPs); *functionality* (the area should be large enough to spatially cover the most significant interrelations between existing problems and opportunities); and *politico-administrative acceptability and feasibility* (the area delineated as IAD must be acceptable to the respective LGUs to ensure smooth implementation of PPs).

In Region I the seven (7) provinces, four (4) cities and the municipality of San Fernando, La Union, as the region's administrative center are each delineated as an IAD. While the third criterion obviously played the overriding factor in this delineation, the purposes of contiguity and functionality were also served given this kind of delineation. Sub-IADs especially with regards to the seven (7) prov-

inces consist of cluster of municipalities delineated based on two factors, namely, resource homogeneity and nodality.

Because the IAD Investment Programs (IPs)* are likewise construed as being implementive of the IAD's own strategies of developing, an IAD-strategic plan becomes the logical framework for these IPs. Accordingly, IAD planning is built on the premise that it would be able to respond immediately to problems or capture opportunities facing the area. As a planning approach, IAD planning shuns the complete inventory and thorough-going situation analysis that usually attend the comprehensive planning approach.

Programming Techniques and Procedures

The array of programming techniques includes: (1) *sanitization*, or the removal of parts in the traditional package which, in the light of existing standards and criteria, are found to be redundant, impractical, undesirable or inefficient; (2) *augmentation*, which entails the conduct of additional studies and researches to determine PPs, the injection of additional PPs to fill in inter-project gaps in the traditional package and the identification and formulation of new income-cum-employment generating projects especially in areas left out by the current programming process; (3) *innovation*, which is an extension of augmentation but which especially features the orchestration of the supplemental and supportive activities of the government in order to entice the private sector to engage in productive enterprises especially those that have strong forward and backward linkages; (4) *prioritization*, which is a procedure needed to match total cost of the entire project package in terms of reasonable estimates of financial resources by a PP ranking

*The set of IAD-IPs, following the programming tiers in the region, includes the Municipal Development Investment Program (MDIP), the City Development Investment Program (CDIP), and the Provincial Development Investment Program (PDIP). As an output of the RDIP Project in the region, the RDC produced 7 PDIPs, 4 CDIPs, and 1 MDIP. When integrated at the region, these constitute the RDIP.

system; and (5) *action planning*, which again is a further extension of augmentation and innovation but has the nature of a work program, i.e., it entails the listing of inputs which must be marshalled in space and time in order to realize an activity which enhances the income and employment of inhabitants in a given programming area, especially depressed areas. This is intended especially for key regional project packages.

Processes and Levels of RDIP Formulation

A major activity precedent to the formulation of the IAD-IPs was a training program directed at those who will directly undertake the task of IP preparation at the IAD and regional levels. Two sets of training programs were undertaken to fully disseminate and operationalize the concept and techniques of IP formulation, namely: (1) the training for the local government technicians designed to impart the basic techniques of project identification at the IAD level, and (2) the training for line agency programmers, aimed at sensitizing participants on the impact of multi-sectoral integration of programs and projects and the significance of augmentation for identifying program gaps.

In terms of the levels of IP formulation and the corresponding roles and linkages of each of these in the entire RDIP Project including specific roles of project participants, the following captures the more salient aspects in each of the programming tiers.

(1) *First level programming.* The basic building block for the IP exercise is the municipality, where strategic projects are identified and packaged. In the preparation of the 1981 to 1985 RDIP of Region I, programming at this level was not very substantial, primarily due to time constraints. In many instances, it only took the form of fishing out projects from municipalities with existing capital investment programs (CIPs) and from the few that had town plans. However, in the current RDIP refinement project, the municipalities are now taking an active role in the preparation of their MDIPs. The major participants and their roles at this level of programming are:

— Municipal Development Council/Staff (MDC/MDS)—the municipal govern-

ment through its MDC/MDS assumes full responsibility for the formulation of the MDIP. It therefore coordinates the various activities of line agencies and barangay officials, and enjoins the private sector to take an active part in the preparation of the MDIP.

— Provincial Development Council/Staff (PDC/PDS)—the provincial government through its PDC/PDS extends technical assistance to the various municipalities within its jurisdiction.

— The Regional Development Council/NEDA Regional Office (RDC/NRO)—the RDC/NRO's role is to formulate a framework for project identification and integration which, among other things, will single out the appropriate sectoral and spatial thrusts of programming relevant to the overall development of the region.

(2) *Second level programming.* Output of this stage is the PDIP or the IAD-IP. The PDIP is basically the integration of the MDIPs including "augmented" PPs identified by the PDS. Its preparation is the main responsibility of the provincial government through the PDS and the line agency representatives assigned in the province. Technical assistance is provided by the NRO staffs especially in the conduct of trainings and the generation of augmented PPs for the province.

(3) *Third level programming.* The final phase of the IP exercise is done at the regional level and its output is the RDIP. This consists of the final integration and consolidation of the programs and projects generated at the municipal and provincial levels. The generation of the RDIP remains to be the responsibility of the NRO/RDC with the utmost cooperation of the regional agencies.

In each of the programming tiers, a critical process is the concept of project packaging which, as earlier mentioned, may be secured through the application of the augmentation-innovation-prioritization approaches. In the existing RDIP (1981 to 1985), the attempt at integrating mutually reinforcing investments from different sectors and/or programs/projects

required to achieve a common development objective for a specified geographic unit (in this case the various sub-IADs and IADs) was at best a shallow one. Project packages emanating from various project proponents were simply aggregated by sectors without these being meaningfully aligned with one another.

In the current RDIP refinement project, however, productive activities (agriculture, small industry, services) which are already or are in the process of being identified under the livelihood program (Kilusang Kabuhayan at Kaunlaran or the KKK) are used as the principal basis for project packaging. In this context, a package contains a productive activity (private sector investment) and its support requirements in terms of development services (agricultural/industrial support services, social support services, and infrastructural support facilities) representing the public sector investment. This packaging essentially is in pursuance of the proper role of the public sector in a predominantly free enterprise economy. (See Figure.)

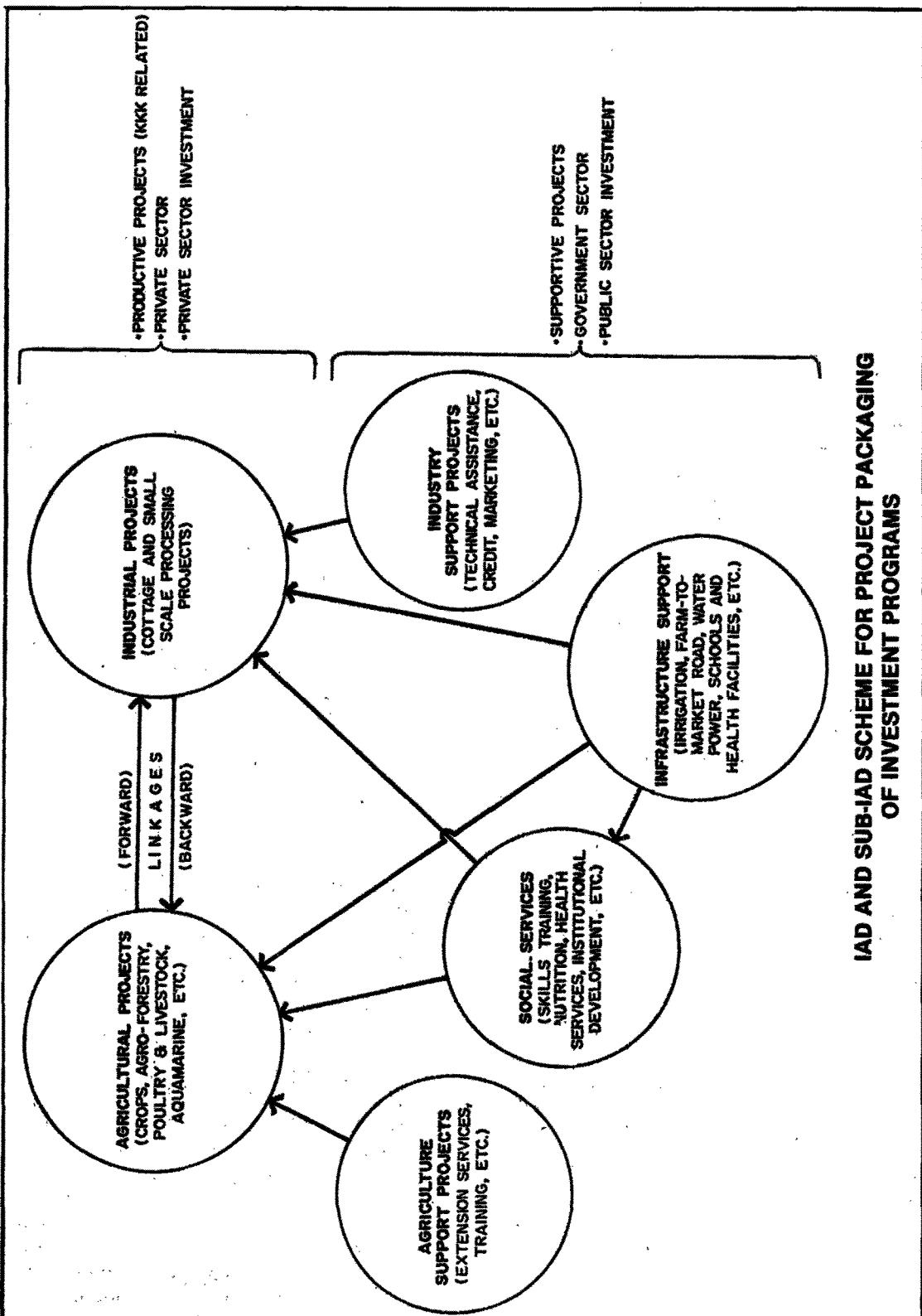
SOME ISSUES AND CONSTRAINTS IN THE FORMULATION OF THE REGION'S RDIP

Limited Private Sector Participation. The preparation of the investment program features as a very significant activity private sector interface and, accordingly, based on the public sector responses could be fashioned in a more direct way to support private sector activities. As conceived then the ultimate intention of this component of the investment program was to ascertain the specific productive activities to be engaged in by the private sector as a basis for providing the supportive and complementary projects of the government. Except for the more obvious ones, information on these types of activities especially for industrial projects was scanty. During the various IAD workshops on project identification, private sector involvement took the form of suggestions on specific government PPs to be incorporated in the IAD IPs while others had indicated the need for appropriate government policies and better information dissemination to improve the investment climate in the region. The

lack of a more explicit basis for formulating the various IAD-IPs had substantially limited the effectiveness of the various IPs instruments for mobilizing public sector support for private sector productive endeavors.

Weak Spatial Augmentation to Increase Socio-Economic Opportunities in Depressed Areas. Augmentation as a programming technique aims not only to fill in interstitial gaps between/among projects but more importantly to identify and formulate new income-cum-employment generating projects especially in areas left out by the current programming activities. Augmentation is therefore a critical process in helping create a more balanced pattern of development within the region especially in view of the marked intraregional imbalance between the lowland coastal provinces and the interior mountain areas. To a great extent, this imbalance continues to be brought about by a lopsided pattern of public investment which continues to favor relatively developed areas. The task, therefore, of augmenting traditional PPs which should result in increasing asset transfers to so-called depressed, disadvantaged and undeveloped (DDU) areas had not been very successful as revealed by an investment program which apparently seemed to perpetuate the old pattern. Across IADs, relatively well-off provinces continued to get a larger share; within IADs, depressed municipalities had lower shares vis-a-vis the more developed ones.

Limited Data Base for Planning, Project Identification and Programming. One of the major constraints in planning, project identification and programming in the IADs is the severely limited data base. This had a far-reaching effect on the whole IAD-IP formulation process. Basically, there are two types of data being gathered, namely: inventory data for PPs and general socio-economic data for an IAD situation analysis. For the first type, complete PP data could be secured in many instances at the regional or even national offices of sectoral line agencies. Inter-level coordination and systematic information/data filling of agencies in the IADs would have facilitated data gathering for these types of project data. Breakdown in vertical as well as lateral coordination, however, limits data gathering of this type. The



second type of data is the more critical one because it should be accurate, up-to-date, and valid. While the data requirements for IAD socio-economic analysis was generally of lesser specificity, that for PP identification and programming in general would require data of a more specific nature. From the IAD experience, it is clear that most data are not readily available and those that can be secured from secondary sources are not completely reliable. Any planning and programming activity undertaken at the IAD level would hence require the establishment and/or improvement of the data base if only to ensure that proposals would have a reasonable degree of validity.

Dominance of Sectoral Line Agency PPs. As indicated earlier, the more significant IP component, the non-traditional package, is not given the importance it deserves. Because of pressures of time and the constraints in data, the IADs end up with an investment program almost wholly dominated by sectoral line agencies PPs. In some IADs, the outright adoption of line agency PPs without these being fine-tuned in terms of their own unique requirements result in a mere disaggregation of the regional agency investment program by IADs. With traditional programs dominating the IAD-IPs, it can be expected that only a modicum of effort is made to correct the current slant of programming to efficiency areas. To the extent that the composition of IAD-IPs are largely line agency PPs, it can be expected that much programming carries with it the priorities defined at the national level.

Uncertainty of Investible Resources. Ideally, programming starts with a delineation of the available investible resources which the region could muster. Based on the regional and sectoral resource ceilings, the RDC prioritizes various PPs considering the relative importance of these in the achievement of developmental objectives. Unfortunately, the region started with the investment programming project without the benefit of aggregate regional as well as sectoral ceilings. Even the annual budgeting exercise incidentally does not carry with it a clearcut delineation of resources allocated to the region. Attempts to estimate resource and budgetary ceilings either through the extrapolation of past trends

or the application of the 20 percent annual increase over the immediately preceding year has only resulted in gross miscalculations, causing time-consuming revision of the whole investment program package each year.

The basic difficulty of investment programming and regional budgeting arises from the fact that the allocation of the national budget is done by broad sectoral and program categories without these being disaggregated by region and sector based on the RDP and the RDIP. Strategies and priorities of development of the region have not, therefore, been fully taken into consideration when the intention of policy makers is really to make the national budget a more effective instrument for responding to local/regional needs and aspirations. As a matter of fact the adoption of the regional budgeting system was based on this premise.

Weak Machinery for Planning and Implementation in the IADs and Sub-IADs. The preparation of the RDIP entails as basic inputs the sub-IAD (municipal) and IAD (city/province) investment programs. In the region's RDIP (CY 1981 to 1985), there was no deliberate attempt to formulate sub-IAD-UPs due to the limited time within which the RDIP would be prepared as well as the absence of trained personnel to prepare the IP. Whatever municipal breakdowns of PPs there were came about not from a systematic and integrated assessment of sub-IAD needs but from the need to specify the municipal component of the PP proposals of line agencies. At the IAD level, the PDC and PDS in the case of provinces and the CDC and CDS in the case of cities were tasked to formulate the PDIP or CDIP with the assistance of the RDC's technical staff or the NRO. But even at this level where there already exists an organized development council and staff the outputs are less than satisfactory. At this level, lack of trained people, lack of expertise, limited logistical support, default of local leadership to provide the much-needed coordination and political support, lack of specific guidelines for the participation of line agencies in the IADs, etc., coupled with the paucity of basic data for planning and programming have already affected the quality of IAD-IPs.

INVESTMENT PRIORITIES OF THE ILOCOS REGION

Employment Situation in the Ilocos Region

In 1981, out of 1.4 million people in the labor force, 96.3 percent or about 1.36 million were considered employed. Unemployment stayed at less than 4 percent (3.7%). Those considered to be fully employed represented 76 percent of total employment in 1981, leaving underemployment at 24 percent.

Of those who were considered fully employed about 61 percent remained in agriculture. Among the underemployed, almost one out of three remained in the agricultural sector. The pattern of unemployment distribution followed similar trends.

Regional Employment Scenario and Broad Strategies of Development

For the period from 1983 to 1987, employment is expected to increase at the rate of 4 percent per year. Employment is expected to increase from its first year level of 1.48 million persons or 94.35 percent of the expected labor force to 1.7 million in 1987, representing 97.8 percent of the labor force for the same year.

Agriculture will continue to be the main source of employment for the planned period increasing at an average rate of 2 percent each year; its share to total employment will however decrease from 50.68 percent in 1983 to a little more than 47 percent in 1987. The Industry sector will experience a steady increase at the rate of over 5 percent per year, expanding its share of employment from a little less than 13 percent in 1983 to 13.67 percent in 1987. Trade and services will likewise experience similar growth patterns, resulting in an increase in share by almost 3 percentage points between 1983 (36.33%) and 1987 (39.19%).

Admittedly, the foregoing scenario reflects the attempt at further strengthening and expanding the non-agricultural economic base of the region in view of the limited potential for growth in the primary sector. Part of the reason for the heavy emigration of Ilocanos in the 1950's and 1960's was the limited opportunity available in agriculture aggravated by a slow-growing urban economy.

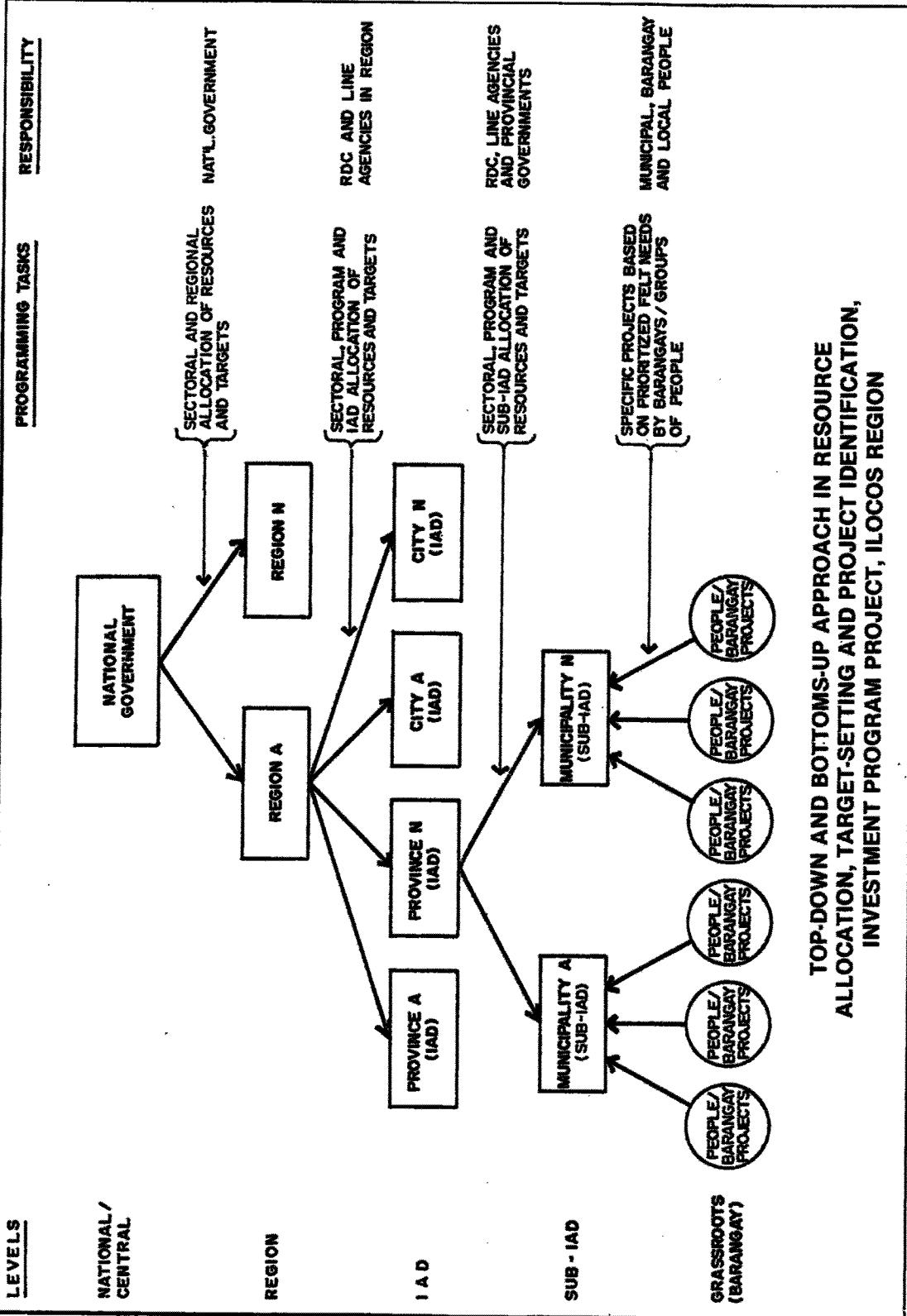
For the planned period, an estimated average of 50,000 jobs per year will have to be created for the new labor entrants. The average annual increase of incremental labor force will see a decline of about 8.5 percent in agriculture, while positive increases are

EMPLOYMENT, UNEMPLOYMENT AND UNDEREMPLOYMENT, BY MAJOR SECTORS: REGION I, 1981

<i>Items</i>	<i>Total</i>	<i>Percent</i>		
Household pop. 15 yrs. old & over	2200	<u>100.0</u>		
In the Labor Force	1412	64.18	<u>100.0</u>	
Total Employed	<u>1360</u>	93.6	<u>100.0</u>	
Fully Employed	<u>1032</u>	75.9	<u>100.0</u>	
In Agriculture	628	46.2	60.8	
In Non-Agriculture	404	29.7	39.1	
Underemployed	<u>328</u>	24.1	<u>100.0</u>	
In Agriculture	204	15.0	62.2	
In Non-Agriculture	124	9.1	37.8	
Total Unemployed	52		3.7	

* Average of 3rd and 4th Quarters

Source: ISH, Labor Force, Special Release, Nov. 26, 1982.



expected for both the industry and trade/services sectors (5.16% and 0.85%, respectively). The attempt at expanding employment opportunities in secondary and tertiary sectors of the economy will of course imply development of urban sectors. This does not however preclude the corollary strategies of providing (1) off-farm employment opportunities in the rural areas as a measure of providing gainful employment for the unemployed and additional sources of income for the underemployed, and (2) improving agricultural productivity levels through irrigation, institution-building, intensified technology transfers, land classification and other similar moves. Striking and maintaining a delicate balance of growth and development between urban and rural areas is earnestly attempted to ensure functional and productive linkage between these two sectors of the region's space economy.

The Region's RDIP: Implications on Employment, Population Distribution and Migration Patterns

Total, Sectoral and Spatial Distribution of the RDIP

Partial estimates of the total financial requirement of the public sector in the implementation of development projects as contained in the RDIP indicate an amount of ₱25 billion for the 5-year period. This is sectorally distributed with agriculture getting 12 percent, industry and trade less than 1 percent, social services two-thirds of the total and infrastructure 21 percent. The share of social services has ballooned to this proportion because of the inclusion of the budgetary requirements of five state colleges and universities in the region with sizable capital outlays in infrastructure.

ESTIMATED LABOR FORCE AND EMPLOYMENT TARGETS BY SECTOR/SUB-SECTORS: REGION I, 1983-1987

Particulars	1983	1984	1985	1986	1987
Projected Household Population					
15 yrs. old & over ¹	2,275,056	2,320,542	2,364,988	2,408,441	2,451,330
Expected labor force ²	1,535,588	1,597,178	1,657,487	1,717,888	1,777,965
Expected employment ³	<u>1,488,874</u>	<u>1,552,341</u>	<u>1,614,578</u>	<u>1,676,914</u>	<u>1,738,944</u>
AGRICULTURE, FISHERIES⁴ AND FORESTRY					
— Crops	588,866	600,379	613,744	628,228	637,501
— Poultry and Livestock	82,262	84,843	86,724	88,759	90,156
— Fisheries	65,404	67,618	69,380	71,268	73,205
— Forestry	18,368	18,460	18,552	18,645	18,738
INDUSTRY	193,200	202,400	213,200	227,100	237,800
— Mining	12,200	12,300	12,400	12,500	12,900
— Manufacturing	93,400	99,800	105,700	112,800	120,500
— Electricity, Gas & Water	19,200	20,800	21,300	22,500	23,900
— Construction	68,400	69,500	73,800	79,300	80,500
TRADE AND OTHERS	540,974	578,641	612,978	642,914	681,544
— Trade ⁴	84,400	87,700	91,200	94,800	98,600
— Others ⁵	456,574	490,941	521,778	548,114	582,944

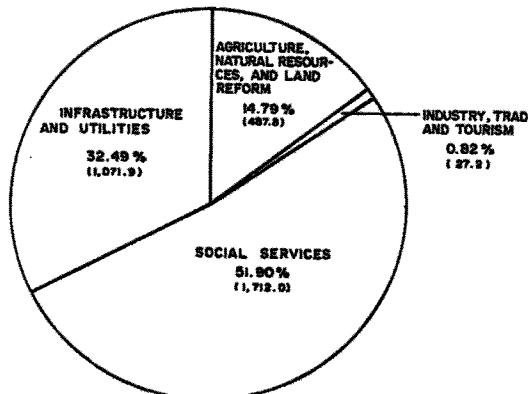
¹Taken from Official NCSO Projection as of July 1, 1983-1987.

⁴Estimate of NRO Region I.

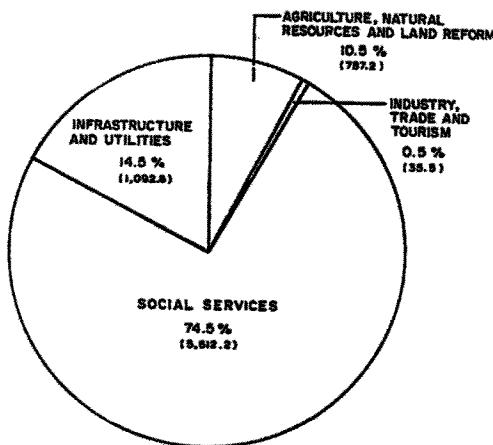
²Based on trend projections of LFPR.

⁵Residual of total employables.

³Based on trend projections of employment.

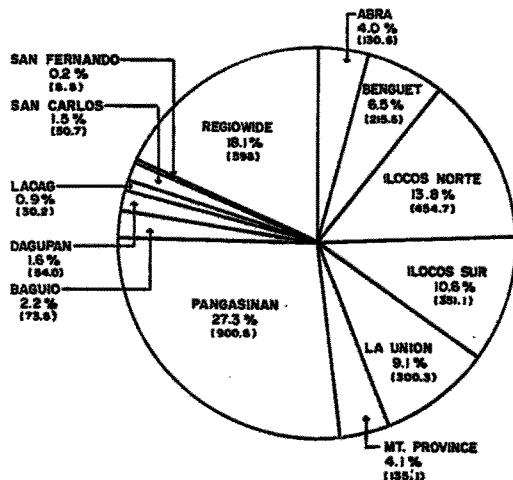


1983
(₱3,298.9 = 100.0 %)

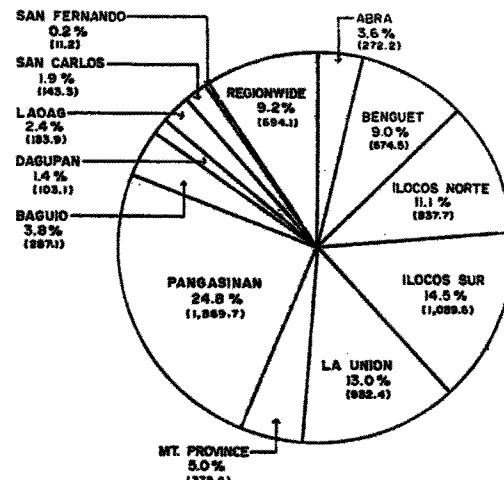


1987
(₱7,527.5 = 100.0 %)

RDIP BY IAD, REGION I, CYs 1983 AND 1987 (MILLION PESOS)



1983
(₱3,299.1 = 100.0%)



1987
(₱7,507.4 = 100.0%)

RDIP BY SECTOR, REGION I, CYs 1983 AND 1987 (MILLION PESOS)

This investment program considered the existing levels of development of the various economic sectors of the region and its component IADs together with its growth strategies for the period. The region still has to fill in wide gaps in the basic sectors of infrastructure and social services as a pre-condition for growth the reason why these sectors continue to absorb higher proportions of total public investments. Agriculture in the region has more or less reached its plateau of development, and its requirements are basically for maintenance. For tourism, industry and trade, the sector for which the region will attempt to promote and develop within the plan period—the financial requirements are relatively small (in fact, negligible) compared with the other sectors because the activities considered under this sector refer mainly to industrial extension and regulatory services.

Capital infusion from financial institutions cannot as yet be captured by the present RDIP process, nor are the special infrastructure projects (usually foreign-assisted) like the Philippine Rural Infrastructure Project (PRIP), Rural Roads Development Program (RRDP), the PADP, NACIAD-sponsored projects, etc. under which considerable resources are funneled into various areas of the region.

In terms of its spatial breakdown, the three Ilocos provinces (Ilocos Norte, Ilocos Sur and La Union) will have more or less similar shares ranging from 11 percent to 12 percent of the RDIP while Abra, Benguet and Mt.

Province will get a share of 3 percent, 8 percent and 5 percent each. Pangasinan will continue to get more than one-fourth of the total. The four cities in the region will get a share of 2 percent to 3 percent each. This broad pattern of allocation is based on population, land area and perceived magnitudes of needs. While apparently this spatial distribution is a continuation of existing trends, the composition of programs and projects packaged by IADs is felt to deliver the desired level of impact given the unique situation and strategies of development at IAD and sub-IAD levels.

Implications of Sectoral Allocations on Employment, Population Distribution and Migration

For the 5-year period, more than four-fifths of total investments is accounted for by the social services and infrastructures/utilities sectors. This magnitude ought to be seen not only in the light of the basic function of the public sector within a dominantly free enterprise economy where such functions understandably assume critical importance vis-a-vis those of the private sector but also in regard to the need to provide the preconditions of growth for a sustained economic take-off.

An important consideration is their effect on population distribution and migration. Many of these services and facilities have

**RDIP BY SECTOR, PERCENTAGE DISTRIBUTION AND ANNUAL GROWTH RATE,
REGION I, CYs 1983, 1987 AND 1983-1987
(Million Pesos)**

Sectors	1983		1987		1983-1987		Annual Rate 1983-1987
	Amount (PM)	Percentage Distribution	Amount (PM)	Percentage Distribution	Amount (PM)	Percentage Distribution	
GRANT TOTAL	₱3,298.9	100.0	₱7,527.5	100.0	₱25,075.6	100.0	25.64
Agriculture, Natural Resources, and Land Reform	487.8	14.79	787.2	10.5	3,128.1	12.47	12.30
Industry, Trade and Tourism	27.2	0.82	35.5	0.5	163.4	0.65	6.10
Social Services	1,712.0	51.90	5,612.2	74.5	16,563.2	66.06	45.60
Infrastructure	1,071.9	32.49	1,092.6	14.5	5,220.9	20.82	0.39

Source: RDIP, Region I, CYs 1983 to 1987 (partial estimate).

**RDIP BY IAD, PERCENTAGE DISTRIBUTION AND ANNUAL GROWTH RATE
REGION I, CYs 1983, 1987 AND 1983-87
(Million Pesos)**

I A D s	1983		1987		1983-87		Annual Rate 1983-87
	Amount (PM)	Percentage Distribution	Amount (PM)	Percentage Distribution	Amount (PM)	Percentage Distribution	
TOTAL	₱3,299.1	100.0	₱7,507.4	100.0	₱25,075.62	100.0	29.88
Abra	130.8	4.0	272.2	3.6	971.8	3.1	21.68
Benguet	215.6	6.5	674.5	9.0	2,012.5	8.0	42.56
Ilocos Norte	454.7	13.8	837.7	11.1	2,947.0	11.9	26.84
Ilocos Sur	351.1	10.6	1,089.6	14.5	3,217.9	12.8	42.06
La Union	300.3	9.1	982.4	13.0	2,907.2	11.6	45.42
Mt. Province	135.1	4.1	378.6	5.0	1,159.4	4.6	139.68
Pangasinan	900.6	27.3	1,869.7	24.8	6,647.9	26.5	21.52
Baguio	73.6	2.2	287.1	3.8	790.8	3.2	73.32
Dagupan	54.0	1.6	103.1	1.4	369.6	1.5	18.18
Laoag	30.2	0.9	183.9	2.4	475.1	1.9	101.78
San Carlos	50.6	1.5	143.3	1.9	439.9	1.8	36.52
San Fernando	6.6	0.2	11.2	0.2	46.0	0.2	12.94
Regionwide	596.0	18.1	694.1	9.2	3,090.5	12.3	1.40

been conceived to equalize social and economic opportunities between developed and lagging areas. In effect, growth is deliberately slanted in favor of the depressed rural areas. Since the benefits as well as opportunities of development are expected to be within the reach of the rural populace, it is generally expected that rural-urban migration will slow down and that rural service centers may initially become the focal points of increased migration. In general, investments in the rural areas will have the effect of keeping rural population stay put.

It should be mentioned that while a rural bias is somehow built into the provision of services (health, training, nutrition, etc.) and facilities (roads, water supply, schoolbuildings, health facilities, communications, etc.), this does not preclude simultaneous investments in rural areas. Politically articulate areas will continue to press for their due share, and the planned urbanization of select points in the region will anyway suggest reasonable public assistance in developing the external economies of these areas.

The investment priorities of the region, while definitely responding to social equity concerns, also recognize that rural develop-

ment ultimately will require complementation through a synchronized development of urban nodes. Only the need to provide immediate and more direct intervention in effecting a more just society and in the process also stemming premature urbanization dictate that "more" should be given to those with much "less".

For the planned period, the investment share of the sectors on agriculture (including natural resources and land reform) and industry, trade and tourism is only a little over 13 percent of the total. This reflects, as mentioned earlier, the service-type projects included under these sectors as compared to the heavy capital-outlay orientation of infrastructure projects. Being essentially extension projects (agricultural and industrial extension), investments here largely entail payments for public personnel services, with the private sector being responsible mainly in agricultural or industrial development.

Agricultural investments will remain concentrated within the coastal plains and river basins in the region. The thrust of investment entails the raising of productivity levels, thereby having the general effect of keeping present agricultural employment in the rural

areas. The high arable land-to-farm population ratio and the strategy of promoting high-value labor-intensive cash crop production (e.g., tobacco, cotton production) are not expected to attract migrant employment to these areas but will merely put to maximum use current manpower resources available. And because a number of programs in agriculture and resource development likewise involve the tapping of marginal areas* as a measure of improving welfare of one of the most depressed groups in the region, it can be expected that the net effect of these is the further slowing down of rural migration.

In industry, trade and tourism, the major programs have varying effects on employment, population distribution and migration.

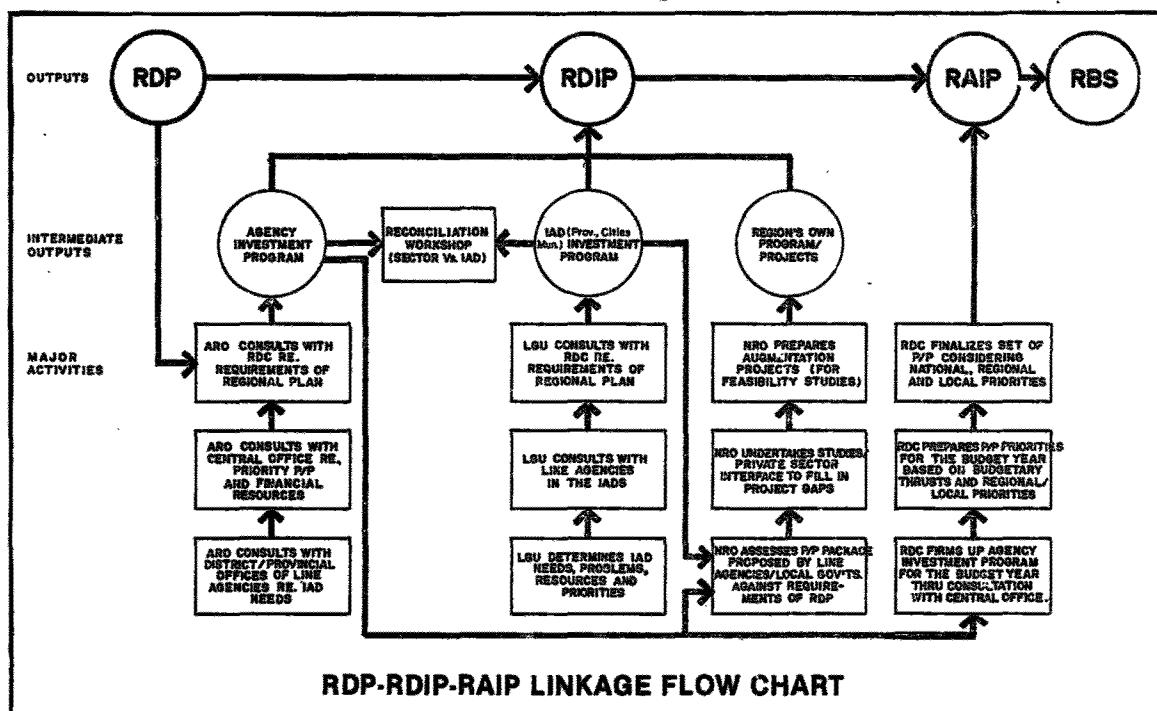
As regards cottage industries, their generally rural orientation will continue to exert a "holding effect" on the rural population. For small and medium scale industries and industrial estates,** they generally tend to polarize in primary and secondary urban centers because of their relatively developed

external economies. The urban locational preference of these industries will make them the focal points of intra-regional migration.

For mineral resource development projects which are resource-oriented, population dispersal usually trails behind the location of these enterprises as can be seen in the Baguio Mining District.

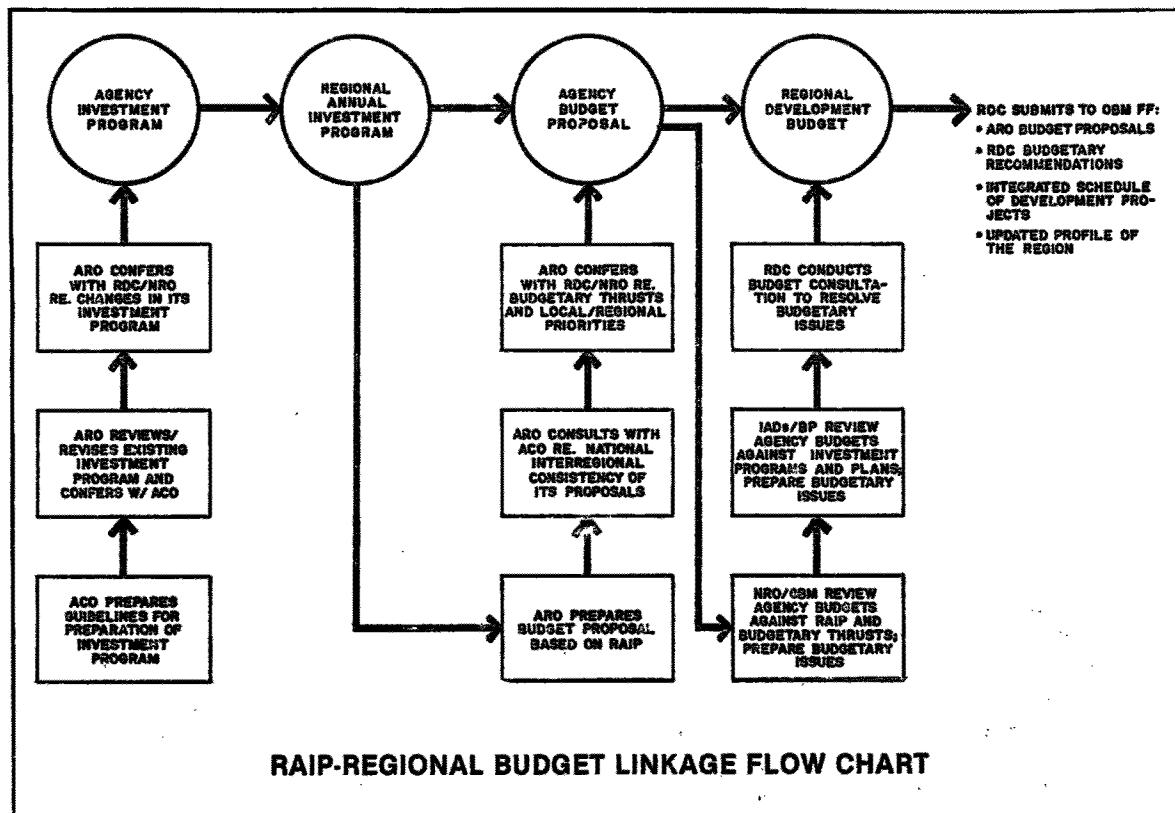
For tourism projects the strategy of aligning tourist nodes as close as possible to existing urban centers will also have the effect of inducing potential labor to gravitate in these areas except of course for a few resource-oriented and hence site-specific tourist centers.

In general, it can be observed that direct private investments especially in the sectors of industry, trade, tourism and services tend to polarize in urban nodes as countervailing trends exist in public investment decisions where these generally are funneled into depressed rural areas. While the latter would tend to hold and slow down, even arrest rural migration, the former tends to pull surplus



* Examples of these are the Forest Occupancy Management Program, Communal Tree Farms, various livelihood projects like goat production, ipil-ipil plantation projects, fruit tree development projects, etc., most of these situated in marginal lands and hillsides.

** The region has at present one export processing zone in Baguio City; those planned to be developed are in San Fernando, La Union and Currimao, Ilocos Norte.



and new labor entrants from the rural areas to these activity nodes.

SUMMARY AND CONCLUSION

The preparation of the RDIP requires the integration of area (local government) investment programs including private sector PPs with the sectoral line agency investment programs at all levels of the programming tiers. While the RDC and the sectoral line agencies have defined their roles in terms of indicating the resource ceilings by IAD and sub-IAD and by major program category, the IADs are tasked to formulate the more specific program/project components within these broad categories of programs. This arrangement ensures that a substantial portion of local needs which cannot be met by resources nonetheless becomes part of the national program of development.

To a considerable degree, the RDIP as a linkage mechanism ensures that the plans and priorities formulated by the RDC are implemented by sectoral line agencies. Likewise, the needs, aspirations and problems

of the local people translated into packages of programs and projects are captured by the same mechanism and finally made an integral part of the national program. This should ensure national responsiveness to local felt needs and priorities.

Because the RDIP, therefore, operationalizes regional planning considering both the top-down and bottoms-up approaches and because it represents the single most important activity that gives the RDC a substantial influence on strategic areas or parameters of the region's development especially when teamed up with the regional budgeting system, its refinement in terms of processes, procedures and approaches should continually be the subject of earnest attention by regional planners. Likewise, in terms of the spatial approach of the RDIP, more serious attempt should be made to determine the locational/spatial impact of public investment decisions in the context of the objectives of balanced and accelerated growth and development. □

THE INTEGRATED AREA DEVELOPMENT APPROACH TO REGIONAL DEVELOPMENT

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Introduction

There are several published literature on integrated area development (IAD) and on the National Council on Integrated Area Development (NACIAD) that give basic information and, perhaps some details on the subject matter and which many of you have already studied. I will attempt to supplement what has already been written about and will share with you today some new ideas and recent developments on the IAD approach and the NACIAD.

On this premise, my discussion will focus on two major topics of interest to planning practitioners and to policy makers: *First*, the planning relevance of IAD vis-a-vis other regional development approaches; and *second*, appropriate technologies to accelerate rural development.

Postulate on IAD

Two important assumptions and limitations of the IAD that need to be stated at the outset are:

1. There is no set blueprint for IAD. IAD has many formats and takes no universal definitions. This makes it extremely difficult at this stage to compare and assess the most functional IAD approach or model without grossly committing errors.
2. From the academic viewpoint, IAD is relatively a new evolving art and science. Hence, the "theories" that have been laid down are not very conclusive.

Evolution of IAD

As a pragmatic invention, the IAD approach gradually evolved from the failures of past traditional approaches to rural development. This innovative approach was formulated as an eclectic permutation of several traditional approaches, to wit: community development, comprehensive planning, and integrated rural (agriculture) development.

During the pre-martial law era, rural development was equated with agricultural development. Several major projects on land reform, resettlement, credit and cooperatives and other community development undertakings were, however, uncoordinated and fragmented, thus, yielding marginal results despite substantial inputs. Also, during this era, urban economies exploited immensely the rural sector resulting in a widening disparity in development between the two.

The past traditional approaches to rural development were crippled by several limitations. Community development, for instance was not totally effective in resolving basic conflicts and structural problems such as land ownership which were too politically sensitive to be settled merely by community development workers. Development projects during this period were identified and decided at the national level with minimal or no participation from the grassroots. In agriculture, the thrusts were too concentrated on single commodity approach (Green Revolution). Although this approach increased production, it was reported to have failed in appropriately distributing production gains.

These limitations and failures of past rural development approaches led to the introduction of the integrated rural development program which was formally launched when President Marcos signed Letter of Instructions No. 99 on July 10, 1973 creating the Cabinet Coordinating Committee on Integrated Rural Development Projects (CCC-IRDP).

In the process of its operation, the CCC-IRDP underwent three transformations. It was elevated to the National Council on Integrated Area Development (NACIAD) in May 1978 by virtue of Presidential Decree No. 1378 which was later amended by Executive Order 731 in September 1981 giving the Council new powers and added functions, and by Executive Order 835, in October 1982 expanding the membership of the Council to include the whole Cabinet.

Innovative Features of IAD

The IAD approach aims at: 1) accelerating growth in depressed areas; 2) increasing local participation; and 3) distributing equitably economic gains. IAD simply involves the intensive pouring of investments in lagging and marginal areas so that these areas could cope with the overall growth rate of the region.

The innovative features of IAD adopted by NACIAD are as follows:

1. *Defined geographical unit.* The IAD scheme is implemented within a sub-regional delineation or multi-provincial in scope. Aside from using the political boundaries to delineate an IAD area, ecological units (such as river basin, watershed, coastal zone, island) are also taken into consideration to synchronize politico-economic administration with resource-based environmental/ecosystem management. This delineation is viewed as functional from the perspectives of planning, management, production, and protection of environmental resources for sustained growth and production.

2. *Multi-sectoral in operation.* In an IAD area, the efforts (for projects) of the different government agencies, focusing on different sectors of development (health, agriculture, education, infra-

structure, etc.) are coordinated to produce complementary and reinforcing effects to the beneficiaries. Recognizing that the problem of rural poverty is complex and multi-dimensional in nature, a total systems approach is adopted in an area whereby sectoral programs and projects are integrated and packaged for greater impact (i.e., the net collective benefits from the overall program are greater than those in the individual projects).

3. *Spatial integration.* The IAD boundaries are drawn to link rural production areas effectively with market towns and urban centers. Spatial integration provides greater access to product and factor markets thereby inducing the farmers to produce beyond subsistence levels. Eventually, this will stimulate higher levels of farm production.

The major reason for adopting the nomenclature "Integrated Area Development" instead of "Integrated Rural Development" is due to the fact that the former connotes spatial integration of both rural and urban areas, and, therefore, IAD areas do not solely comprise of rural areas but also of urban areas. Spatial integration supports the hypothesis that economic development occurs in a specific locational matrix which is primarily rural-industrial in composition. The growth and efficiency of this matrix directly affects rural development. Thus, IAD boundaries were drawn to encompass the industrial-rural areas through a series of market relationships.

4. *Grassroots participation.* IAD is designed to generate active and meaningful participation of the grassroots in the planning/decision-making process, and in the implementation of programs and projects. The participatory approach integrates the grassroots' needs and aspirations to the development plans of the government. By this "bottom-up" approach, the responsibilities in development are shared by both the government and the local people. IAD also aims to integrate the low-income segment

with the rest of the rural communities by ensuring them participation in the production and social processes.

5. *Political commitment.* To ensure the effectiveness of IAD as an administrative framework within existing local government structure and function, a firm and explicit commitment at the highest political level is required. In current practice, every IAD project in operation is being coordinated at the ministerial level by a Cabinet Coordinator who is a member of the NACIAD chaired by no less than the Prime Minister himself.
6. *Organization integration.* IAD projects are sectoral in operation. Thus, the implementation of IAD projects require an organization which has the coordinative authority and jurisdiction over the activities and resources of a multi-sectoral effort. This organization could take the form of a land agency, or a Program/Project Management Office set-up.

IAD Vis-a-vis Other Integrated Development Approaches

Other integrated development approaches to rural development are the following: the Ministry of Agriculture's Integrated Area Management System approach; the Ministry of Human Settlements' Integrated approach; the U.P. Los Baños Sub-provincial Area Integrated approach; the Unified Training and Area Isolate Development approach; and the National Economic and Development Authority's IAD and Regional Development approach. With these various integrated approaches, it is evidently clear that the national government is pursuing the integrated development of areas as a strategy for rural development.

The Integrated Area Management System approach of the Ministry of Agriculture aims to unify the operations of various government agencies involved in the delivery of agricultural services and inputs for any given area of operations. Integration of operations is at the provincial level under the coordination and supervision of the governor. The develop-

ment thrust is agriculture-based and complementary with the IAD approach.

The Human Settlements approach brings together provision of the 11 basic needs of man (shelter, water, mobility, food, ecological balance, medical services, education, power, livelihood, sports and clothing with corresponding auxiliary brigades at the village level. The approach is nationwide in scope and cuts across all ministries. The IAD and human settlements approach are complementary and mutually reinforcing. The IAD supports the efforts of the MHS at the countryside, especially the Kilusang Kabuhayan at Kaunlaran livelihood movement. The adaptive mechanisms inherent in the NACIAD in prompting KKK are integration and complementation. Integration involves the inclusion and accentuation of the livelihood thrusts in the IAD pipeline program planning and project implementation. On the other hand, complementation involves the strengthening and redirecting of IAD on-going projects to meet the requirements of KKK. In abstract of conceptual terms, the IAD structure serves as a matrix for the livelihood program. It is a ground substance which holistically maintains, nourishes, supports and produces the livelihood backbone. In more operational terms, the IAD (multi-sectoral) program in a given area enhances and supports livelihood as follows: 1) the agricultural production component generates employment and increases the income of the small farmers; 2) the infrastructure component provides access to inputs and services; 3) the social services component provides training and health services, thus, making the target groups more productive individuals; and 4) the industrial component (cottage and small industries) generates non-farm employment.

The Sub-provincial Area Integrated Rural and Agricultural Development (AIRAD) approach views development holistically but recognizes the fact that some of the problems in a given area are more serious than the others. The approach employs the comprehensive area analysis practicing the Technocratic-Democratic mix in the preparation of the framework plan. The AIRAD has similarities with the IAD approach but the former is limited to the sub-provincial level.

The Area Development Isolate approach of the Philippine Training Center for Rural Development (PTC-RD) involves a defined ecological zone (watershed unit) serving as the basis for generating locally-specific technology and for developing production systems, institutions, and other community living support services. However, as compared to IAD, it is more accentuated on training of government extension workers rather than on the actual implementation of development projects.

Lastly, we have the NEDA IAD which is focused on the development of a group of adjoining cities or municipalities comprising a region. The approach utilizes the municipality as the basic spatial unit and the building block for project identification, with the regional perspective providing the framework for program integration. Municipal investment programs (MIPs) are prepared consisting of identified local projects and programs within each municipality. The municipalities are then grouped to form an IAD and their corresponding MIPs are integrated and packaged. The next step would be the integration of the IAD packaged projects to form the Provincial Investment Programs (PIPs). And finally, the PIPs are integrated to yield the Regional Investment Programs which then reflect the national and local government projects and the private sector projects which are sectorally and functionally linked and integrated with locational dimensions, and with amounts and sources of funding essential for full implementation being indicated.

To ensure complementarity of the various integrated efforts to rural development planning and programs/projects implementation, a unifying ideology and cogent principles must be advocated by the practitioners. This ideology must focus on the equitable distribution of economic gains and social services, grassroots participation, and self-reliance. Moreover, we have to consider three cardinal factors in the design and planning of IAD projects: 1) the IAD project should be located strategically in identified growth centers or depressed areas with growth potential to produce spill-over effects; 2) adequate investment in resource development should be made to achieve an income needed to sustain rural development thereby making the program

or project self-propelling; and 3) institutions should be built to run the rural development machinery and achieve self-reliance in the operationalization and management of projects or programs.

IAD Vis-a-vis Other Planning Typologies

Although the delineation in IAD planning is sub-regional, it has a parallelism with regional planning. Just like regional delineation, sub-regional planning in IAD takes into careful consideration the following:

1. Homogeneity in terms of physical, economic and social factors.
2. Functionality (as previously mentioned) in terms of spatial linkages (i.e., urban-rural linkages).
3. Ecological units such as river basin, coastal zone or island in river basin planning, we obviously consider the coherence of the hydrologic regimes. This type of planning was employed at the Bicol River Basin Development Program and is currently being done in the planning of the Abra River Basin. For coastal zone planning, we account for the interdependence of fishing villages with coastal and inland waters like what is being done right now in the planning of Lake Mainit which is situated between Agusan del Norte and Surigao del Norte. And lastly, in terms of Island planning we select ecologically sensitive islands such as Palawan, Mindoro, Marinduque and lately, Romblon.

In exceptional cases, NACIAD also takes into account the planning of severely depressed and problematic areas like San Vicente in Davao del Norte and Porac in Pampanga. Similarly, other high growth potential areas deemed by the Council members as priority for planning such as Rosario, Cavite and Bauan, Batangas are planned for development by the NACIAD on an ad hoc basis.

If we review the common typology in planning: horizontal vs. vertical; and top to bottom vs. bottom to top; we find that IAD planning is an intermediate link among these types. If we define horizontal planning as one which is done at the national, regional,

or local level and integrated at one specific level; and vertical planning (sectoral planning) as an approach per specific sector (education, health, infrastructure, agriculture, etc.) and integrated at the different administrative levels, then we can consider IAD planning as a combination of both types. Top to bottom planning provides the framework for national development activities and are done at the national level while in bottom to top planning, plans are formulated by the local population with the assistance of the local government. It should be noted that in the top to bottom procedure, the plan defines the functions that the various regions of the country will have to perform in the development process of the country as a whole. The bottom up procedure will give us plans based on an assessment of the potentials of the region. IAD planning is an optimum mix of both types of procedures and at the same time achieving a complementarity of both by relating to national and local plans.

The IAD planning process broadly consists of the following stages:

1. *Selection of an area selection index which measures the socio-economic status and resource potential of an area and compare these with other provinces of the country to come out with a list of priority provinces or group of provinces for IAD planning and project development.* More specifically, the criteria used in the selection of IAD areas where: 1) areas with high tenancy rates; 2) relatively underdeveloped areas with development potentials in various sectors of the economy; 3) areas whose inhabitants are within the lowest income bracket; 4) areas which are economically depressed and have poor accessibility to basic social services; and 5) areas which require relatively small incremental investment to generate high benefits.
2. *Preparation of an area profile using secondary data.* Surveys are likewise conducted to generate primary data.
3. *Holding of a series of consultations and dialogue with the people, line agencies in the area, local development staff, local leaders and other selected persons to identify needs, problems,*

priorities and formulate programs using the area profile as working material. The people's participation is vital in identifying felt needs and problems and in imbuing residents with a sense of belonging. The results of these consultations and dialogues (usually in the form of workshops) are properly documented and used as working material in drafting the project components for the framework and the Master Plan.

4. *Once the Master Plan has been finalized, NACIAD initiates the mobilization of resources to finance the implementation of the drawn up projects.* In most cases, available resources are tapped through the local government and the NACIAD support staff. Financing from foreign funding institutions may, likewise, be solicited especially in areas where capital intensive projects are to be implemented.
5. *Conduct of feasibility studies.* In areas where the implementation of major projects that require heavy financing is not immediately feasible, small-scale high-impact projects are implemented first. These projects, which aim to bring about immediate and tangible effects, serve as take-off point and provide continuity to the program so as to sustain the people's enthusiasm and participation in the development process. Such projects are supportive to large-scale projects envisioned for an area and help in the promotion of self-reliance and in the mobilization of local resources. Appropriations are requested from line agencies operating in the project area to support the implementation of small-scale, high impact projects.
6. *The establishment of a project office or support staff follows once necessary resources have been secured for implementation.* The Project Office coordinates projects included in the Master Plan.

Appropriate Technology for IAD

In a capital-scarce country such as the Philippines, the development of capital-saving

or labor intensive technology is very much desirable in stimulating growth in the countryside. One of the major keys to rural development is the application of appropriate technology in small scale agriculture and industry. This is a viable way of redistributing income and alleviating poverty specifically by increasing employment, agriculture and industry productivity, and minimizing cost and dependence on imported inputs. In this context, NACIAD is encouraging and supporting the research and development of appropriate technology in its project areas.

The NACIAD partly subscribes to the small-scale technology dogma prescribed by Schumacher. We refer to this as intermediate technology—i.e., more productive than indigenous technology but also immensely cheaper than the sophisticated capital-intensive modern technology. As part of the IAD program, we are encouraging the establishment of small-scale irrigation and small-scale food processing plants in some of our project areas. Use of high yielding varieties (HYVs), azolla fertilization, composting, rice-fish farming, and soil conservation techniques (such as contour furrowing, terracing and buffer strips) are among the agricultural technologies we are promoting in our IAD areas. Along with these physical technologies we have established appropriate social technologies such as cooperatives, irrigators association, area development teams, and other farmers' organizations and rural institutions to serve as conduits for the efficient delivery of our services in the countryside.

Recognizing the value of technology in improving the productivity of small parcels of land in the rural areas, the NACIAD is currently undertaking appropriate technology dissemination projects in collaboration with the National Science and Technology Authority (NSTA) and the Philippine Council for Agriculture and Resources Research and Development (PCARRD). The NACIAD-NSTA Appropriate Technology Program is in its stage of training users of selected appropriate technology in IAD project areas. So far, two training programs have been conducted, one in Palawan on processing and preservation of cassava, fish and banana, and coconut products, and the other in Bohol on various food processing techniques, brick

and tile-making, goat raising, and herbal medicine.

The NACIAD-PCARRD Technopack project involves the packaging of location and situation specific technologies which are technically feasible, economically viable and acceptable to farmers. The target clientele for this project includes both the farmers and the extension workers. The project aims to cover the following geographical areas: Bicol, Mindoro, Cagayan, Samar, Palawan, Zamboanga del Sur, Bohol, Marinduque and Cavite. To date, the following areas are already covered by the project:

1. Cagayan (Rice, corn and legumes technoguides)
2. Samar (Coconut technoguides)
3. Palawan (Rice and corn technoguides)
4. Zamboanga del Sur (Mungbean and peanut technoguides)

The technoguides or technopacks are published in both English (for technicians) and the local dialect (for farmers) and serialized in periodicals such as the *Banawag* and *Liwayway*. The technoguides contain informations on the following: 1) expected yield of particular crop using the technoguide; 2) projected income per hectare using the technoguide; 3) varietal recommendations; 4) cultural practices (land preparation, planting, cultivation, irrigation, etc.); 5) insects and their control; 6) harvesting technique; 7) processing and storage; 8) marketing and extension; and 9) credit/financing costs and returns.

IAD Thrusts for the Eighties

In his message Prime Minister Cesar Virata, Chairman of NACIAD, sets the tone of the IAD thrusts for the eighties as follows: "In this challenging decade of the eighties the IAD approach shall remain as a basic strategy for rural development. We shall continuously develop new and innovative approaches to make integrated area development even more attuned to our national goals and priorities. We shall build up on the momentum the NACIAD has gathered and endeavour to further enrich our program through the greater participation of local officials and our target beneficiaries, more involvement of the private sector, and the introduction of more livelihood activities in

the IAD project areas in support of the national movement embodied in the Kilusang Kabuhayan at Kaunlaran."

For the eighties, the NACIAD has drawn-up a seven point strategy to pursue vigorously its IAD program and to fill-in the gaps created by past efforts:

1. *Promotion of Small-Scale High Impact Integrated Projects.* On-going IAD projects are characteristically large-scale with emphasis on infrastructure such as roads and irrigation. The full completion of these projects, however, takes a longer period of time. In the meantime, disrupted productivity of the area could be alleviated through the introduction of small-scale high impact integrated projects. With minimal investments, such projects can supplement large-scale ones and produce immediate and tangible growth effects. Furthermore, small-scale projects promote self-reliance and enhance the mobilization of local resources. Conceptually, small-scale high impact integrated projects possess the following characteristics: 1) less capital intensive; 2) cover a small area; 3) utilize local resources and indigenous technology; 4) product oriented; 5) yield immediate benefits; 6) directed to priority needs of the people; 7) cover several sectors (agriculture, rural industries, village energy, social services, etc.); and 8) could easily be integrated to existing programs and projects in the area.
2. *Promotion of Local Level Planning.* The participation of the grassroots and local officials in IAD planning and implementation is crucial to the successful development of an area. Cognizant of this, the focus of the NACIAD for the eighties is the institutionalization of local level planning whereby the grassroots leaders together with local government officials shall be organized and trained to be more actively involved in the planning, implementation and evaluation of IAD programs and projects. The main impetus of this strategy is towards participatory development—the fundamental integration of the masses in rural development.

3. Emphasis on Nutrition Orientation.

Nutrition being one of the critical elements comprising the chains of the poverty cycle should be given emphasis in any effort toward rural development. Thus, NACIAD orients its development planning to incorporate a nutrition component. Under this new thrust, IAD projects shall be aligned taking into account the recommendations outlined in the Food and Nutrition Plan of the Ministry of Agriculture. An integrated nutrition improvement program concentrating at the barangay level shall be undertaken by NACIAD.

4. Focus on Rural Industrialization. In support of the Kilusang Kabuhayan at Kaunlaran, the NACIAD identified rural industrialization as a new program thrust. The establishment of small- and medium-scale agro-industries in the countryside aims to generate greater employment for the rural poor, especially the landless laborers. Hopefully, this strategy will attract private sector participation in IAD program through investments in rural industries. The promotion of the rural industries component in the IAD program hopes to achieve this target for the eighties.

5. Appropriate Technology Development. IAD brought along with it a transition of technology from the traditional or pre-industrial to the intermediate level which could spin-off to higher level technology in the future. The appropriate intermediate level technology has to be identified and studied at this stage of IAD implementation to determine its suitability and applicability in a given cultural milieu. To achieve this goal, NACIAD shall undertake technology-oriented research in collaboration with other research institutions of the government.

6. Human Resources Development. Currently, one of the most pressing problems in IAD management is the dearth of technical personnel with adequate skills in IAD planning and implementation. To solve this crippling problem, the NACIAD shall undertake an extensive inventory of potential personnel and intensive

Human Resources Development Program (HRD) to upgrade the managerial and technical capability of its staff, the IAD project offices, and other IAD practitioners such as those coming from the implementing line agencies. The HRD Program shall be comprised of seminars, workshops, trainings, advanced courses on IAD management, executive development programs, and a scholarship and exchange program. The Program will augment the pool of IAD expertise and professionalized IAD administration.

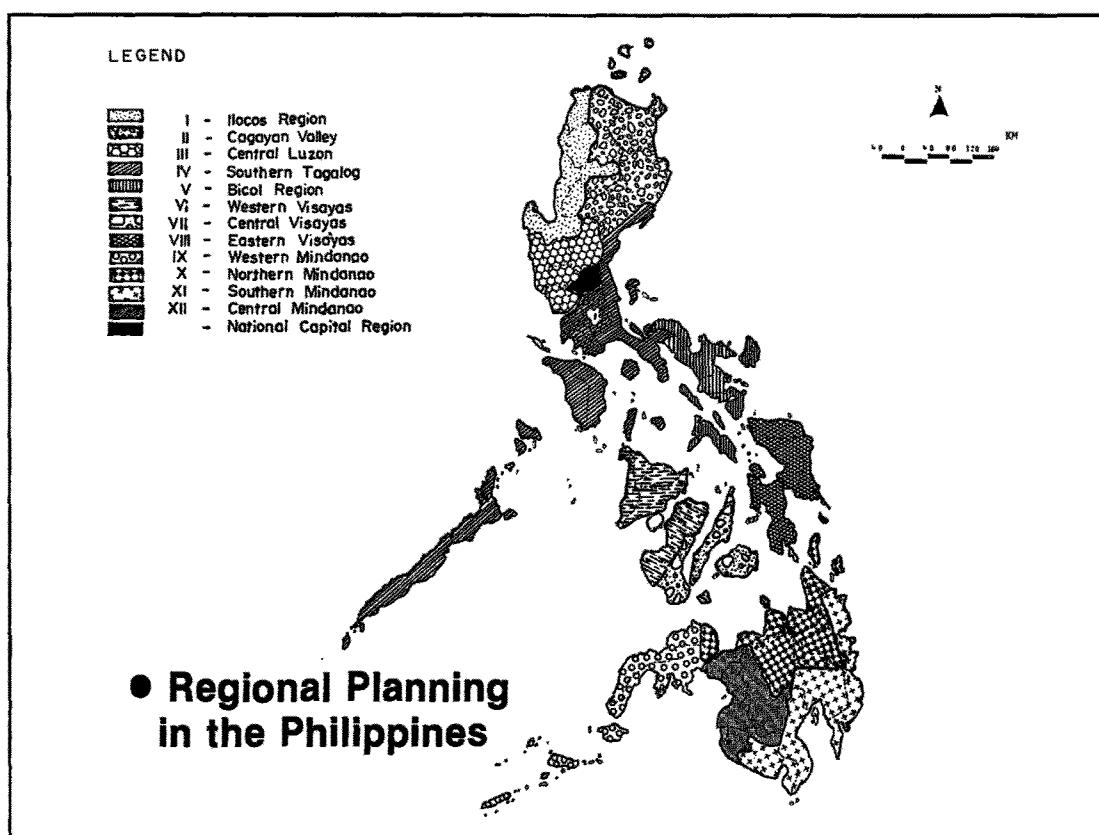
- 7. Strengthen Local Resource Mobilization.** This new orientation aims to develop self-reliance among local governments in planning and implementing concrete and tangible IAD projects. Under this program, NACIAD envisions to share with the local government the costs of integrated area development. The concept of cost-sharing refers to the apportionment of a project's total expenses

between the project proponent and the project beneficiaries, either in terms of counterpart funds or in kind, such as the provision of manpower services, facilities, or equipment. This is particularly designed for the wide-scale implementation of the small-scale high impact integrated projects.

Conclusions

Efforts in upgrading the quality of life in the countryside shall be intensified through the IAD approach. Both the government machinery and the rural society are undergoing the process of "iadization." We are optimistic that in the near future the IAD approach would become a "way of life" for the practitioners and users.

With the achievements of the IAD approach and the people behind it, no doubt it is becoming a potent tool to regional development. □



The map above is a reproduction of the one on the cover with the names of the regions added.

MANAGEMENT OF NATURAL RESOURCES IN THE PHILIPPINES: GOALS, POLICIES AND STRATEGIES

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Introduction

This paper will not cover all areas of natural resources management; instead, it will discuss major aspects of forest and agricultural resource management. These two ecosystems constitute more than two-thirds of the country's natural resources. Pollution will not be treated separately but will be discussed within the context of the two major Philippine ecosystems.

Natural resources and natural resource management are defined in this paper as follows:

Natural resources are resources which are made available by nature in an appraiseable form such as air, climate, soils, water, plants, animals, minerals and certain amenities which have genetic, aesthetic and other non-quantifiable values. Natural resources are classified as renewable and non-renewable/exhaustible. Renewable such as plants, animals, solar energy and others constitute supposedly *continually flowing or regenerating* resources which can be consumed. Non-renewable/exhaustible resources are non-regenerating resource stocks such as minerals, or resources which are characterized as being inherently renewable but can nevertheless be exhausted through over-exploitation; e.g., ground water.

Natural resource management refers to the technical aspects of both producing and generating products of natural ecosystems, i.e., forest, aquatic and agricultural ecosystems as well as to the planning, organiza-

tion and control of public agencies, their interactions with private industry and the community and the influence they have on policy development as they affect the productivity and sustainability of these ecosystems. As a natural scientist, I may be guilty of having my bias on the technical aspects of natural resource management. But, I will try as much as possible to bring in the administrative aspects of natural resource management.

General Goals of Natural Resource Management

The Philippine Constitution provides the general goals for natural resource management (Article XIV, Sections 8, 9, 10 & 11). The salient points are the following:

1. The state is the steward of natural resources of the country with the exception of agricultural, industrial or commercial, residential, and resettlement lands of public domain;
2. The disposition, exploration, development, exploitation, or utilization of any of the natural resources shall be limited to citizens of the Philippines, or to corporations or associations at least sixty percentum of the capital of which is owned by such citizens; and
3. The extent of use of natural resources will have to take into account conservation, ecological and developmental requirements.

Presidential Decree 1151 further asserts that the generations yet unborn have an equal right to enjoy the country's natural resources; that is, it is the responsibility of the present generation to assure the availability of those resources in the future.

The Philippine Constitution and recent Presidential Decrees, including P.D. 705 or the Revised Forestry Code, therefore, generally defines control, management and goals in the utilization of the country's natural resources. The state generally is the steward and therefore, it controls, allocates and manages our natural resources through existing bureaus and ministries. Natural resource utilization should benefit citizens of the country both of the present and future generations; and ecological, conservation and developmental considerations should be taken into account in the utilization of our natural resources.

The general goal of forest resources management would be the utilization of the tangible and intangible products of the ecosystem to benefit the most number of the present and future generations of Filipinos. This must be done in a manner which will not jeopardize the renewable or sustained-yield character of these ecosystems.

FOREST RESOURCES

The tropical rainforest of the Philippines, just like any tropical rainforest in other parts of the world, is considered as one of the most productive, diverse and stable ecosystems in the biosphere. At low population density, hunting and gathering practices or even shifting cultivation practices have not been disruptive of its stability. These traditional practices have not influenced the regeneration capacity of this renewable resource. However, population and economic pressure (more from outside of the country; i.e., world market for timber and timber products) have brought accelerated rates of deforestation.

We have no common figure on the remaining forest cover; the Bureau of Forest Development (BFD) maintains that it is 55.5 percent while the Natural Resources Management Center (NRMC) says it is 38 percent. Our national policy states that we should have 42 per cent forest cover (in all watershed areas, not as a country average).

From 1972 to 1981, BFD figures show that the rate of forest transformation into non-forest cover was 379,000 hectares annually.

The bulk of remaining commercial forest in the country is located in Mindanao (57%), Luzon (26%), Visayas (9%), and Palawan (8%). Of total log production in 1980, Mindanao contributed 65 per cent, Luzon 27 per cent and Visayas, 18 per cent.

Our lowland tropical rainforest is highly diverse with 3,800 known species of trees. Minor products such as almasiga resin, anahaw leaves and now the trunk, bamboo, rattan, honey, wildlife, salago bark, orchids among others are also used or commercially sold.

The BFD estimates that there are 1,675 species of wildlife. Of these 11 species of birds, five of mammals and eight of reptiles are considered rare and endangered.

The rapid deforestation had laid bare hilly lands which are now covered with native and unproductive grasses such as *Imperata cylindrica*, *Saccharum spontaneum* *Themeda triandra*, *Capillipedium parviflorum* and *Chrysopozon aciculatus*. The extent of open land is now more than 5 million hectares.

During the last ten years or so, mangrove areas which serve as protection, sanctuaries of fisheries and wildlife, source of wood and other products have been reduced from 400,000 hectares to about 150,000 hectares at present.

The Forest Research Institute (FORI) had identified five critical watershed areas while the BFD indicated there are 15 watersheds which are critical. Their bases are different; degree of denudation, siltation, soil-erodibility, geomorphological characteristics and climatic conditions are the criteria used by FORI while those by BFD are potential as source of water for irrigation and other similar purposes. There is clearly a need for the combination of these parameters.

The effect of all these is decreasing forest production so that some say that by the year 2000, Dipterocarp species would be a rarity; floods, siltation, drought and destruction in lives and properties will be common occurrences. The rich genetic pool of our tropical rainforest is also dwindling very fast.

The disruptive utilization of the tropical rainforest and the declining state of our rainforest cover are a glaring fact. We have

failed in the past to achieve our goal of sustained forest production.

To improve on our existing forest resource management, the following are some suggested policies.

Forest resources should be for the present and future generations. This is clearly embodied in the Constitution and in P.D. 705 but must be reiterated to emphasize its urgency and importance.

The time scale for forest resource management is so different from that for other ecosystems. It usually takes at least 80 years for a premium tree species to attain commercial size. It spans more than one generation; more than any short term project. During this period, market and political structures may change. Because of this, I believe that the major basis for forest management should still be the ecological need for sustainability. It should involve the least disruption of biotic, soil-water-plant relationships, nutrient cycling and micro-climatic processes so as to maintain its regeneration capacity.

A number of strategies will help achieve the goals of this policy:

1. Identify and protect remaining forests which will serve as *protection forest* and *genetic resource pool*.

Landsat data must be correlated to ground level conditions of the forest. Spectral signatures of forest types identified with shallow, unstable and infertile soils in steep slopes and high rainfall areas should serve as a guide in identifying forests which must fully serve as protection forest. These areas should not be logged.

It may well be that if we are not concerned enough, our tropical rainforest cover which represents a diverse, unique and productive ecosystem will be a thing of the past. Information about this ecosystem will be needed for future survival of our race. We need to identify *now* forest types which must be preserved. I suggest that we should have one each to represent distinct forest community types about which we do not have adequate knowledge as yet. We have been conducting forest inventories for a long, long time but unlike other countries we still do not know much about our forest types. A practical approach would be to have one each for every agro-climatic zones. I suggest that priority should be given to identifying

one each in Palawan, Cordillera, and Surigao-Butuan areas. These areas represent unique evolutionary and agroclimatic zones in the country.

2. Intensified efforts must be devoted to the basic and long-term study of forest biological properties which will evaluate the effectiveness of the existing logging system for Dipterocarp, pine and mangrove forest, in terms of:

- nutrient cycling; decomposition, litter-fall, mycorrhiza, etc.
- adaptation of forest regenerants
- adaptation strategies of grassland and mangroval species, i.e., nitrogen fixation, mycorrhiza, double symbiosis, etc.
- hydrometeorology
- genetics and germplasm
- diversity and stability
- ecology of rare and endangered species.

For example, no basic information is available on the rate of regeneration of our mangrove species. More recent evidences also show that proper cutting systems may not be solely based on diameter of trees, which is the basis of our present selective logging system. There are indications that removal of individuals in the immediately prereproductive classes have had the greatest effect in slowing down the population growth rate. This must be looked at in the context of the Philippine selective cutting system.

3. Conversion of mixed forests to monoculture or plantation forest must be studied carefully. Some forestry experts are now raising apprehension as to whether we are creating sterile and instable systems in these conversion efforts, sacrificing long-term goals for short-term benefits.

4. Total log export ban should be implemented and a shift to integrated forest product utilization should be effected. Our economy is trade dependent. Hence, it is difficult to implement the log export ban because this is needed to cover our balance of trade deficits. However, it has also become a major force that has led to forest exploitation.

There is therefore a need to shift from a trade dependent economy to an enclave-inclined economy, according to a Filipino

economist, Mr. Teodoro Ella. This type of economy will entail a very minimum dependence on foreign trade. Luxuries and vices are curtailed. It is primarily based on land tax.

The requirement of environmental impact assessment for the release of the remaining commercial forest areas must also be strictly implemented.

This will be necessary to avoid further internal as well as external adverse effects of forest utilization especially with water and air which are considered fugitive resources associated with the forest ecosystem, among others.

5. Setting up of an effective monitoring and evaluation system for forest utilization. An effective institutional network for monitoring forest utilization which starts with the involvement of the local community must be set up. Landsat and aerial reconnaissance must also be utilized. This should offer an instant feed back mechanism to decision-makers as to proper or improper use of forest areas.

Another policy suggestion may be stated in the following slogan: "Forest resources for the people, by the people and through the people."

The social dimension has been and will be a major force that will influence forest resource management. Figures compiled by BFD indicate that there are 164,635 families or 624,967 dependents occupying 605,512 hectares of public forest lands. There are probably more. Migration from the already occupied lowlands into the uplands has been intensifying in the face of increasing population.

These uplanders (cultural communities, lowland migrants and speculators) have been blamed for forest destruction without any discrimination or qualifications. However, if we examine the situation the following facts become apparent:

- a) In the first place, the government is the steward of these natural resources, not the local community.
- b) Many a traditional culture does not agree with this premise, therefore, there is a conflict of perception.
- c) Land tenure and use of resources becomes an important issue. Many forest

areas leased to private corporations have some occupants who are both cultural community groups and upland migrants.

- d) This kind of situation has brought about social conflicts and promoted improper utilization of forest resources leading to deforestation, soil erosion, siltation and other disruptive effects associated with short-term exploitation.

To implement the latter policy, the following strategies must be adopted:

1. Enhance and strengthen the implementation of the social forestry projects to cover not only uplands and forest areas but also other components of the forest ecosystem by strengthening and delegating to the community the management of their own resources and by granting more secure and long term tenurial status to individuals or the community after they have shown capacity to properly manage their natural resources. This will reduce load of government and enhance community participation and promote distribution of benefits to more number of Filipinos.
2. Improve interagency cooperation in the delivery of needed support services to enhance the first strategy. At present, there is much to be desired in the relationships among agencies in delivering needed services in the uplands especially in the implementation of agroforestry projects for social forestry. Partly, this is because agency jurisdictions are in conflict with requirements of upland development. An example of this is the agency jurisdiction over mangrove areas. Mangrove areas are initially with BFD but once they are released for fisheries they now fall under the Bureau of Fisheries and Aquatic Resources (BFAR). However, abandoned fishponds do not seem to fall under any of the two agencies.
3. Implement agroforestry projects in denuded areas, shifting cultivation areas and buffer zones of natural forest resources and critical watersheds. These should be productive, socially acceptable and protective to take care of the need to stabilize communities and protect or rehabilitate critical areas.

AGRICULTURAL RESOURCES

Of the country's total land area of 30 million hectares, about 12.84 million hectares are being cultivated for crops. Sixty-six percent of these are devoted to food crops and the rest are planted to commercial crops. These figures represent all cultivated areas in both forest and non-forest lands. If we consider the non-forest area alone, the total area of our croplands is about 7.5 million hectares constituting one-fourth of our total land resource base.

Among the various food crops grown, rice and corn rank first and second respectively in terms of hectarage (3.5 and 3.2 million hectares, respectively). Among commercial crops, the most extensive is coconut (3.4 million hectares) while sugarcane is second with close to half a million hectares. These four crops, therefore, occupy 86 per cent of our cropland.

Present and future needs in the management of our agricultural resources are the following:

- Increased agricultural production for food and export crops. We must at least maintain a 4 per cent increase in agricultural production to cope up with our rate of population increase.
- Increased utilization of marginal areas for agricultural production. At present, this is only approximately 4.5 million hectares.
- Intensification of agricultural production with emphasis on recycling, integration and multiple cropping or intensive monoculture.

Productivity is the key objective in the equation of agricultural production and population. There are some revealing facts about our present agricultural resource utilization and management, i.e.:

- a) It is possible to increase production such as those demonstrated by the Masagana 99 program or the Maisagana program. However, calculations show that for rice and corn production in 1975, approximately 4 bags of fertilizer per hectare are needed to attain these high yields. This indicates that doubling of yield would require almost ten fold increase in fertilizer inputs, and other chemical inputs for pest and disease

control. Energy efficiency analysis of modern-day agriculture also indicates that yield increases have been attained with increased dependence on fossil fuel-based inputs.

- b) Detrimental or hazardous levels of some chemicals used in agriculture have spread in the food chain that eventually reaches and affects man.
- c) Breeding for high yields alone has resulted in the narrowing of the genetic base which has made crops more vulnerable to the attack of pests and diseases.
- d) Mechanization of agriculture has resulted, in many instances, in the displacement of the labor force.
- e) Incompatible land use practices in an area consisting of a continuum of an upland-lowland-aquatic ecosystem have resulted in the disruption of lowland agricultural production. For example, the discharge of mine tailings and natural soil erosion occurring at the upper part of the Agno River Basin have caused losses due to the rehabilitation cost amounting to more than 12 million pesos. Added to this is almost 46.8 million pesos worth of crop losses in Pangasinan and La Union due to the mine tailings and silt that affect the crops.
- f) In sloping land cultivating pineapple, corn, cassava, sugar cane or even coconut interplanted with pineapple is erosive (10-120 T/ha per year).

General Goal of Agricultural Resource Management

The general goal of agro-ecosystem management would be to increase production on a sustained-yield basis with emphasis on greater equitability and social acceptability. This is a must in the face of burgeoning human population and climatic uncertainties.

To attain the objective of increased production on a sustained-yield basis, the following strategies must be adopted:

1. Effect of agricultural intensification on soil physical and chemical properties must be studied.
2. Energy efficiency and strategies to lessen dependence on fossil-based energy inputs must be employed in

agricultural production such as the use of nitrogen fixing microorganism, mycorrhiza, recycling, organic farming and biological pest control. Research on biological processes such as Ps, biological N-fixation, P-absorption, molecular genetics, etc. will play a crucial role.

3. Added to the list would be improved efficiency of crop production under mangroval condition of low water supply, highly fluctuating water (droughts and floods), low nutrient levels, low and high radiation, and wind stress.
4. Intensive monitoring of agricultural chemical pollutants must be installed making use of indigenous ecological indicators.
5. Conservation of traditional varieties/species to broaden genetic base of crop plants.
6. Impact assessment must be conducted prior to introduction of a new technology for agricultural production including post harvest aspects.

The second objective of agricultural resource management is to integrate the cultural and institutional considerations. To serve this end:

1. Land tenure problems should be considered and given top priority especially in agricultural areas beyond the 18 per cent slope category.
2. Traditional beliefs and values must be considered in the implementation of agricultural development projects. An initial community appraisal should be conducted by an interdisciplinary team to assess this before the implementation of any agricultural development project starts.
3. Interaction of agriculture with forest and other ecosystems must be clearly understood.

General Issues, Goals and Strategies

Previous descriptions of the present state or condition of forest and agricultural ecosystems have indicated that these various ecosystems appear as a continuum and are highly interactive. It is an imperative for proper resource management to take this into consideration. An existing national policy,

in fact, takes cognizance of this; it asserts that a 42 per cent forest land should be maintained and the rest can be alienable and disposable. The only problem is that it does not specify where these lands must be located. It is not uncommon therefore to encounter situations where lowland agricultural development projects fail because the uplands adjacent to them have been released for pasture or for forest concession or even for mining.

The integrated area development (IAD) which is the centerpiece of the National Coordinating Council for Integrated Area Development (NACIAD) program incorporates this in the framework of a River Basin Development Plan. But the present extent or geographical and socio-political coverage of these programs is so immense that the problems of implementation also assume a less manageable magnitude, not to mention the difficulties involved in interagency collaboration.

To arrive at a suitable geographical and socio-political unit for integrated resource management, the following strategies are suggested:

1. Divide an Integrated Area Plan into smaller watershed management units for planning whenever possible. Criteria for selection should consider the susceptibility and capability of local socio-political organizations for handling responsibility for such a unit.
2. Resort to a one or two-agency responsibility for such a smaller management unit.
3. Adopt a multiple-use concept for the planning of this watershed management unit considering both the short-term and long-term needs of the resource base and the community.

At the other end in the spectrum or equation of natural resource use and utilization/regeneration is population growth. It is an important driving variable. In 18 years we foresee a population of 73.4-83.7 millions.

Conclusion

The complexity of natural resource management in the Philippines will be largely determined by who controls and who has access to these natural resources against a background of poverty and burgeoning human population.

MASS TRANSIT IN PROVINCIAL AREAS: HISTORY, POLICY, REALITY*

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Introduction

The rapid influx and expansion of modern mass transit stands out as the most striking change to public transport in the Third World over the past twenty years. Most big cities in Latin America, Africa and Asia have recently witnessed the introduction of a transit network based on high-capacity buses or high-speed rail transit. Since 1969, rail rapid transit systems have been built in Mexico City, Seoul, Sao Paulo, Santiago, Rio de Janeiro, Hong Kong, and Caracas, with lines under construction in Cairo, Calcutta, Lagos, Manila, Pusan, Singapore and Tunis. Beyond this, almost every other major city has some plan for a rail transit facility.

As might be expected following the process of modernization and resultant spatial diffusion, expansion of this technology and its application have slowly moved beyond the largest cities and into provincial areas. Although the pressures of modernization have been powerful and mass transit has firmly established itself in many provincial areas of the Third World, the Philippines is an important exception. Through local ingenuity and entrepreneurship, this country has not yet become dominated by high-capacity, high-technology forms of public transport. Accounting for over 90 per cent of motorized public transport vehicles registered in 1980, jeepneys and tricycles still carry the majority of urban travellers. Even in Metro Manila, where the highest concentration of large buses exists, about 85 per cent of public transport passengers used jeepneys in 1980 (Halcrow Fox and Associates, 1981).

The growth of mass transit in Metro Manila, however, has been very strong. The consistent trend has involved the promotion and expansion of bus services at the expense of jeepneys, which, it was hoped, could be gradually and quietly phased out. This is evident by programs forcing jeepney operators to group themselves into co-operatives facilitating government control, establishment of the Metro Manila Transit Corporation (MMTC, a government-owned bus company) and subsidizing private bus operators. In 1980, the Light Rail Transit Authority (LRTA) was created, reflecting a decision to proceed with the construction of rail rapid transit. With substantial financial and technical assistance from Belgium, construction of the first line, using an entirely elevated structure incorporating both guideway sections and stations, is well under way, and public service is expected to begin in 1985.

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Creation of the MMTC and LRTA has in effect decided public transport policy in Manila, but the future course of public transport strategies in provincial cities remains unclear. Because of ongoing pressures to spread capital-city policies to secondary urban areas, attention is focused on Metro Cebu and its immediate hinterland—the largest provincial city in the Philippines—to evaluate the applicability and relevance of such action. Before turning to the current situation in Cebu however, it is essential (a) to comprehend the historical development of public transport as a means of appreciating the relationship between different modes and the effect of mass transit technology; and (b) to survey official transport studies and other proponents of modernization, placing recent trends into perspective.

Historical accounts are examined in detail because the Philippines has witnessed a previous period of mass transit promotion, which began in Manila and diffused into the provinces. A proper understanding of these past experiences can facilitate a more educated planning process, whose influence can have an important bearing on the appropriateness of future directions. Transport studies have been commissioned in order to assist in the formulation of policy objectives and guidelines, and are among the most influential contributors to this process. They have not always taken account of historical experience, however, especially when conducted by foreign consultants who are often unfamiliar with the environment in which they are asked to work. Only in this light does it become possible to assess the performance of Cebu's public transport system, in an effort to determine whether the introduction of Manila-style policies is justified. In essence, such decisions should hinge on how well intermediate forms of public transport have succeeded in satisfying local travel demand.

History: Public Transport Experience in the Philippines

While the origins of land-based public transport throughout the Philippines can be attributed to the *carabao*—the most aboriginal of indigenous forms of motive power—it was not until the arrival of horses on the islands that conditions began to change. The introduction of horses to the Philippines dates to the Spanish colonial era, during which time

the breeding of so-called "native" ponies was begun. These were a local adaptation of the imported horses, which developed after several generations in response to the patience and endurance demanded by the tropical Philippine climate (Guerrero-Nakpil, 1978). The earliest record of horses being imported to the Philippines, primarily from China and Mexico, dates to 1587. This later resulted in a great diversification of transport facilities, and mushroomed into a thriving industry of horse-drawn vehicles (*tartanillas* in Cebu; *calesas*, *carromatas* and *caretelas* on other islands), modelled after the Spanish pattern but locally designed and manufactured (Blair & Robertson, 1903). These horse-drawn vehicles proceeded to serve as the primary form of public and private transport throughout the Philippines for three centuries. The horses and ponies were such faster, lighter and more agile than the sluggish *carabao*, but in turn required a more solid and smooth infrastructure of roads on which to travel. Thus, the Spanish devoted a substantial effort towards road building across the archipelago.

It was not until the 1880s that the first notable development in the direction of introducing mass transit was initiated. Following two 60-year concessions granted in 1881 and 1884, Spanish entrepreneurs constructed five horse-drawn tram lines in the city of Manila, the first of which was inaugurated in December 1885. Whereas these horse trams do not qualify as mass transit by virtue of their low passenger capacity,¹ they did represent the first concrete step towards modern industrial transport technology introduced by the Spanish (Reyes, 1935). The invention and spread of the railway,

¹In this connection, mass transit itself may be defined as comprising high-capacity vehicles catering for standees, as depicted in the diagram below:

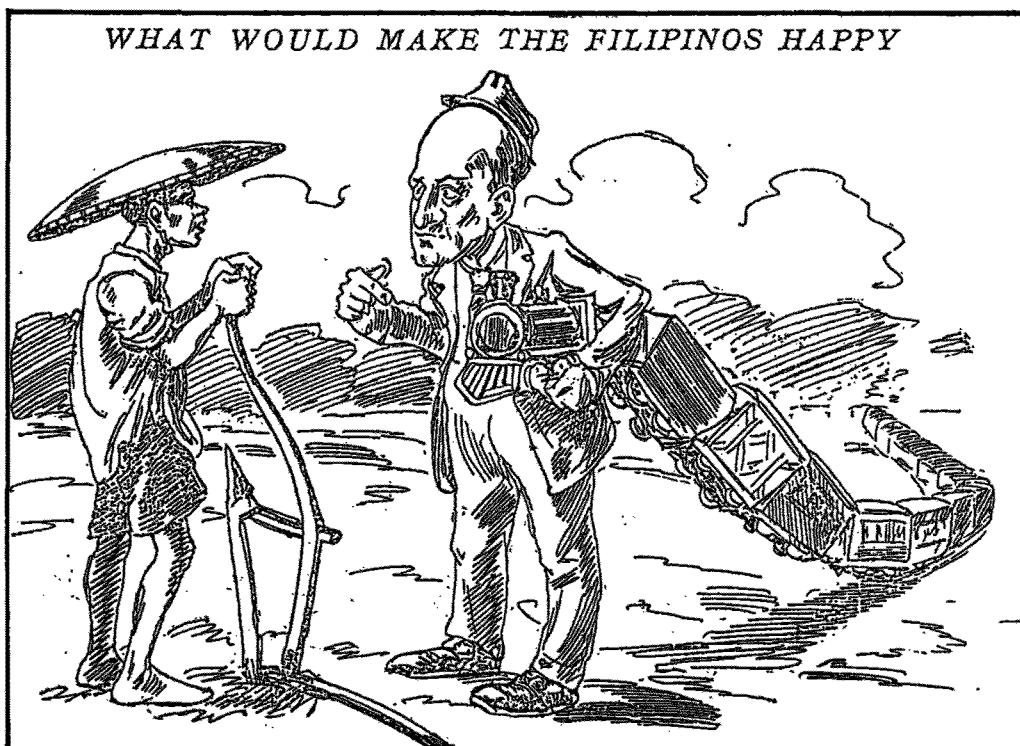
MASS TRANSIT	HRT	LRT	Tram	Bus
Minibus	Jeepney		Auto/Taxi	Tricycle
Tartanilla	Calesa	Bicycle	200	100
200	100	50	40	30
Passenger Seating Capacity (log scale)				

however, was the first true challenge to the monopoly of animal transport. This began with the Manila Railway Company, Ltd., an English corporation whose first trains were put into operation in 1892, using worn-out second-hand equipment from Spain and other countries (Report of the Philippine Commission, 1907b; Street Railway Review, 1900).

Such was the state of public transport in the Philippines at the turn of the century, when Spanish colonial rule gave way to the incoming American administration. During the first ten years of United States control, much spatial diffusion was to take place. Roads were upgraded and bridges rebuilt for

military purposes, and railway lines were constructed in Cebu, Panay and throughout Luzon. The spread of electric tramway technology from Europe and the United States resulted in the replacement of Manila's urban horse tram network by a fully electrified high-capacity service, and attempts were made to establish at first horse-drawn and later electric tramway service within the city of Cebu (Electrical World and Engineer, 1905; Street Railway Journal, 1905).

By 1908, there were 95 kilometers of railway in service on Cebu, and the Philippine Railway Company (PRC) operations serves as a good example of the railway's impact on the Philippine economy. Consisting of a con-



FORBES—Here is something I have brought to make you happy—a nice railroad to take your crop to market where you can have a good sale for it.

FILIPINO—I'd rather you had brought me a crop and I would have looked out for taking it to market with my carabao if I had any of it left to sell!

Source: "Lipag-Kalabaw," Philippine comic paper, January 23, 1909.

soritum of American entrepreneurs,² the PRC was granted a concession in July 1906, that virtually guaranteed the company against losses for the thirty-year life of its franchise, guaranteed interest of the corporation's four per cent construction bonds and permitted inclusion of fifteen per cent of the construction cost as immediate profit. The first section of the line, from Cebu to Danao, was opened for traffic in September 1907, only fifteen months after initial surveying was begun. Locomotives and the majority of the rolling stock were imported from the United States, and supervisory positions were held by Americans. In spite of (or perhaps because of) the guarantees embodied in the franchise, the railway was never profitable. By 1932, annual deficits approaching 500,000 pesos were being reported, and the government realized with dismay the extent of the obligation it had incurred. A committee was appointed to investigate the circumstances surrounding the railway, revealing inordinately high salaries and fringe benefits paid to American expatriates, original overestimates of traffic demand and increasing competitions from road traffic on the parallel national.³ Although the committee recommended a thirty per cent reduction in salaries of the American employees, the sale of certain railway-owned property and suspension of payments on bond interest, no action was taken and in 1937 the railway's franchise lapsed. The government responded

by foreclosing its mortgage and placing the railway in receivership until after the war (Report of the Philippine Commission, 1907a, 1907b; Kingon, n.d.).

During World War II the railway on Cebu continued to operate under the Japanese Army supervision, but was destroyed by bombing on the part of Allied Forces in 1945, never to be rebuilt. The original entrepreneurs were richly rewarded for their investment although the railway never made a profit. On construction costs exceeding seventeen million pesos they received a fifteen per cent profit (2,550,000 pesos), and the construction bonds yielded a further thirteen million pesos over their lifetime. Since the investors were aware that they would profit on the initial construction of the railway, there was no long-term incentive to maintain a profitable and efficient operation (Kington, n.d.).

Similar scandals transpired on Luzon, where in 1916 the legislature authorized the Philippine government to purchase all the stock of the Manila Railroad Company⁴ in order to rescue it from the brink of insolvency. In spite of the fact that this stock had no market value, the government paid four million dollars gold to the English owners and assumed payment of the railway's \$10,575,000 bond issue. The three million dollars owed by the railway to the government was not even deducted from the amount paid for the stock. It was an outright gift to the London

²Called the White Syndicate, this consortium consisted of William Salomon & Company, Cornelius Vanderbilt, J.G. White & Company and Charles M. Swift, with whom were associated the International Banking Corporation, H.R. Wilson and Heidelbach & Company. Mr. Swift, also responsible for the electrification of urban tramways in Manila, was the moving spirit and president of the Philippine Railway Company (Elliott, 1917).

³In addition to free housing and paid vacations to the United States, salaries of American expatriates ranged from 1966 pesos per month for the General Manager to 450 pesos for storekeeper, compared to a Filipino traffic manager with over twenty years experience, who received only 180 pesos per month (Kington, n.d.).

⁴Successor to the Manila Railway Company, Limited.

stock and bond holders at the expense of the Filipinos.⁵

A measure more unjust to the Filipino people and disastrous to the treasury could not have been conceived by their worst enemies.... And it was done by the administration which was posing as the special friend of the Filipinos while urging upon Congress the passage of the bill granting independence to the islands within the short period of four years. (Elliott, 1917:311).

⁵The purchase was condemned by both the American and Filipino press. *The Far Eastern Review* of February 1916 quotes the following from an editorial in *The Bulletin*, a leading Manila paper:

"Some day the islands are going to need all their credit in order to borrow money on their bonds to acquire these things, only to find that credit has been exhausted to purchase a railroad, which the country needs about as much as a cat needs two tails. The country will have the railroad, but will be unable to trade it for real needs. The only advantage that will accrue to the people will be the privilege of raising several additional millions of pesos in taxes to pay the interest on the indebtedness incurred by the purchase.

The most essential factor in the future as well as present prosperity of the islands is the coming of capital for the development of its natural resources, industries and public utilities. The largest investment of capital in the islands up to the present is that invested by the Manila railway. Is the government to announce now to the financial world that the government is to be the means of sending this capital out of the country? Will such action encourage other capital to enter the country?

We do not know what political benefit is to be derived by the purchase of this railroad. One thing is certain; there will be no economic benefit derived from it. The only expert opinion available of the value of the road is that of the government itself. In a decision by the public utilities board, seven months ago, that body said: That the company's income is not sufficient to provide adequately for the protection of its property devoted to public use, to pay its fixed charges and to pay a reasonable return upon its investment, is shown by the following comparative statement of its income account for all lines for the years 1910 to 1914, inclusive. Is the credit of the country to be mortgaged for generations, in order that the government may acquire a property of this kind? Will government ownership and management get better results than experienced and competent railroad officials have accomplished? If they are, then the people should have some knowledge of why and how it is to be done." (Quoted in Elliott, 1917:313).

While railways were the first example of modern high-capacity transport to arrive in the Philippines on a regional scale, Manila's electric tramway was the urban equivalent. Proposals had been drawn up as early as 1899, and after a fifty-year franchise was granted to an American in 1903, the Manila Electric Railway and Light Company (MERALCO) was formed to take over the Spanish company's horse cars and to operate the electric service (Report of the Philippine Commission, 1903). Public service began almost exactly two years after the franchise was issued, in April 1905, and by 1907 over 100 tram cars were in service, with MERALCO earning over one million pesos per year in gross income. This was about double its operating expenses including taxes, leaving the handsome sum of almost 500,000 pesos per year in net earnings (Report of the Philippine Commission, 1908).

In the meantime, the idea was diffusing into provincial areas and two serious attempts at constructing an electric tramway in Cebu City were underway. The Cebu Street Railway Company was organized in 1900 with a capital of 200,000 dollars, but owing to the difficulty in establishing an electric power plant, it was decided to temporarily begin operations using horse-drawn trams, but to start construction of a power generating plant immediately. Although the project was initiated by Americans, much of the capital was provided by local businessmen.

The people of Cebu have always been industrious and many of them control sections of the country that bring them large financial returns.... When it was proposed to get together thirty or forty rich Filipinos and Spaniards for the purpose of putting in a trolley line, it was only necessary to announce it through the Filipino and Spanish papers that circulate there and the moneyed men were promptly on hand. (Street Railway Review, 1900:712).

While this first attempt never came to fruition for unknown reasons, a subsequent venture was launched in 1911. A franchise had been granted to members of the MERALCO engineering staff in Manila, who drew up the plans and engaged an American firm as partners. Anticipated annual revenue of 356,000 pesos and total operating costs of 145,000 pesos resulted in estimated annual profits of 211,000 pesos on a capitalization of one million pesos. Whereas the electric

tramway was only proposed to operate within Cebu City proper, serious objections were raised by the Philippine Railway Company on the assumption that eventual tramway extensions beyond the city limits would create conditions of destructive competition, jeopardizing the railway's revenue and hence government finances through its guarantee of interest on the railway's bonds (miscellaneous correspondence, 3 February—29 April 1911). This was apparently sufficient cause for the government to create conditions effectively quashing any successful attempts at building a tram line in Cebu City, although the Philippine Railway Company was never able to turn a profit anyway and later suffered considerable competition from road-based transport services.

In Manila, MERALCO's total revenue had by 1913 reached more than double its operating expenses, much of which was due to the high productivity and low cost of Filipino labor. The labor component of operating costs was twenty-four per cent for the city system and only seventeen per cent for the suburban lines (Electric Railway Journal, 1914). With most profits returning to investors in the United States, the tramway was, like many other foreign enterprises, a substantial drain on the local economy. In contrast to Western experience, however, Manila's trams were not able to achieve a position of dominance in the public transport industry. Ten years after their introduction, it was estimated that about 4000 horse-drawn street rigs were still operating and more or less competing with the trams. These horse-drawn vehicles had a total passenger capacity three times the entire tram fleet and were estimated to have collected fares valued at two and one-half times the electric railway's revenue. In spite of their high fares,⁶ the rigs were carrying a

ridership roughly equivalent to that of the tram system (Duffy, 1917). In addition to the horse-drawn conveyances, a substantial number of automobiles had entered public service at the time, indicating that the electric trams were unable to attract more than, at most, half the public transport market.

The first internal combustion engine-powered vehicles in Cebu were imported from the United States, usually in the form of second-hand cars that were used to provide transport services on whatever roads were suitable for the purpose. The role of these cars, which by the 1920s were largely converted into open, bus-like conveyances (not entirely unlike today's jeepneys), served to complement, but also partly to compete with the railway (Andersen, n.d.). While the railway was reporting substantial operating losses, competing bus companies were, by virtue of continuing investment by their owners and personal control over operations, able to at least meet their costs. Competition between the various entrepreneurs involved was also fierce, as illustrated by two large bus companies in Iloilo that resorted to large-scale sabotage, fistcuffs and death threats (McCoy, 1978). Although such violent confrontations did not develop in Cebu, rivalries between the Opon-established Cebu Autobus Company and its main competitor, Bisayà Land Transportation, were very strong. These elements of free enterprise ensured a measure of convenience, service, low fares and competition that government-protected railways were unable to match.

Ironically, since the American-built mass transit facilities were used by the Japanese during their occupation of the Philippines during World War II, it was the Americans who bombed the cities and towns towards the end of the war, destroying most of their own installations. Whereas some of the railways on Luzon and Panay were rehabilitated after the war, the railway on Cebu and Manila's trams were never revived. Up to this time, local transport in the smaller towns and cities was carried out entirely by horse-drawn conveyances, and in rural areas by carabao cart or on horseback, and longer-distance transport provided by buses and railways. After World War II, the importance of animal-powered transport increased in order to partly fill a void created by wartime destruction, followed by improvisation of U.S. army jeeps

⁶Street rigs in 1915 charged 40 cents per hour for first class and 20 cents for second class. Fares for single passengers were 5 cents up to one mile and 10 cents one to two miles. The tram fare, by comparison, was 6 cents first class (5½ cents with a ticket) and 5 cents second class (4 cents with a ticket), regardless of distance travelled. The average fare per passenger on the trams was about 4 cents, and on the street rigs about 10 cents. All of these fares are quoted in gold (Duffy, 1917).

into a public transport vehicle that was so successful in Manila, nothing could prevent its rapid spread throughout the newly-independent country. Hence, not long after the war, jeepneys became the predominant form of urban public transport, slowly displacing some of the horse-drawn vehicles and catering for the increased demand resulting from post-war reconstruction, subsequent population growth and rural-urban migration. Outside the urban areas, buses began to predominate again, taking advantage of the railway's demise to consolidate their position on the busiest and most profitable routes, while jeepneys began to infiltrate some of the shorter-distance rural or inter-community services.

In retrospect, the three features of mass transit promotion before World War II were (a) the railway, which was promoted and financially endorsed by colonial expatriate governments primarily as a means to gain military control and mobility; (b) the electric tramway, which was promoted and built by private interests in search of substantial quick profits and encouraged by government in order to cultivate economic development and modernization; and (c) the spread of motor-buses, first as a complementary form of public transport, feeding the rail and tram lines where appropriate, but later exploited due to their flexibility, to compete with rail-based modes.

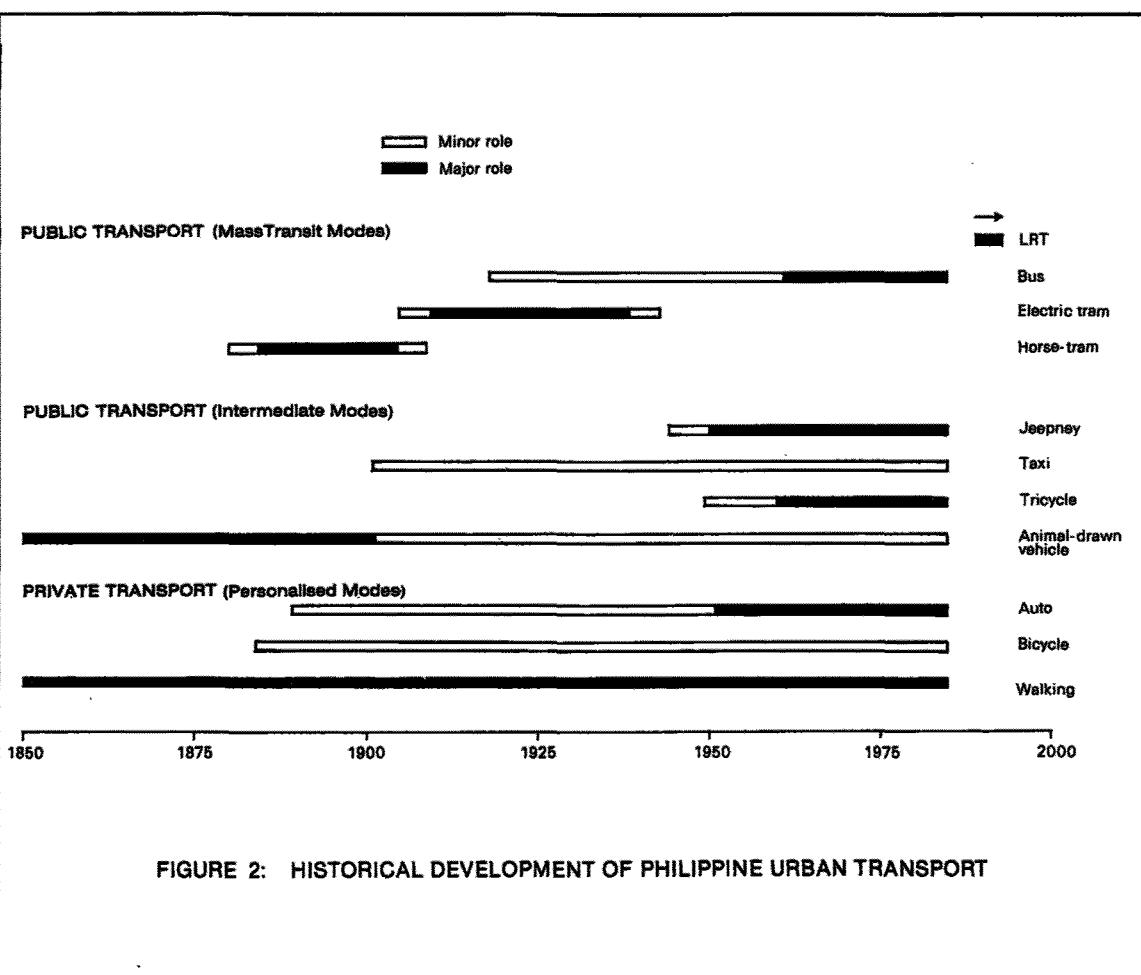


FIGURE 2: HISTORICAL DEVELOPMENT OF PHILIPPINE URBAN TRANSPORT

Policy: Transport Studies, Strategies and Their Effect on Provincial Cities

Before World War I, most mass transit facilities were promoted and constructed by private entrepreneurs and capitalists in search of profits resulting from passenger revenues. The effect of automobiles on personal mobility and on densities of urban development, however, especially in the advanced capitalist countries of Western Europe and North America, caused a rapid decline in the demand for and profitability of such systems, resulting in eventual takeovers by public corporations, authorities or commissions.

Even in the Philippines, where most public transport is still operated profitably by private enterprise, the capital intensity of mass transit projects is usually so prohibitive that only government agencies can afford to undertake such schemes. The promotion of mass transit facilities since the late 1960s can therefore best be reviewed with reference to transport studies that have been carried out in the Philippines, their findings, recommendations and eventual impact.

Understandably, most major planning projects with implications for public transport have been concentrated in Metro Manila, beginning with the Major Thoroughfares Plan of 1945 and ranging through the 1960 Jeepney Phase-Out Policy, the Urban Transport Study for the Metropolitan Manila Area (UTSMA) and the Metro Manila Transport, Land Use and Development Planning Project (MMETRO-PLAN) during the 1970s, followed by the Metro Manila Urban Transport Improvement Project (MMUTIP), completed in 1981. These elaborate studies, mostly conducted by either Japanese or British consultants, have consistently prescribed expensive mass transit plans as the only viable solution to Manila's transport problems. This is perhaps not surprising, in view of the experience and well-established engineering and manufacturing industries in these countries. Of all the large buses operating in Third World cities, twenty-seven per cent were built in England or Japan, and British or Japanese firms are responsible for constructing forty-two per cent of the rapid transit rolling stock operating in developing countries (Union Internationale des Transport Publics, 1979).

In a similar manner to the way in which both modern urban tramway technology diffused from Manila to Cebu in the early part of the twentieth century, and the application of jeepneys spread to the provinces after World War II, so the practice of conducting large-scale urban transport studies has been diffusing from Manila to secondary urban centres. With it has come the promotion of modern mass transit systems, in the form of large buses and even rail rapid transit.

At least partly due to strong competition from other foreign consulting groups, and the resultant inability to become involved with further capital city studies in the mid-1970s, the Japanese began to show interest in penetrating the urban transport market of Asian cities at secondary and tertiary levels. Through a private consulting firm, the Japanese government conducted a survey of public transport requirements in eight small- and medium-sized South East Asian cities. With a short report on two cities in each of Malaysia, Thailand, Indonesia and the Philippines, the study recommend the creation of a roving committee of planners and engineers who could assist in the transition from intermediate technology and organization to full-sized Japanese buses and corporate management. It emphasized the inevitable process of "modernization and incorporation" that provincial cities would have to undergo before development could occur (Black & Rimmer, 1982).

In Cebu, suggestions included an upgrading of traffic signals as well as the establishment and consolidation of jeepney stops in the downtown area, effectively tripling average walking distances. Relocation of existing bus terminals and closer co-operation between central and regional offices of regulatory agencies was also urged, in order to reduce the number of jeepney franchises issued and prevent the public transport industry from suffering "excessive competition" (Mitsui Consultants, 1977).

The Japanese study preceded any serious attempt by the Philippine government to direct its own attention towards planning transport services outside the Metro Manila area and acted as somewhat of an impetus in generating such interest. In the five years following completion of the Mitsui Consultants report, transport studies were initiated in three provincial cities, one in each of the Visayas,

Mindanao and Luzon. The first to get underway was in Cebu, with the Metro Cebu Land Use and Transport Study (MCLUTS) established in October 1978. Together with substantial financial aid from the government of Australia and expertise provided by a group of visiting Australian consultants, field studies were begun in 1979.

MCLUTS conducted an extensive data collection program, including a land inventory socio-economic profiles, measurements of existing road infrastructure and compilation of statistics regarding traffic signals. This was followed by home interviews and roadside surveys designed to determine those characteristics of transport trip-making behavior required for the computer model, used for generating forecasts at various stages within MCLUTS's twenty-year time horizon. Although the model predicted a population for Metro Cebu of 1.2 million by 1986, 1.4 million in 1990 and at least 1.9 million in the year 2000, rail rapid transit was not explicitly proposed as a feasible way of increasing the region's transport capacity. Nevertheless, the option was left open by suggesting that if mainland reclamation projects are not implemented, additional transport capacity could be generated by a twenty-kilometer light rail transit line, which should be reconsidered when the Metro Cebu Plan comes up for review in 1985 (MCLUTS, 1980; Cal & Cholerton, 1981).

MCLUTS suggested that jeepneys should remain the predominant form of public transport in Metro Cebu and, in contrast to the Mitsui Consultants study, favoured lifting the ban on issuing jeepney franchises and legalizing those operating without franchises. The introduction of intracity buses was not ruled out, as MCLUTS recognized the temptation to replace jeepneys with large buses. Yet, such a possibility was qualified by the narrow and rough nature of Cebu's road network, in effect preventing one bus, with three times the passenger capacity of a jeepney, from performing the role of three jeepneys (MCLUTS, 1980).

Perhaps the most far-reaching aspects of MCLUTS is the strategic highway improvement program, which includes the construction of six radial and three circumferential roads, requiring a total investment of 760 million pesos at 1979 prices. An integral part of this plan is the widening of existing

arterial roads, a new four-lane dual carriage-way coastal road and other connecting links, in effect removing all infrastructure-related obstacles to the operation of a city bus service. The specific routes that would then be available for bus use were identified by MCLUTS and, although the emphasis remains on jeepneys, a more detailed feasibility study of "introducing buses to operate wholly within Metro Cebu by 1990" (MCLUTS, 1980, vol. 2:233) is part of the overall recommendations.

Following release of its main report, the study phase of MCLUTS was complete. The recommended programs were adopted by the government and MCLUTS was subsequently redefined to follow through and actually supervise the implementation stage of the project. Financial assistance, previously provided by the Australian government, was taken over by a World Bank loan, but continuity was assured through retention of the same core and support staff components.

MCLUTS was followed by urban transport study projects in Davao and Baguio. The Davao City Urban Transport Cum Land Use Study (DCUTCLUS), with substantial technical and financial input from Japan, concluded with strikingly different recommendations from those produced by MCLUTS. DCUTCLUS planning revolved around the phased introduction of mass transit systems, beginning with a complement of fifty buses in 1985, 200 in 1990 and 500 together with a major rail rapid transit line in 2000. Jeepneys would slowly be transferred to a short-distance feeder role, and the report argues in favour of buses on three related grounds: (a) buses carry more than twice the number of passengers per unit of road space occupied than

⁷ These arguments are based on the assumption that a bus occupies 1.3 times the road space of a jeepney. Dimensions of the average Asian Utility Vehicle used for jeepney service in Davao or Cebu, however, are 4769 mm (length) x 1622 mm (width), for a total area of 7.7 square meters. Dimensions for a typical Manila urban bus seating 58 passengers are 10,975 mm (length) x 2490 mm (width), for a total area of 26.3 square meters, indicating that the bus occupies 3.4 times the road space of the jeepney. Most calculations only take vehicle length into account, neglecting the fact that buses are much wider than jeepneys, a crucial factor in the Philippines, where most roads do not have enforceable lanes.

jeepneys; (b) as a result, traffic congestion would be reduced considerably, and (c) this would require a much smaller amount of road construction.⁷ With the introduction of a light rail transit line at the turn of the century, buses would be shifted to the role of providing a secondary trunk and feeder service, with jeepneys remaining only for local neighborhood distribution, thus ensuring that no competition would exist between modes (DCUTCLUS, 1981).

The Baguio City Transportation Project (BCTP), employing a staff consisting entirely of local residents, is the only study that did not include any form of mass transit in its recommendations. Clearly, Baguio City is much smaller than Cebu or Davao, but due to its role as a major vacation spot in the mountain provinces, this level swells considerably during holiday periods when many people migrate from the lowlands. Hence, transport services are subject to dramatic fluctuations and to peaks in demand that can cause significant delays in crucial times. In this light, BCTP identified locations for integrating jeepney parking spaces and inter-city bus terminals within the central business district, recommend road widening and engineering improvements in certain areas, and suggested the expansion of off-street car parking facilities as well as an increase in the manpower of local police in order to enforce traffic laws. Jeepney owners were required to paint the exterior of their vehicles in prescribed colours depending on the route they were franchised to ply, along with a rather complicated combination of letters and numbers, identifying the route on all four sides of the vehicles (Baguio City Transportation Project, 1981a, 1981b).

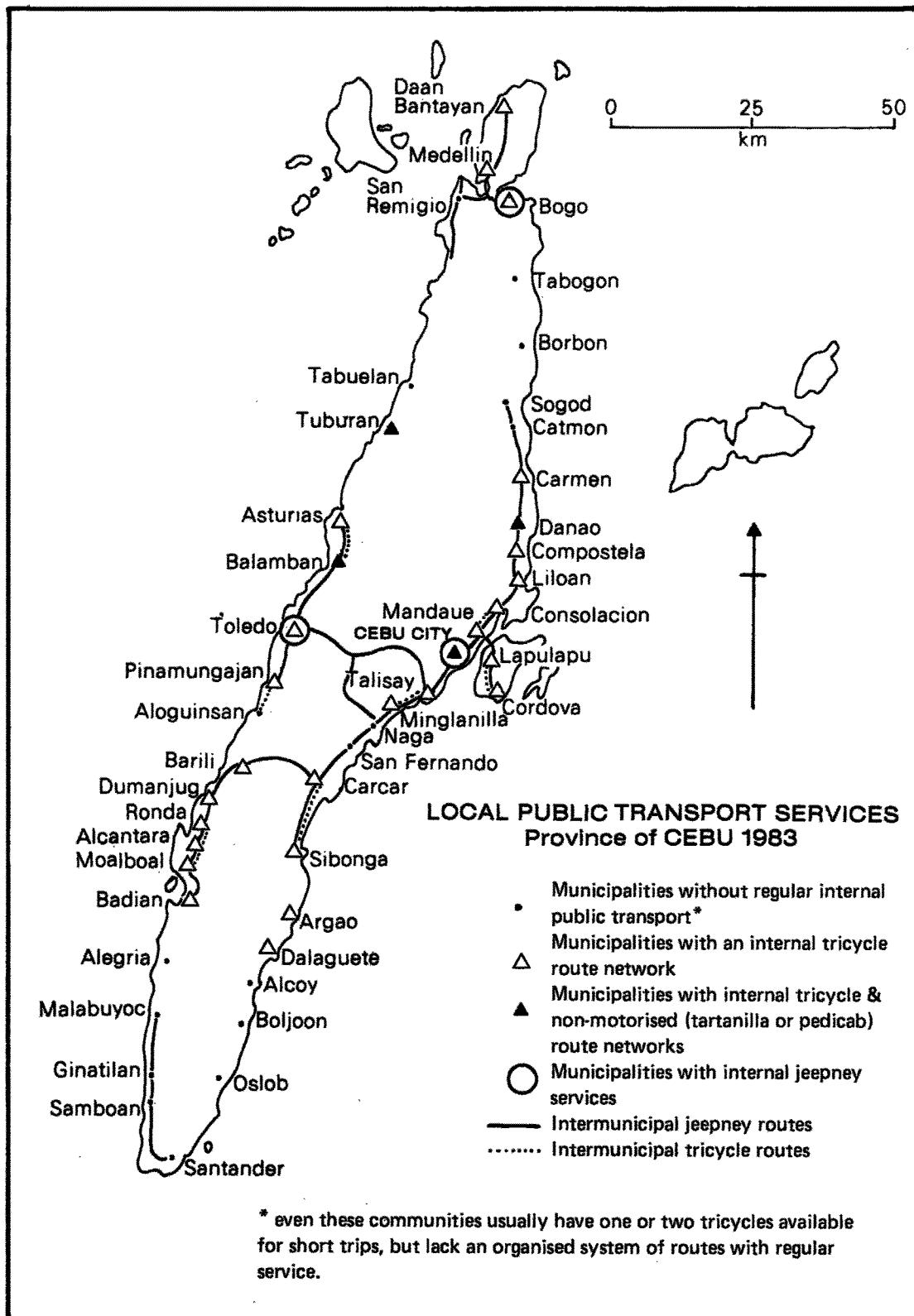
The Philippine government and its transport planning agencies has understandably been preoccupied coping with problems in and around the Metro Manila area. Little attention was directed towards provincial areas until local political concerns and foreign interest in modernization began to indicate that it was time to start assessing the needs of smaller cities. The studies outlined above have been the result, and they provide a clear indication of the modernization pressures that are increasingly being felt as the push for mass transit technology progresses from the advanced capitalist countries, through Manila, to the provincial areas. Urban transport

studies being planned for Cagayan de Oro, Zamboanga and Bacolod, and other medium-sized cities cannot be far behind (Deutsche Stiftung für internationale Entwicklung, 1981). As these cities grow, pressures brought to bear by local administrators and assemblymen will attract government attention, and the temptation to push mass transit down the urban hierarchy will be difficult to resist. Studies employing foreign experts as consultants somehow seem to carry much more weight than local efforts, and if foreign aid or international loans are involved, the overseas technical assistance is almost compulsory. But is the replication of programs implemented in Manila and Western or Japanese cities of value for provincial areas in the Philippines? Are the intermediate forms of public transport highly deficient in meeting the needs of provincial cities? A brief examination of Cebu's public transport industry aims at providing some evidence for considering these questions.

Reality: The Public Transport Industry of Cebu⁸

Public transport in Cebu consists of four intraurban modes and one interurban mode that connects the main city with other areas in the province. The major line-haul mode, as in most Philippine cities, is the jeepney; in outer communities, the motorized tricycle serves as a local distributor as well as a feeder to the jeepney services; bicycle-powered pedicabs dominate local public transport in Danao City; in a designated part of central Cebu City and in the municipalities of Tuburan and Balamban, horse-drawn *tartanillas* are still in use; and large buses operate on long-distance runs from Cebu City to most other communities on the island. This is the only instance where full-sized buses are employed for public transport, and they do not carry passengers locally within urbanized areas. A breakdown of these vehicles is presented on Table 1.

⁸The evidence in this section is based primarily on interviews, surveys, direct inquiry and observation of the systems in practice during the months of July to October 1983.



**Table 1. Breakdown of Public Transit Vehicles
Province of Cebu 1983**

<i>Mode</i>	<i>Vehicles Estimated Number</i>		<i>Seating Capacity</i>			
	<i>Registered</i>	<i>In Service</i>	<i>Per Cent</i>	<i>Average</i>	<i>Total</i>	<i>Per Cent</i>
Jeepneys	2109	3725	38.6	16	59,600	60.2
Tricycles	335	4700	48.7	4	18,800	19.0
Tartanillas	451	550	5.7	4	2,200	2.2
Pedicabs	391	400	4.1	2	800	0.8
Large Buses	187	270	2.8	65	17,550	17.7
Total	3473	9645	100.0		98,950	99.9*

* Error due to rounding

Sources: various.

Participants in the industry who are directly involved in day-to-day operations can be grouped into three categories: owners, operators and drivers. Owners are those who have actually invested their capital in a vehicle and are its rightful owner. Operators are those in possession of a legal franchise to operate a public utility vehicle and, finally, drivers are the individuals who actually drive the units on a regular basis. The size distribution of these three types of participants and the relations between them vary according to the mode in question. The owner, operator and driver may be the same individual or could be three different people. The relationship is most complex for jeepneys, where owner-drivers are relatively rare, and operator-drivers rarer still. In most cases, the owner of a unit will hire one or two drivers, who rent the vehicle for a fixed "boundary" fee per day. The excess of income from fares collected, after paying the daily rental, cost of fuel and other expenses, constitutes the drivers' net earnings.

While an owner may apply for his own operating franchise, this is actually a very cumbersome process, and the common practice for those who wish to avoid this inconvenience is to attach their jeepney to someone else's franchise through the *kabit* system. This is usually a professional operator who has obtained franchise for more units than he actually owns. Although the *kabit* system is officially illegal, it is very difficult

to change because of the pervasive influence of Cebu's five largest *kabit* operators, who controlled about 2500 jeepney units in 1983 (almost seventy per cent of the provincial total).

Tricycles, pedicabs and *tartanillas* have similar arrangements, except that there are no properly enforced franchises and no *kabit* operations. The proportion of owner-drivers is much higher than for jeepneys, probably due to the smaller amount of capital required (see Table 2). There are no effective restrictions to the number of pedicabs, tricycles or *tartanillas* in operation, other than market forces of supply and demand.

There has recently been a heavy investment of capital in the replacement of old jeepneys as well as expansion of the overall fleet through the addition of new units. The situation is smaller for pedicabs in Danao, the average age for both types of vehicles being less than three years (see Table 3). Both for tricycles and *tartanillas*, however, the vehicles are, on average, almost twice as old. In most cases, attempts are made to avoid heavy capital expenditures by extending the life of old vehicles through reconditioning or replacement of major components. A vehicle can usually be totally rebuilt in a local shop for about half the cost of a new vehicle, resulting in a product that looks and performs almost as well as new. This practice is particularly popular with *tartanillas* and tricycles, whereas jeepneys are more frequently replaced,

**Table 2. Component Breakdown of Vehicle Retail Price
Cebu 1983**

<i>Mode</i>	<i>Average per cent of retail price remaining in the Philippines</i>				
Bus					39
Tricycle					63
Jeepney					65
Pedicab					71
Tartanilla					98

<i>Vehicle type</i>	<i>Average retail price (P)</i>	<i>Cost of materials (P)</i>	<i>Per cent imported</i>	<i>Per cent local</i>	<i>Per cent remaining in Phils.</i>
Bus—Chassis/Cowl	280,000	236,000	85	15	28
Bus—Body	60,000	50,000	5	95	96
Bus—Complete	340,000	286,000	72	28	39
Jeepney—AUV	75,000	60,000	40	60	68
Jeepney—Baisac	55,000	43,000	50	50	61
Tricycle—motorcycle	10,800	8,000	70	30	48
Tricycle—sidecar	5,000	4,000	5	95	96
Tricycle—complete	15,800	12,000	48	52	63
Pedicab	2,100	1,500	40	60	71
Tartanilla	3,000	2,000	2	98	98

Source: Interviews and surveys.

possibly due to the current trend of switching from petrol to diesel-powered units. This allows owners to double the "boundary" fee, in exchange for a lower fuel cost and better fuel economy. The proportion of diesel jeepneys in Cebu has increased from almost zero in 1978 to over fifty per cent in 1983.

Vehicle manufacturing, parts production and assembly is largely concentrated in Manila, although some work is performed locally. Preference for jeepney styles in Cebu differs markedly from the fashion in Manila, as the great majority are "Asian Utility Vehicle" (AUV) models, as opposed to the traditional American-style jeep. As a result, these vehicles are all of Philippine design and the majority of materials are locally made, with the more complicated parts imported from Japan. In all cases except for the recent Ford Fierra models, AUVs are purchased as a "chassis and cab" unit, with a Cebu-style body installed

by one of several local body builders. There is also one manufacturer in Cebu who builds jeepneys from scratch, using reconditioned diesel engines and new local parts.

There are some twelve to fifteen tricycle sidecar manufacturers in Cebu, producing units for the local market as well as for use in Mindanao, Bohol, Leyte, Negros and even Manila. Three of these enterprises are also engaged in building pedicabs, and there are several bus body builders in the province. About five *tartanilla* manufacturers remain in Cebu City, most of whom are more concerned with repair and rebuilding than with actual manufacturing of new units. As illustrated on Table 2, the local content of horse-drawn rigs is almost 100 per cent, the majority being of wooden construction. Some of the shops have also been engaged in a substantial export production, supplying rigs to customers in West Germany and the United States.

**Table 3. Summary of Selected Average Characteristics by Mode
Cebu 1983**

	Jeepney	Tricycle	Tartanilla	Bus	Pedicab
Sample size	349	240	61	29	40
Age of vehicle (years)	2.8	4.6	5.0	3.4	2.6
Driver's age (years)	33	31	38	37	23
Daily earnings (P)	81	32	32	29	17
Years at job	11	7	14	16	2
Average fare (P)	1.02	0.87	0.40	8.62	0.25
Daily boundary (P)	98	21	18	—	6
Per cent of drivers satisfied with income	74	62	82	48	70
Family size	5.3	4.1	4.5	5.3	2.6

Source: Interviews and surveys.

Fares for all five modes are fixed and regulated by federal or local authorities, and are enforced by the riding public who is constantly on guard to avoid overcharging. Within the urbanized area of Metro Cebu, authorized fares are strictly observed by most drivers, while on longer-distance provincial jeepney routes as well as on all provincial buses, actual fares are substantially below the official rates (sometimes as low as half), primarily due to competition and the need for a full load in order to make a long trip worthwhile.

By virtue of continuing investment in all modes of the public transport industry, be they drivers, owners or operators, it can be concluded that profit margins and earnings are sufficient to attract private enterprise. The re-equipment of Cebu's jeepney fleet in recent years, for example, has involved a total investment of some fifteen million pesos, all from private sources. Drivers are earning amounts that are comparable to average incomes, except for pedicab drivers who earn considerably less, and jeepney drivers who earn much more (see Table 3). Most important, however, is that on the average over seventy per cent of drivers seem to be satisfied with their income.

Efficiency of operation in quantitative terms is outlined on Table 4, classified by the five

different modes. Of the motorized modes, jeepneys carry the largest number of passengers per day and are most efficient in terms of productivity per unit of fuel consumed, the only non-size related measure. Average occupancy is highest for the two non-motorized modes, partly due to their very short average trip distances, which allow for a higher level of occupancy per vehicle.

Quality of service offered by the various modes is very high, considering that none of them accommodates standing passengers. Comfort is assured by providing a seat for everyone, usually well padded with extra back- or head-rests, handholds and steps. Many of the motorized vehicles are equipped with stereo music, and all vehicles tend to proceed along their respective routes as fast as permitted by traffic flow, usually ensuring a rapid ride. Frequency of service is among the highest anywhere in the world, thus providing in negligible waiting time, except in remote areas or late at night. Commuters in Cebu have been observed commenting that a wait in excess of five minutes is often considered intolerable. For example, average frequency of service during a three-hour period from 7:00 to 10:00 a.m. on most major jeepney routes is better than one vehicle per minute, as presented on Table 5.

**Table 4. Measures of Productivity and Efficiency by Mode
Cebu 1983**

Average per vehicle	Jeepney	Bus	Tricycle	Tartanilla	Pedicab
Passengers/day	238	162	100	152	92
Passenger-kms/day*	2688	10,327	186	150	35
Passenger-kms/km*	10.9	38.7	2.6	3.3	1.7
Kilometres/day	247	267	72	45	20
Litres of fuel/day	27	130	5	—	—
Litres/100 kms	10.9	48.7	6.9	—	—
Passenger-kms/litre*	100	79	37	—	—
Average occupancy + (per cent)	68	60	65	83	85

* Assumes 75% of route distance as average kms/passenger.

+ Passenger-kms/km divided by seating capacity (see Table 1).

Frequency of service for tricycles, *tartanillas* and pedicabs is generally equivalent to or better than for jeepney routes, as they are usually waiting for passengers in a queue at terminals. Waiting time is never greater than the time it takes to fill the vehicle (two to four passengers). Buses, due to their large capacity and long distance travelled, have the lowest frequency of service, ranging from about

every half hour on runs to Toledo, to about three or four trips per day to the outlying towns and villages in the provincial hinterland (see Figure 4). A relatively frequent service to the farthest reaches of the island is maintained because of the demand generated by connecting ferry passengers from Negros in the south and Leyte or Bantayan Island in the north.

**Table 5. Average Frequency of Service—Cebu City Jeepney Routes 1983
(Three-hour period 7-10 a.m.)**

Route	Average number of vehicles per hour	Frequency of service (average)
Urgello/Pier	300	12 seconds
Mabolo	133	27 "
Lahug	196	18 "
Guadalupe	114	32 "
Banawa	27	2.2 minutes
Basak	83	43 seconds
Pardo	5	12.0 minutes
Inayawan	20	3.0 "
Labangon	228	16 seconds
Talamban	89	40 "
Capitol	37	1.6 minutes

Source: MCLUTS Traffic Surveys.

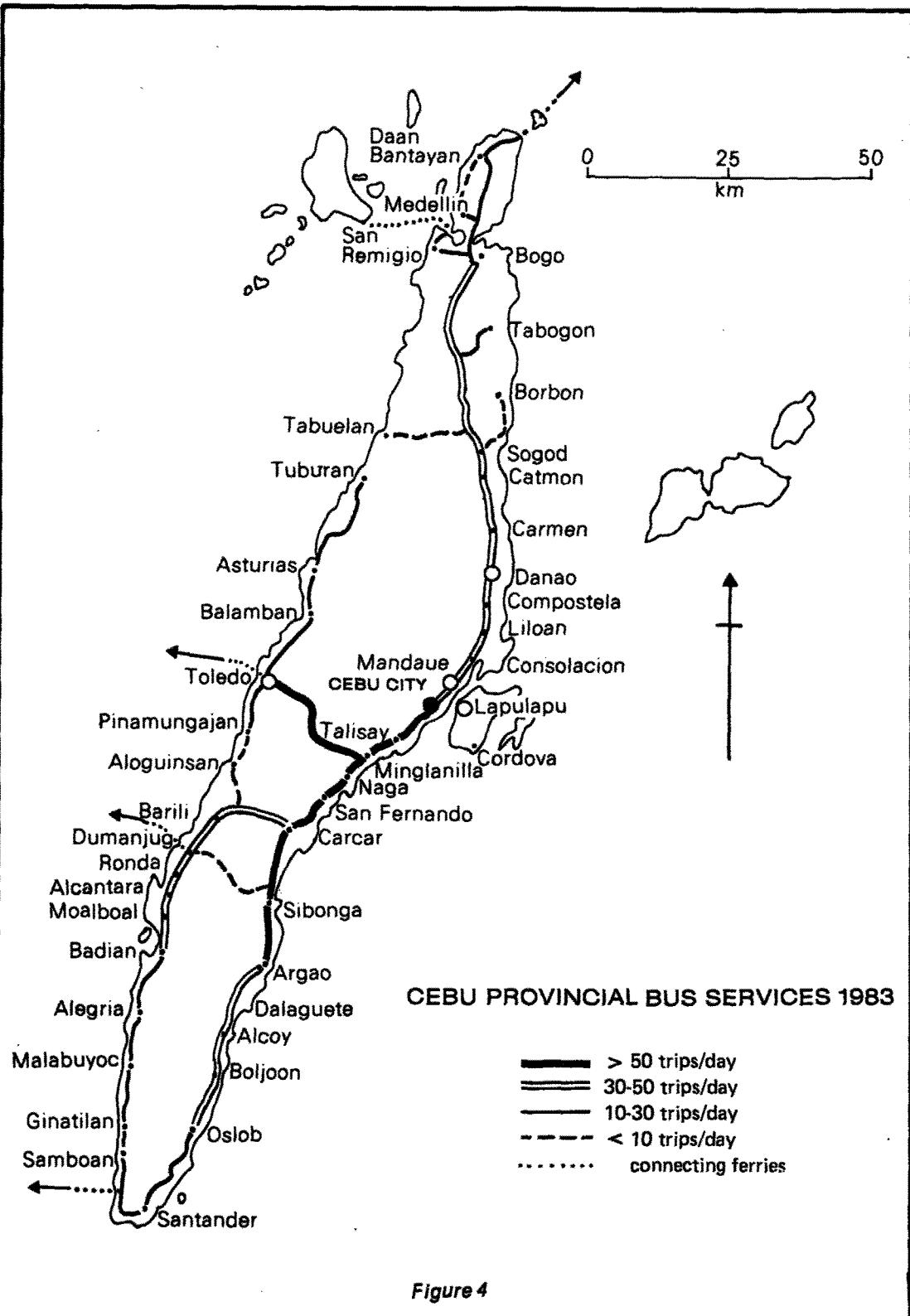


Figure 4

The flexibility of operation allows most public transport modes to be very demand-responsive. Vehicles occasionally deviate from their usual route to bring passengers closer to their destination, or can alter the route to allow for shifts in demand patterns at different times of the day, days of the week or seasons of the year. They are thereby also able to circumvent accidents, traffic bottlenecks or other temporary problems. Because drivers are most familiar with the precise nature of passenger demand, they are able to adjust their service to suit changes very rapidly, although the recent jeepney rerouting program makes this much more difficult than in the past.

Because of the relatively small size of Cebu's public transport vehicles, the industry is very labor-intensive, directly employing drivers, conductors, luggage boys, despatchers, mechanics, wash boys and drivers' companions. The latter earn their living by assisting the drivers, who in turn pay for their food while together. While this is in part the symptom of a more fundamental problem of underemployment, it also underlines the contribution of Cebu's transport industry in creating employment opportunities, including approximately 20,000 drivers, 4000 conductors and helpers, 1000 owners and operators, and 10,000 or more in ancillary services and industries. When families and dependents are added, this accounts for some 150,000 individuals, or between seven and ten per cent of the provincial population.

On first observation, it might appear that an unreasonable proportion of income derived from the industry is claimed by vehicle owners, but after closer examination it becomes clear that financial obligations and maintenance requirements of the owners consume most of the daily "boundary" fee, such that a significant return on initial investment cannot be earned until after the vehicles are fully amortized. As individuals, it is only the large *kabit* operators and government officials who are collecting large sums of money from the public transport industry. Furthermore, financing companies, automobile dealerships, oil companies, parts suppliers, wholesalers and retailers, manufacturers, insurance agents as well as the government (through fuel taxes, license fees, traffic fines, etc.) reap substantial monetary benefits. Thus, while income distribution within the industry is far from being

optimally equitable, it reaches a far greater number of people than in advanced capitalist countries or in cities with extensive mass transit facilities. The capital-intensive nature of mass transit automatically erodes the spread of benefits and invites government subsidies.

Although there have been large buses operating on routes within the urban area of Metro Cebu in the past, the trend has been for these to be replaced by jeepneys, which can provide a more frequent, faster service and are more easily able to offer the owner with a return on his investment. Nevertheless, there have been three recent plans to re-introduce buses to urban public transport in Metro Cebu:

- (a) In 1980 a feasibility study was carried out by a private operator concluding that it would be viable to operate buses on certain routes as a supplement to jeepney services, but only during peak hours. The study has been requested by the local police department at a time when strikes among jeepney drivers were frequent. Nothing further has resulted, largely because a peak hour-only service would not be sufficient to recover the capital investment on a fleet of buses.
- (b) MCLUTS has included large buses as part of their long-range plans, however dependent on improvement of the road infrastructure.
- (c) Another private operator has been planning to introduce eight buses on a service within Metro Cebu to compete vigorously with jeepneys by offering a considerably lower fare (₱1.00 vs. ₱1.90) at low frequencies (four buses per hour versus twenty-five to sixty jeepneys per hour, depending on the time of day). This is only possible, however, because the operator was able to purchase his buses at an artificially low price, as they had been repossessed from the previous owner by a financing company, who wanted to dispose of them quickly.

Whereas buses inherently provide an inferior service to jeepneys in terms of speed, comfort when crowded, frequency of service and flexibility of operation, they can serve a useful purpose in offering the user a definite

choice, but *only* if the equivalent fares are significantly lower than those of a jeepney for the same trip. Thus, buses can offer the public a cheaper ride in return for a longer wait, a slower trip, less convenient boarding points and greater crowding. Jeepneys, for a higher fare, offer the opposite amenities, thereby giving passengers a wider choice of service levels, according to the price they are willing (or able) to pay. This can also have the effect of somewhat elevating the perceived status of jeepney transport and making it more attractive to people who would otherwise ride in taxis or private cars.⁹

During a survey of 200 retail employees and university students in Cebu City in September 1983, respondents were asked, if big buses were introduced to Cebu City for local travel, and a choice were available in making the same trip for the same fare by either bus or jeepney, which one they would prefer. The result was sixty-two per cent in favour of jeepneys and thirty-eight per cent preferring buses, indicating a clear overall preference for jeepneys as a mode of intracity public transport.

Conclusions

As demonstrated above, the intermediate modes of public transport, currently accounting for the lion's share of public transport in Cebu, are providing a service at frequencies, average speeds and with an efficiency that is equalled in few places around the world; and this is accomplished by private enterprise without government subsidy. The only forms of land-based public transport in the Philippines to be heavily subsidized by government are the 700 large buses operated by the Metro Manila Transit Corporation, construction of Manila's light rail line to be operated by the Light Rail Transit Authority, and both the passenger and commuter trains of the Philippine National Railways, all of which are good examples of mass transit managed by

big government corporations. Yet, transport studies continue to recommend mass transit as a solution to urban transport "problems," not only in Manila, but also in provincial cities, which are increasingly attracting the attention of government planners and technocrats. Reasons for this are difficult to pinpoint, but are likely to include (a) a compulsion to make public transport conform more closely to an image of the perceived ideal standards of the Western world, exemplified by a tendency of government to opt for visible types of accomplishments such as freeways or mass transit projects rather than less prestigious schemes; (b) a desire to increase the ability of government to exert direct control over the public transport industry and its behaviour, permitting contact with the entire industry through a handful of corporations instead of a multitude of individual owner-operators; and (c) a genuine belief among some planners and consultants that increasing vehicle size will relieve traffic congestion, reduce fuel consumption and reduce costs.

In the Philippines, horses have been used as public transport for almost 400 years and carabao even longer. Both are still working faithfully, although in reduced numbers. The railway on the island of Cebu and Manila's electric trams, however, have both come and gone in the space of about forty years. Jeepneys, as a mode of public transport, are approaching their fortieth anniversary, coincident with the planned beginning of light rail service in Manila. Yet they show no signs of decline, as their position in the industry and their numbers are stronger than ever before.

Large capital expenditures, operating subsidies, management difficulties, employee apathy and higher unemployment tend to accompany the introduction of high-capacity mass transit and corporate organization. Dictated by vehicle size and complexity, such attributes hold little promise for improving the quality of public transport in the Philippines. Just as Manila will never be like Munich, Montreal, Manhattan or Melbourne, Cebu is not destined to become another Cologne, Calgary, Cleveland or Canberra. Philippine cities have an identity very much their own; it is unique and distinctive, colorful and vibrant, and intermediate public transport is an integral part of it.

⁹ Such as is provided by public light buses in Hong Kong, *peseros* in Mexico, and *por puestos* in Venezuela.

The Philippine Islands, their economy and people, did not stand to gain much from the experience of mass transit in history. The advantages that resulted were concentrated in the hands of a few foreign investors, contractors and consultants. Benefits from recent policy involving the creation of the MMTG and LRTA in Manila have particularly favoured Japanese and Belgian manufacturing

and engineering industries, at the expense of jeepney drivers and the public purse. In view of the ability of intermediate public transport to provide a very high level of service at no cost to the taxpayer, as evidenced by the high performance of Cebu's public transport industry, it is extremely difficult to justify the extension of mass transit and capital-city policies to provincial areas.

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PLANNING NEWS

Summer Graduates

The School of Urban and Regional Planning graduated four students under the Master of Arts in Urban and Regional Planning Program this summer. The new planners are: Raul G. Trinidad, Pedro S. Mortel, Rosario M. Adapon and Oscar R. Rosal.

Seminar Workshop on New Towns

The Training Division of the U.P. SURP, the U.P. PLANADES, and the Subsidiary Operations Comptrollership Group, Human Settlements Development Corporation, jointly conducted a seminar/workshop on "Planning for New Towns" on October 11-14, 1983 at DAP, Tagaytay City. The participants consisted of selected staff members of HSDC who were involved in the planning and development of the Lungsod Silangan Project. The seminar aimed to give the trainees an overview of the nature and scope, as well as the problems and opportunities in New Towns development.

SCURP 8 To Open

"Planning and Management of Urban Settlements" will be the focus and title of the 8th Special Course in Urban and Regional Planning to run from August 1, 1984 through November 30, 1984.

The course is designed primarily to respond to the current needs of all cities and municipalities to have effective city/municipal development coordinators as mandated by the new local government code.

1,168 Towns Now Have Town Plans

As of December 1983, a total of 1,168 out of 1,551 municipalities have availed of the government assistance to local government units in the preparation of town plans and zoning ordinances. Of this number, 159 received assistance under the National Coordinating Council for Town Planning, Housing and Zoning (NCC-TPHZ, 1977-1979), 347 were assisted under the Human Settlements Regulatory Commission (HSRC) program (1980) and a total of 662 under the Inter-Agency Town Planning Assistance Program (IATPAP).

Of the 12 regions, regions II, III, IX, XI and XII have the highest number of completed town plans while regions I, IV and VIII have the lowest number. Only 383 towns remain without plans. But these are either undergoing assistance currently or targeted for assistance in the next year or so.

The on-going assistance to local government units in the preparation of land use plans, capital investment programs and zoning ordinances is carried out via the inter-agency set up of which MHS, MLG, NEDA, OBM, MOF are members.

Assistance is in the form of sharing the expertise of trained planners from the participating agencies fielded to the target municipalities. These trained planners assist the local planning staff in all phases of planning and coordinate with agencies present within the locality for necessary inputs.

PLANNING NEWS

Back from India

Carmelita R.E.U. Liwag, a Research Assistant of the School attended a Course in Urban and Rural Environment Analysis under the Technical Cooperation Scheme of the Colombo Plan, 83-84. The course was conducted by the National Institute of Rural Development (Hyderabad) and the School of Planning and Architecture (New Delhi), India, from September 1 to November 30, 1983.

Within the period and by special arrange-

ment, she was also able to take up two additional training modules, the Course on Evaluation—Methodology and Technique (September 1-28, 1983) and the Seminar on Methodology for Planning and Implementation of Rural Development Programmes (October 6-7, 1983).

Carmie U. Liwag, fourth from left, front row with the other participants in the seminar on Methodology for Planning and Implementation of Rural Development Programmes.



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