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# Rural Development: THE PHILIPPINE EXPERIENCE

ARTURO A. GOMEZ  
PRISCILLA JULIANO  
EDITORS

UNIVERSITY OF THE PHILIPPINES  
AT LOS BANOS  
COLLEGE, LAGUNA, PHILIPPINES

RURAL DEVELOPMENT: THE PHILIPPINE EXPERIENCE

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## FOREWORD

As a University whose primary orientation is countryside development, the University of the Philippines at Los Baños (UPLB) is deeply involved not only in evolving new techniques that can improve the quality of life in rural communities but also in testing how these new techniques can be speedily introduced in communities where they are most suited for adoption. Thus the university has continuously worked on several pilot communities where new development techniques are being experimentally tried before they are recommended for use by the implementing agencies of Government. An example of this is our program on multiple cropping. Experience in the experiment station has repeatedly shown that the intensification of land use by growing several crops throughout the year has excellent potential for profit specially for small farms with adequate labor supply. And yet the technology has not been quickly adopted by Filipino farmers whose farms are generally small and whose households are usually large. Thus, since 1972 UPLB and the International Development Research Center (IDRC) of Canada have initiated a project to study the factors influencing the adoption of multiple cropping in selected communities in the Philippines. Since then the program has progressed from a pilot area of six barrios to what is now a nationwide program.

As we continue to work on rural development, we become more keenly aware of the need to share our experiences and at the same time learn from the experiences of other development workers. Thus in mid-1977, the IDRC supported program on multiple cropping organized a symposium on rural development program in the Philippines. We are proud to publish the proceedings of this symposium which are excellent references for workers and students in rural development.

The introductory chapters of part I constitute some of the recent thoughts in rural development. Parts II to IV put together our recent experiences in rural development. The various case studies, presented by the program leaders, are invaluable sources of information for use as basis for future programs. For this reason the National Training Center (NTC) of UPLB has agreed to fund the publication of this book, for any training in rural development cannot be complete unless the trainees are amply exposed to past experiences of their colleagues.

Lastly, we express our gratitude to the people most instrumental in the publication of this book: to IDRC who provided financial support, to the multiple cropping program who organized the symposium, to the participants who generously gave their valuable time to this symposium and to NTC who has found this book a worthwhile investment.

ABELARDO SAMONTE  
Chancellor, UPLB



## PREFACE

Like many other developing countries, the Philippines is characterized by a rural sector which constitutes more than 60 per cent of the population, whose main source of employment is agriculture, and whose average per capita income is less than half of that of the urban sector. In keeping with the main objective of the Philippines to increase productivity while improving the distribution of income, the government has, in recent years, allocated more and more resources for developing the rural sector. Thus, in the last decade many types of rural development programs have been implemented with varying degrees of success.

Indeed accelerated rural development is a most logical priority for the Philippines. Productivity and income in the rural areas must be quickly accelerated if income distribution is to improve. Thus the Philippines, like many other developing countries, will probably continue to increase her investments in the rural sector. It is an anticipation of this added activity in rural development that this book is written. By putting in a single volume our recent experiences in rural development, we hope to facilitate the identification of program features that are most likely to succeed and thus guide subsequent rural development workers in their task of synthesizing new and better programs. This book is also directed to the rank and file of our government employees who are directly working with rural households. By familiarizing themselves with past experiences, they can adopt proven techniques and avoid common pitfalls.

Since the content and orientation of a book on rural development is greatly affected by the choice of authors and materials included, it is important that the readers be aware of the guidelines we followed in developing this book. First, the contents. We have arbitrarily classified rural development programs into three types, namely: production oriented programs, human oriented programs and integrated programs. Under each type we have chosen three to four of the most recent and the most successful programs that clearly illustrate the primary features of the type under which it is included.

Second, the authors. We selected as author(s) the person(s) most closely associated with the planning and implementation of the program. While this choice of authorship may not result in an objective evalua-

tion of the program's impact, we felt that the strategic position of the program implementor and his wealth of actual experience are more than enough to offset his probable bias in evaluating his own program.

This book is divided into four parts. The first consists of introductory chapters which attempt to define the frame of reference for the succeeding parts. It states the primary objective of rural development, how these objectives can be achieved and finally how development can be measured. Parts two, three and four are case studies of selected programs illustrating the three orientations of rural development programs. These cases have been selected for their currentness and actual or potential impact on rural development.

All the articles in parts I to IV were presented in a symposium attended by all the authors and some selected authorities in rural development. After each article was presented, comments and question were elicited from the participants. Because of the similarity of comments and questions for each of the articles, we decided to summarize all the discussions into one chapter instead of the usual procedure of incorporating them in each article. Thus, the last part of this book (Part V) is a summary of discussions that followed the presentation of the articles in parts I to IV.

ARTURO A. GOMEZ

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## CHAPTER 1

### APPROACHING RURAL DEVELOPMENT

Florentino Librero\*

#### Focus on the Rural Segment

Rural development efforts aim to improve the well-being of the rural segment of society. The outcomes of those efforts must show at the family and individual levels. At those levels, well-being may be broadly shown by the relative adequacy of the basic living needs-- a package of food, other consumption goods and social services.

The capability to provide for these living needs, however, may be measured by the family income. Average family income in the rural areas was ₱2,818 in 1971 (or about ₱1,740 at 1965 prices). This was less than one-half (about 48%) of the average family income in the urban areas for the same year.<sup>1/</sup>

Moreover, between 1956 and 1971, the lowest 20% of the rural households experienced a diminishing share of the total income, i.e. they received about 7% in 1956 but shared only 4.4% in 1971.<sup>2/</sup> In general, the income of the lowest 40% of the rural families was growing less than one-half the rate of their urban counterparts. Consequently, this has worsened the economic condition of the rural families and has made poverty more widespread in the rural areas.

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\* Executive Director, Philippine Training Center for Rural Development, UPLB, College, Laguna.

<sup>1/</sup> National Economic Development Authority, 1976. Statistical Yearbook.

<sup>2/</sup> International Labor Organization, 1974. Sharing in Development: A program of Employment, Equity and Growth for the Philippines.

Using the cost of providing for these basic needs as the norm for defining the prevalence of poverty, the Development Academy of the Philippines concluded that in 1971, about half of the families in the urban areas and about three-fourths of the families in rural areas should be considered poor.<sup>3/</sup> During that year, the current annual cost of providing for the recommended "food consumption basket" for a family of six would have been about ₱3,714 in Manila, ₱3,014 in other urban areas, and ₱2,632 in the rural areas. However, food price index since that time has increased. Consequently, providing for the same family food consumption needs in 1975 would have amounted to about ₱7,316 in Manila, ₱5,693 in other urban areas, and ₱4,971 in the rural areas.

Limited employment opportunities in the rural areas have generally resulted in rural underemployment and a rural-to-urban population movement. The response to the latter has been to channel resources in the urban areas in order to absorb the growing urban labor. This has worsened the comparative income and productivity of those left in the rural areas.

Health and other social services have also been less adequate in the rural areas where about 68% of the total population live. With a high rate of population growth and low income, malnutrition has been estimated to be as high as 75% in the rural areas.

All these conditions have made under-productivity,

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<sup>3/</sup> Development Academy of the Philippines, 1975. Measuring the Quality of Life: Philippine Social Indicators, p. 11.

low income and malnutrition as part of the entire economic and social systems of the rural areas. Hence, major development efforts need to be focused more on these depressed rural segment of Philippine society.

The strategy to develop these depressed rural areas should define particular ways of approaching rural development. The feasible and effective approaches or strategies will become more clearly defined after the objectives and the process of rural development have been well-understood. Hence, the next two sections will discuss those concepts. After that, it will also be necessary to discuss the measurement of rural development.

### Goals and Objectives of Rural Development

Improving the well-being--a better quality of life--of families and individuals in the rural areas has been indicated as the aim of rural development. To many people, that may mean a lot of things: increase in the level of productivity, higher incomes, better housing, improved health and nutrition, more adequate utilities, better social services, etc. In general, however, rural development has two main goals: accelerated growth in the available services, resources and opportunities; and equitable distribution in the access to, and in the use of, such services, resources and opportunities.

### The Accelerated Growth Goal

A rural development project is a change intervention to achieve a desired socio-economic state-- a planned change. As an intervention, the project must enhance the environment and facilitate the process of rural development within a given segment of time. This is the idea of accelerated growth as contrasted to the normal or natural process--unabetted growth.

Growth occurs when there is an increase in the magnitude and/or when there is an improvement in the quality of the services, resources or opportunities.

The accelerated growth goal gives rise to more specific development objectives. For example, in the NEDA Four-Year Development Plan, the specific objectives to achieve the goal of "self-sufficiency in food and raw materials" include the following:<sup>4/</sup>

1. Accelerate the development of fisheries and aquatic resources;
2. Expand production and utilization of products from carabaos and other ruminants;
3. Expand and improve irrigation and drainage facilities;
4. Satisfy raw materials requirement for the local housing and construction industry;
5. Intensify and improve the efficiency of production;
6. Develop appropriate farming systems for rain-fed areas; and
7. Improve the efficiency of post harvest and marketing operations.

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<sup>4/</sup> National Economic Development Authority, 1976. Four-Year Development Plan, FYs 1974-77 (Midterm Review).



In general, the first four objectives are more oriented to quantitative changes while the last three are more oriented to qualitative improvements in the agricultural production and marketing systems.

#### The Equitable Distribution Goal

It is not enough that there are more and/or better services, resources and opportunities resulting from the implementation of rural development projects. It is equally important that the access to, as well as the benefits accruing from and with the use of such services, resources and opportunities should be shared more equitably among the various segments of the society.<sup>5/</sup>

In the agricultural sector goal of "Social equity and agrarian reforms" in the NEDA plan, the following more specific objectives have been included:

1. Accelerate the completion of land transfer;
2. Ensure the stability of land tenure for farmers;
3. Accelerate land valuation and compensation;
4. Strengthen and expand settlement programs;
5. Increase real income of small producers;
6. Strengthen rural development-oriented and people-based institutions; and
7. Generate more employment opportunities for the rural population.

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<sup>5/</sup> Equitability reflects the spirit of fairness and just relations among men, and therefore, does not mean equality. Equality, on the other hand implies a one-to-one correspondence among men. Equitability allow as for tolerable differences which may not be possible in the strict context of quality.

Broadly, the distributive goal would push up the more than two thirds poorest segment of rural society rather than pull down those who are already better provided. Hence, this goal is oriented to the pursuit of desired social values and universal human rights.

#### A Framework of Rural Development

Achieving the goals and objectives of rural development requires a framework for deriving the broad policies as well as for planning the specific courses of action. The process of development may be more clearly defined and understood as a transformation process occurring in, and explainable by, the framework.

#### A Configuration of Rural Development

The well-being of families and individuals in the rural areas is a desired social state which may be measured along the dimensions of social services, resource capabilities, and work opportunities.

Observable characteristics or attributes along these dimensions may serve as indicators of development. Hence, the extent of malnutrition may serve as one indicator of the dimension of social services; level of income, of resource capability; and level of employment, of work opportunities. Changes in these indicators may singly or severally describe the nature and level of development within a rural social system.

#### A Transformation Process

Development is a time-spaced sequence of inter-related changes. This interrelatedness visualizes the spatio-temporal states of a social system as closely interlinked conditions brought about by the

operation of change factors on the particular social system. Hence, a particular state or condition of a social system is not a distinct stage or step, but a transitional condition in a process of change. This is the view of rural development as a transformation process.

Using the conceptual framework above, the transformation process may be visualized into two general typologies, namely: proportional and disproportional transformation.<sup>6/</sup> The first category reflects a constant change factor in all the significant characteristic variables or dimensions of the social system. This is equivalent to a scalar transformation in the projection of a social system from a vari-dimensional social space. As a scalar transformation the descriptive multi-dimensional configuration of the social system will not change. The elevation relative to its dimensions, however, will change.

In the disproportional transformation, however, the changes along each dimension of the social system may differ. These would result in a distinctive change in the configuration and the elevation of the social system surface relative to its vari-dimensional social space.

These two types of transformational processes may be related to the two basic goals of rural development--growth and distributive goals.

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<sup>6/</sup> These are conceptually similar to what A.T. Mosher has termed as raising the achievement distribution and changing its shape during a Regional Seminar on Extension Teaching in Asian Universities held at Sri Lanka in October, 1975.

Growth in general is the net increase and/or improvement - change in the elevation - along the significant characteristic variables or dimensions of a particular social system. This growth may result from a proportional or disproportional change along those dimensions as long as there is a net increase or improvement reflected in the aggregate indicator, e.g. 7% growth in GNP, 1.5% increase in employment.

Distributive changes are shown by the spread and clustering of the population along one or more dimensions (or their indicators) descriptive of a particular social system. A proportional change in the context of the population distribution would generally result in the accentuation of the initial distribution, i.e. the skewness or kurtosis of the distribution. On the other hand, a disproportional change will distinctly change the general shape or type of the distribution.

A population distribution highly skewed to the left along a particular dimension means a high concentration of the population at the higher levels or greater units along a particular dimension, i.e. a distribution highly skewed to the left along an income means that most people have high income and very few have low incomes but there is a great difference between the lowest and highest income individuals.

In the case of a normal distribution along an income dimension, a high degree of concentration around the average income reflects a lesser difference between the lowest and the highest income individuals and therefore a more uniform income level for the whole population.

The transformational processes should generally aim for a normal but highly concentrated distributions around the means along the relevant dimensions of the social system.



## Approaches to Rural Development

Planning and managing the transformation process in rural development defines an approach or strategy relative to a particular social system.

In this context, there are three different principal transformations in rural development: the transformations relative to (1) production resources; (2) social services; and (3) institutional structures.

### Production Resource Transformation

The production resource transformation revolves around the process of organizing the production input materials and support services in order to generate products.<sup>1/</sup> This is the production-oriented approach.

In the crop or plant production system, the fertilizer input is transformed biologically to become grains, fruits, foliage, roots, fibers and other by-products. The aggregate impact of various material inputs into the crop production system is to increase yields. Hence the Masagana 99 program was conceived to involve among others a package of material inputs such as improved seeds, fertilizers and herbicides in order to increase rice yields.

In the case of the livestock or animal production systems, the feeds given to cattle, swine or poultry are transformed into meat, milk, eggs and other by-products. Improved breeds, better quality feeds and veterinary medicines are major inputs in livestock and poultry projects.

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<sup>1/</sup> John A. Edwards found it useful to differentiate that firms produce products and consumers consume commodities. ("A study in the Theory of Value: Heterogenous Commodities." Unpub. manuscript, Dept. of Ag. Econ., Oregon State University 1969).

Production services are also viewed as resources needed to enhance the effectiveness of the agricultural production system. These services include irrigation and drainage, financing and credit, and post-production processing and marketing.

The specific types, magnitudes or intensities of material inputs and support services required in the production system are determined by the particular enterprise and their geo-physical environments. For example, some high yielding rice varieties developed in the lowland area do not produce grains in the high altitude areas.

Development or the transformation process, in the crop-oriented approach is generally concerned with the increases in the levels of production, improvements in the products, distributions of production resource capabilities, as well as in the sharing of production outputs.

### Social Service Transformation

The social service transformation addresses itself to the people involved in the production and/or consumption systems. In this human-oriented approach, the emphasis is on the adequacy and accessibility of the social and personal amenities in the social system including work and income opportunities, health and nutrition, education and training, settlement and habitation, and protection and governance. In this context, production and income are important only if they enable the individuals and the society to obtain and provide for those amenities.

The process of transformation in this context involves the improvement in the scope, quality and

distribution of such amenities or services. Examples of development projects emphasizing this process are the programs on nutrition, population, out-of-school youth training, etc.

### Institutional Structure Transformation

Sustaining development goes beyond the generation and allocation of production materials and services, or even the social and personal amenities in the social system. Ultimately, the agencies, organizations, and institutions providing for such resources and services have to be developed and adapted. This is the concern of institutional structure transformation in rural development.

Social institutions are the organized ways for fulfilling basic societal needs- the "overlying structural fabric of society".<sup>8/</sup> They provide the basic threads for analyzing and understanding the total society. Hence, the transformation of these social institutions has been viewed as an "integrated development" approach.<sup>9/</sup>

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<sup>8/</sup>A. L. Bertrand 1970. Social Organization and Social Structure. Louisiana State University.

<sup>9/</sup>Development is itself integrated and therefore what is usually viewed or implied as integrated in the involvement of various implementing entities in the conduct of interrelated programs, and projects.

As a development approach, the transformation process is addressed to the institutions providing for both the input resources and the output of products and services. The scope and interest of this approach encompasses both producers and consumers and it extends beyond the agriculture sector to include road system, distribution facilities, agro based industries, etc. Some examples of these projects are the Bicol River Basin Development Program, Mindoro Integrated Rural Development Project, Cagayan Integrated Agricultural Development Project, Samar Integrated Rural Development Project.<sup>10/</sup>

In these projects, the orientation is towards the long run. The specific activities, materials and even individual persons become only the instruments of the development institutions. Hence, the creation, adaptation and survival of institutions become the major interest in the planning and management of these types of development programs. This adaptation to changing needs, is itself the institutional structure transformation process - a process of development and survival.

### Measuring Rural Development

The transformation process in rural development becomes more clearly understood by using a particular change medium which serves as the unifying instrumentality to envision - trace and register - the transitory states in a dynamic process. This makes a particular medium a useful tool for measuring the magnitudes and trends of changes.

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<sup>10/</sup> Details of these projects are summarized in the report of the Cabinet Coordinating Committee for Integrated Rural Development Projects, Integrated Rural Development: Perspective, 1977.



Measuring agricultural development necessarily relates to the dimensions of the social system upon which development inputs are made. These dimensions, as indicated earlier, are along the areas of services, resources and opportunities. The units of measurement along these dimensions may be broadly classified into three categories, namely: units of economic value, physical potency, and psycho-social state.

Unit of Economic Value: Peso

Money is the universal medium of exchange and reflects the value of goods and services. The value of a particular good represents the utility introduced into it, and therefore, the potential utility which may be derived therefrom.

In the agricultural production process, the price of a farm produce represents the value of resources, services and opportunities foregone for having produced such a commodity. The price at which the buyers or consumers would be willing to pay such a commodity represents the value of the resources, services and opportunities that they would be willing to forego by buying a particular good.

The monetization of various goods and services enables one to conveniently carry out exchange transactions and perform functional analysis. These are the principal concerns of economics.

Operationally, all material inputs in the agricultural production system such as seeds, fertilizers, fuel and herbicides may be reduced to monetary units. Likewise, labor inputs and other production support services including irrigation, credit and insurance may be priced and then aggregated. In like manner, the

produce may also be priced and aggregated. Hence, the performance of the production system may be measured and assessed using the Philippine peso as the unit of measurement.

The use of a monetary unit, however, has the fundamental problem relating to the valuation process. The input costs and output values are both subject to the externalities of the pricing system in the market.

#### Unit of Physical Potency: Calorie

The recent energy crisis has spurred a concern in energetics. Along this concern, materials and activities - goods and services - may be measured in energy units. Hence, the energy potential of a particular material, e.g. fertilizer, is equated to the total energy put into it during the process of its creation or production.<sup>11/</sup>

Labor operations in the agricultural production process, on the other hand, can also be expressed in terms of the amount of energy used up by the person, animal or machine performing those operations. Similarly, the energy stored in the crop produce may be measured in calorie units.

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<sup>11/</sup> It has been estimated that the energy value of fertilizer elements are: N= 12.34 Mcal/kg;  $P_2O_5$ = 2.9 Mcal/kg; and  $K_2O$ = 1.90 Mcal/kg.

Indeed, the transformation process in agricultural production system may be traced and explained by this energy cycling. The basic foundation of this process is the principle of the conservation of energy, i.e. energy can neither be created nor destroyed. Energy is only transformed into various forms.<sup>12/</sup>

The calorie is a unit of measurement in energetics. The use of this unit eliminates the vagaries of the market pricing system in the monetization process of economics.

#### Units of Psycho-Social State: Goodwill

The ultimate objective of rural development efforts implies that money and energy may have to be spent for the services, resources and opportunities needed to improve well-being of rural families and individuals. However, a given magnitude of money or energy may not

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<sup>12/</sup> There is a long list of studies in energetics. Some local attempts to use this approach include the following:

Norcio, N.V. 1970. Photosynthesis of rice under field conditions. Unpub. M.S. thesis, Univ. of the Philippines at Los Baños. p. 92.

Heichel, G.A. 1973. Comparative efficiency of energy used in crop production. The Conn. Agric. Expt. Sta., New Haven, The Bulletin, 739.

Nguyen Van Nguu. An Agro. economic analysis in the efficiency of some cultural energy inputs for lowland production. Unpub. Ph.D. thesis, University of the Philippines at Los Baños, 1976. 94p.

Librero, F. "Two alternatives in evaluating cropping systems." (Paper read in the symposium on cropping systems research and development for the ASEAN rice farms held at the International Rice Research Institute in September 1976).

actually obtain the same satisfaction or joy for various families or individuals. Hence, the critical measure of well-being, if at all measurable, may be the prevailing psycho-social states of families and individuals.

Not much work has been done to measure the psycho-social states relative to rural development. It would be quite difficult to arrive at a unit to functionally measure a psycho-social state. For this reason, the measurement unit of goodwill as used here is only indicative and vaguely defined.

Goodwill, however, is proposed as a possible unit of the psycho-social state because it is founded on the relationships of people. It reflects an intangible value given by somebody else rather than by oneself. The orientation is in giving rather than in taking and emphasizes the importance of an individual to others and vice versa. To this extent, it is a measure of social relativity.

#### To Sustain Rural Development

The effectiveness of approaches to rural development may vary in different places, under various operational conditions and over a period of time.

One has to remember, however, that development is in people: its objectives are addressed to people, it is carried out by people, and the outcomes are enjoyed by people. It applies social values to achieve equitable access to, and enjoyment of, social services, resource capabilities and work opportunities.

Development is also a continuing process. It manifests itself as summarative spatio-temporal states.

Hence, the significance of development lies more in its operational dynamics than at the level of achievement at any one point in time.

Sustaining this dynamic process extends beyond the organization of production materials, services, and opportunities by the producers and consumers. It involves the internalization of those development requisites by individuals and families in order to build the foundation of responsive institutions in dynamic social system. This is the real essence of rural development.

The implementation phase, on the other hand, is principally concerned with the execution of strategies which operate on the characteristic-variables and apply directly to the individuals in the social system. Any decision on the use of a particular strategy considers the changes in the individuals and their characteristic variables, as well as all the relevant implementing information coming from the environmental interface, which effectively contribute to the attainment of the desired change state.

## CHAPTER 2

INTEGRATED RURAL DEVELOPMENT:  
CONCEPT, APPROACH AND OBJECTIVES

Abelardo G. Samonte\*

Introduction

The heightened interest in rural development, reminiscent of what was then called community development in the 1950's, is a significant trend in contemporary theory and practice of development. Integrated rural development has become the "in thing". Indeed, it is a concept that is universally acclaimed; it is an approach to which practically all people—including those having single programme interest with no real idea or intention of relating their narrow, specialized programmes to the broader development process - claim to adhere.<sup>1/</sup>

In what way is this current concept of integrated rural development different from past concepts of community or rural development? What is its rationale and method? What are its objectives? How and to what extent can these objectives be realized in the light of current

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\* Chancellor, UP at Los Baños. Paper prepared for the Expert Consultation on Policies and Institutions for Integrated Rural Development, sponsored by the Food and Agriculture Organization, the German Foundation for International Development, and the Government of Indonesia, held at Jakarta, Indonesia on December 2 to 12, 1975.

<sup>1/</sup> Douglas Ensminger, "Rural Development: What Is It?" Paper delivered at the East-West Center's Conference on "Integrated Communication for Rural Development", Honolulu, Hawaii, December 2-6, 1971, p.3.

conditions, needs, and problems of the developing world?

In seeking to these questions, it is necessary to place integrated rural development - both as a concept and as an approach - in broad perspective. It is essential to trace its conceptualization as well as its application in various climes and times.

### Rural Development in Perspective

The concern for rural development is not new. Projects and programmes in this field, exhibiting a wide variety of approaches and scope have been undertaken in many countries at different periods. This may exemplified by a brief review of some of these efforts to develop rural areas or communities.

The Gezira Scheme in Sudan. One of the early projects in rural development was the Gesira Scheme in Sudan. It was launched shortly after World War I as an irrigation project to increase production in a cotton growing area of 100,000 acres. This pilot project was premised on the assumption that with the rise of farm production and income, the villagers will improve themselves in social and other aspects of life. This project was later expanded to cover approximately 1,000,000 acres with 120,000 farm families. Instituted with narrow economic objectives, it was subsequently somewhat broadened to



include such social goals as adult education and improved family and community life.<sup>2/</sup> A lesson from this project is that economic growth does not automatically bring about social well-being.

Accion Cultural Popular in Colombia. After World War II, a number of rural development programmes were conducted on a national scale. In 1947, there was instituted in Colombia an Accion Cultural Popular. This programme aimed to create motivation for development among the peasants. It fostered education and popular participation in community organizations through a nation-wide radio network, a rural weekly newspaper, and printed materials. In this programme, it was found that literacy relates more positively to newspaper than non-print media exposure. Positive correlations were also observed between literacy, on the one hand, and agricultural innovativeness, achievement motivation and political awareness, on the other hand.<sup>3/</sup> The focus in this programme was widespread communication and education.

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<sup>2/</sup> H.M.M. Khalil, "The Sudan Gezira Scheme: Some Institutional and Administrative Aspects", Journal of Administration and Overseas, Vol. IX, No. 4 (October 1970), pp. 273-285; P. Coombs and S. Mangoor, In Attacking Rural Poverty (Baltimore and London, The John Hopkin's University Press, 1974). In a most recent report by journalist John Worrall, this "biggest farm in the world under one management" now covers 2 million acres (The Indonesia Times, December 4, 1975, p.4).

<sup>3/</sup> E.M. Rogers. Modernization among Peasants: The Impact of Communication (1969), pp. 79-89.

### Federal Land Development Authority in Malaysia.

Rural development has also been undertaken through resettlement schemes or programmes like the Federal Land Development Authority (FELDA). Starting as a Loan Board in 1956, this Authority has become the largest statutory body on land development in West Malaysia. In resettling the landless, the Authority adopted a "package deal" approach: an economic holding and a house for the settler, a school for the children, a health center as well as training for settler, family planning and domestic science service. After the various subsistence crops are established, the job of resettlement is ~~considered~~ completed. This approach appears to have worked out relatively well; 30,012 families were resettled and 627,647 acres of plantation developed as reported in 1974.<sup>4/</sup> While the objectives of FELDA have broadened through many years of changes, many aspects of integrated rural development have not seemed to be fully incorporated.

The Commune System in China. Perhaps the most pervasive application of what is now called integrated rural development is the commune system in Communist China. The attainment of greater economic productivity, equitable market distribution, and the provision of welfare and social services are closely integrated with political and administrative mobilization of the whole community. Dramatic results in terms of increased

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<sup>4/</sup> Tan Teng Sin, "Federal Land Development Authority (FELDA) Its Organization, Functions and Scope", paper presented at the 3rd International Conference on Integrated Communication for Rural Development, held at the East-West Center, Honolulu, Hawaii, December 2-6, 1974.

economic productivity, social welfare, as well as administrative decentralization and local participation at the grassroots or lowest local level have been observed.<sup>5/</sup> Whether this pattern of rural development would be applicable and effective in a different ideological setting is most problematical. Nevertheless, there could be some adaptable lessons from the Chinese experience for the developing nations.<sup>6/</sup>

Some Philippine Experiences. In the Philippines, one of the early postwar experiments in rural development was undertaken by the Philippine Rural Reconstruction Movement (PRRM) in 1952. Under the leadership of Dr. Y.C. James Yen, the programme revolved around a four-fold goal of promoting livelihood, education, public health and self-government for the rural populace. It utilized multipurpose rural reconstruction workers who live and work with the villagers. Its operations, however, were limited to pilot areas in a relatively few provinces.

Utilizing an approach similar to PRRM, the Philippine Government launched in 1958 a nation-wide rural development programme under a Presidential Assistant on Community Development. This programme achieved some

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<sup>5/</sup> Aziz Sataj, "The Chinese Approach to Rural Development", International Development Review, Vol. XV, No.4 (1973/74), pp.2-7.

<sup>6/</sup> Chi-wen Chang, Rural Asia Marches Forward: Focus on Agricultural and Rural Development (College, Laguna: University of the Philippines, 1969).

degree of initial success, but later "lost steam" like many community development programmes in other countries during the sixties. The high aspirations and expectations generated were not amply matched by substantial and sustained accomplishments.

Rural Development Projects of the University of the Philippines at Los Baños. About the same period, the Agriculture College of the University of the Philippines at Los Baños undertook a series of rural development projects namely: (1) a pilot study on farm development in 1959; (2) a study on alternative extension approaches in 1963; and (3) a family development project in Barrio Boyong in 1968. From the knowledge and insights gained from these pilot studies, the University instituted two projects in 1970- the Social Laboratory and the Barrio Development School.

The Social Laboratory, which has been instituted by the University in collaboration with the Southeast Asian Center for Graduate Study and Research in Agriculture (SEARCA) is a demonstration, research-training program in rural development in all villages of one municipality. Adopting a "bottom up" institutional approach, the programme endeavors to assist and motivate the people to learn how to work together through their own local institutions and organizations for more effective economical and social action. It is concerned not only with the productivity but with total development; thus training is designed for various segments of the community including farmers, rural women, teachers, specialists and out-of-school youth.<sup>7/</sup>

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<sup>7/</sup>Chi-wen Chang, A Strategy for Agricultural and Rural Development in Asian Countries (College, Laguna: SEARCA, 1974).

Because of the relative success of this experiment, nearly a dozen other social laboratories have been established throughout the Philippines; steps have also been taken to introduce similar projects in Thailand and Malaysia through the SEARCA.

Through covering a more delimited field, the Barrio Development School project of the University demonstrates how education can be an instrument for rural development. The school is situated in a village several kilometers from the University. It revolves around a school curriculum to prepare the greater number of the rural youth for self-employment. The curriculum includes a supervised farming programme supplemented by classroom instruction in production agriculture as well as tool and citizenship subjects. The significance of this project lies in its positive, development-oriented impact not only on the students but also their parents and the rest of the community.<sup>8/</sup> Similar projects have recently started in three universities in different regions of the country.

#### An Area Development Program in the Philippines.

In the past few years, a number of integrated rural development projects in the Philippines have shifted from the usual micro study covering a single village or municipality, to an entire region covering several provinces. One of these in the Bicol River Basin Development Programme which was started two years ago. This programme,

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<sup>8/</sup> Tito Contado, "Education for Rural Development: The Case of the UPCA/BNE Barrio Development Project", paper prepared for the Third World Congress for Rural Sociology held in Baton Rouge, Louisiana, U.S.A., August 22-27, 1972.

obviously benefitting from the most recent thinking on integrated rural development, has the main objective of increasing per capita income of farmer-beneficiaries of the land reform programme in the Bicol region. Complementary objectives include increased agricultural productivity and employment opportunities, more equitable distribution of wealth, and the promotion of agro-industrial development. A Programme Office under an Executive Director was set up to implement the development exercise. The Office is assisted by a technical advisory and multidisciplinary group from the University of the Philippines at Los Baños, and organizational support for project planning and execution is on a multi-agency level. With a sound blueprint, the programme has nonetheless met a number of operational difficulties, and dramatic results have yet to be seen.

Comment on Past Efforts. These selected cases of rural development indicate a wide variety of experiences in rural development. Many of them have been introduced as pilot projects or schemes to test certain hypotheses, approaches or techniques, presumably for subsequent replication or adoption on a nationwide scale. On the other hand, a number of them were action research programmes intended to contribute directly to the acceleration of community or national development. As a whole, the outcomes have been less than a success. Even those programmes that deliberately sought integration were in practice not really or effectively integrated. This is not to demean the efforts of the pioneers and innovators in the field of rural development. Indeed their work, taken in a cumulative manner, has contributed to the acquisition of more knowledge and understanding of the requirements, constraints, and problems of rural development.

Nevertheless integrated rural development, as a concept and an approach, need further sharpening and refinement if it is to meet the urgent demands and challenges of an increasingly complex and troubled world. Time is of the essence. And integrated rural development that is soundly conceptualized and that can be effectively applied, is sorely needed.

#### Rationale and Method of Integrated Rural Development.

The current efforts to re-examine and redefine rural development could well be part of the continuing, critical revision of the concept of development itself. Equating development with economic growth has been debunked. According to Seers, development involves increasing output in all sectors of the economy and distributing this output in such a manner as to enhance the quality of life of the broad masses of the population.<sup>9/</sup> Denis Goulet proposes a broader definition; development, he states, embraces the entire gamut of changes by which a social system, with optimal regard for the wishes of individual and sub-systematic components of that system, moves away from a condition of life perceived as unsatisfactory in some way toward some conditions regarded as "humanly" better.<sup>10/</sup> Inayatullah even goes further to propose that the people of the developing countries should not unquestionably accept the Western idea of

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<sup>9/</sup>See Dudley Seers, "The Meaning of Development", paper delivered at the 11th World Conference of the Society for International Development held in New Delhi, November 14-17, 1969.

<sup>10/</sup>The Cruel Choice-A New Concept in the Theory of Development, pp.331-334.



development and must evolve a new concept of development based on their own set of values.<sup>11/</sup>

In any event, it is now widely accepted that development implies increased capability to achieve not only economic but also political and social goals.

In the face of this intellectual ferment, reinforced by a growing disappointment or dissatisfaction in action programmes based on the past orthodoxies, integrated rural development has progressively evolved with a new rationale and method.

Focus on the Rural Poor. Basic in its orientation is the focus on the rural poor, i.e., the great masses of small farmers, tenants, share croppers, landless workers and their families. It gained impetus from a challenging address of the President of the World Bank, Robert S. McNamara on the subject of poverty especially in the rural areas of developing nations. Mr. McNamara made the pointed and perceptive observation that efforts at economic development have shown tangible results in terms of increased gross national product, but have failed to improve the level of living of the greater number of poor people in the rural areas. The lot of these people, as a matter of fact, could have worsened even in the face of rapid economic growth in the country as a whole.<sup>12/</sup>

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<sup>11/</sup> Inayatullah, "Toward a Non-Western Model of Development" in Communication and Change in the Developing Countries (1967), pp.98-102.

<sup>12/</sup> For a commentary on the McNamara address, see W. Von Uriff, "Development Strategy for Rural Areas", Intereconomics No.3 (March, 1974), pp.79-83.

The emphasis of integrated rural development on the rural poor should be a particular interest to us in Asia. According to a World Bank study, about 85 per cent of the 750 million poor in the developing countries are considered to be in absolute poverty, i.e. with an annual per capita income equivalent to US \$50 or less.<sup>13/</sup> And three-fourths of those in absolute poverty are found in the Asian region. We may not fully agree with the rather arbitrary criterion for measuring poverty in absolute monetary terms, considering the great variances in life styles and cost of living of peoples from different countries, but it is evident that poverty abounds in the Asian country side.

Thus while integrated rural development considers human or manpower resources as a whole, it adopts the view that schemes to tap and benefit the large mass of rural poor can lead to increased economic capability of the community in the long run.

A Systems Approach to Rural Development. As a method or strategy, integrated rural development adopts the holistic or total systems approach to development. Economic productivity and social amenities are not necessarily conflicting or mutually exclusive; in fact they should be so related that they become complementary and mutually reinforcing. Development is thus viewed as a single, unified process. And its various aspects- social, political, economic and technical- must all be taken into account and interrelated to form part of an integrated development strategy. Indeed

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<sup>13/</sup> Rural Development: Sector Policy Paper (World Bank, February, 1975), p.4.

economic development is significantly conditioned by the state of social well-being and of political stability and capability in the country, in much the same way as social and political development are affected by its state of economic productivity.

This concept of functional integration in development must be complemented by sectoral or area integration. Thus, while the various components of growth and well-being at the local or grass-roots level are stressed in integrated rural development, the establishment of marketing and other economic, as well as social and political linkages between the rural and urban sectors should not be overlooked. Plans for rural development must be viewed as parts of a sub-system that must be closely related and integrated with the larger system- the national development plan.

#### General Goal of Integrated Rural Development

In this context, the overall goal of integrated rural development is to liberate the energies of the rural people, especially the poor, so that they can realize their full potential and thus increase their capacity as well as commitment to develop, organize, and govern themselves towards the attainment of a higher quality of life for the individual and for the entire community.

Increased Motivation. This goal statement underscore a basic factor: the increased motivation of the people to develop themselves and to mobilize themselves to cooperate or work together towards the achievement of their common goals. This factor is crucial and, in fact, permeates the whole process of rural development. For, in the ultimate analysis, what

matters most is the development of people, not of things.

In the rural areas of developing countries, the will to work must be activated and strengthened. The people must be awakened from their lethargy; they must be encouraged, if not inspired, to fulfill their human potential and to aspire for greater achievement. This however, involves an arduous and complex process; for the basic problem facing the rural poor is that of sheer physical survival, i.e., to have enough food to eat. The psychologist Maslow tells us that man has a hierarchy of needs: physiological, security, love and self-actualization. He further states that the basic need of man is to meet his physiological need particularly for food, and that the higher needs for security, love and finally self-actualization can only be activated after the basic food need is adequately fulfilled. This psychological analysis of human needs has direct relevance to the problem of motivating the people for development, and should be borne in mind in the formulation of operational objectives and strategies for rural development.

Mobilization of the People. The other aspect of the above-mentioned goal statement is the mobilization of the rural people to work together, to cooperate. The willingness to cooperate, of course, implies an awareness and appreciation of the need for common social action such as an identity of interest or the expectation of mutual benefit. Indeed it would be hard to convince a small farmer or a landless worker to cooperate in a social project or an economic activity which he perceives as primarily oriented to benefit his richer neighbor. The determination of common goals as bases of cooperative

action is therefore of outmost importance. Equally important is that these goals are adequately communicated to the members of the community such that they are properly understood and accepted. All these are essential to effective social and political mobilization of the people for rural development.

Increased Capacity to Develop. With the motivation and mobilization of the people to realize their full potential, they are in a better position to increase their capacity to develop socially, politically and economically. This, in turn, leads to better economic and socio-political integration of the rural community, thus paving the way to a higher quality of life for one and all.

To increase their capabilities, the rural people must acquire greater development orientation. A greater will to work must be accompanied by a more positive drive to move from one level to a higher level of condition or achievement. The people must acquire greater foresight and vision. They must continually seek improvements, and be receptive to technological innovations and social reforms.

Moreover, they have to cultivate the art of managing scarcity. They have to learn how to fully tap their resources, to obtain maximum output from the limited human and material resources available. Thus, they must be imaginative and, at the same time, practical and resourceful, improvising if need be in order to succeed.

Increased capacity for rural development also requires organizational and political skills. The rural people have to learn how to work together for the attainment of common purposes. They have to be more self-reliant and less dependent on outside direction or aid.

For, to achieve their social and economic goals, the rural people must be able to organize and govern themselves in a just and effective manner.

Commitment to the Community and Nation. In addition to increasing the capability of the people to develop and achieve, there must be a deep sense of commitment to the community and to the Nation. Indeed integration must be preceded by a feeling of identity; the individual member of the village or town must be able to identify with the rest of the people. Crucial to the crisis of identity is the effectiveness to which individual interests are reconciled or harmonized with the interests and goals of the whole community. Only with this sense of identity will the individual farmer or worker be willing to cooperate with other members of the community; only thus will he find reason to make individual adjustments or even sacrifices for the common good. How can this sense of identity with and commitment to the community be realized? This involves the basic issues of individual dignity, equality, freedom and justice, of the role and responsibility of the individual as a member of society. In the rural areas of developing countries, a substantial and long process of education and communication is required. The sense of commitment can be either impeded or fostered by the level of economic progress, the state of social well-being as well as the process of political socialization and mobilization existing in a particular society. It is, therefore, a basic goal in the development of rural communities in particular and of the Nation in general.<sup>14/</sup>

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<sup>14/</sup> See Key Issues: Integrated Rural Development (Rome, Food and Agriculture Organization of the United Nations, 1975).

## Operational Objectives of Integrated Rural Development

Increased Economic Productivity. Having defined the general or overall goal, what then are the operational objectives of integrated rural development? One objective is to increase economic productivity. There must, first of all, be a comprehensive assessment of actual and potential resources- physical, human, material and financial- of the rural areas of community in order to be able to design a plan or strategy for their maximum utilization. This should include land use and cost-benefit studies on alternative utilization of resources, as well as measures to maintain ecological balance and prevent or arrest environmental degradation.

A major thrust in increasing economic productivity in the rural areas of developing countries is increased agricultural production and productivity. A large portion of the rural populace are engaged in agricultural pursuits. Compared to those engaged in manufacturing and mining, the incomes of the farmers are much smaller. Indeed productivity in the rural areas, especially in the small farms, is very low.

Integrated rural development must include serious and tremendous efforts to modernize agriculture, to shift from subsistence to commercial farming, to introduce more technological inputs such as high-yielding varieties, irrigation, fertilizers, pesticides, as well as to provide more adequate credit and a more effective system of marketing and distribution of agricultural products. Furthermore, agricultural research should be accelerated to evolve new technologies that will be continually and promptly made available to the farmers through an effective system of agricultural extension.

In the Philippines, we have been relatively

successful in introducing a complete package of technology to our small farmers through the Masagana programmes. Likewise, more intensive methods of farming such as multiple cropping and compact farming are the subject of serious study and experimentation, and should find wider application soon.

Technological innovations, however, are not enough. Equally, if not more important in the long run, is the introduction of social and institutional reforms in land tenure and ownership, in community organizations like farmers' associations and cooperatives, and in governmental planning and administration. These changes or reforms should be primarily aimed at making the great rural masses as the main beneficiaries of increased agricultural production and productivity.

Increased farm yields need to be complemented by improved post-harvest technology. It is sad to note that in many developing countries there is substantial wastage due to inadequate or improper storage, processing and distribution of the food produced. Food scientists and technologists, as well as nutritionists, can make significant contributions by influencing what should be produced and maximizing the utilization of food products in terms of the nutritional needs of the people. They have to help improve food consumption patterns and eating habits especially among the rural poor.

Complementary to increased food production and utilization is the urgent need to reduce the rate of population growth. Indeed the gains in food production could easily be nullified by rapid population increase.

Concurrently with the modernization of agriculture, efforts should be exerted to develop cottage or rural industries. Such industries, which may include the



processing of agricultural products as well as the manufacture of finished products from locally available materials or natural resources could augment the overall economic productivity of the rural areas. Policies aimed at industrial dispersal, as well as the giving of incentives, subsidies, and technical assistance could foster the expansion and viability of rural industries.

In all these efforts to increase output in the rural economy, the government should provide the necessary physical infrastructure like farm-to-market roads, dams, irrigation and other public works. It should also enact and enforce policies to encourage production including price support for certain products, fertilizer and other subsidies whenever applicable, tax exemptions for pioneering ventures, and the like.

Greater Employment Opportunities and More Equitable Distribution of Wealth. A second objective of integrated rural development is to provide greater employment opportunities and effect a more equitable distribution of income.

A major problem in the rural areas is the great number of unemployed and underemployed people. The generation of more employment opportunities would thus tap a larger part of the available human resource and channel more of it to the production stream. Aside from this economic consideration, the provision of more jobs has psychological and political implications that have far-reaching effects on rural development. Giving a job to a person does not only mean employment; it gives that person a greater sense of self-respect or dignity and changes his outlook from one of dependence and oftentimes medicancy to that of self-reliance and

independence- traits that are essential not only for a productive but also vigilant and responsible citizenry.

Greater employment opportunities is directly related to expanded economic activity. A conscious effort, however, should be made to introduce labor intensive methods of production. For instance, there should be a selective use of capital-intensive methods or machineries so as not to displace labor unnecessarily. This does not mean that machines should not be used, particularly when their use can expand economic activity and generate the need for more labor.

With more jobs generated, the fruits of production can be better shared and more widely distributed. The more equitable distribution of income or wealth can be promoted further through agrarian reform programs as well as fiscal or tax policies that will make the more affluent contribute more for common services of the rural areas. Furthermore, banking and credit policies should be adopted to give the rural poor more access to much-needed credit. Profit-sharing, amelioration funds from, say, export taxes, and similar schemes should be fostered. Extension services and social welfare programs could also provide the small farmers and workers equal access to services and resources.

In this connection, one has to discard the old, classical argument that economic inequality is necessary to generate savings, thus accelerating economic growth. It has been shown that the propensity to save is lowest in countries with the most unequal income distribution; it is precisely the rich who have high consumption levels particularly for goods and services with high foreign exchange content.

For economic and socio-political considerations,

the generation of more employment opportunities and a more equitable distribution of wealth are favorable to accelerated rural development.

#### Effective Delivery System for Social Services.

A third objective of integrated rural development is to provide a comprehensive, economical and effective system for the delivery of social services. At the very least, minimum acceptable levels of health, education, and housing should be provided. Social development cannot wait until the economic aspect is adequately dealt with. Indeed economic productivity may be low and will remain as such, because the people are chronically ill or diseased to be productive. Improved community nutrition is essential; studies have shown that nutritional deficiencies among children can cause permanent impairment of the body and mind.<sup>15/</sup>

Education is a most basic requirement of integrated rural development. The people must be functionally literate to be able to apply the benefits of science and technology to productive activity and to participate actively and constructively in the social and political affairs of the community. Education, of course, should be geared to manpower needs including the acquisition of technical and managerial skills which are in short supply in the rural areas. Formal education should be complemented by non-formal education including adult education and manpower skills training. Above all, it is through education that the people can be more positively oriented to the dignity of manual labor, to

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<sup>15/</sup> See Screimshaw and Gordon (eds). Malnutrition, Learning and Behavior (Cambridge, Mass., MIT Press, 1968).

equality, productivity, commitment, and other attitudes and values that are positively related to integrated rural development.

In addition to health and education, the delivery system of services for social development should include provisions for adequate but low-cost housing, family planning, cultural activities, recreational facilities, and other measures to enhance the people's sense of social security and well-being.

Increased Political and Administrative Capacity. A fourth operational objective of integrated rural development is to increase the capacity of the people to organize and govern themselves. Peace and order and political stability are prerequisites to development. At the same time, wider participation of the people in community decision-making is vital to the attainment of greater political maturity and viability of rural areas. In the determination of community goals and the initiation of development programmes, serious efforts must be exerted to find out what the people want. Only thus will they have a genuine feeling of identity and involvement. Such popular participation will also ensure greater understanding, acceptance and support of public policies and programmes.

To realize these ends, political and administrative innovations and reforms are needed. The highly centralized structure of government, as is found in most developing countries, must be changed so that more policy making, planning and administration are decentralized to the regional, provincial and village levels. Concurrently, the administrative machinery of the government should be streamlined in order to reduce the multiplicity and proliferation of agencies providing governmental services including extension work in the rural communities. There

has to be more interdepartmental cooperation and coordination. There is likewise need for a reorientation of the bureaucracy from undue concern over regulation or controls, often resulting in red tape and even corruption, to that of facilitating the extension of community services and accelerating development. In this regard, a corps of highly motivated, responsive, and development-oriented administrators must be organized, trained and fielded to the provinces and villages.

With an efficient, decentralized and responsive system of government, the people can then increase their capacity to participate in the formulation of policies and programmes, in the solution of problems, and in the development of their community. They can better organize themselves into associations and cooperatives for the achievement of common objectives. Thus, government extension workers- serving more as catalysts and facilitators- can concentrate on fostering the people's awareness to their problems and strengthen their desire and determination to solve them through their own social organizations and institutions. For indeed it is primarily the people who can and must develop themselves.

With wider popular participation and with this kind of orientation, there can be a stronger capacity as well as commitment of the rural people to contribute significantly to national welfare and development.

#### Toward an Operational Strategy for Integrated Rural Development

Integrated rural development must be based on a multi-functional and intersectoral set of objectives that are in a continuous state of interaction and evolution. The attainment of these objectives is easier said than done. The realities of development include

the fact that available human and material resources especially in developing countries are very limited. Thus, the simultaneous pursuit of all the objectives, at the usually high levels of intensity and magnitude as proposed by various sectoral, professional, and disciplinary groups, cannot be realistically and effectively made.

Priorities have to be set. Actually, the alternatives cannot be cast in terms of black and white; they are not usually susceptible to exclusive, sequential patterns. What is needed is to carefully assess the specific situation- the conditions, resources, needs and problems of a given place at a particular stage of development. Only thus can one determine the particular "shade of gray" or the blending of inputs and interactions that will most effectively proper development. This pragmatic mix of developmental elements to realize the general objective of integrated rural development must be determined within a dynamic time frame.

Nevertheless, basic to an operational strategy of integrated rural development is the increasing capacity and commitment of the people to be involved and to participate in the development process. This requires a satisfactory state of health, and more importantly, education and training to enable the people to acquire not only knowledge and skills but also develop attitudes and values that are positive and development-oriented.

Equally crucial in planning and implementing integrated rural development is leadership at the national, regional, and local levels. Technical and managerial manpower that is highly competent, motivated and committed, is essential. There must be more effective coordination of the various governmental agencies, farmers'

and other voluntary community organizations, as well as other participants or collaborators like technical assistance agencies, in the common pursuit of the objectives of integrated rural development.

Finally, there is great need to acquire a better understanding and appreciation of the rationale, approach and objectives of integrated rural development, which must be translated into action. The coordination and integration of rural development efforts, the determination and application of the "proper mix" of rural development elements have been the subject of numerous, often repetitive experiments or action research at the micro level. It would be useful to make a more careful review of these many experiments to evolve more workable and refined concepts, strategies and techniques based on past cases or experiences, as sharpened and enriched by the fast growing theory and literature of development.

It is also suggested that the sample of these studies be expanded and made more representative. A number of action research projects are now being conducted at the regional or area level, but there seem to be still lacking intermediate models of integrated rural development that substantially utilize what has been gained from previous studies and experiences. Moreover, many of the present projects involve substantial human and financial inputs- often with foreign assistance- that it is doubtful whether they could be replicable under normal conditions. There is, therefore, a need for interdisciplinary research that are oriented to the involvement of more realistic, economical, and therefore replicable models.

Integrated rural development is responsive to the basic needs of developing countries. It involves a

very complex and dynamic process that should challenge the imagination as well as the energies of all those interested and involved in the development of rural peoples all over the world.



## CHAPTER 3

## INSTITUTIONS IN RURAL DEVELOPMENT

Amando M. Dalisay\*

Introduction

On the whole, institutions are essential to socio-economic growth and change although there are prevailing institutions that tend to hinder growth. As Dorner has indicated, institutions which serve to provide the security necessary for supporting the processes of economic growth and development must be consistent among themselves to form an integrated, cohesive system.<sup>1/</sup>

Institutions are a function of a nation's culture. For viability and effectiveness, they must conform to the value system of a particular culture. If they do not conform, as in many imported institutions, they lose their effectiveness after a while and eventually fade away. Effective and viable, they become an integral part of the building blocks in nation-building.

In agricultural and rural development, institutions serve as the channels for the adoption of innovations and provide means by which they could support rural development and structural transformation in the rural communities. First for all, they provide the mechanisms for the pooling of resources and talents among the small

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\* Executive Director, National Research Council of the Philippines.

<sup>1/</sup> Peter Dorner: "Institutions as aids to development" in The Future of Agriculture: Technology, Policies and Adjustments. Oxford Agricultural Economics Institute, 1974.

farmers and landless cultivators which otherwise remain fragmented and unutilized. For example, the individual small farmers and new lessees on the emancipated holdings can hardly take advantage of the advances in farm technology developed in regional experiment stations as well as in the International Rice Research Institute (IRRI) nor the necessary technical inputs for the new technology on their farms. By forming farmers' associations or cooperative organizations, these small farmers are enabled to acquire cheaper production inputs and avail themselves of the external economies of large-scale marketing and distributive organizations based in the urban centers.

Secondly, the gains made through improved technology in small agriculture, such as those obtained through the Green Revolution, may be sustained for the benefit of the rural communities, through the encouragement and support of the public supporting services, by institutionalizing extension education and administrative approaches to increased farm productivity.

For instance, the growth and development of agricultural extension and applied research in the various regions have buttressed the efforts of the farm leaders and their associations in carrying out agrarian and institutional reforms in their respective communities. These public supporting services and the support they actually give the small farmers have become as essential to reform as the provision of irrigation and other physical infrastructures in the areas transferred to leaseholds and new owners.

Thirdly, institutions are the venues for the training in local leadership and the strengthening of local government. Through farmers' associations

and other institutions, potential local leaders are sought and given means and opportunities for training on the job and the necessary apprenticeship for local entrepreneurship and the exercise of local government functions. These institutions ensure, therefore, the development of local leadership for rural transformation as well as for nation-building and expand the prospects for the emergence of grass-roots democracy.

### Concepts of Institution-Building

Powelson's concept of institutions at the micro and macro levels is pertinent to institution-building in the LDC's. Powelson (1974) considers institutions with fundamental bases at the micro and macro levels. At the micro-level, institutions as part of a nation's cultural capital are determined or selected in an essentially economic manner, in terms of benefit, cost, supply and demand. According to this theory, institutions are selected by those groups capable of establishing them and for whom the institution's product has a great value than its cost; here, both value and cost are subjectively determined.

In a developing country where growth-sensitive groups are achieving power, the new institutions will be those directed toward increasing the national product. Two types of cost are involved: the sacrifice of the growth-sensitive groups who perceive benefits from the new institutions, and the losses of other groups. The costs to the former will include sacrifices they entail in persuading or coercing the other groups whose cooperation they need. The cost to the other groups will be the value they must sacrifice. Where two institutions of equal effectiveness are substitutable for each other, the one less costly to the power groups

will be selected.

From the macro-standpoint, institutions must conform in the long run to national values, or else they will perish. Conformity, however, has both positive and negative effects: positively, in which values are the foundations of institutions, and the latter cannot survive without value support; negatively, in which values act as constraints, making certain institutional forms too costly.

No institution capable of resolving conflicts in a developing country with maximum effectiveness will be consistent with the existing value structure; the country must therefore at first depend on ineffective institutions that do not conform. Those growth-sensitive groups that achieve power will act to increase institutional effectiveness.

In seeking more effective institutions, Powelson points out that power groups ordinarily choose among many directions, for the reason that there is no unique path to effectiveness. Normally, they select those institutions that yield the greatest marginal economic growth per unit of sacrifice (to the power groups themselves) as they push on the optional dimensions. Growth institutions, according to this theory, will ultimately conform to the national consensus on economic and political ideology, or else they will not be formed. Consensus may come about in two ways, or a mixture of them: successive institution formation or direct pursuit of ideology.

Owens and Shaw have emphasized the need for the build up of essential institutions that will harness the initiative and enthusiasm of the poor segments of the population in a developing country.<sup>2/</sup> These institutions they term as problem-solving institutions, the formation and development of which should be governed by certain principles. On the whole, these principles relate to the delineation of functions of the support at the local level, decentralization of functions of national government agencies concerned with rural transformation, the increase in the number of leadership functions of the local level and the linkage of the rural village within the region and the nation.

Weitz's (1971) concept of institution lies in the importance of public supporting systems, which consists of a network of factors external to the farm as a production unit but so organized as to provide "a system of assistance to the farmer" to increase production and improve his living conditions. Composed of a large number of varying elements, the system covers farm services (supply, marketing, credits), public services (education and health), and physical infrastructures (road, irrigation, warehouses and dryers).<sup>3/</sup>

Taken for granted in the Western countries, this system developed gradually as a result of the accumulation of capital and human expertise. In the

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<sup>2/</sup> Edgar Owens and Robert Shaw. Development Reconsidered: Bridging the gap between the government and people. Lexington, Massachusetts: D.C. Heath and Co., 1972, pp. 21-30.

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<sup>3/</sup> Raanan Weitz. From Peasant to Farmer: A revolutionary strategy for development. N.Y., Columbia Univ. Press, 1971, pp. 111-112.

developing countries, these facilities hardly exist and their organization and development would require time, patience and money and manpower which are in short supply in these countries. But as Weitz has emphasized, the supporting system must be organized and made operational in an efficient and flexible manner and adapted to prevailing conditions, if development in these countries is to be achieved.

However, to assist small farmers directly and effectively, the public supporting systems are not enough. Weitz has pointed out that in the transition from subsistence to market-oriented production, the farmer in the LDC's lacks capital, knowledge, and initiative towards change, a weakness which prevents him (the small farmer) from taking advantage of the available supporting services. Experience in these countries, including the Philippines, shows that the small village producer does not always make use of the public supporting system even if it exists; in fact, he may not know "how to use the system to his advantage, and the system itself may not be designed to serve the masses of small producers". There is need therefore for "an intermediate organizational structure between the individual farmer and the service system" that will enable the small producer to utilize the services available. In Weitz's words: "An organizational structure is required that can operate for the village community, within the village community, and by the efforts of the village community."<sup>4/</sup> And the village

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<sup>4/</sup>Weitz, op. cit. p. 96.

cooperative provides the answer to this organizational structure.

Emphasis on the historical perspective of community development as a process of growth and change in the rural areas of the LDC's is emphasized by Tavanlar (1977)<sup>5/</sup>. Citing the programs and activities of the British authorities in Kenya in the early 50's, Tavanlar points out that the lessons in community development during the 50's and 60's in the Philippines should now be applied in developing an integrated program for rural development, one vital aspect of which is institution-building. The experience of this country in land and institutional reforms, improvements in public administration, and the development of the supporting services in the rural areas should as matter of policy, be incorporated in new programs and strategies for agricultural and rural development.

My own experience in the last 15 to 20 years in community development activities as well as in the implementation of foreign-aid programs for agricultural development shows that the establishment and administration of new institutions for growth change is essential to increased productivity among farmers and the improvement of their living conditions. As a result, of this experience and of close working relationships with the farmers in the barrios or villages in Central Luzon,

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<sup>5/</sup> Tavanlar, personal communication with the author.

the concept of enterprise effectiveness and viability was formulated (Dalisay 1972)<sup>6/</sup> involving the three principal aspects of cooperative growth and development, namely: (a) utilization of available natural resources; (b) harnessing local talents and vocational capabilities; and (c) the involvement of local government. It has always been my conviction that voluntary associations or private enterprises at the local level would thrive and make their contributions to agricultural and rural development if these three aspects were present; if any one of them were absent; the voluntary organizations or private enterprise would decline and disappear.

Lessons from the Performance of Supporting Systems and Other Institutions in the last 30 Years.

The slow growth of productivity on the farms, the inequitable distribution of income among our people, and the persistent problems of unemployment and underemployment in the rural areas arise from a complex combination of socio-economic factors. Certainly, one principal factor contributing to the situation is the inadequacy and underdevelopment of existing support services and other institutions which should give support and assistance to the rural population.

A bold, general summary of performance of the supporting systems and other institutions will indicate that the development of these systems that will support agricultural development and the improvements in other institutions designed to bring about desired changes in

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<sup>6/</sup>A. M. Dalisay. Development Planning: Concept and Experience in the Philippines. JAED, vol. 2, no.1. July 1972.



land tenure and the structure of the rural communities, has not been quite successful.<sup>7/</sup> This general observation may be detailed as follows:

1. The agricultural research and extension systems which have been organized with a view to providing the extension- educational support to small farmers and farm workers have not succeeded in bringing improved technology and the necessary technical information to all farmers. The common criticism that the extension service tended to assist large and well-to-do farmers, leaving the small and underprivileged ones to their own devices, still holds today. The agricultural research system, on the other hand, as represented in recent years by PCARR, is just beginning to overcome the many years of lethargy and neglect of essential applied researches on desirable or appropriate technology for crop, livestock and fishery production and has only recently inaugurated programs for the establishment of regional research centers and the proper evaluation and improvement of farming systems by regions.
2. The supply of technical inputs for production and the marketing and storage of cereals and other commodities are still inefficient and underdeveloped. The necessary development

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<sup>7/</sup> A. M. Dalisay. Design for rural development. Center for Policy and Dev. Studies to be published.

and integration of private marketing and distribution facilities in the different regions have remained unfulfilled. The growth of small supply stores in the barrios as well as the development of supply-distribution of essential farm inputs (seeds, fertilizers, insecticides, etc.) under private enterprise remains inadequate and fragmented to this day. The leadership of NGA in the purchase and distribution of rice and corn has helped stimulate increased cereal production through price support and a price stabilization scheme, but the necessary assistance and stimulus to the establishment of private storage, drying and marketing facilities have not been realized. In fact, the necessary tie-up with voluntary marketing associations among farmers, in order to give them encouragement and assistance for institutional effectiveness and viability, has remained merely hypothetical. Without the essential linkages and the necessary stimuli to voluntary cooperatives, NGA will remain a public monopoly and a primary obstacle to the development of commodity marketing-distribution systems in private hands.

3. The development of agricultural credit for the rural communities is quite remarkable, but no consistent policy has been followed in the assistance to rural banks in their capital build-up and in their efforts toward viability and increasing effectiveness.

Starting with 26 banks in the 50's, the rural bank system has grown into more than 800 unit banks in the early 70's. Mainly concentrated on loan assistance for production among small farmers, these rural banks have to be guided in providing credit to small traders and small manufacturing enterprise in the rural communities. Except for small World Bank loans to buttress a program for the distribution of small tractors and threshers to small rice and corn farmers, there are no significant programs for rural bank support to small trading enterprises or supply distributors in the rural areas nor adequate industrial loans for medium or small-scale manufacturing plants in the countryside. Moreover, the Central Bank has yet no policy for the proper utilization or distribution of the accumulated savings in the rural bank system, estimated at P850 million by the end of 1976, in order to enhance capital formation in agriculture and industry in the rural areas.

4. On the institutionalization of land-reform implementation, there is apparently more to criticize in the breach rather than in the performance. The organization of a separate Department of Agrarian Reform has apparently resulted in the concentration of reform activities in one single agency, but the coordination of interdependent and mutually-supporting activities for agrarian reforms remains as difficult as ever.

The linkages with other public agencies and other activities to bring about better socio-economic conditions for the recipients of land reform continue to be fragmenting, if not wholly illusive. The realization of a comprehensive program of increased productivity, more efficient and better coordinated support services, and improved community facilities in the land-reform areas remains a challenging task to the land-reform administrators. The tendency to blame others for difficulties or inadequacies as in the case of parcellary mapping of tenancy lots, continues to slow down the work of the DAR.

#### Package Program Under Land Reform

Perhaps the most important development in institution-building in this country is the proposed package program for the land-reform areas. This consists of, besides the transfer of small land-holdings to their present occupants or tenants, the provision of cheap and readily available technical inputs, a workable credit system, essential storage and marketing facilities, and organizations for the improvement of community living. Regrettably, agrarian reform operations have been confined to or absorbed mainly by Operation Land Transfer, which is designed to transfer all small holdings on large estates or on family-owned farms of more than 6 hectares, to their tenants or lessees.

The food production program launched by the present Administration is designed primarily to

achieve self-sufficiency in rice and corn. However, by the very nature of rice production, based on the output of small operating units, the principal beneficiary of the integrated food-production program (e.g. Masagana 99) are the small lessees and new owners who are recipients of land reform. More than this, the institution-building efforts that such a program would inevitably generate could be expected to improve farm productivity even more and assist in upgrading living conditions in the land-reform areas.

In spite of the above expectations, the approaches to the agrarian reform program have remained fragmented and uncoordinated. Preoccupation with land-transfer operations has apparently prevented increasing attention to the other aspects of land reform, which are quite as important as the transfer of the land they till to present occupants. Land transfer, in other words, is not enough; the related programs are just as essential to achieve higher productivity and better living conditions for the new owners and lessees.

The development of supply institutions, of credit and marketing facilities, and of farmers' organizations that will bring the benefits of the supporting systems to the rural communities and directly to the farm households are absolutely necessary to a successful land-reform program. This is one way of restating the fundamental truth- that an integrated rural development program is essential to the success of agrarian reforms. Unless this fundamental truth is recognized and implemented decisively by the land-reform administration, agrarian

reform in this country will be a protracted and fragmented program and, therefore, ineffective as an instrument for overall national development.

#### Common Management and Policy Constraints to Institutional Effectiveness

As we review the performance of the supporting systems and their supplementary institutions in the last ten years or so, we find that they have common constraints in terms of organizational, administrative and policy difficulties, which must be overcome if these institutions are to attain greater effectiveness and viability. Some of these common constraints are the following:

1. Inadequacy of trained manpower to undertake the necessary activities in the different regions. This is especially true in the case of the Bureau of Agricultural Extension, not to mention the Department of Agrarian Reform, the field workers of which have to carry a heavy case load, too heavy perhaps to permit close and effective working relationships with the farmers to be assisted. In the case of the PCARR, the number and quality of scientific manpower needed for the different regional experiment stations to meet total requirements will remain insufficient for some time to come.
2. Programming of assistance-activities by regions is still in its initial stages. There are organizational and management problems to be faced if the various public supporting systems are to be effective

instruments in giving direct assistance to the farmers and rural groups they are designed to serve. We still need to decentralize the planning and programming-activities of the various public support services and to relate them to the regional development plans and programs of NEDA. There is also need for a national administrative policy on decentralization which will guide the different supporting systems to coordinate their programs and activities with one another at the regional and local levels.

While it is recognized that the NEDA has started to decentralize its planning functions and the different supporting systems have their regional offices, the practice of decentralized planning, particularly for rural development, has to be observed in each region of the archipelago and the implementation of the development plan and program for each region has to be done in concert among the participating support services. Moreover, the guidelines for the choice of priorities in each particular program is the responsibility of the public supporting system concerned, e.g. for the agricultural extension system, the guidelines for the choice of priorities by region is a task of the Bureau of Agricultural Extension.

3. Many of the supporting systems have not developed the capability of harnessing

local leadership or tapping leadership potential in the rural communities that will supplement their field force in implementing their support services. Training programs adapted to local and regional conditions, will have to be designed to tap local leadership potential and gain the confidence and trust of the rural population. An institutional framework covering the leadership requirements for general and specific tasks in rural development must be devised in order to delineate functions and specify responsibilities at the regional and local levels.

4. Linkages with related supporting services and with institutions at the regional and local levels are still weak and uncoordinated. This is especially true with the land-reform program and with the other public supporting systems. Only the agricultural research system (PCARR) has exerted considerable effort in establishing regional linkages as well as international linkages. But even with PCARR, the internal linkages will have to be strengthened with common programs for the training of scientific manpower and the assurance for funding at considerably high levels will have to be defined in policy.

#### Policy Implications

The development of institutions in a growing economy is not an easy task. It requires resources, time and more important, administrative or development management skills and innovative, dedicated and



competent field personnel.

The policies and measures essential to the achievement of institutional effectiveness and viability range far and wide- from an administrative policy that will ensure decentralization of support services and regional planning, to a system of incentives and awards for the private sector and for outstanding performance in the public service. These policies would be concerned also with training (formal and informal) to generate competent and skilled field personnel and development managers and in some cases with domestic and foreign fellowships for advanced studies in the sciences and in public administration.

The organizational and administrative difficulties of the public supporting systems have been with us for some time. For solution, they need the continued and sustained development of management skills and field service competence among the rank and file, particularly at the regional and local levels. Pre-service and orientation seminars have provided some palliatives for certain deficiencies, but competence and dedication, particularly in the extension and research services, will call for a long-term program for the development of management skills among middle managers and inculcation of a unified philosophy of agricultural and rural development as an integral aspect of national development. For this purpose, we must establish, as I have recommended sometime ago, a national center for the technical services, where candidates for the public support services can go for pre-service and orientation training.

An administrative policy on decentralization of

the national public support services and the coordination of symbiotic and related activities at the regional and local levels will help remedy present fragmentation and tendencies toward further proliferation of local agencies serving agriculture. This policy must be supplemented by the decentralization of planning activities under NEDA and the tie-up with related programming activities of the support services at the local level. Under this policy, action agencies operating at the local level will be compelled to integrate their programs and activities and possibly, set up priorities for such activities, in the face of fiscal constraints and skilled manpower shortages.

In developing the capability for harnessing local leadership potential, the supporting services need organizational skills and management competence among their top and middle personnel. More important than these is the vision and innovativeness of personnel assigned to the field services, particularly in devising new approaches or new institutions to assist the rural people directly. To be able to establish supplementary institutions to the public support services, we must increase the number of skilled organizers for cooperatives as well as farmers' associations rooted in the villages, or barrios. And for this purpose, a combination of policy measures would be essential: joint training programs with institutes or development centers designed or assigned to work in the rural areas, promotional-educational programs or farmers' and consumers' cooperatives, and a system of incentives or awards for outstanding field organizers or innovators.

A specific policy covering a system of incentives and awards for outstanding performance would be the motivation and generating force in establishing the linkages with the private sector as well as with institutions or agencies, both public and private, operating at the regional and local levels. Concurrently, a continuous dialogue with the leaders of private business/industry should be undertaken by the public supporting systems in order to obtain their active support to their programs of assistance and to provide guidance in the continuing review and evaluation of programs and activities and in enriching their support services for and with the rural people.

Lastly, a development strategy for institution-building will call for a combination of policies and policy instruments that will ensure a high pay-off with institutional effectiveness and viability as well as the proper timing of implementation. Perhaps the best guide for such a strategy is a concrete knowledge of past performance among the supporting systems and a recognition of the kind and quality of available leadership in these institutions, together with an appreciation of the prevailing socio-political situation in the country.

Chart I. Policy Implications of Performance Evaluation of  
Different Supporting Systems.

Problems in and obstacles to  
institutional effectiveness

Policies and/or  
policy instruments

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|--|--|
| <p>a. Organizational and administrative obstacles<br/>--supervision and control<br/>--control of financial operations at the local level</p>                           | <p>(1) Manpower training programs; management and field service competence<br/>--nat. center for the technical services</p>  |
| <p>b. Decentralization and coordination at the regional and local levels</p>   | <p>(2) Administrative policy on decentralization and local financial measures<br/>--decentralization of administrative services and of planning</p>  |
| <p>c. Capability in harnessing local leadership<br/>--organization of supplementary institutions (cooperatives)<br/>--innovativeness in designing new institutions</p> | <p>(3) Joint programs on short-term training for management and or orientation seminars<br/>--training in cooperative organization and operation<br/>--tie-up with TR institutes and Development Centers</p> |
| <p>d. Weak linkages with local and regional agencies/institutions, including the private sector</p>  | <p>(4) Policy on incentives and awards for outstanding performance in the supporting systems and in the private sector<br/>--continuing dialogue with innovators and leaders in business/industry</p>        |
| <p>e. Motivations for outstanding performance in the public service and in the private sector</p>  | <p>(5) Fiscal policy on sustained financial support and on tapping local sources of public revenues</p>  |

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## CHAPTER 4

INDICATORS FOR MONITORING  
RURAL AREA DEVELOPMENT PROJECTS

Burton T. Oñate\*

Introduction

Indicators for monitoring rural area development projects are generated to measure the level, pace and direction of the economic and social impacts of project components on the life of the rural poor. Without these unbiased indicators, it would be impossible to monitor the progress, if any, that is achieved by the development project. Economic indicators on production, cost of production and related variables are relevant to the economic feasibility of the project while indicators on the major concerns of poverty, inequality and unemployment and the traditional concerns on food and nutrition, health and welfare, housing and clothing, education and culture, and security and family planning would indicate the project's social impacts on the rural man.

Major movements in measuring development at the national level are reviewed. Since progress must emanate from depressed areas which have been selected as priority projects for development, the indicators which are presented refer to agricultural and rural area development schemes. The correspondence between the statistical monitoring system and project development will indicate objectively whether progress is

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\* Chief Statistician, Asian Development Bank

being achieved as planned or whether there are certain constraints to development. In the latter case, policy decisions and follow-ups could be made or instituted immediately to remove the constraints so that progress as envisioned in the Appraisal Report could move back to its desired path.

### MEASURING DEVELOPMENT

#### Major Movements

Development of Social Indicators is one of several movements which are currently sweeping the intellectual, financial and developmental worlds.<sup>1/</sup> The other movements are referred to as the "Quality of Life Components of GNP"<sup>2/</sup> and the "Developmental Indicators".<sup>3/</sup> Since Man is the primary concern of development, we may refer to these efforts as measuring

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<sup>1/</sup> ESCAP Committee on Statistics. Social Indicators. Meetings held in Manila, 1971, New Delhi, in 1973 and Jakarta, in 1974.

<sup>2/</sup> Milton Moss(Editor). The Measurement of Economic and Social Performance. Studies in Income and Wealth, No.38, U.S. National Bureau of Economic Research. Columbia University Press, New York, 1973. Of relevance are Japan's Net National Welfare (NNW) approach (1974) and the UN Committee on Development Planning (1973) on Net Beneficial Product (NBP).

<sup>3/</sup> Nancy Basten. Development Indicators: An Introduction. Journal of Development Studies, Vol.8, No.3, April 1972.

the "Quality of Life" or more precisely as measuring the "Improvement in the Quality of Man". A study for example of efforts on measuring development indicates that there is wide agreement about the role of the Fundamental Social Concerns such as population, health, housing, nutrition, education and culture, employment and social security, personal security, consumption, wealth and social welfare as the basic framework for the development of appropriate "social indicators".<sup>4/</sup> Whether prepared and adopted by ESCAP Committee on Statistics, or the OECD which has only eight basic fundamental concerns (BFC) but has numerous sub-concerns which are very difficult to obtain under conditions in the developing member countries (DMCs) in the Region of by France, the United States, Japan (also similar to OECD's eight BFC), Malaysia,<sup>5/</sup> the Philippines,<sup>6/</sup> Indonesia,<sup>7/</sup> Thailand <sup>8/</sup> or by other

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<sup>4/</sup> For example, the Asian Development Bank Annual Report, 1974 (p.11) states the following on Social Impact: "An important objective in Project Formulation -- is to ensure--that within the framework of economic justification, the benefits of the Bank's development assistance are as widely spread as possible and the needs of lower-income groups in particular are taken into consideration".

<sup>5/</sup> Department of Statistics. Social Statistics Bulletin, 1972. Kuala Lumpur, Malaysia, June 1975.

<sup>6/</sup> Development Academy of the Philippines. Measuring Philippine Development: Report of the Social Indicators Project. Manila, 1976.

<sup>7/</sup> Biro Pusat Statistik. Social Indicators, 1973. Jakarta, Indonesia, September 1974.

<sup>8/</sup> National Economic and Social Development Board. Thailand. Social Indicators, Bangkok. 1975.



DMC's, one will note that the basic structure will include these fundamental social concerns.<sup>9/</sup> The difference will be in terms of the depth and complexity of the measurements or indicators developed for each sub-concern within a major concern. The complexity in the indicator will of course depend upon the stage and level of urbanization, modernization and industrialization of a given economy. Also, the more developed the economy, the more sophisticated and detailed are the indicators adopted. The collection and generation of these indicators are the responsibilities of the statistical system and services of the country which are more efficient and elaborate in the developed world. But it is important to recognize that the specifications of such a list of concerns, both major and traditional, and their elaborations can only be done by those who have had an intimate knowledge of the country's culture, customs and traditions and social structures.

Another movement which focuses on the major issues of poverty, unemployment and inequality<sup>10/</sup> has been the topic in regional and international forums. But, if

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<sup>9/</sup> Refer to B.T. Oñate's "Statistics in Southeast Asian Agriculture". Chapter XVII. Tables 17.1 and 17.2. SEARCA, 1976.

<sup>10/</sup> Friedrich-Ebert Stiftung, ESCAP Workshop. Effective Anti-Poverty Strategies, Bangkok, 12-21 December 1973. Inequality may also be reflected in terms of the level, pace and direction of social and political mobility.

one analyzes critically the major social concerns mentioned earlier then one can derive, with the availability of sufficient data, level of poverty for each major or sub-concern as well as the distribution of poverty by concern. The latter will give us a picture of the inequality not only of income but of each major or sub-concern as the case may be. Unemployment, as a component of the labor force, could be a sub-concern under population and its relationship with poverty and inequality could be analyzed critically. In fact, we may wish to add agricultural land per capita as a measure of "population pollution". This framework was suggested by the author in 1974.<sup>11/</sup>

#### Who Measures and For Whom

Indicators attempt to measure the level, pace and direction of development with special reference to the "Quality of Life" or the "Quality of Man".

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<sup>11/</sup> B.T. Oñate. "Measuring the Quality of Life: Man as the Concern of Development". Philippine Statistical Association Annual Conference. July 1974. See also the author's Chapter XVII of "Statistics in Southeast Asian Agriculture", SEARCA 1976 which describes in more detail this statistical framework. GNP may grow rapidly without any improvement on these three criteria, so the pace of development must be measured more directly. See also Dudley Seers paper "What Are We Trying to Measure"?, Journal of Development Studies, Vol.8, No.3, pp. 20-36. April 1972.

But the philosophical and other interpretations will depend upon whether the points of view of the national government prevails or that of the group of experts commissioned to develop the measurements or those of the financial or bilateral or multilateral financial development agencies. Also, if one applies the "phenomenological" approach, then the views of the people comprising the given society or the project area must prevail in measuring or evaluating the pace of development.<sup>12/</sup> Another complication arises if the area under study is at the national/regional or at the project level as in the case of an integrated area development scheme. In the latter case, the participants in the project area should be given an opportunity to indicate their position before, now and possibly in the future on the basis of a scale developed with regard to their own views and interpretations. Probably, the objective of higher per capita GNP for the Developing World or the Third World may have to be revised or reconsidered on the basis of the possible impact of modernization, urbanization and industrialization on the "Quality of Life" or "Quality of Man"; on the destruction of wholesome national family life, customs and traditions; and/or on the loss of irreplaceable natural resources.

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<sup>12/</sup> Through the educational and training programs, continued exposure to extension services and other rural development approaches, the rural man becomes more attuned to the need for changes to attain "progress" but with a very critical eye on the effects of "progress" on wholesome rural customs and traditions and to the overall quality of life of the rural poor.

Direction and Pace of National Development: Composite Index<sup>13/</sup>

A developing country would be at a given stage of development which may consist of a structural mix between the old and the modern technologies. The level and growth of real per capita income (GNP) are economic indicators which are considered as very rough approximation or measurements of the possible direction and pace of national development. Real per capita GNP is often referred to as a national level of "poverty" but due to varied reasons it is considered not a good single indicator of the developmental potential. Firstly, the income data for most developing countries (DC's) in the Asian Region are either poor or fair in quality<sup>14/</sup> and of the 20 DC's, about one-third has no official income series. Per capita income data as an index does not reflect major conditions of development such as income distribution or structural change. Secondly, a given DC may be in a given stage of dual technological structural mix so that at this stage of development real per capita income may be stagnant or may even decline during the period. Under these conditions real per capita income is not an adequate single indicator for measuring the pace of development. GNP has a built-in tendency to give an exaggerate picture of the material wealth produced by

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<sup>13/</sup> B.T. Oñate. Composite Index for Measuring the Direction and Pace of Development. Philippine Statistician. Vol. XXVII. Nos. 1-2, pp. 21-28. June 1976.

<sup>14/</sup>                     . Improvement of the Quality of Current Statistics in the Asian Region. ADB Occasional Paper No.5, Manila. May 1971. Revised 1977.

complex, market-oriented economies and has an equal tendency to overlook significant activities in the simpler, more self-sufficient societies. Applying the same measure to both can lead to serious distortions.<sup>15/</sup> Thus, depending on the stage of development of its statistical system, other indicators may be available or could be collated to serve also as possible determinants of the developmental potential.<sup>16/</sup> In measuring and quantifying development during these stages of structural mixes, it might be worthwhile to consider other indices of development. Some possible determinants of development have been identified and may be measured through the combined impact of the growth in these determinants such as (a) managerial or entrepreneurial ability; (b) capital; (c) skills; (d) employment of labor; and, (e) technological changes.

The identification of variables or indicators which must be collated to approximate these determinants is a difficult problem. However, certain statistical series are currently available in each DC which could be used as approximate proxy variables of these determinants. Thus, the first step would involve a critical study and evaluation of the statistical series, both economic and social, in physical or monetary terms, which could be used as possible initial measurements of the development potential. The number and

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<sup>15/</sup> U.N. Development Forum. Not by GNP Alone. Center for Economic and Social Information. 1974.

<sup>16/</sup> V.V. Divatia and V.V. Bhatt. On Measuring the Pace of Development. Banca Nazionale del Lavoro Quarterly Review. No.89, Rome. June 1969.

type of these proxy variables may change depending upon their availability in a given DC. Some of the social and proxy variables are highly correlated with GNP at current prices. In fact, these indicators can serve as excellent predictor variables for GNP. These correlations are surprisingly high. For example, the correlation between GNP and enrollment in the secondary schools was 0.992 for the Philippines and was 0.999 for another DC.

The index of developmental potential seeks to measure the real changes going on in the country during a given stage of the developmental process. In the Philippines, the composite index showed a compound annual growth rate of 10.9 per cent while GNP grew at a rate of 10.6 per cent at current prices and 5.8 per cent at 1976 constant prices. Thus, the growth rate of the developmental potential is almost double the rate of growth of real GNP. Table 1 shows that as a DC moves along the development axis measured in terms of per capita GNP, then the ratio of the Composite Index (B) to the GNP Index (A) decreases. Thus, the Composite Index reflects a more rapid rate of growth in the overall process of developmental transformation in the three DC's than is shown by the more conventional real GNP Index. The empirical results indicate that as a country moves from the lower scale of development as measured by per capita GNP, then the ratio of B/A will approach unity which implies that at higher levels of modernization, urbanization and industrialization, the Composite Index would approach the real GNP Index. Probably, at the higher developmental stage, real GNP or per capita Index would be an appropriate single index to use. The development and improvement of the Composite Index as a measurement of the developmental

potential should be recognized as a concomittant part in the process of structural transformation. While the major movements in the measurement of the "quality of life" at the national level is still in its developmental stage, the Composite Index may be used to supplement the per capita GNP indicator with special reference to DMC's in the Asian and Pacific Region.

#### INDICATORS FOR AGRICULTURAL AND RURAL AREA DEVELOPMENT PROJECTS

##### Monitoring Development in Project Area

Experiences in and problems of programs and approaches for rural development could be discussed and illustrated but successes of such programs can only be aptly demonstrated with the use of a sound and unbiased statistical monitoring system which at this stage is less than satisfactory. Approaches to rural development have mentioned, among others, production oriented, emphasis on human development and the integrated project with the required institutional supports to the developmental effort. Thus, indicators for monitoring rural area development projects must necessarily consider the objectives of the programs and/or approaches which are used to generate progress for the rural poor. Basically, rural development must concern itself not only with the improvement of the quality of life but more importantly move toward the improvement of the quality of the rural man. There are many conceptual, technical and philosophical difficulties in the generation of relevant economic and social indicators for rural development. Some of these issues

Table 1. Development Potential: Composite Index v.s.  
Real GNP

Index	Developing Member Country			
	Per Capita GNP in US\$ in 1970			
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u> <sup>b/</sup>
	(US\$100)	(US\$200)	(US\$450)	(US\$6,000)
(Per cent per Year)	15 years <sup>a/</sup>	11 years <sup>a/</sup>	18 years <sup>a/</sup>	
(A) Real GNP	3.5	5.8	8.5	(4.0)
(B) Composite Index	7.0	10.9	13.1	(4.0)
Ratio B/A	2.0	1.8	1.5	(1.0)

a/ Length of series in years

b/ Projected on the basis of trends and current levels;

on indicators for social development<sup>17/</sup> are as follows:

- (1) Aggregation at national, regional or project level and measurements in terms of indices or sub-indices;
- (2) Identification of major social concerns on poverty, inequality and unemployment and the traditional concerns on food and nutrition, health and education, clothing and housing, etc;

<sup>17/</sup> Op cit. p.69.



- (3) Measurement of inputs, facilities or use of facilities, benefits or individual well-being;
- (4) Evaluation in terms of standards set by experts or in terms of the participants or recipients' values or scales in the project area; and,
- (5) Social concerns as building blocks are not mutually exclusive and in this aspect the social concerns would differ from the economic sectors of GNP.

The indicators for monitoring rural area development projects will be site-specific and these projects would generally refer to those schemes where the financial support is contributed to and participated in by national and/or bilateral, and/or multi-lateral resources. Since 1964 or a period of 31 years, the World Bank has lent US\$8 billion for agricultural and rural development. If in general, this investment is matched by an equivalent amount from domestic sources, then the World Bank contributed to and participated in the financing of some US\$16 billion in agricultural and rural development projects.<sup>18/</sup> Similarly, the Asian Development Bank (ADB) approved during the period January 1968 to 30 April 1977, 86 projects amounting to US\$20.853 million in agriculture and agro-industry.<sup>19/</sup> The introduction and importance of a sound statistical

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<sup>18/</sup> IMF and World Bank. Finance and Development Quarterly, Vol.14, No.1, March 1977.

<sup>19/</sup> Asian Development Bank (ADB). Loan and Technical Assistance Approvals as of 30 April 1977. No.77/4. 3 May 1977.

framework for project monitoring is not yet well-recognized and appreciated. This framework involves the setting-up at time of appraisal precise key objectives, yearly during its project life, in the form of key indicators which could be checked through a sound monitoring device on a regular or periodic basis by the generation of current values of these indicators for comparison with the projected values (cost and benefit streams) in the appraisal reports. The implications of these comparisons in terms of necessary policy decisions could be easily perceived by the national governments and financial development institutions. There are other uses of the micro indicators obtained from agricultural and rural area development schemes such as source of data for the components in the production accounts in agriculture (PAA) for specific crops/livestock/poultry by location and by the level of technology. In the statistical system in food and agriculture, this sub-system is referred to as "Micro-Data in Rural Area Development Schemes".<sup>20/</sup> The setting and implementation of this type of statistical framework is referred to as "Project Monitoring" with special reference, in this case, to agricultural and rural area development projects.

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<sup>20/</sup> B.T. Oñate. Statistical System in Food and Agriculture: Evaluation, Analysis and Uses of Agricultural Census Results. ADB Lectures at the Asian Statistical Institute, Tokyo on the 1980 Census of Agriculture for the Asia and the Pacific Region. Pp.4-7, June 1977.

### Statistical Framework for Project Monitoring

The statistical framework will provide timely, up-to-date, consistent and accurate key indicators for monitoring the benefit streams assumed in the appraisal of the project. The cost streams could be checked by standard accounting procedures but the basic data used in the benefit streams could be obtained only from households at the village or hamlet level. The suggested statistical framework, if well designed, will provide (a) benchmark data at appraisal time; (b) data at post-evaluation stage and (c) key variables needed for charting the overall economic and social impacts of the project on a continuing basis. This framework will provide valuable information for a particular project which could contribute to a better understanding of the project, assist toward sound preparation and formulation of similar developmental projects and in providing data on a time series during the project life for policy decisions and follow-up at all levels; national, bilateral and international financial developmental institutions.

The objectives of the statistical framework for the project monitoring of rural area development projects are as follows:

- (1) To generate adequate data on a time series for appraisal, post-evaluation, and during the project life for the farm economy, with special emphasis on the income and expenditure aspects of the farm household. With such time series data, an assessment of the socio-economic well-being of the beneficiaries in the area would be possible;
- (2) To determine the direction and extent of distributive effects of the Project. Are there

noticeable shifts in the distribution of the social concerns which could be used as indicators for improvement in the poverty levels?

A tentative list of items to be collected for agricultural and rural area development scheme is given below: The frequency of the collection could be yearly or annually at the initial stage. This frequency could be made longer depending on the progress achieved in earlier years.

1. Farm Economy survey:

Composition of the farm household by age, sex and marital status  
 Size of farm holdings controlled/cultivated by farm family  
 Owner/tenant/worker status  
 Educational status of farm household head  
 Number of Children attending schools  
 Farm inputs(seeds, fertilizer, pesticides, maintenance cost of livestock and machinery, irrigation fee, land rent, labor, etc.)  
 Farm outputs(paddy, corn livestock, poultry and other farm products and their uses)  
 Farm equipments(pumps, tractors, power tillers, motor vehicle and other agricultural machinery)  
 Land area classified by use:  
     Cultivated land(paddy/other crop) with irrigation or not(and with water management or not)  
     Idle and pasture land  
     Forest  
     Others  
 Planted area and yield by crop  
 Wholesale and retail prices of major crops and products  
 Net income of the project area by crop and by irrigated/non-irrigated land  
 Status of water management, credit and extension services, and related services at the farm household level

## 2. Income and expenditure:

### Household income(farm and non-farm):

- Wages/salaries/managerial income
- Rents/dividends/loans
- Profit from business
- Sales of farm products
- Subsistence production
- Income in kind
- Others(interest, remittances, etc.)

### Household expenditures(farm and non-farm):

- Food, drink and tobacco/home produced/  
purchased/imported
- Clothing and personal effects-imported/  
home produced/purchased
- Housing(rent and maintenance)
- Fuel and light-home produced/purchased
- Transport and communications
- Recreation and entertainment
- Education
- Household durables
- Health
- Investment in business(farm or non-farm)
- Farm/Business equipment purchases
- Savings
- Debt repayments
- Tax and local dues

## 3. Social welfare and living conditions at the household and village levels:

### Commerce/industry(at the village level only):

- Wholesale/retail trade
- Cottage industries
- Grain milling

### Housing conditions and facilities(at the household level only):

- Type of house
- Tenure of accomodation
- Water supply facilities
- Toilet facilities
- Main energy source for cooking and lighting
- Electrical appliances in use

## Social Welfare and living conditions: (con't)

## Food and nutrition(at the household level only)

Calorie consumer per person per day  
 Protein(Animal/Non-Animal) consumed per person  
 per day

## Health and medical facilities:

Number of hospitals, puericulture centers, etc.  
 Number of hospital beds, doctors, nurses,  
 midwives and dentists  
 Infant mortality rate(rough estimate)

] at the  
village  
level  
only

Crude annual death rate(rough estimate)  
 Number and nature of household illnesses  
 Fertility status(for married women only)  
 Distance of medical facilities(hospitals/  
 clinics/etc.) from household

] at the house-  
hold level  
only

Expectation of life at birth(rough estimate)

## Education:

Number of schools by type  
 Number of teachers and pupils  
 Municipal expenditure on education

] at the  
village  
level  
only

Number of year of education  
 Number in household with or receiving  
 primary/secondary/vocational/higher  
 education  
 Distance of household from educational  
 institutions(primary, secondary, voca-  
 tional

] at the house-  
hold level  
only

## Transportation and communications:

Total length of roads by class  
 Number of registered motor vehicles by  
 class  
 Total circulation of daily/non-daily  
 newspapers  
 Number of telephone in use  
 Number of cables/letters sent and delivered

] at the  
village  
level  
only

Principal means of transportation  
 Number of newspaper, magazine, journal and  
 periodical subscribed to by members in  
 the household

] at the  
household  
level  
only

### Entertainment and Recreation:

Number of movie theatres, sport clubs, public parks, etc.  
 Number of theater goers

at the  
village  
level  
only

Number of household who are members  
 of sport clubs, and other recreational  
 organizations  
 Average daily leisure hours

at the house-  
hold level  
only

### Religion and culture:

Number of churches, mosques, cultural  
 centers(societies), charitable organi-  
 zations, etc.  
 Number of church/mosque goers  
 Total membership of charitable  
 organization

at the  
village  
level only

Number of household who are members  
 of religious and cultural organizations  
 Type of religious affiliation

at the house-  
hold level  
only

### Insurance(at the household level only)

Number with medical/life insurance  
 Number covered by unemployment  
 insurance  
 House and property under insurance  
 or not

### Others(at the village level only):

Number of cooperatives  
 The multiplier effects

Sampling methods will be used and farm households will invariably be the ultimate sampling units. The ease and practical-ability in the application of the sampling techniques must be the primary consideration in the application of this approach. The availability of the results of recent population and agriculture censuses would be helpful in the development of the sampling frame in the project area.<sup>21/</sup> A multi-stage design with villages (or hamlets) as the primary sampling units (PSU's) and the farm households (holdings) as the secondary sampling units (SSU's) will be adopted. To reduce cost to a minimum, the sample size will be between 200 to 225 farm households. This sample size will generate fairly reliable estimates of the key indicators at the project level. For comparative purposes, a small sub-sample will also be drawn from outside the project area and from the "pilot" area, if such a "pilot" or demonstration area is included in the scheme. A tentative sample allocation is given in Table 3. There are other technical requirements which could be considered, namely:

- (1) Establishment of suitable sampling framework and preparation of paper strata,
- (2) Methods of drawing sample households,
- (3) Estimation procedures for total and sampling error, and
- (4) Methods of collecting data at the village level.

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<sup>21/</sup> The author suggested during the Advanced Seminar on the 1980 Census of Agriculture for the Asian Region held at the Asian Statistical Institute, Tokyo in May 1977, some approaches in utilizing the Census as source of benchmark data or frame and as a component of the monitoring device for agricultural and rural area development schemes. *ibid.* p.76.



Table 3

Sample Allocation of Farm Household in Project Area

Location	Number of Sample Households (SSUs) by type of Participants <sup>*/</sup>					Total Sample
	Sample Village	Farmers		Landless Laborers/Harvesters		
		Small	Large			
<u>Tentative proportion</u>	PSUs	2	:	1	:	2
Upstream	1	10		5		10
	2	10		5		10
	(3) <u>**/</u>					
						Sub-total 50
Midstream	1	10		5		10
	2	10		5		10
	(3)					
						Sub-total 50
Downstream	1	10		5		10
	2	10		5		10
	(3)					
						Sub-total 50
Sub-total (A)	<u>6</u>	<u>60</u>		<u>30</u>		<u>60</u>
Pilot Project	1	10		5		10
Out-of-Project	1	10		5		10
	2	10		5		10
Sub-total (B)	<u>3</u>	<u>30</u>		<u>15</u>		<u>30</u>
<u>Grand Total</u>	<u>9</u>	<u>90</u>		<u>45</u>		<u>90</u>
(A/B)	—	—		—		—

<sup>\*/</sup> For illustration, the ratio of small farmers; large farmers, landless laborer is 2:1:2. This ratio will change depending on actual proportion observed from Census of Agriculture or other sources.

<sup>\*\*/</sup> For highly variable area, an additional village (3) will be included in the sample, one each for up-stream, mid-stream and down-stream or an additional 75 sample households (25 x 3). If this is so, the total sample size will be increased to 300.

The beneficiaries in the project area are expected to be mostly small farmers, landless laborers and harvesters. If so, the stratification will consider these groups as domains of the survey. With an irrigation component, then the stratification of the area for sampling purposes will also consider the up-stream, middle-stream and down-stream portions of the irrigation scheme in order to find out the interaction between water management and control with the location of the fields in the project area. Some features of this statistical framework for Project Monitoring are as follows:

- (1) National currency will be utilized to conduct the survey;
- (2) The agency to implement the collection scheme will be a national entity referred to as the Project Survey Team (PST) and the technicians will be nationals of the country where the agricultural area development project is located. In order to maintain utmost objectivity and to remove any suspicion of bias in reporting the results, the PST that will implement the statistical framework for Project Monitoring must not be directly involved in the implementation of the program for agricultural area development schemes. The scope of work of the PST is as follows:
  - (a) Prepare a detailed survey questionnaire which shall be reviewed and revised if necessary, in consultation with the Technical Committee (TC): conduct a pretest of the questionnaire before conducting

field work and prepare tabulation plans;

- (b) Prepare instructional Manual on Concepts, Definitions and Methodology for the enumerators; and recruit and train qualified enumerators and data processors;
  - (c) Perform quality checks at each stage of the field operations and institute consistency tests of the responses to the questionnaire in the field;
  - (d) Process and tabulate the data collected as planned;
  - (e) Prepare a written report with supporting statistical tables and description of methods and techniques;
  - (f) Coordinate efforts with the TC and keep the TC informed, as frequently as practicable, of the progress of its work;
  - (g) Complete its assigned tasks, including the submission of a final report to the TC within a period of three (3) months after commencement of preparatory work.
- (3) The design and analysis of sampling surveys require adequate technical competence in the theory and application of sampling methodology. Thus, it is necessary that the planning and implementation of the statistical framework for Project Monitoring should be reviewed

by a Technical Committee (TC) with representation from the Executing Agency and the PST.

### Agricultural and Rural Area Development Projects

It may be worthwhile to take a look at some leading indicators which have been derived in the appraisal of projects from agriculture, fishing, the agro- and the non-agro based industries. These indicators include the length of the project life in years, the benefit/cost (B/C) ratios and the economic internal rate of return (IRR) in per cent. These results are given in Table 4 for about 100 projects of ADB.

Table 4.1. Indicators of Sectoral Projects<sup>\*/</sup>

Sector/ Project	Project Life Years	B/C	IRR (%)
Agricultural Area Development	10-56	1.6 to 18.5	8.5 to 18.3
Fishing	10-15	1.6 to 4.9	11.1 to 42.1
Agro-Based Industries	15-25	1.7 to 6.0	13.9 to 24.7
Non-Agro Based Industries	14-17	3.1 to 8.5	21.8 to 54.1

<sup>\*/</sup>Source: ADB Appraisal Reports. Various years. These indicators show that for agricultural area development schemes, the project life could be relatively long extending from 10 years to 50. On the other hand, the B/C ratio could be very wide (1.6 to 18.5) indicating very wide variations in the benefit streams (total B) since C could be easily monitored through standard accounting procedures. This situation will show that agricultural area development projects are more sensitive to changes in the benefit streams since the slope or rate of change in IRR on B/C may be small but the streams are subject to more error (Onate 1976).<sup>22/</sup> The IRR is also relatively lower as compared to those exhibited by Fishing and the Industries, both agro- and non-agro based.

<sup>22/</sup>B.T. Onate. Statistical Framework in Area Development Projects for Small Farmers, presented at the National Workshop on Uses of Census Information. Chiangmai, Thailand. March 1977.

### Phases in Agricultural Research and Rural Development

Agricultural and natural resources research cannot be confined into one short phase. It must consist of different phases depending on the stage of the research processes, the level of local control applied to the phase of research and the benefit (B) and cost (C) ratios. The B/C ratio may be negligible in the early phase but may increase substantially at the later stage when research findings are applied to rural or agricultural area development schemes. The suggested phases of Agricultural Research and Rural Development are given in Table 4.2. Note that the local control requirement for experiments would be an important criterion.<sup>23/</sup> The productivity level is a good indicator of the trend in the absorption of the biological-chemical, hydrological and possibly also mechanical technology from research stations to the project area. Also, the total project life would necessarily include a portion, if not all of the project life of rural development scheme. At any rate, the trends could indicate an agreed upon cut-off period. Phases II and/or III could be by-passed but what is important is to integrate a portion or part of Phase IV with Phase I in order to show whether the particular set of agricultural research development is economically feasible or that enough benefits are

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<sup>23/</sup> B.T. Oñate. Statistical Quality Control (SOC) in Agricultural Research. Revised paper read at the Philippine Council for Agricultural and Resource Research Conference. Cavity City. Philippines, 1977.

generated as a result of the research efforts. It is very important that the required statistical monitoring scheme could be established at an early phase so that objective estimates of productivity and other key indicators are made available at each phase beginning from the research proper (Phase I) and during the project life of rural area development schemes (Phase IV). Trend in productivity is one of the key indicators in the derivation of project benefits and therefore of the economic internal rate of return.

Table 4.2. Phases in Agricultural Research and Rural Area Development<sup>\*/</sup>

Phases	Stage	Level of Local Control	Productivity Level	Project Life (Years)	Benefit (Social/Economic)	Cost
I	Research Proper	High(H) to Very High (VH)	H to VH	3-5	$B_{I,i}$	$C_{I,i}$
II	Cooperative Tests	High (H)	H	1-3	$B_{II,i}$	$C_{II,i}$
III	Trials in Farmers' Fields	Medium (M)	M	1-2	$B_{III,i}$	$C_{III,i}$
IV	Rural Area Development Schemes	Low (L) or negligible	L	10-30	$B_{IV,i}$	$C_{IV,i}$
	TOTAL			<u>15-40</u>	$\sum_{k,i} B_{k,i}$	$\sum_{k,i} C_{k,i}$

<sup>\*/</sup>Source: B.T. Onate. Statistical System in Food and Agriculture: Evaluation, Analysis and Uses of Agricultural Census Results. Asian Statistical Institute, Tokyo. p.61 June 1977.



### Indicators for Economic Feasibility

Production, cost of production and net income derived from crop, livestock, poultry with other related variables in the agricultural activities in the project area are the key indicators used in the derivation of the economic internal rate of return (IRR). The benefit streams (B) are derived from these variables by planting seasons and cropping patterns which are illustrated in Tables 5.1. and 5.2. The cost streams (C) and the benefit streams (B) are illustrated in Table 5.3. while the cost, benefit and project profiles are shown in Chart 1. Also shown in the chart is the relationship between IRR and B/C. This project may be said to be relatively sensitive to errors in B and C. Most of the cost streams (C) are available even prior to full completion through the use of standard accounting procedures while the B streams must, however, be monitored through a statistical device which could be applied to the farm households in the project area. Chart 2 illustrates an estimate of the incremental benefit.<sup>24/</sup> which is the difference between the benefit derived with the project (W) and without the project (W/O). The statistical monitoring device will provide the checks on whether the benefits as envisioned, say, in Chart 2 (as projected in the Appraisal Report) are being generated as planned. If not, the constraints could be identified and appropriate follow-ups necessary to bring the project under control could be implemented.

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<sup>24/</sup> Some forms of linear or related programming techniques could be applied to maximize incremental benefits.

### Social Aspects

It is important to note that with the attention given to the major concerns on poverty, inequality and unemployment and the traditional concerns on food and nutrition, education and culture, housing and clothing, personal and social security, family planning and social welfare, there is also a shift in emphasis on the statistical approach from point estimation to the estimation of distributions which will indicate not only the levels of poverty but also the extent of inequality by social concerns. The statistical monitoring system (see p.76) will provide a continuing picture on the improvement of poverty and inequality by concern in rural area development schemes. An example on the distribution of land illustrates the concept of the distribution of poverty and the levels of inequality of farm land.

Micro-data from sample farms will consist of the production or yield of crops, levels of nitrogen and  $P_2O_5$ , moisture stress, hopperburn and other insect damage, weed control level and their interactions. The resultant regressions between these inputs on yield could be used to indicate the pace and direction of crop yields at desired levels of inputs and at prevailing prices of inputs and outputs which will generate optimum net returns to the farmers in the project area. Since the inputs used outside the project area or without (w/o) the project area subject to normal changes the incremental benefit will also be close to optimum. Thus, the preparation of the projected benefit streams will also be based on micro-data obtained from the project area. If the statistical monitoring system is repeated periodically, then the projected benefit streams could be checked and if needed also

adjusted on the basis of current information on key variables.

Some experimental data are available from farmer's paddy fields in the Philippines<sup>25/</sup> which indicated that on many farms studied, a substantial increase in nitrogen input in the dry season can raise paddy yields by about 1 ton/ha. During the wet season, yields of more than 3.5 tons/ha do not appear to be profitable due partly to the high cost of insecticides. It is interesting to note that in Laguna the yield gap between the farmers' level and the high level of inputs was 2.0 tons/ha in the 1975 dry season. Fertilizer accounted for about 50 per cent of this yield gap; insect control for about 33 per cent while weed control for less than the remaining percentage.

Low level of fertilizer or inputs is generally associated with low level of technology or productivity at the initial stage ( $t_0$ ) while the high level of inputs is associated with high level of technology or productivity at the target date ( $t_e$ ) in the project area. Under conditions in the Asian region, this time reference from  $t_0$  to  $t_e$  could be 20 to 30 years.

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<sup>25/</sup>IRRI Annual Report 1974, 1975. The provinces are Laguna, Nueva Ecija and Camarines Sur.

But no objective data are available to indicate this trend. The statistical monitoring system will provide among others, this type of data as basis of future planning.

The statistical monitoring system will provide data on non-farm activities of the rural poor in the project area and on large numbers of small to medium scale non-farm activities in the villages and towns covered by the rural area development scheme. These data at the household, village and town levels will be useful in the design and provision of assistance for non-farm activities which merit special attention in formulating new approaches for rural development projects and programs.<sup>26/</sup>

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<sup>26/</sup> World Bank. Development Issues in Rural Non- Farm Employment. Development Economics Department. Report No. 1577. April 1977.

Table 5.1.

Cost of Production (1-ha.)  
(For illustration)

Item	Paddy		Vegetables		Miscellaneous Crops		Peanuts	
	P	W/P	P	W/P	P	W/P	P	W/P
<u>Wet Season</u>								
<u>Cash Inputs (₱/ha)</u>								
Fertilizer	25	725	300	1,800	100	-	-	730
Pesticides	10	350	200	1,500	-	-	-	200
Seed	90	90	650	650	150	-	-	640
Hired Labor <sup>a/</sup>	115	240	-	-	-	-	-	360
Miscellaneous <sup>b/</sup>	80	120	200	500	50	-	-	190
Total	320	1,525	1,350	4,450	300	-	-	2,120
Total Labor Requirements (man-hours/ha)	675	880	1,150	2,050	550	-	-	1,015
Hired Labor (man-hours/ha)	75	120	-	-	-	-	-	180
<u>Dry Season</u>								
<u>Cash Inputs (₱/ha)</u>								
Fertilizer	-	870	300	1,800	100	-	-	730
Pesticides	-	450	200	1,500	-	-	-	200
Seed	-	90	650	650	150	-	-	640
Hired Labor <sup>a/</sup>	-	270	-	-	-	-	-	360
Miscellaneous <sup>b/</sup>	-	120	200	500	50	-	-	190
Total	-	1,800	1,350	4,450	300	-	-	2,120
Total Labor Requirements (man-hours/ha)	-	1,050	1,150	2,050	550	-	-	1,015
Hired Labor (man-hours/ha)	-	135	-	-	-	-	-	180

P - Present

W/P - Future with Project

<sup>a/</sup> Unit cost of manual labor ₱1.5hr.  
at present, ₱2/hr. for the future

<sup>b/</sup> Include land tax, depreciation and  
repair of equipment and implements,  
etc.

Table 5.2. Total Farm Income  
(For Illustration)

I t e m	1-ha. Farm <sup>a/</sup>		2.5-ha. Farm <sup>a/</sup>	
	<u>Present</u>	<u>With Project</u>	<u>Present</u>	<u>With Project</u>
Net Income from Crop Production <sup>b/</sup>				
Paddy	2,880 <sup>c/</sup>	10,507 <sup>d/</sup>	6,730 <sup>c/</sup>	27,360 <sup>d/</sup>
Other Crops	<u>2,504</u>	<u>4,410</u>	<u>3,048</u>	<u>4,902</u>
Sub-Total	5,384	14,917	9,778	32,262
Net Income from Livestock <sup>e/</sup>	1,200	1,400	1,200	1,400
Off-Farm Income <sup>f/</sup>	<u>1,400</u>	<u>700</u>	<u>1,400</u>	<u>350</u>
TOTAL FARM INCOME	<u>7,984</u>	<u>17,017</u>	<u>12,378</u>	<u>34,012</u>
(%Increase)		(113)		(175)

a/ Irrigable area per farm.

b/ Adjusted

c/ Based on present farm gate prices.

d/ Based on IBRD Price Forecasts with necessary adjustments.

e/ Income from backyard poultry, duck, pig-keeping, and income from the sale of cull and excess cattle.

f/ Mainly off farm income and some cottage industries like silk.

Table 5.3 Percentage Distribution of Cost & Benefit Streams:  
N.W.P. Agriculture Project  
(For Illustration)

<u>Year</u>	<u>Total Cost</u> (US\$ 000)	<u>%</u> <u>C</u>	<u>Benefits</u> (US\$ 000)	<u>%</u> <u>B</u>
0	74	0.46	-	
1	802	4.94	-	
2	4,423	27.23	9	.01
3	1,947	11.99	67	.06
4	2,036	12.54	239	.23
5	2,238	13.78	618	.58
6	1,663	10.24	1,254	1.19
7	1,417	8.72	2,108	2.00
8	68	.42	3,046	2.88
9	68	.42	3,777	3.57
10	68	.42	4,242	4.02
11	68	.42	4,475	4.24
12	48	.42	4,475	
13	277	1.71	4,475	
14	48	.30	4,475	
15	48	.30	4,475	
16	48	.30	4,475	
17	48	.30	4,475	
18	48	.30	4,475	
19	48	.30	4,475	
20	48	.30	4,475	
21	48	.30	4,475	
22	48	.30	4,475	
23	277	1.71	4,475	
24	48	.30	4,475	
25	48	.30	4,475	
26	48	.30	4,475	
27	48	.30	4,475	
28	48	.30	4,475	
29	48	.30	4,475	4.24
30	48	.30	5,270	4.99
	<u>16,242</u>	<u>100.00</u>	<u>105,655</u>	<u>100.00</u>

Chart 1. N.W.P. AGRICULTURE PROJECT

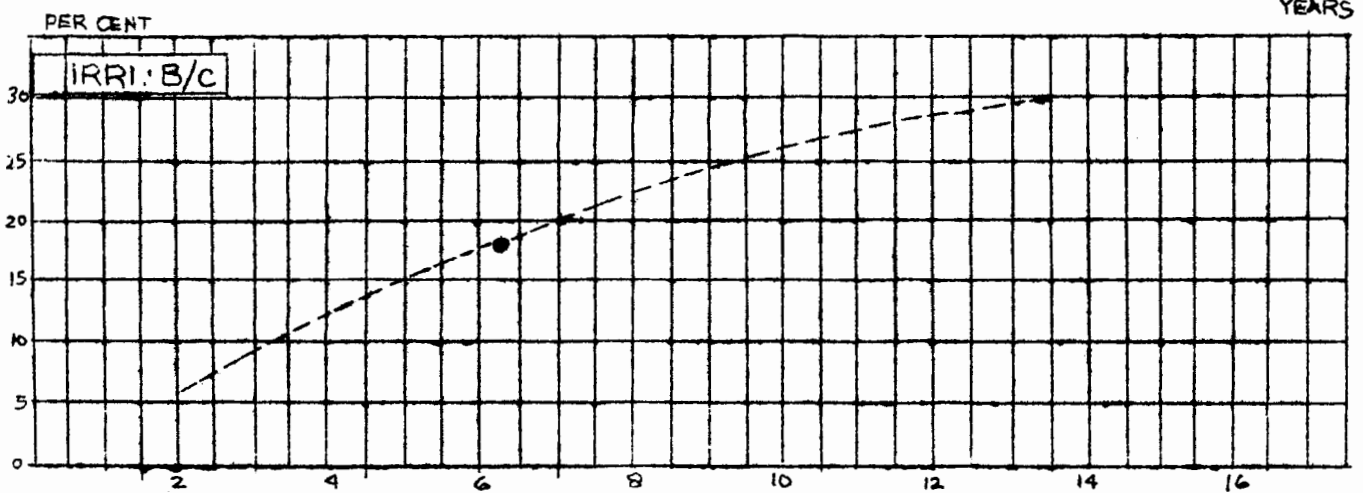
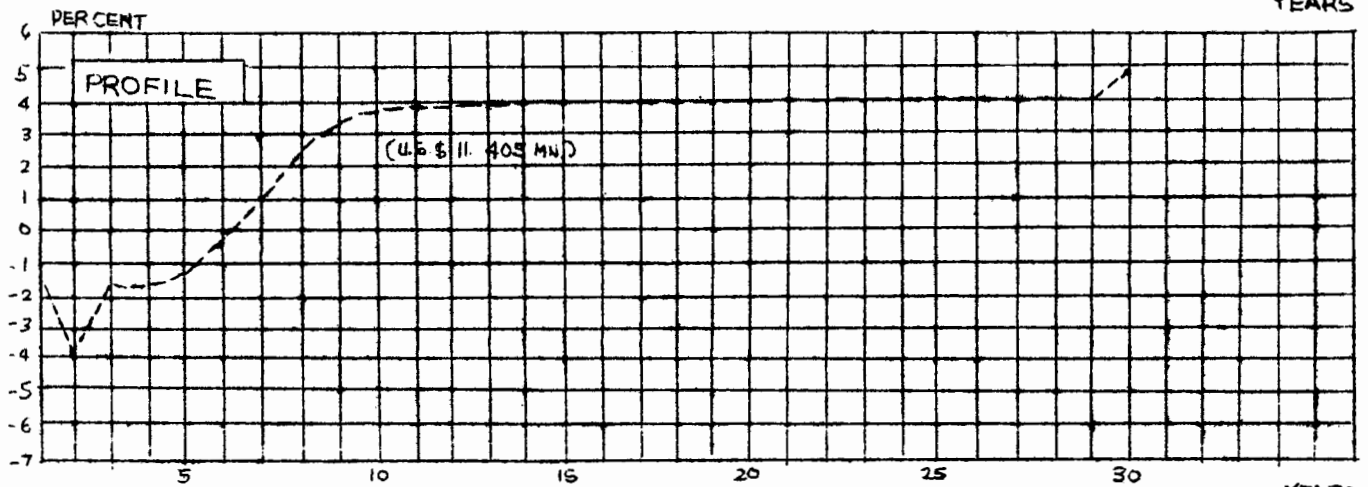
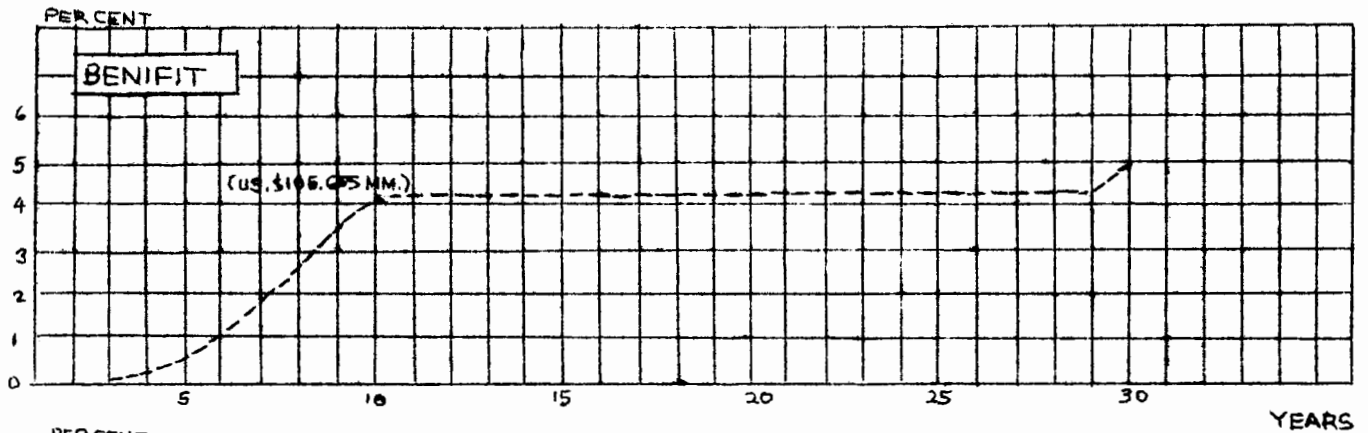
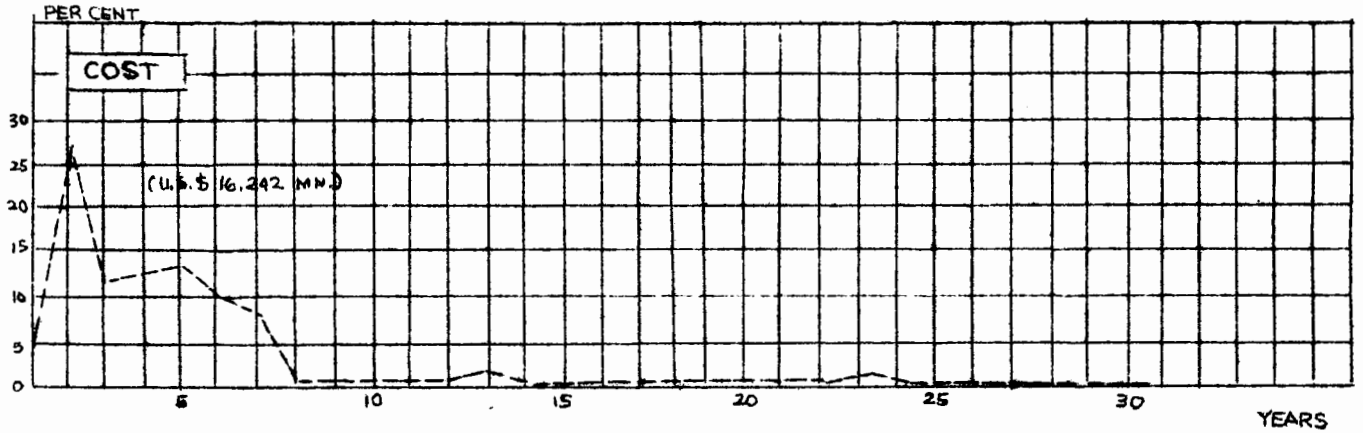
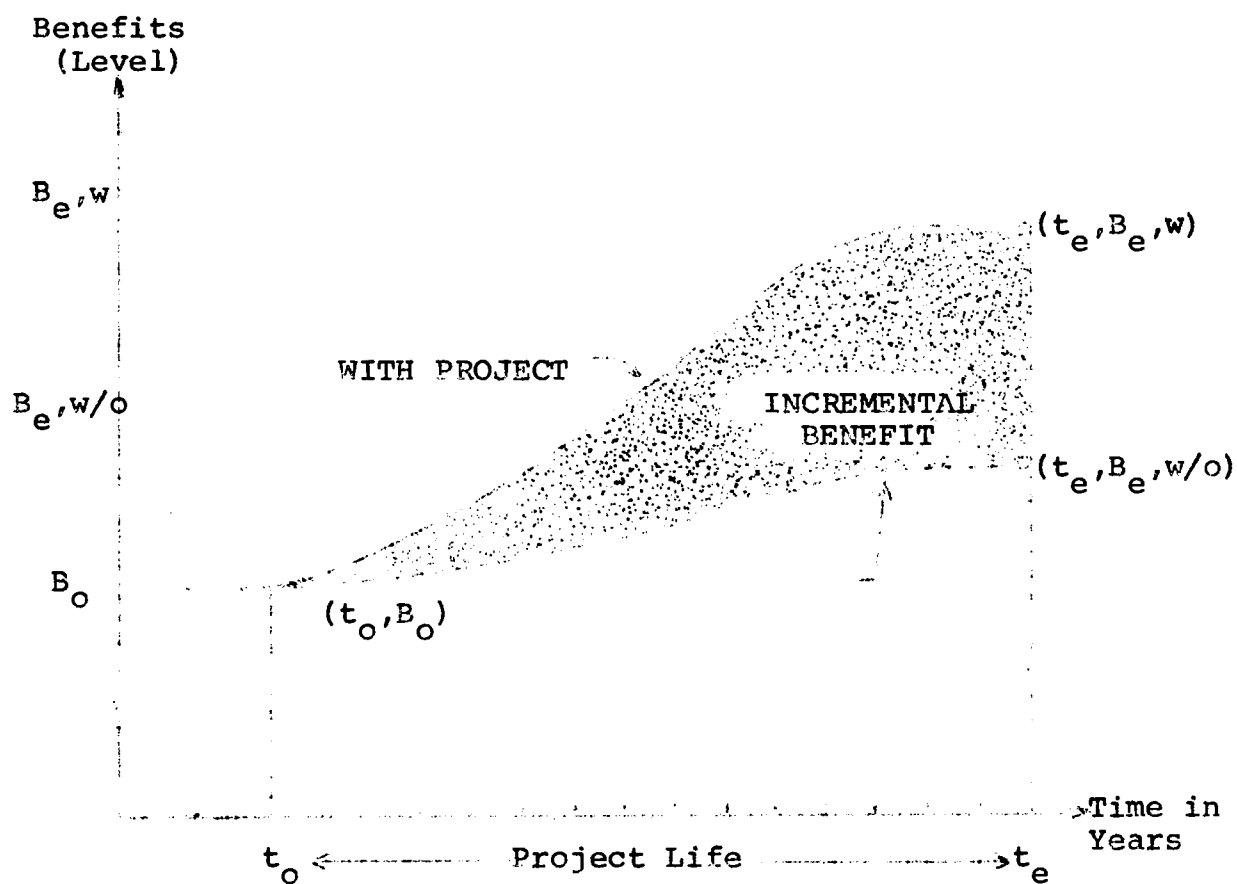




Chart 2

INCREMENTAL BENEFIT EQUALS WITH PROJECT MINUS WITHOUT PROJECT:  
AGRICULTURAL/RURAL AREA DEVELOPMENT PROJECTS



### Distribution of Land: Area of Farms

If the farm size is relatively small, then the income of the farm household derived from Agriculture would generally be low. The distribution of the number of farm households with the area of farms as influenced by farm size would indicate the extent of inequality in the distribution of farm area. Data from the 1960 World Census of Agriculture were obtained from FAO Report for Bangladesh, India, Indonesia, Malaysia (West), Pakistan, Philippines, Sri Lanka, Thailand and Viet-Nam (South) and after consolidation, the relationships between farm size, per cent distribution of the number of farms and per cent distribution of areas of farms are shown in Table 6. The unequal distribution of land approximates the results if the distribution of income is used. Table 6 shows that about 44 per cent of the number of farms (households) have one hectare or less and this large proportion of total farm households operates only 3 per cent of total area of farms. On the other end of the spectrum, one could see that farms with 5 hectares and over, comprised only about 10 per cent of total farms but operate 47 per cent of total area of farms. These data imply general inequality in the distribution of area of farm holdings in the South and Southeast Asian countries. Chart 3.1. shows the relationship between percentage of farms and percentage of area. The departure from the line of equal distribution of land ( $45^\circ$  line) of the actual curve is so marked that this aspect of inequality in the distribution of farm area is considered one of the most important impediments or constraints to effective agricultural development in the Asian region. In fact, the results in Table 6 and Chart 3.1 could be used as one of the possible statistical frameworks for monitoring any progress which could be made in terms of

a more equitable distribution of land area to the farm households in rural Asia. The assumed curve for 1970 in Chart 3.1. will show improvement in this inequality.<sup>27/</sup>

### Impacts on Development

One may identify six processes in the social system, namely: (1) Production, (2) Consumption, (3) Protection, (4) Learning, (5) Interaction, and (6) Decision. Singly or jointly these processes will generate certain impacts on development which in turn will determine the state or quality of life in the project area. These impacts may be termed as follows: (1) direct, (2) income, (3) industrial, (4) migration, (5) public service, (6) negative, and (7) indirect or multiplier effects. While production or the direct impact can effectively be evaluated by economic efficiency through the use of the IRR, the other impacts mentioned in Nos. 2 to 7 above could not be handled adequately by the IRR. One has to develop an empirical relation between inputs (or facilities or use of facilities) and outputs through causal flow diagrams to explain the processes in the social system.<sup>28/</sup>

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<sup>27/</sup>The author applied the concept of Gini Coefficient to the distribution of land. Op. cit. p. 78.

<sup>28/</sup>Asian Development Bank. Feasibility Report for the Namgang Area Development Project (Phase I), Vol. I, Chapter X. Social Indicators. December 1974. This chapter of the Report was developed with the assistance of the Department of Social Engineering, Tokyo Institute of Technology in consultation with the ADB Social Indicators Committee which was chaired by the author in 1974.

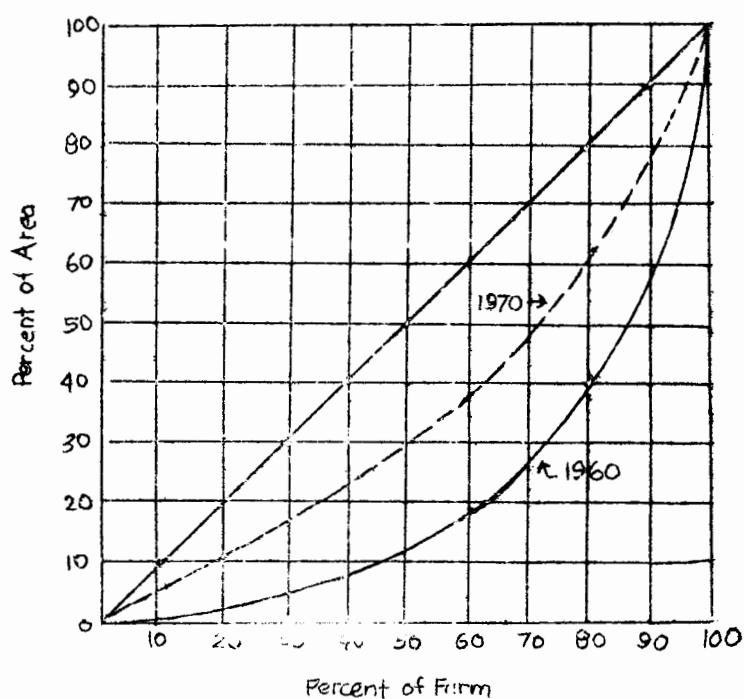
Table 6. Distribution of Farm Holdings by Number and by Area for Nine South and Southeast Asian Countries, 1960.<sup>a/</sup>

Farm Size (ha)	Number of Farms		Area of Farms	
	%	Cumulative	%	Cumulative
less .5	21.8	21.8	1.9	1.9
.5-1.0	22.2	44.0	6.1	8.0
1.1-2.0	22.1	66.1	13.1	21.1
2.1-3.0	11.0	77.1	10.9	32.0
3.1-5.0	12.8	89.9	21.1	53.1
5.1-10.0	6.3	96.2	18.5	71.6
10.1-20.0	3.1	99.3	18.8	90.4
over 20.0	0.7	<u>100.0</u>	9.6	<u>100.0</u>
Total	<u>100</u>		<u>100</u>	

Basic source: FAO Report on 1960 World Census of Agriculture

<sup>a/</sup> Countries included are Bangladesh, India, Indonesia, Malaysia (West), Pakistan, Philippines, Sri Lanka, Thailand, Vietnam (South).

Chart 3.1. Relationship between Percent of Farm and Percent of Area

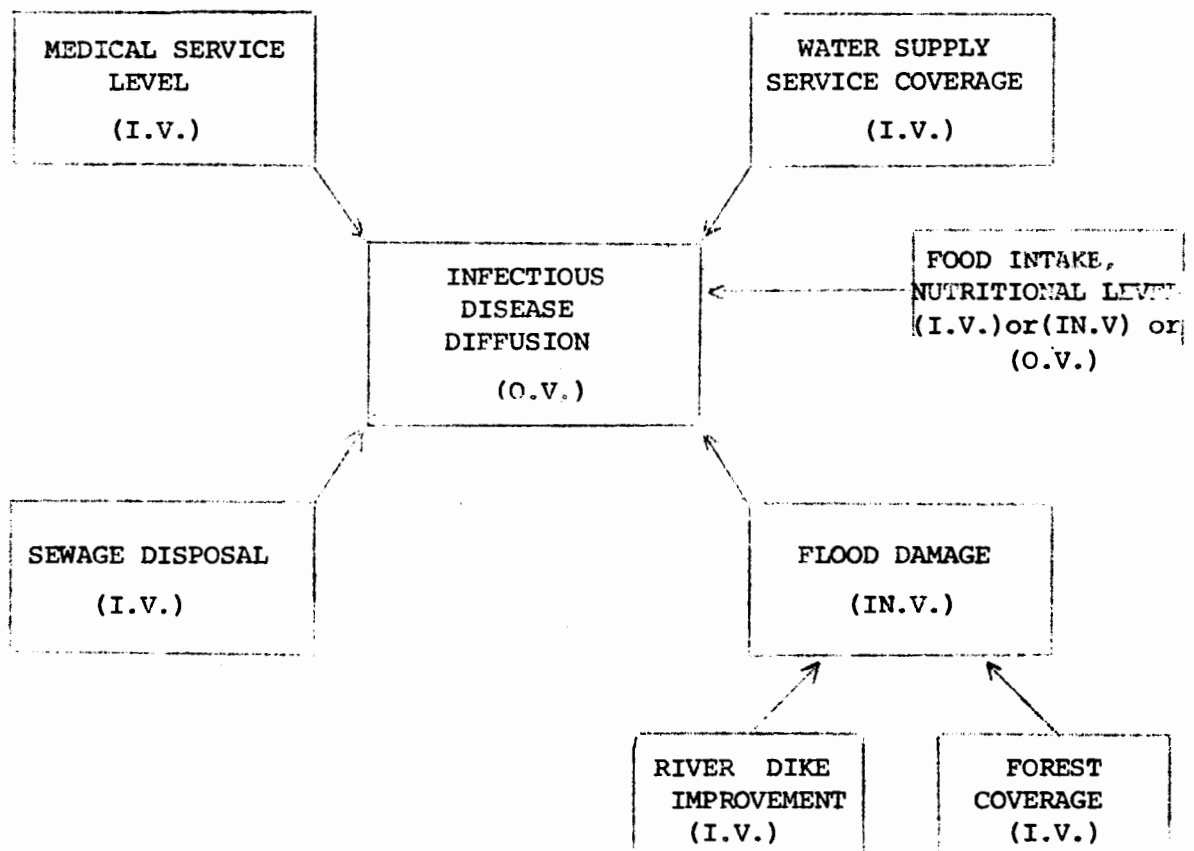


Since this is extremely difficult at the present stage of knowledge and too variable for evaluation purposes, the other alternative is to institute a statistical monitoring system with special emphasis on measuring the income, industrial, migration, public service, negative and indirect or multiplier impacts. The results of this monitoring system on a time series could be used as inputs or intermediate variables or outputs to derive the empirical bridge for evaluation of similar area development schemes.

The results of studies on household economies with special reference to specific rural areas could serve as model for flow diagrams and as source of empirical relationships between input, intermediate and output variables which could be used to project trends in the impacts of agricultural and rural area development projects (See Chart 3.2. as illustration).

Different paths associated with different empirical relations and different initial values ( $t_0$ ) of the input and intermediate measurements and output variables will generate different output social indicator at target year ( $t_N$ ). The empirical relations will depend not only on the flow diagrams but also on the set of data used to derive the relations. Equally important would be the precision and accuracy of the variables used to derive the coefficients in the empirical models. For illustration, the derived data in Table 7 utilized empirical models to project the output variables at  $t_N$  which were used in turn to evaluate the impacts in a given rural area development project with various alternatives or paths for development.

Chart 3.2. EXAMPLE OF FLOW DIAGRAM TO INDICATE RELATIONSHIP OF INPUT VARIABLE (I.V.), INTERMEDIATE VARIABLE (IN.V.) AND OUTPUT VARIABLE (O.V.) : RURAL AREA DEVELOPMENT PROJECTS.



I.D.D.= FUNCTION (I.V., IN.V., O.V., INTERACTIONS)

Table 7. Examples of Output Indicators as Indices at  $t_N$   
(Case II = 100)

Selected Items	Unit	Initial state (at $t_0$ )	Control	Case I	Case II (= 100)	Case III
1. Agricultural Labor Productivity	N.C./person	71	79	98	100	106
2. Agricultural Income per household	N.C.	73	80	98	100	105
3. Value added Manufacturing	N.C.Million	55	57	95	100	163
4. Unemployment	Person	90	80	94	100	98
5. Food expenditure	N.C.	85	90	99	100	109
6. Infectious Disease Diffusion	Cases 1000 person	176	166	160	100	97
7. Life Expectancy	Year	99	99	100	100	100
8. Enrollment Ratio High School	%	95	95	98	100	148
9. Working Period per farmer	Hours	117	109	101	100	98
10. Association Participation Ratio	%	84	85	93	100	104

Source: Derived Table for illustrative purposes only. Op cit para.26, p. 32.

N.C. = National Currency

### CONCLUSIONS

The status of Project Monitoring of rural area development projects financed through resources from national, bilateral, regional or international financial development institutions is less than satisfactory. Unbiased and objective data from these project areas are not adequately available for monitoring the progress or development on a continuing basis. These rural areas are pockets of poverty, inequality and unemployment and national governments have designated these development schemes as priority projects. National efforts and considerable amount of funds, both local and borrowed have been concentrated into these depressed areas to improve the quality of life (Pagpapaunlad Ng Uri Ng Buhay) which in turn should improve the quality of the rural man (Pagpapaunlad Ng Uri Ng Taga Bukid).

Statistical monitoring systems based on sound and scientific sampling procedures could provide the necessary management tools for generating indicators for monitoring progress or development attained in these areas. The cost of the statistical device is extremely minimal as compared to the overall cost of the project, at times reaching more than 100 millions USdollars. This cost could be included as a very small component of the cost streams (C). The indicators generated by the statistical system will indicate the constraints to progress. Prompt policy-decision and effective follow-ups to remedy the defects could bring the project immediately under control or along the desired path as envisioned in the plan or appraisal report. The Statistical Monitoring System (SMS) could easily have a pay-off in terms of the capital, employment and benefits (B) foregone, if the project was not brought



under control. Thus, the SMS should be an important component of the Project Design.

If each agricultural and rural area development project has a built-in statistical monitoring system, then a good picture of the progress attained could emerge for the province, the region and finally at the national level. At this stage, statistical monitoring of rural area development projects becomes an important part of the Statistical System in Food and Agriculture.<sup>29/</sup>

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<sup>29/</sup> Oñate, Op cit, see p.76.

## CHAPTER 5

## MASAGANA 99

Virgilio R. Carangal\*

INTRODUCTION

Rice is the most important staple crop in the Philippines. Approximately 3.6 million hectares were planted to this crop in 1976-77. One of the major agricultural production programs of the government is rice production. All presidents of the Philippines have stressed the importance of and vigorously supported the drive to increase rice production with the main objective of attaining self sufficiency in this staple crop.

In 1966, with the spread of the high yielding varieties of rice developed by the International Rice Research Institute (IRRI), the University of the Philippines College of Agriculture (UPCA) and the Bureau of Plant Industry (BPI) and a well coordinated rice production program with good leadership, the Philippines finally progressed towards the attainment of self sufficiency. In 1966-70, the Philippine government produced more than its requirements although as early 1968, the country was already considered self sufficient. This was true because of the heavy importations earlier which were carried over the following years. However, in 1970-71, there were 28

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\* Formerly Chairman, Masagana 99 National Management Committee (1973-74) and now Cropping Systems Network Coordinator, IRRI.

typhoons that hit the Philippines within a four-month period and rice production decreased to only 3.2 million metric tons. Although this was still the biggest harvest ever, the increase in production was very little over that of the previous year while our population growth was 3.2%. This was far below the consumers' need. The following year, another deadly calamity hit the country. This time it was tungro disease transmitted by the green plant hoppers. Unfortunately, the widespread high yielding varieties were susceptible to tungro. Production went down to only 3.1 million metric tons. The following crop year, 1972-73, a killer flood destroyed the newly transplanted rice crop in the biggest rice producing areas in Central Luzon and Southern Tagalog. The Philippines experienced the worst flood in its history. The floods had barely receded when severe drought hit the major rice producing areas in the Visayas and Mindanao. The flood and the drought drastically reduced the rice production in the Philippines to only 2.7 million metric tons. As a result, the government had to resort to heavy importation. Unfortunately, the bad weather that affected the Philippines affected also the rice producing countries in Asia. The price of rice in the world market went up to as high as \$500/metric ton and supply was very limited. The price of rice went up during the ean months of June, July, August, and September. Fortunately, the corn harvest was very good in Mindanao and more people for the first time, ate corn or rice-corn instead of rice.

With this major crisis in rice production, the government mobilized again all agencies to produce enough rice. Thus, the Masagana 99 production program was launched on May 21, 1973 by the President to return

to self sufficiency. The President gave the program top priority status and called it a program of national survival. Masagana means bountiful and 99 was the yield per hectare established as the goal- 99 sacks (cavans) of palay or rough rice per hectare or about 4.35 tons per hectare.

### OBJECTIVES AND TARGETS

The main objectives of the program are to recover from losses in previous years, to reduce importation of rice, and to achieve self sufficiency in rice in the shortest possible time.

The target of the program was 950,000 hectares in 1973-74; 1,489,000 hectares in 1974-75; 1,786,000 hectares in 1975-76. These targets were broken down as follows:

Phase	Date	Target area in hectares (x000)		
		Irrigated	Rainfed	Total
I	May-Oct. 1973	500	100	600
II	Nov. 1973-April 1974	300	50	350
III	May-Oct. 1974	672	237	909
IV	Nov. 1974-April 1975	500	80	580
V	May-Oct. 1975	840	300	1,140
VI	Nov. 1975-April 1976	529	117	646

Although the target yield was 99 cavans per ha, the projected over-all average throughout the country was only 80 cavans/ha in irrigated areas and 70 cavans/ha in rainfed rice areas during the first year. However, the projected average yields increased in the following years.

## STRATEGIES AND APPROACHES

### Selection of priority rice areas

Although rice is produced in almost all provinces in the Philippines, the first year program was implemented in only 42 priority provinces. This allowed the concentration of resources on major rice growing provinces and areas with very high potential of increasing production. With the successful implementation of the program in 42 provinces, the other provinces were included to further spread the technology to other farmers, use the bank and the production technicians available in these provinces, and give them the opportunity to join the President Program of national survival. The number of priority provinces increased and those provinces with limited rice areas were also included in the program as associate provinces. In Phase VI, the program covered 57 priority provinces and 9 associate provinces.

### Use of package of technology

Research results generated in experiment stations and applied research in farmers' fields were put together in a 16-simple-step package of production technology and disseminated to farmers, through the production technicians and the mass media, especially the radio. The package was developed by various technical committees of Masagana 99 whose members came from the three major research institutions in the Philippines, UPLB, IRRI, and RPI. The package included instructions on the planting of high yielding varieties resistant to major pest and diseases; timely and correct application of fertilizers, insecticides, herbicides and rodenticides; proper water management

practices; timely harvesting and good post harvest practices. Any changes in the recommendations were disseminated immediately through the different management committees and action teams.

### Supervised credit

In order to adopt the package of technology, the small rice farmers need capital. Non-collateral production loans under the supervision of the production technicians were extended to farmers provided they organized themselves into a "selda". The "selda" is a loose organization consisting of 5-15 rice farmers with contiguous rice areas, as much as possible closely related to one another and jointly liable in paying their loans. If a member of the selda fails to pay his loan, all the other members should pay.

The loan per hectare was started with ₱700 in Phase I and was increased to ₱1,200 in Phase VI. The production technician supervising the farmers determined the amount of the loan. The loan consisted of a cash portion amounting to ₱446 and an input portion (seeds, fertilizers, pesticides, and rodenticides), of ₱628. Members of Samahang Nayan had a contribution of ₱36.00 each to the barrio savings bond (Table 1).

Farmers got their production loans with the assistance of the production technicians who helped them prepare the in farm plans and budgets in order to determine the amount of credit needed. However, the guideline was that the amount was not to exceed ₱1,200/ha. The farmer then applied for the loan attaching the duly prepared farm plan and budget, and an ID or certification of his identity as a farmer, from the barangay leader. Farmer borrowers, as well

Table 1. Distribution of loans into cash, seeds, input and contribution to Barrio Savings Funds.

	<u>Regular M-99</u>
<b>A. Cash Portion</b>	
Land preparation	₱ 290
Pulling of seedlings	26
Transplanting	100
Harrowing	
Baits & baiting station materials	30 <sup>*</sup>
Sub-total	₱ 446
<b>B. Seeds</b>	₱ 90
<b>C. Input Portion</b>	
Fertilizer	₱ 425
Chemicals	183
Pesticides	
Herbicides	
Rodenticides	20 <sup>*</sup>
Sub-total	₱ 628
Grand Total	₱ 1,164
<b>D. Barrio Savings Fund for Samahang Nayon Members</b>	36 <sup>**</sup>
Guidelines loaning Rate	₱ 1,200

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\* In cases where the management type of rat control is adopted, the ₱50 for baits and rodenticides should be given in cash but not to exceed ₱50.

\*\* This amount is equivalent to 30 of the total loans of the ₱1,143. The 3% shall always be based on the total loan release, but in no case will the total loan exceed, ₱1,200 per hectare.

as other members of the selda, have to sign the promissory note to pay the loan.

Once the loan is approved, it is released in one lumpsum and is automatically credited to a Special Savings Deposit Account (SSD) in the name of the farmer borrower. The deposit earns an annual interest of 12%, while the farmer borrower is charged a monthly 1% rate of interest. The cash portion is given to the farmer as soon as possible. The farmer can avail of the input portion through the chit system. The technician issues to the farmer borrower chits corresponding to the input requirements before he submits his application for the loan. When the loan is approved, the bank stamps its seal on the signed chit and gives the bank's and dealers' portion to the farmers.

When the farmer-borrower is ready to use the input, he goes back to the bank to validate the chit. A validated chit is good for only 15 days so he must withdraw his inputs from the chosen dealer within that time. However, if he fails to use the chit within the specified time, he can revalidate this, subject to the approval of the production technician and the bank. The farmer-borrower presents the validated chit to the accredited dealer of his choice in the locality. The dealer issues the input with an invoice receipt indicating clearly the code number and the exact number, quality, and price of the withdrawn inputs. Weekly, the dealer summarizes the chits served during the week and the summary, together with the banks' portion of chits, invoices, and/or delivery receipts are submitted to the bank for payment. The amount then is deducted by the bank from the SSD of the farmer borrower concerned.



The banks are protected in extending loans on a non-collateral basis. The Land Bank guarantees any loss incurred by the banking institutions involved in the program as a result of non-payment due to force majeure. The guarantee rate is 85%.

### Price Support

Increased production in rural areas is generally associated with low prices at harvest season. To encourage the farmer to adopt the new technology, he must be assured of fair prices. One of the major strategies used in Masagana 99 was to provide price support to rice farmers. The National Grains Authority (NGA) implemented this aspect of the program. The price support at the beginning of the program was ₱1.00 per kilo of palay at 14% moisture content. This was increased to ₱1.10 per kilo later because of the increase in price of inputs. NGA procured the palay when the price was lower than the price support. This was done in coordination with the Provincial Program Officers and production technicians involved in the program. In some cases, the production technicians assisted NGA in the procurement, either directly or through link-up with NGA authorized traders/millers.

### Massive information campaign

An information Committee was established to coordinate the different agencies involved in the dissemination of information and to develop guidelines and policies. This was designed principally to facilitate the transfer of technology to the farmers. Pocket size brochures explaining the Masagana 99 program and how farmers could join the program, plus the 16 steps to increase production were printed in

different dialects. Leaflets describing new technology such as chemical control, new resistant varieties, fertilizer rates, etc. were published regularly. The most important media was, of course, the radio since 3 out of 4 farmers owned radio sets. National radio and local radio programs were established. Position for farm radio broadcasters were created and these were all trained on information dissemination. The production technicians and PPO's coordinated closely with radio farm broadcasters in designing radio programs to dramatize actual field conditions and operations. All recommended practices were announced over the radio at the time of operations. A theme song of Masagana 99 was commonly heard throughout the land.

At the beginning of the program, the government got the help of J. Walter Thompson Company, a private advertising agency to help the Information Committee. JWT designed the campaign materials including the theme song of Masagana 99. During the first phase, their services were free of charge but later on they charged the government a minimal amount.

#### Training of production technicians

Production technicians from the Bureau of Agricultural Extension, the Bureau of Plant Industry and the Department of Agrarian Reform were trained before the implementation of Phase I, at IRRI, UPLB and various regional and provincial offices to update them on the packages of technology, train them on the procedures in implementing the new credit schemes, and acquaint them with their duties and responsibilities and the different aspects of the programs. Training was concentrated on the new technology to increase the

yield and attain the goal of 99 cavans per hectare and was conducted from December 1972 to May 1973. About 900 technicians attended the training at IRRI and UPLB for 2-weeks. In order to train all 3102 technicians, mobile training teams were created and sent to the 42 provinces to conduct a 3-4 day training session. The training team consisted of 2-3 specialists involved in Pilot Masagana 99 program in Bulacan under the IRRI-BAF applied research project. Almost all the technicians were trained before the start of the nation wide Masagana 99. In the following years, training of production technicians was continued at UPLB and in the provinces for two weeks, to upgrade further the production technicians implementing Masagana 99. Six-month training programs for rice specialists and district supervisors were also conducted at UPLB and, for a limited number at IRRI.

#### Mobility of production technicians

A major drawback of previous programs was the immobility of the production technicians assigned to cover several barrios or the entire municipality or several municipalities. The government did not have enough funds to provide each technician with means of transportation. The agencies gave their technicians transportation expenses of ₱20-₱80/month. However, majority did not receive any. After two years of negotiations, NFAC implemented the Special Vehicle Loan Fund whereby the Philippine National Bank provided the loan to the production technicians involved in the program, to acquire motor cycles from accredited dealers. The technicians had to raise money for down payments. The monthly amortizations were deducted by the mother agency from their salaries and forwarded to the bank.

To encourage the production technicians to avail of this privilege, they were given an additional incentive of ₱25.00/month for gasoline. During the first year of the program, more than one third of the production technicians involved in Masagana 99 were able to own motorcycles.

#### Incentives to production technicians

The production technicians generally received very low salaries. In order to encourage them to work harder and really contact the farmers, incentives in the form of money were given. NFAC provided incentive allowances which started from ₱50 per month during the first year and were increased to ₱100 per month in the third year. In addition, under the supervised credit scheme production technicians were given ₱1.00/month/farmer supervised and, if the farmer paid his loan on time, the production technician got an additional ₱3.00 bonus. With this incentive scheme, a production technician with about 150 farmer borrowers under his supervision could easily double his monthly salary.

#### ORGANIZATIONAL ARRANGEMENTS

The National Food and Agriculture Council (NFAC) is the overall coordinator of the program. (Figure 1) The Council is headed by the Chairman, who is the Secretary of Agriculture, and is composed of 31 government and private agencies directly or indirectly involved in food production and nutrition programs. The council members are all heads of cooperating agencies both private or public. The Council has a Secretariat and technical units that coordinate the various agricultural programs such as corn and feed-

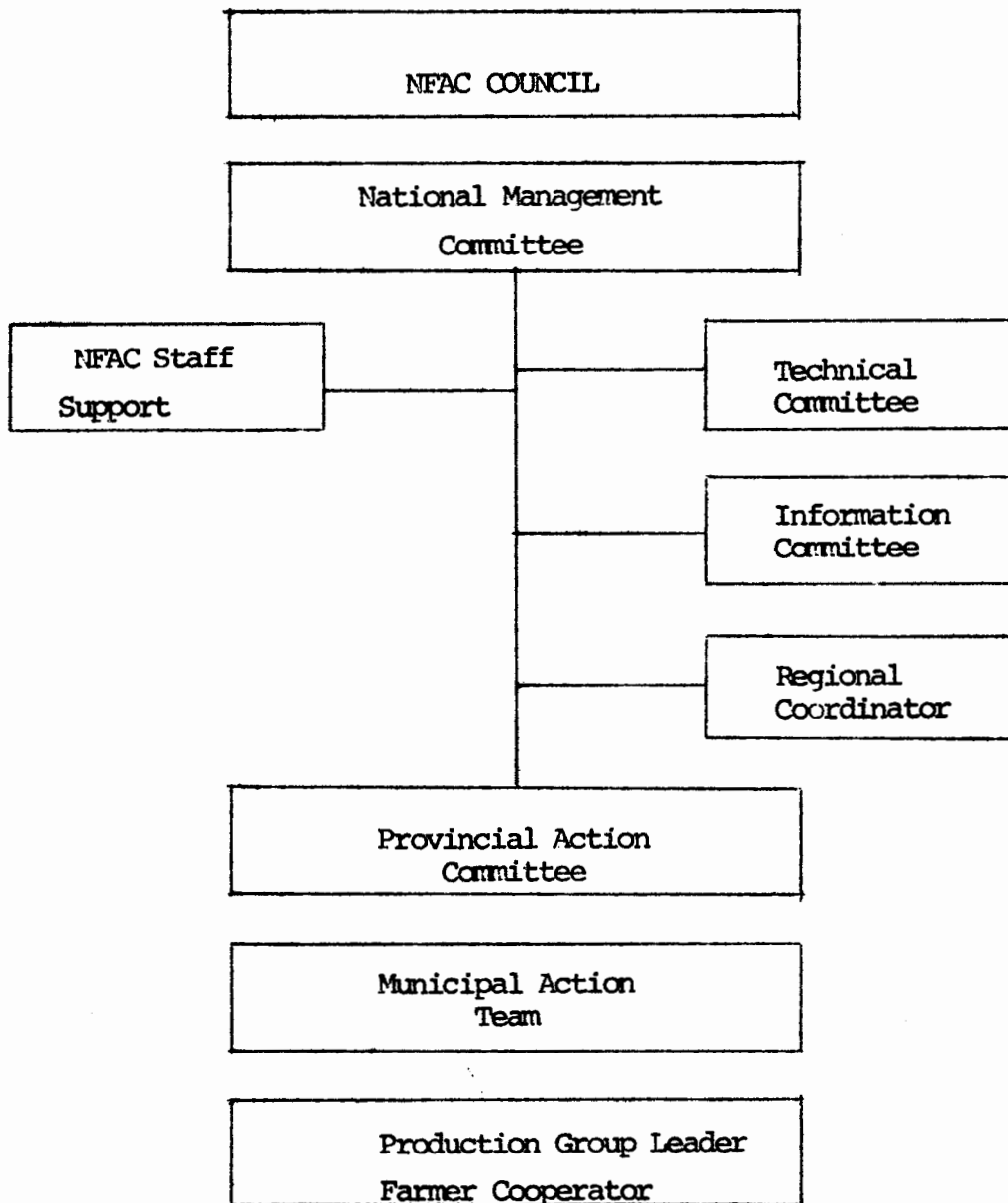
grains, meat, fish, vegetable nutrition and Masagana 99. Around 70% of the technical staff's time is devoted to Masagana 99.

Since the heads of various agencies would not attend the meetings regularly to solve problems during the implementation of the program, a committee called the National Management Committee (NMC) was created by NFAC with the NFAC Deputy Executive Director as chairman (in 1973-74 only) and later, the Executive Director. The committee is composed of 18 government and private agencies. Each member agency sends a representative from a Bureau Head to a chief of the Division. The task of actually coordinating the the planning and implementing of the program is the responsibility of the NMC. The committee utilizes the various units of NFAC in the preparations of the plans, guidelines and implementing strategies.

To help the National Management Committee on the recommended technology, a Technical Committee was created. The Committee recommends what goes into the package of technology. The chairman is from the BPI, the research arm of the Department of Agriculture, and the members, from UPLB and IRRI. During the fertilizer crisis, a Fertilizer Technical Committee was also created to recommend fertilizers for different parts of the country. The Chairman was from the Bureau of Soils, with the members from UPLB, BPI and IRRI.

An Information Committee was created to take charge of the massive informational campaign. The Chairman was from the Department of Agriculture with members coming from BAE, BPI, UPLB, Unified Rice Applied Research and Training Program, National Media Production Council, and Agricultural Pesticide Institute of the Philippines.

Figure 1. Masagana 99 organization chart



At the start of the program, the Regional Director of member agencies were not very much involved. However, with the decentralization plan of the government, a Regional Coordinator from either the BPI or BAE was designated in each region. A Regional Management Committee was created with the Regional Coordinator as Chairman.

At the provincial level, there is a Provincial Action Committee (PAC) with the Provincial Governor as Chairman, although the responsibility of implementing the program lies in the Provincial Program Officer (PPO) who is either the provincial head of BPI or BAE. The PPO is designated Vice Chairman of the PAC. The member agencies are the same at the national level but this time the representative comes from the provincial heads (Appendix A).

A Municipal Action Team was created at the municipal level with the Mayor as the Chairman and a production technician as Co-Chairman. The team implements the program in different barrios. The members are available representatives of government agencies involved in the food programs, the barrio captains and selected "selda" leaders.

Since there are several agencies involved in Masagana 99, the duties and responsibilities of each agency are spelled out in the program. This was done to ensure that everybody was aware of his responsibilities in implementing the different strategies.

The different committees, from the national to the municipal, meet about once a month or as often as necessary to discuss the plans, progress and problems in the implementation.

## PROGRAM EXPERIENCES

### Planning

In 1972, after a series of rice production drawbacks, particularly due to floods and drought, the Secretary of Agriculture assigned the Deputy Director of NFAC to develop a rice production program to increase rice production again and put the government on the road to self sufficiency. In that year, IRRI and BAE had a successful pilot production program called Masagana 99 in Bulacan Province. They brought to the attention of the government planners the organizational set up and implementation of their provincial program. The government decided to adopt the name Masagana 99 and involve 42 priority provinces during the first year. Modifications were made in the strategies to make the program nation wide. The package of technology consisting of 16 steps developed in Bulacan, was also modified to include results from BPI, UPLB, and IRRI experiments for national recommendations.

A national target was set up by NFAC to cover 650,000 hectares irrigated and 100,000 hectares rainfed lowland rice in the first wet season crop. A new approach to planning was introduced. This time the provinces were asked to develop their own plans instead of the main office setting up goals for them. A program format was sent to them and from this, they developed their own, starting from the production technicians to the PPO's. The provincial plans were put together and during Phase I the total target areas submitted by the PPO's coincided with the national targets. In Phases II and III, the provincial targets, when put together, exceeded the national targets. Upon consultation with the PPO's concerned, modifications



were made on their targets because support facilities were not available and the number of production technicians was limited. This procedure gave a more realistic plan and the PPO's and the production technicians became committed since the goals were set up by them. The implementation was also better because the Governors, the PPO's and the production technicians were all involved in planning.

#### Management and coordination

The management committees set up at different levels were very effective in the management and coordination of the program. The general plans and guidelines in implementation were prepared and approved by the different member agencies with the NFAC as coordinator. Most governors were very active in implementing the program since this was a priority program of the President.

The day to day coordination at the national level lay directly with the Chairman of the NMC who was younger in years and in service than the agency Heads. However, the full backing of the Secretary of Agriculture made his job easier. Sometimes, decision-making was delayed by other members who had to check with their mother agencies.

The Secretary of Agriculture visited the provinces and met with PAC to discuss the bottlenecks and solved most of the problems on the spot. The visitations boosted the morale of the people in the field. Likewise, the NFAC Executive Director and NMC Chairman regularly visited the different provinces, particularly those with problems. The other members of the NMC were also sent to the provinces with problems in which their

agencies were directly involved.

NFAC and its member agencies have a radio network covering the priority provinces involved in the program, to facilitate communication between NFAC and the PPO's. During the first phase of the program, NFAC received an average of 50 telegrams or messages per day regarding problems in implementing Masagana 99. The Chairman of NMC coordinated with other agencies in solving these problems within a few hours or a few days. In later phases, as people became experienced, minor problems were solved at the provincial and even at the municipal level.

#### Achieving objectives and targets

The strategies in achieving increased rice production were very effective particularly in four very important innovations: non-collateral credit, transfer of technology, price support and political will.

The main bottleneck in our rice program has always been credit. Small rice farmers without collateral cannot get credit from the banks. However, under the program, the Philippine National Bank (PNB), for the first time, provided credit to small farmers. The Central Bank gave the Rural Banks and PNB funds in addition to their own capital. The CB streamlined and regionalized its rediscounting. Technicians were detailed on full time with the banks and were given incentives in the supervised credit scheme. During the first year of operation, there were 420 local rural banks, 102 branches of the PNB, and 25 offices of the government's Agricultural Credit Administration that participated in the program. The PNB banks were generally located in big cities. In order to reach

more farmers, the bank-on-wheels was introduced. PNB bought one hundred jeeps, trained bank personnel, and brought the bank to barrios. Loan applications were processed on the spot. The mobile banks covered more farmers than stationary banks did.

The transfer of technology involved many factors. Production technicians were trained, given salary incentives, provided with motorcycles through the Special Vehicle Loan Fund, and assigned throughout the program areas to teach the farmers the cultural steps of new technology, help informing seldas, securing bank loans and getting the inputs. Further, the technicians made sure that the farmers followed the 16 steps prescribed by the program, and reminded them to repay their loans. In order to reach more farmers, media were used to sell products. For the first time the program turned to the private sector and consulted J. Walter Thompson Company (JWT), a private advertising agent which donated its services and mounted the bigger broadcasting campaigns for the program in the country. The campaign was done through the radio since 3 out of 4 farmers owns transistor radios. JWT took the new technology and translated it into a series of announcements, radio skits, and musical jingles in seven different languages. The program even had a theme song. In addition to the national radio program, there were 58 local half hour radio programs before dawn everyday for farmers. To supplement the radio campaign, thousands of simple pocket size brochures and magazine articles were printed, containing illustrations and instructions on the new technology. Sign boards were put outside the bank advertising loans without collateral. Membership flags were given to the farmer cooperators. Vehicle stickers and other information materials were

distributed. In addition, the production technicians were given bright colored uniforms advertising the program.

Another element that contributed to the success of Masagana 99 was price support. The program increased the price support of P1.00/kilo to P1.10/kilo in order to match the rising production costs. Although the farmers would have liked to get more, the government had to protect the consumers. The NGA was also able to procure palay in provinces where the price was lower than the price support, in coordination with the production technicians and PPO's. However, there were problems in procurement. The NGA did not have enough personnel in the field so the production technicians were sometimes used in the procurement.

The fourth element of success in the program is the strong political leadership of the President. When the President launched the program on May 1973, he set the pace in the following words. "If the national agencies, if those who participate in the private sector--the rural banks, the farmers--if you find anyone, whether in the public sector or the private sector, constituting an obstacle, an obstruction to the attainment of the objectives of Masagana 99, don't follow this ladder of leadership. If it is urgent, do something about it. If you cannot, and you think I must intervene, let me know, I will intervene immediately. As of today, let everybody be on notice Masagana 99 is a priority project". With these words of the President himself, the coordination of activities at different levels was made much easier.

Program personnel

The production technicians are the backbone of the program. During the first year there were 3104 technicians involved in the program. About 75% of the technicians belong to BAE, 17% to the BPI and the rest, to the Department of Agrarian Reform. The provincial heads of the BPI, and BAE were also involved as PPO's in charge of implementing the program at the provincial level.

Each production technician is supposed to supervise 150 farmers. However, each technician supervised an average of 184 farmers during Phase I and 212, during Phase III. Some technicians had more than enough farmers to supervise. (Table 2). However, in later phases, the number of technicians increased from 3,133 in Phase I, to 4,406 in Phase VI. The overload of technicians in Phases I and III affected the delivery and supervision of the technology package. In the early part of the program, the technicians had difficulties in servicing the farmers because of lack of transport. Only about 35% of the technical availed themselves of the motorcycle loan fund during the first year.

Table 2. Number of technicians and farmers supervised.

Phase	No. of Production technicians	No. of farmers supervised	No. of farmers per technician	
			Average	Range
I	3,133	576,639	184	46-619
II	3,095	374,909	121	10-320
III	3,480	738,176	212	38-434
IV	3,711	378,970	102	9-431
V	4,413	660,765	150	53-392
VI	4,406	492,038	112	27-575

Source: Quisimbing, 1976.

District supervisors/specialists trained in rice production were assigned to help the PPO's supervise the implementation of the program. The number of district supervisors/specialists varied from province to province depending on the target hectareage and the number of technicians involved. The supervisors/specialists also helped in solving technical problems encountered by the technicians in the field and in preparing the provincial programs. They served as the technical staff of the PPO.

### Funding

The National Food and Agriculture Council and its member agencies are supported by the government to implement the program. At the beginning of the program,

the technicians were on the daily wage basis but in later phases most of them had been transferred to monthly salary basis. Items for supervisors/specialists were created and funding provided in the second year of the program after the first successful year. Funds for credit were provided by the Central Bank. The PNB also utilized its own resources to extend credit to the farmers. The NGA was provided with adequate funds to procure palay when the price was lower than the price support. Funds were provided to NFAC by the national government for special research studies, training of technicians, PPO's and farmers; massive information drive; and incentive allowances for the technicians.

#### SIGNIFICANT ACCOMPLISHMENTS

##### Production

After only three years of the Masagana 99 program in the Philippines, we have become self sufficient in rice. The first crop year from July 1973 to June 1974 had a rice production of 3.4 million tons, an increase of 27% over the 2.7 million metric tons of the previous year, in spite of the serious damage by brown plant hoppers during the Phase II in 1973-74. In 1972, imported rice solved the shortage problems during the lean months. During the second Masagana 99 year, bad weather affected the production again. Twenty two typhoons hit the main crop during Phase III. Fertilizer prices went up, credit system proved faulty and production technicians were over-burdened. As a result, rice production was only 3.5 million metric tons, 1.2% higher than the first year's production. The Masagana year 1976 (Phase V and Phase VI) made us self sufficient

for the first time in many years. Production went up to 3.8 million tons, a 9% increase over the previous year. With the production, plus carry-over stock from previous years, the Philippines has enough stock for the lean months in July, August, and September when much less is usually harvested than consumed.

#### Farmer Participation

In the first year of the program, there were 900,000 farmers involved in Phases I and II. Production technicians supervised about 69% of the participants with credit, and 31% without credit. The total number of farmers actually involved in the program was about 700,000 out of about 1,700,000 rice farmers (Tanco, 1976), 1,117,146 farmers were involved in the program during the second year and about the same number of farmers during the third year.

#### Area planted

The rice areas, both irrigated and rainfed, covered by the program exceeded the targets of Phases I, II, and III (Table 3). Some provinces exceeded their targets and some provinces did not; therefore, provincial targets were adjusted accordingly based on the performance of the previous crop seasons.



Table 3. Target and harvested area in the thousand hectares and percent accomplishment of Masagana 99 Phases I-VI.

Phase	Targets			Planted			%Accomplishment	
	Irrigated	Rain-fed	Total	Irrigated	Rain-fed	Total	Irrigated	Rain-fed
I	500	100	600	550	200	750	110	200
II	300	50	350	-	-	542	-	-
III	672	237	909	794	366	1160	118	154
IV	560	20	580	531	88	619	95	440
V	840	300	1140	739	346	1085	88	115
VI	529	136	645	529	115	644	100	85

### Loans and repayments

The overall loans extended to Masagana 99 farmers from Phases I to IV ending September 30, 1976 amounted to ₱2 billion (Table 4). The Philippine National Bank extended 50% of the total loans credit given to small farmers without collateral; the Rural Banks extended 46 percent; and the Agricultural Credit Administration, 4%. The amount of loans increased up to Phase IV. In the third year, Phases V and VI, the number of farmer borrowers decreased due to poor repayment in the second year. Farmer borrowers who failed to pay their loans were not given new loans the following season. Likewise, if a member of the "selda" did not pay his loan, the other members could, likewise not get new loans the following crop season.

Table 4. Total loans granted by source and phase as of Sept. 30, 1976.

Source	P H A S E						Total
	I	II	III	IV	V	VI	
Rural Banks	152.9	117.2	303.5	333.3	235.4	102.5	1,244.8
Philippine National Bank*	194.4	101.9	382.0	225.3	317.5	109.7	1,331.8
Agricultural Credit Administration	21.2	11.6	30.7	13.6	18.4	6.0	101.4

\* As of October 31, 1976.

Source: Quisumbing, 1976

The overall repayment rate for the Masagana 99 loans as of September 30, 1976 was 78 percent (Table 5). The repayment during Phases I and II were 93% and 92% respectively. In the following phases, repayment rates decreased. However, a 78 percent overall repayment rate was not had considering the absence of collateral on the part of many small farmers with less than 2 hectares each; the bad weather; and the occurrence of pest and diseases, especially the brown plant hoppers. This repayment rate compared favorably to that of industrial collateralized loans.

Table 5. Repayment rate by source and phase as of September 30, 1976.

Source	P H A S E					
	I	II	III	IV	V	VI
	<u>Percent</u>					
Rural Banks	98	97	93	80	75	72
Philippine National Bank	90	90	72	69	56	62
Agricultural Credit Administration	87	66	62	60	69	53
Average	93	92	81	76	64	67

Source: Ouisumbing, 1976.

#### SIGNIFICANT PROBLEMS ENCOUNTERED AND SOLUTIONS

Some of the significant problems encountered in the implementation of the program were low repayment in later phases of the program, fertilizer shortage in the first year, fertilizer diversion, over-loaded production technicians, fertilizer chemical tie up and, pests, particularly the brown plant hoppers.

The repayments in Phases III, IV, V, and VII were only 81, 76, 64 and 67 respectively. Some farmers needed more time to learn the obligations involved in borrowing money without collateral. The loans of farmers affected by bad weather, pests and diseases were restructured accordingly within 2 or more cropping seasons. Some farmers did not pay simply because they were waiting for the other members of the Selda to pay. Some

**smart operators** even connived with the technicians in obtaining loans.

In a special study of the causes of increasing low repayment of loans, the following were indicated as the causes of non repayment (Quisumbing, 1976):

- a) Banking institutions did not exercise sufficient efforts in assessing credit worthiness, failed to keep in contact with the farmers during the production period, and did not have enough collectors at harvest time.
- b) Some farmers thought that they would not be forced to pay since the amount borrowed was only small.
- c) The job of collection on the part of the production technician was inconsistent with his teaching of farmers.

To increase repayment of loans, Selda members were screened more thoroughly and fewer members were recommended. The production technicians intensified their campaign. The banks also increased their collectors involved some technicians in the collection. Borrowers who posed as farmers, maliciously delinquent borrowers were brought to court. Corrupt technicians were fired.

There were shortages of fertilizer and chemical inputs during the first year. The input companies did not realize that the Masagana 99 program could accomplish the targets. As a result, there was a shortage of agricultural inputs. This was solved with more importation of fertilizers and pesticides by the private sector. However, the price of

fertilizer went up in the world market during the time. Cheaper fertilizer was made available by the government through a subsidy program to the food-crop farmers but export-crop farmers such as sugar growers had to pay the import parity cost. In Phase I of the Masagana 99 program, a bag of urea cost the sugar planter only ₱10 more than then it cost the rice farmer. However, the ₱10 gap widened alarmingly when fertilizer prices suddenly quadrupled in the 1973-74 energy crisis. Some rice farmers and profiteers diverted fertilizer to the export crops for profit. Thus, the fertilizer usage for rice dropped. As a temporary measure, fertilizer subsidy for food crops was increased to narrow the gap between the two prices. At the same time, sugar fertilizer was also subsidized. However, this measure was only temporary since the fertilizer prices in the world market continued to go down. Strict allocation systems were developed to effectively distribute the subsidized fertilizers to farmers involved in the food production programs.

The technicians were also over-burdened. With an original acceptable ratio of 1 technician to 150 farmers, the ratio went up to 1:184 in Phase I and 1:212 in Phase III. The President authorized the release of funds to increase the extension force. In Phase VI, there were 4,406 technicians or an increase of 40% from Phase I. The ratio in Phase VI was only 1:112.

The fertilizer-chemical tie-up was also a major problem. The fertilizer dealers particularly Planters' Product dealers tied up insecticides with the fertilizers. Farmers were forced to buy insecticides even if they needed only fertilizers.

As a remedial measure, chit coupons for fertilizers and insecticides were separated to discourage the tie-up. The fertilizer company involved warned its dealers to discontinue the tie-up.

The pest problem, particularly that of the brown plant hoppers, was serious in many provinces. During the first year, brown plant hoppers heavily infested Laguna and other provinces in Central Luzon. Fortunately, a new variety of rice, IR26 was released by the Philippine Seed Board that year and the infected rice areas were given priority to the limited seed supply. In later phases, more varieties resistant to brown plant hoppers were approved for national distribution.

#### MONITORING AND EVALUATION

In a nation wide program, there is a need for systematic recording, reporting and analysis of selected information for management purposes. In Masagana 99, a management information system was established and a working group consisting of representatives from NFAC, the Bureau of Agricultural Economics (BAEcon), and the US Agency for International Development was formed. The group designed and developed a simplified standardized format for production technicians' field data, technicians' summary reports, provincial summary reports to NFAC and a nation-wide reporting format.

The production technician, who is directly in touch with the farmers, records the data for each farmer he is supervising (both with and without credit) in standardized data sheets. He summarizes the data in another format and submits this to the PPO. The PPO, with a representative from BAEcon summarizes the data

coming from all the technicians of the province and, in turn, submits the report to NFAC. The National Management Committee and all member agencies receive the summary reports for the whole country from NFAC. The reports at different levels from the municipality to NFAC are used by the committee and action teams in the management of the program.

Deadlines for reporting have been established at every level with emphasis on timely reporting and processing. Reporting is done once a month. The summary data for the whole country is usually ready 15 days after the end of the month reported on. This includes transmission time from the data collector to NFAC.

The monthly summary report (with breakdown per province) submitted to the National Management Committee includes the following:

1. Provinces reporting

2. Program status

- Targets

- Total area planted

- Total area harvested

- Total production

- Average yield

3. Credit by banking institutions

- Total loans approved

- Total amount released

- Average loan per hectare

- Total amount paid

- Percent repayment

#### 4. Total number of farmers supervised

With credit

Without credit

Average each technician is supervising

#### 5. Problems encountered

NFAC has an Agricultural Program Evaluation Services that conducts regular auditing of the implementation of the approved plans and program. This unit of NFAC conducts regular field inspections appraisals of the implementation of Masagana 99 in the provinces and municipalities. They make periodic reports to the NMC for action. They also verify problem areas and the accuracy of the reports coming from the municipalities and provinces involved in the program. They also help solve some minor problems that arise during their inspection trips. Although their functions include all the sectoral program of NFAC, their major efforts are concentrated on Masagana 99.

#### CONCLUSION

So far, Masagana 99 has been successful. In spite of the shortcomings, the program has attained its main objectives of increasing production and self sufficiency in rice after 5 crop seasons. However, the Philippines has yet to continue its drive to increase rice production further. With increasing population and uncertainty of weather, particularly typhoons, we have yet to produce enough buffer stocks to avoid the experiences of the lean months in 1973. The machinery for this production is now established and deeply rooted.

At the start of the Masagana 99 program, there was criticism to loans without collateral. Critics



said it is extremely risky and that the small farmer had poor credit. But to date, the farmers have proved their critics wrong. An overall repayment rate of 78% as of September 30, 1976 was high for non-collateral loans, even comparable to the repayment rate of the industrial sectors (with collateral).

All the elements of the program are the same as those of the previous rice programs of the government, but political will and management ability have been added to all these elements. The major bottlenecks have been solved. The credit scheme works. The transfer of technology works. The organizational machinery works. The price support works. But most important of all is that the whole system has been institutionalized and can continue on its own momentum hereafter, regardless of changes in personalities.

The most important impact of the program is the increase in income of the farmers who participated. Non-participants also benefited as a result of spill-over in the production drive. Studies indicate that non-participants attained about the same yield as participants, particularly in irrigated areas. To quote President Marcos: "... it is quite clear therefore that there has been a dramatic increase in rice production. Increased production, plus increased prices, equals vastly increased farm income. There is unexpected prosperity therefore in the farm. In a very real sense, the prosperity of the farmer is the prosperity of the nation".

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### Technical Committee

Chairman: Representative from BPI

Members: Representative from:

1. UPLB, College of Agriculture
2. Bureau of Soils
3. International Rice Research Institute (IRRI)

### National Information Committee

Chairman: Representative from the Department of Agriculture

Members: Representative from:

1. DA
2. BAE
3. BPI
4. URARTIP
5. National Media Production Council
6. Department of Agricultural Communication, UPLB
7. APIP and FIA

### Provincial Action Committee

Chairman: Governor

Vice Chairman: PPO

Members: PC Commander

Provincial Heads: BPI/BAE, ACA, DLGCD, NGA, PNB

Representative from: Rural Bankers, millers traders and input dealers, CB-DRBSLA Agricultural Credit Supervisors, DAR, Farm Rural Broadcasters and Federation of Farmers Association

**Municipal Action Team**

**Chairman :** Mayor

**Co-Chairman:** Production Technician

**Members :** RB/PNB Representatives  
Barangay Captains  
Production Group Leaders

## APPENDIX A

### Composition of Different Committees Involved in Masagana 99

#### National Management Committee

Chairman: Representative from National Food and  
Agriculture Council

Members: Representative from:

1. Bureau of Agricultural Extension  
(BAEx)
2. Bureau of Plant Industry (BPI)
3. Philippine National Bank (PNB)
4. Agricultural Credit Administration  
(ACA)
5. Bureau of Agricultural Economics  
(BAEcon)
6. Central Bank - Department of Rural  
Bank and Savings and Loans Association  
(CB-DRBSLA)
7. Land Bank (LB)
8. Fertilizer Industry Authority (FIA)
9. Agricultural Pesticides Institute  
of the Philippines (APIP)
10. U.S. Agency for International  
Development (USAID)
11. Rural Bankers Association of the  
Philippines (RBAP)
12. National Grains Authority (NGA)
13. Bureau of Cooperatives, DLGCD
14. Department of Agrarian Reform (DAR)
15. Unified Rice Applied Research Training  
and Information Program (URARTIP)
16. Philippine Constabulary (PC)
17. National Irrigation Administration
18. Bureau of Soils

## CHAPTER 6

### MULTIPLE CROPPING: AN APPROACH TO RURAL DEVELOPMENT

Arturo A. Gomez\*

#### INTRODUCTION

The primary purpose of a production-oriented rural development program is to increase productivity and consequently the income of rural households. Since productivity in the rural areas is primarily farm base, most production-oriented programs are directed to increase farm productivity.

The Philippines has developed very productive technology which is not used in many of our farms. In rice and corn, for example, our two most important grain crops, the potential productivity as shown by yields in experiment station is much higher than the average for the country (Table 1). In addition, the intensity with which we crop our very limited arable lands is much less than what is potentially possible (Table 2). Clearly an important factor for rural development is the acceleration of the transfer of this technology from the experiment station to the farmers.

There are at least two alternative approaches to production-oriented rural development programs, namely: (1) the commodity approach in which the main objective

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\* Vice-Chancellor for Academic Affairs, UPLB and Coordinator, National Multiple Cropping Program.

is to increase production in specific commodities; and (2) the farming system approach in which the main objective is to increase farm profit through efficient use of farm resources. In the last decade, the Philippines has primarily followed the commodity approach. A typical example is the rice program, Masagana 99, which is familiar to many of you.

There are two important advantages in a commodity approach. First, improved technology in a single commodity, say rice, is easy to transmit. Second, limited resources can be concentrated on a single commodity, thus, maximizing the chance of success. Because of these two advantages and because of the initial success in rice the commodity approach has been applied to other crops as well. Thus, there are two other commodity programs- Masaganang Maisan for corn and Gulayan sa Kalusugan for vegetables- that are being implemented simultaneously with Masagana 99.

Our experience with the simultaneous implementation of the three commodity programs showed some of the weakness and inefficiency of the commodity approach. Each of the three programs has its own separate extension personnel and separate administrative mechanism. And yet all the three programs are directed towards the same farmers. There is indeed a tendency for the commodity approach to be less and less efficient as more and more commodities are being worked on.

The farming system approach, by virtue of its orientation towards optimizing farm productivity and profit, will have more flexibility in dealing simultaneously with several commodities. As a matter of fact, this approach would probably be more fitted to areas which are producing a wide range of agricul-

tural commodities. Shown in Table 3 are some of the features of a farming system approach that differentiates it from a commodity approach.

We have already mentioned that production-oriented rural development programs must be based on a technology that can significantly increase farm productivity. In addition, we must insure that the new technique is socially acceptable and that the existing and potential socio-economic institutions in the rural sector are capable of adjusting to the changes that are expected to accompany the new technology.

The above requirements identify two major experimental processes that must precede any large scale national programs. First, is a series of biological experiments aimed at developing new and better production techniques. Second, is to actually introduce the new technology in some pilot communities, not only to test its productivity in actual farms but also to examine its socio-economic impact on the community i.e. acceptability market and credit requirements, etc. In this paper, we shall present in detail: (1) a description of the technology upon which this program is based; (2) the experimental process with which we tested the socio-economic impact of the new techniques in some selected communities (barrios); and (3) the design and implementation of a national production program based on the results from pilot communities.

#### THE MULTIPLE CROPPING PRODUCTION TECHNOLOGY

For the Philippines where population density is high and farm sizes are small, an attractive strategy for increasing productivity and labor utilization



per unit area of arable land is to intensify land use. For farms devoted to short maturing annual crops, land use intensity can be increased by growing several crops simultaneously or in succession with each other. A common example is a rainfed rice area in which only one crop of rice is traditionally grown in one year. Land use intensity in this case can be doubled by growing a second crop of rice or a second crop of other annual crops. Multiple cropping is generally used to refer to a family of crop production technology that employs the intensification of land use to increase farm productivity.

Multiple cropping is an ancient practice and is widespread among small farmers in the developing countries of the tropics. While in the early years, multiple cropping was used to diversify agricultural products to satisfy the needs of subsistent farming, recent experiments have shown its potential for increasing productivity and income among market oriented farmers. Luh (1969) reported that as many as 9 crops per year were raised by vegetable farmers in Hongkong and Vietnam. Bradfield (1973) showed that five crops, including a crop of rice could be harvested in the same area in one year giving a gross return of \$3,150 per hectare. And yet the country averages for cropping intensity in Asia ranges from a low of 1.1 in Burma to a high of 1.84 in Taiwan (Darlympre, 1973).

The potential of multiple cropping is illustrated by the targets for intensifying crop production in the Philippines (Table 2). Note the wide gap between the intensity obtainable at the experiment station and that actually practiced on the farms. Even the potential under farm conditions as shown by experiments in farmers'

fields are much lower than those in the experiment stations. Obviously, there are major limiting factors on the farm that hinder the easy adoption of technology developed at the experiment station.

A major limiting factor for intensive cropping in farmers' fields is water. Kanwar (1974) indicated that among the main problems of agriculture in Asia were: erratic distribution of rainfall and the predominance of rainfed agriculture. Because of water limitation, many farmers grow only a single crop during the wet months and leave the land idle during the rest of the year.

Agricultural research, however, has evolved techniques for coping with limited water in rainfed areas. First, there are species of crops such as legumes and millets that are tolerant to water stress. Second, selection for earliness has revealed varieties that mature much earlier than the traditional varieties. Third, by modifying cultural management, certain crops can be planted much earlier than before. In rice, for example, by direct-seeding at the beginning of the rainy season instead of transplanting at the peak rainy months, two crops of rice can be harvested in rainfed paddies (Athwal, 1974).

Considering the facts that land is scarce, that farm labor is abundant, and that majority of the low income groups are in the rural sector, the intensification of cropping systems is indeed very attractive. Labor absorption per unit area of land can easily be doubled by growing an additional crop. Furthermore, the benefits from intensive land use do not discriminate against, and may even favor, the small landowners. Indeed, the prospects of improved cropping systems are

so bright that they could be a means for a more widespread adoption of the green revolution, for bringing the large bulk of subsistence farmers into the stream of market oriented economy, and for solving the serious nutrition problems among the rural poor.

#### MULTIPLE CROPPING IN PILOT COMMUNITIES

##### A. Background information:

Since 1972, the University of the Philippines at Los Baños (UPLB), with the cooperation of the International Rice Research Institute (IRRI) and the financial support of the International Development Research Centre (IDRC), has undertaken studies on the adoption of intensive cropping (multiple cropping) and its impact on selected communities in the Philippines. The main objective of the program is to determine why intensive cropping, which has repeatedly been shown by experiment station researchers to have excellent potentials for profit and is uniquely fitted for small farms with abundant labor supply, has not been widely adopted in Asia where farm size is small and population density is high.

It was thought in the beginning that the success of intensive cropping is not solely based on its potential for increased farm production, but also on the existence of satisfactory services in terms of credit, procurement of farm inputs and marketing of farm products. The approach adopted, therefore, was to treat the whole community (in our case, the barrio which is the smallest unit of formal government in the Philippines) as an

experimental unit. Our aim was to motivate as many farmers as we could to adopt intensive cropping so that the profitability of the technology and the procedure to induce its adoption in rural farms can be evaluated.

The project is divided into two phases:

Phase I. The original pilot areas (1972 to present)

Five barrios in the province of Laguna and one barrio in the province of Batangas were chosen as pilot areas for the Multiple Cropping Extension Pilot Project (MCEPP). The barrios are easily accessible by roads, have rainfed rice as the main crop, and are densely populated.

Our technique for inducing rapid adoption of intensive cropping among farmers in these areas was to provide:

1. One agricultural technician for each barrio: the technician is a B.S. graduate in agriculture and is trained for two weeks in crop production and extension.
2. Liberalize credit-making available to farmers, bank loans without collateral.
3. Assistance to each pilot area in developing a farmers' association which will facilitate bulk purchase of farm inputs as well as farm products.

Phase II. The expanded pilot areas (1974 to present)

The success that the Project achieved in the initial two years of Phase I has raised several questions one of which was whether similar success can be achieved in areas that are not as favorable as the six pilot barrios. This question is most

relevant since most barrios of the Philippines would not be as well-endowed as those in Laguna and Batangas. Hence, in Phase II of the Project, six barrios were chosen from each of the three widely separated regions of the country, Central Luzon, Bicol and Iloilo. A total of 18 barrios were selected for these purposes.

The new areas differ from the original pilot areas in the following aspects:

1. They are not as accessible; their market outlets not as well-developed; and the population density not as high.
2. Their distance from Los Baños (the center of the Project's operation) is further, hence, there is less direct supervision.
3. The areas covered by some technicians is expanded beyond their assigned barrios.

The major objectives of Phase II of the Project are:

1. To determine whether the procedure that has proved effective in the original pilot area can also succeed in areas that are less favorable; and, if not, to ascertain what modifications are necessary; and
2. To determine the minimum level of assistance (i.e., the largest areas that one technician can effectively cover) that needs to be provided in order to bring about accelerated development through the introduction of improved agricultural technology.

## B. Results and Discussion

As a production oriented program, our evaluation and monitoring process was directed primarily at characterizing two major criteria,

namely: (1) farm productivity and its effect on household income and (2) nutritional status. In all pilot barrios, we measured indicators of these criteria at the start of the project and every two years thereafter. Evaluation of nutritional status was based primarily on height and weight measurements of pre-school children and food intake per day.

While there are many interesting human experiences throughout the project, we shall limit our discussion to regularly measured evaluation data. Also, we shall discuss the results for the two phases of the program separately.

#### Phase I. The original pilot barrios

Table 4 shows some of the major features of the pilot barrios at the initial stage of the project (1972). Note that these barrios were selected for their accessibility (all are near market outlets) and for their cultivation of rice as a major crop. The other significant features are small farm sizes, high frequency of tenancy, low productivity, large household size and minimal household facilities.

The adoption of multiple cropping can be seen from the intensity with which land has been cropped (Table 5). Significant increases in land use intensity can be seen at the first two years of the project indicating that a significant portion of the farmers adopted the new technology. This is in fact corroborated by our actual count of multiple cropping farmers, Table 3.

An indicator of the impact of the project

on household income is the rate with which farmers in the communities have been using the credit system. Within a period of four years, each barrio has increased its exposure to the local credit institution from almost nothing to about ₱250,000 per year. While much of this borrowing was catalized by our initial guarantee loan funds, many of the loans in the latter years were not directly supported by our project. Table 4 shows the collection rates of the loans directly guaranteed by the project's fund.

To illustrate the potential productivity and profitability of the multiple cropping technology, let me present the case of one of our most successful farmers, Mang Selmo Javier. Mang Selmo owns 1.2 hectares of rainfed paddy in Cabuyao, Laguna. Traditionally, he planted only one crop of rice per year. During the dry months, his field was left idle. When multiple cropping was introduced in his barrio, Mang Selmo was among the first who tried the technology.

He planted two crops of rice, one was direct-seeded (dry month planting) and the other was transplanted. From his two rice crops, he harvested a total of 203 cavans which gave him a net income of ₱7,300. This was a far cry from the 50 cavans he used to get. After harvesting his second crop, Mang Selmo planted watermelons (varieties Sugar baby and Empire) on 6,000 square meters. No prior land preparation was needed. Holes were dug at a distance of one-and-a-half meters between hills and one meter between rows, with a volume of 1.5 cubic feet. On an area of 2,500 square meters,

Mang Selmo planted tomatoes. One would probably think that it is too much work to attend to two crops at a time but this is not so. With watermelon and tomatoes, most cultural operation like watering, fertilizing and spraying can be done at the same time.

Mang Selmo had a net income of ₱5,355: ₱3,677 from watermelons and ₱1,678 from tomatoes. On the side, Mang Selmo raises ducks to augment his income and to support his nine children.

To evaluate the impact of multiple cropping on the nutrition of rural households, we followed closely the farm productivity and nutritional status of 44 families in the original pilot barrios in Laguna and Batangas. The data span a period of four consecutive years. Two types of farmer households were included: those who participated actively in multiple cropping and those who did not. Farm productivity was measured by keeping daily records of farm activities (see record-keeping). Nutritional status, on the other hand, was evaluated from the height and weight measurements of infants and from the daily food intake (recall interview) of all the members of the farmers' households. A summary of the results of these measurements are given in Tables 10 and 11.

The following conclusions can be gleaned from the data gathered:

1. Multiple cropping cooperator-families (MC) had more crops, higher crop index and higher income than their corresponding non-multiple cropping counterparts (non-MC). It was noted however, that the non-MC families showed substantial gains during



the third and fourth years of the Program indicating the strong radiation effect of the technology.

2. A significant portion of farm products was used by the household for food. In all cases however, the MC families used more products for home consumption relative to their non-MC counterparts. This is understandable since the MC families were producing more. In terms of percent of total farm products, the fraction used for home consumption did not differ between the two groups of families.
3. The nutritional status of MC families is better than their non-MC counterparts. During the first year (1973) of measurement of the height and weight of the children of MC families, they were found to be taller and heavier than children from non-MC families. MC families were also closer to satisfying the RDA requirements. This initial trend continued up to the last year of evaluation.
4. Calorie requirement seems to be the first one that is satisfied from among the nutritional status indicators. Several families have already satisfied their calorie requirements. Other indicators, however, such as intake of vitamins and minerals remained deficient.
5. There was indeed a strong tendency for productivity to influence nutritional status. Increased productivity resulted in more food intake and more satisfactory diet.

#### Phase II. The expansion barrios

Instead of presenting all results for the expansion barrios allow me to concentrate on some unique features which gave us some very important lessons. Take note that relative to the original

barrios (Table 4) the expansion areas were further from the market and less populated. In addition, the rural household had lower income, fewer household facilities and poorer nutrition. All these can be expected since these communities were selected for features that were not as favorable as the original barrios.

As in the original barrios, farmers' adoption of the new technology was encouraging. After the first year, many cooperator farmers were growing an additional crop and making use of the credit facilities. A major departure from the original pilot barrios, however, was the rate of repayment of loan (Table 8). While most farmers in the original barrios, repaid their loans promptly, many farmers in the expansion areas, especially in the cluster barrios, had very low repayment rate. Note that the cluster barrios have not repaid at least 80% of their outstanding loans. On the otherhand, two of the three single barrios have a repayment rate that is as good as those in the original pilot areas. The divergence in repayment performance between the cluster barrios and the barrios in Laguna and Batangas, can be attributed to the following:

1. Area assigned to one technician- five barrios seemed too large for one technician to cover
2. Accessibility- the cluster barrios are located in areas that are not as easy to reach nor as near the market as those in the original barrios. This remoteness resulted in less contact with the project leader at Los Baños and also at faster

turnover of technicians which greatly reduced the influence in the barrios.

### THE NATIONAL MULTIPLE CROPPING PROGRAM

#### A. Background Information

The success of the farming system approach at the pilot barrio level prompted the Philippine Government to try it on a wider area. Thus, in late 1975, the national government appropriated funds for a National Multiple Cropping Production Program which would evaluate the applicability of the cropping system approach to the different regions in the country. While the procedures for implementing this program were patterned after that used in the initial pilot-barrios in Laguna and Batangas, several important differences were noted. First, the area of coverage would be much wider, approximately 100 times more. Second, the area of coverage would be widely distributed over the archipelago thus sampling both the favorable and the less favorable communities. Third, existing government technicians would be used. In the succeeding sections, we shall discuss in detail the implementation of the program.

#### B. Strategy of Implementation

We mentioned in the previous sections that the Philippines is presently implementing three crop production programs, namely: Masagana 99 for rice, Masaganang Maisan for corn, and Gulayan sa Kalusugan for vegetables. The multiple cropping production program is essentially an integration of these programs. Integration was done through

the following:

1. Crop production- introduced multiple cropping which emphasizes the integration and intensification of farm production;
2. Credit- changed the loaning scheme from the previous single crop loan to one which covers all crops grown over a period of one year; and
3. Extension technicians- changed the responsibility of a production technician from a single crop to all crops grown by his farmer cooperators.

a. Target Area - The program concentrated its efforts on some selected areas in order to closely monitor their performance. There were two types of pilot communities, namely:

- 1) A province where the modified extension organizational set-up was evaluated; and
- 2) 18 pilot municipalities where the productivity of the multiple cropping technology was studied over a wide range of environmental conditions. The pilot province for this program was Pampanga. This province was chosen for its high rate of repayment in the previous loans, active and highly motivated extension staff, and good market outlets.

Selection of the pilot municipalities was based on the following criteria: rice and corn as the major crop, high rate of repayment, availability of good market outlets, good production technician, and represents the different geographical location of the country. Eighteen (18) municipalities were selected from 11 provinces, namely:

1. La Union: Rosario and Balaoan
2. Pangasinan: Urdaneta and Mangaldan
3. Nueva Ecija: Sto. Domingo and Gapan
4. Bulacan: Baliwag, Sta. Maria and Pandi
5. Batangas: Tanauan
6. Camarines Sur: Iriga City and Nabua
7. Iloilo: San Miguel and Tigbauan
8. Misamis Oriental: Cagayan de Oro
9. South Cotabato: Koronadal
10. Davao del Sur: Digos
11. Laguna: Cabuyao

- b. Extension Technician- All rice, corn and vegetable technicians in the selected pilot areas were converted to multiple cropping technicians. All were brought to Los Baños for a short training covering such topics as the multiple cropping technology, techniques for introducing to farmers the multiple cropping technology and integrated credit and marketing scheme.
- c. Credit- Farm credit in the Philippines essentially come from two sources: the Philippine National Bank, a government controlled corporation which operates many branches all over the country; and the rural banks which are small private banks operated and owned by local businessmen. For participating in the crop production programs, these banking institutions, most especially the rural banks, are heavily subsidized by government.

In the multiple cropping pilot areas, two types of credit schemes were implemented. The first was the same as that presently being implemented in the existing commodity program where the farmer applies separately for loan for every crop that he grows. All farmers borrowing from the Philippine National Bank used this credit scheme.

The second type involved rural banks allowed by the Central Bank to implement the integrated agricultural financing scheme (IAF). Under this scheme, farmer borrowers are granted a credit line for one year for the production of a duly approved cropping pattern. A farmer, therefore, borrows only once for all the crop he will grow in a one year period.

To familiarize the rural bankers of their role in this new credit scheme, the top administrators of each bank in the pilot communities were brought to Los Baños for a week of training on the multiple cropping technology and the integrated agricultural financing scheme.

- d. Market- One of the most important requirements for increasing farmer's income is to insure that there is a market for additional farm products. This was done in two ways. First, the production technicians were instructed that only crops with good chances of being marketed should be included in the farmers' farm plan. For example, on farms very far from roads and market outlets, the likely crops to grow were the non-perishable grain crops. In the more accessible areas, however, more vegetables could grown. Secondly, marketing schemes were arranged with the National Grains Authority (NGA) and the Food Terminal Market (FTI).
- e. Monitoring System- An efficient reporting system that is able to monitor the status of the program at any given time is very essential to any national program. This is even more so for the

present program because of its experimental status. The monitoring system for this project can be divided into three parts:

1. The listing of farmer cooperators--each technician was required to assist 75 farmers in his area of assignment. His first task, therefore, was to list these cooperators, the area of each farm, the farmer's tenure status, and the projected cropping pattern.
2. Monthly report-- each technician is required to record and submit monthly activities of his cooperators in terms of crops planted or harvested and money borrowed or paid.
3. Benchmark survey-- from the list of farmer cooperators in item (1), a ten percent random sample was interviewed by project staff. The information asked involved family size, land area, household and farm equipment and crops grown in the previous years. This activity served two purposes: as benchmark information and as a random check of the technician's list of farmer cooperators.

#### C. Results and Discussion

- a. Extension technicians-- From January to April 1976, 341 technicians were trained at UPLB. The profile of these technicians together with their assignments after training are given in Table 9. The technicians are characterized by a satisfactory educational background (92% with BS degrees) and long years of experience (45% with more than 5 years in service). Conversion from a single commodity approach into the farming system approach has reduced the average number of barrios assigned to each technician from 3.8 to 1.6 and the number of cooperators from 115 to 75.

- b. Farmer cooperators and projected cropping patterns- After training, the first task of each technician is to identify his farmer cooperators and the projected cropping pattern. It should be mentioned that additional technicians were assigned to the project after the training, bringing the total number of 441. Thus, the program covered 706 barrios, 33,692 farmer cooperators and 66,856 hectares of arable land. The projected cropping patterns for these areas are shown in Table 9. Rice and corn are the most important crops accounting for a projected area of 122,261 hectares. Non-grain crops accounted for only 6% of the total crop area. Grain crops are favored due to the ease with which these crops can be sold. In all the project areas, NGA provided price support for most of the grain crops.

Note that the projected crop area of 138,445 ha. is roughly two times the actual area covered by the project indicating that our farmer cooperators plan to grow two crops per year.

- c. Area planted and productivity- Table 10 shows the actual area planted in the pilot areas as of March, 1977. The area planted for the pilot municipality exceeded the target while that of the pilot province is only 74% of target. The difference in planting between the municipalities and the province can be attributed to two factors. First, the larger size of a province makes it more difficult to influence quickly, as compared to individual



towns. Second, Pampanga was flooded at the early rainy period and most plantings were delayed.

As of March, 1977 the pilot municipalities have harvested about 62% of the planted area with an average yield of 3.02 tons/ha. for rice and 1.28/ha. for corn. In Pampanga, the pilot province, about 60% of the crops have been harvested as of December with a yield per hectare for rice 12.80 tons/ha. and 2.14 tons/ha. for corn. The average yield for rice and corn in the country is 2.15 tons/ha. (irrigated rice) and 0.84 tons/ha., respectively, showing that the productivity in the pilot area is fairly high. Some of these improvements can be accounted for by good weather in most of the project area during the year under review.

- d. Farm credit- The most common banking institution used in Central Luzon is the rural bank while Visayas and Mindanao used the Philippine National Bank. Approximately one third of the farmer cooperators borrowed money from the bank. Of the approved loans of more than 27 million, only 73% was actually released to the farmers. A major portion of the loans was used to finance rice and corn the most commonly planted crop in the project area. As of March, 1977 58% of all released loans have been repayed.

Table 1. Grain yields of rice and corn under different management levels (adopted from PCARR conference reports)

MANAGEMENT LEVELS	RICE	YIELD (TONS/HA)
		CORN
Experiment Station	5.00	5.00
Scientific farming	3.50	2.64
National Average	-	0.84
Irrigated	2.15	-
Non-irrigated	1.20	-

Table 2. Estimated intensity of cropping for different levels of management.

PRIMARY CROPS	LEVELS OF MANAGEMENT		
	EXPERIMENT STATION	ON-FARM TRIALS	COMMERCIAL FARM
Lowland rice	4.0	2.5	1.5
Upland crops	4.0	2.5	1.4
Coconut	4.0	2.0	1.3
Sugarcane	2.0	1.3	1.1

Table 3. Comparison of the cropping system and commodity approach

FEATURES	COMMODITY	CROPPING SYSTEM
Technology	Single crop	Many crops
Efficiency	Mono-crop areas	Diversified areas
Assignment of technician	Crop assignment	Area assignment
Credit	Per commodity	Per farm

Table 4. Some important characteristics of the pilot barrios.

CHARACTERISTICS	ORIGINAL BARRIOS	EXPANSION BARRIOS
1. Land area (ha)	292	203
2. Average landholding (ha)	1.9	1.5
3. Average rice yield (tons/ha)	1.9	1.8
4. Educational attainment (yr. in school)	4.7	5.6
5. Household size (no)	6.4	6.3
6. Household income (₱/mo)	557	262
7. Food expenses	225	125

Table 5. Rate of adoption of multiple cropping in the original pilot barrios.

ADOPTION INDICES	Y	E	A	R
	1972	1974	1976	
Multi-cropped area (%)	48	62	75	
Crop intensity index	1.65	1.92	2.10	
No. of cooperators (no.)	29	490	656	
Project guaranteed loan (000P)	-	127	93	
Repayment rate (%)	-	85	88	

Table 6. Productivity and nutritional status of 23 farmer cooperators in the original pilot communities.

INDICATORS		Y	E	A	R
		1973	1974	1975	1976
Crop intensity index	1.7	1.8	1.8	2.0	
No. of crops grown	2.2	2.8	3.0	3.8	
Value of Produce (000P)					
TOTAL	17.5	23.8	27.5	40.4	
Home consumed	6.9	7.5	7.5	8.3	
Family size	6.8	7.2	7.5	7.7	
Nutritional Status (% of normal)					
Height	83	86	89	91	
Weight	82	85	88	90	
Calorie intake	92	93	96	98	
Protein intake	78	83	86	88	
Vitamins intake	71	74	79	81	
Minerals intake	79	78	82	84	

Table 7. Productivity and nutritional status of 21 farmer non-cooperators in the original pilot areas.

INDICATORS	Y	E	A	R
	1973	1974	1975	1976
Crop intensity index	1.5	1.5	1.6	1.7
Number of crops	1.8	2.0	2.5	2.3
Value of Produce (000P)				
TOTAL	12.8	16.0	19.5	19.6
Home consumed	5.7	6.0	6.2	6.8
Family Size	6.3	6.7	7.2	7.3
Nutritional Status (% of normal)				
Height	80	82	85	87
Weight	80	82	85	86
Calorie intake	88	89	93	95
Protein intake	76	80	83	85
Vitamin intake	63	68	72	78
Mineral intake	74	76	80	83

Table 8. Profile of extension technicians trained in multiple cropping in early 1976.

CHARACTERS	PILOT AREAS				
	PAMPANGA	CENTRAL LUZON	BICOL & SOUTHERN	VISAYAS & MINDANAO	TOTAL/ AVERAGE
Number of trained	189	76	31	45	341
Females (%)	24	28	55	27	28
BS degree holder (%)	92	89	90	96	92
< 1 year in service (%)	14	25	6	31	18
1-5 years in service (%)	20	42	42	42	30
> 5 years in service (%)	53	34	45	31	45
No. of Barrios/ Technicians					
Before MC	3.79	3.89	5.67	2.73	3.84
After MC	1.05	2.44	2.35	2.28	1.60
No. of Cooperators/ Technicians					
Before MC	133	91	75	127	116
After MC	80	70	66	83	76

Table 9. Projected cropping pattern in the National Multiple Cropping Project Area (NMCP).

CROPPING SEASON	PROJECTED AREA BY CROPS				
	RICE	CORN	OTHER GRAIN CROPS	OTHER CROPS	TOTAL
Pilot municipalities					
1st crop	14,090	2,660	93	188	17,031
2nd crop	8,490	3,350	1,591	1,805	15,236
3rd crop	1,100	2,500	600	518	4,718
TOTAL	23,680	8,510	2,284	2,511	36,985
Pilot province					
1st crop	41,325	794	309	153	42,581
2nd crop	29,190	1,590	4,122	2,485	37,387
3rd crop	13,050	4,302	1,340	2,890	25,582
TOTAL	83,565	6,686	5,771	5,528	101,550
GRAND TOTAL	107,065	15,196	8,055	8,039	138,445

Table 10. Area planted, area harvested, and grain yield for the NMCP Pilot areas as of March 1977.

PILOT AREAS	C				R	O	P	S	TOTAL
	Rice	Corn	Other grains			Non-grains			
Pilot Municipalities									
Area planted (ha)	37,484	7,633	1,011			2,463		48,591	
Area harvested (ha)	20,926	6,173	678			2,244		30,021	
Yield (tons/ha)	3.02	1.28	0.76			5.30		-	
Pilot Province									
Area planted (ha)	70,170	655	1,153			2,127		74,125	
Area harvested (ha)	42,723	58	1,070			952		44,806	
Yield (tons/ha)	2.80	2.14	0.93			1.70			

Table 11. Credit status as of March 1977

	Visayas & Mindanao	Southern Luzon	Central & Northern Luzon	Pampanga	TOTAL
Total No. of farmer-borrowers	1,078	2,166	3,116	5,517	11,877
Total amount approved (P000)	2,301	4,847	10,150	12,502	27,800
Total amount released (P000)	1,315	2,802	7,037	10,134	20,288
Total amount paid (P000)	468	1,792	3,778	5,684	11,722
Repayment (%)	36	64	53	56	58



## CHAPTER 7

THE LIVESTOCK AND POULTRY INTENSIFIED  
PRODUCTION PROGRAM (LPIPP)\*/

Cledualdo B. Perez, Jr.\*\*/

INTRODUCTION

The LPIPP is a pilot program on supervised credit for livestock and poultry production implemented from 1972-75 by the University of the Philippines at Los Baños (UPLB) and the Bureau of Animal Industry (BAI) under the auspices of the National Food and Agriculture Council (NFAC) and in cooperation with other agencies/institutions, principally the Central Bank's Department of Rural Banks (CB-DRB).

The success of the rice self-sufficiency program in the late sixties under the coordination of the Rice and Corn Production Coordinating Council (RCPCC) has resulted in increased attention to other food

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\*/Based on the annual and terminal reports of the LPIPP and on limited first hand knowledge of the author about the program before, during and after UPLB's involvement.

\*\*/Professor of animal science and Dean, College of Agriculture, U.P. at Los Baños. The initiative and leadership for this project of the late Prof. Francisco P. Vergara is gratefully acknowledged. The author gratefully appreciates the assistance given by his colleagues especially Prof. Melenio G. Supnet, Dr. Valentino G. Argaños, Arturo S. Alejar and Cesar C. Sevilla in the writing of this report.

commodities such as corn and other feed grains, vegetables, fish, and livestock and poultry. A change in name from RCPCC to NFAC was made to better describe the latter's larger role and concern. This body, composed of all agencies and institutions of the government concerned with food production and agricultural development programs, has more recently gained international renown for its acclaimed Masagana 99 Program on rice production self-sufficiency.

Whereas the different agencies used to go their own independent ways with different programs of action, the NFAC has brought them together to pursue coordinated programs especially for small farmers.

It was the approach of NFAC on a program for rice and corn farmers that encouraged a similar course of action for the small scale and backyard livestock and poultry raisers.

The UPLB, primarily through its Department of Animal Science in the College of Agriculture, initiated an action-type program in collaboration with the BAI, CB-DRB and other agencies with funding from NFAC.

#### ANALYSIS OF THE BACKGROUND SITUATION

Until 1972, practically no activity was undertaken by the government to provide a package of technology on production, credit and marketing for small producers in the livestock and poultry industry sector. The large scale livestock and poultry enterprises were generally able to handle their respective operations. All they needed from the government were favorable policies on production, credit and marketing.

However, in the case of small scale and backyard

raisers who constituted the majority, efforts of the BAI were almost solely on disease control program. While disease control is a very important aspect of the total livestock production program, much is expected from BAI and the other concerned agencies/institutions in providing support and assistance in production and management practices, credit, marketing, and producers' organization. Left to themselves, the small livestock and poultry raisers were generally helpless in all aspects of the production system. They needed assistance in the procurement of animals, feeds and other inputs, availability and use of credit, and marketing of the products from sincere, honest and dedicated government extension workers.

There has been, of course, a lack of extension technicians to adequately serve the needs of these small raisers. Furthermore, the technicians generally lack a thorough knowledge and understanding of the various aspects of an integrated production system.

Much research information has been available, but it has suffered from any of the following shortcomings: a) the research was more relevant to large scale enterprises and largely inapplicable to small and backyard livestock operations; b) even if suitable, it was not properly and regularly packaged into "extensionable" form and disseminated to the desired end-users; c) the extension technicians were not fully knowledgeable about the applicability of the researches; and d) the technicians were not fully committed to the actual use of the research results by the farmers.

In marketing, the small raisers were generally at the mercy of the middlemen. While middlemen had a role to play in business, they generally garnered

more benefits than they deserved, thus unjustly depriving the raisers of the fruits of their labor. The marketing system was very antiquated and there was an urgent need for a more organized marketing system and for an organization of the raisers to protect their interest.

The farmers had low farm productivity and low incomes. Hence, they had little savings if any, and generally had no capital to start or expand a productive activity. They needed credit to purchase quality animal stocks, feeds and other inputs. In some places, backyard raising of pigs and cattle was by "iwi" system, i.e., a relatively financially well-off individual buys the stocks and the farmer raises them. After marketing the product, the costs of the owner's inputs are deducted, and the balance is divided equally between them. The owner assumes all the risks but earns a lot if there are no misfortunes.

#### OBJECTIVES AND TARGETS

The LPIPP set forth the following general objectives:

1. To promote improved and profitable livestock and poultry production among selected small raisers through a packaged pilot action program.
2. To intensify livestock and poultry production through establishment and maintenance of functional cooperatives.
3. To provide a continuous flow of up-to-date information to extension workers and farmers through publications and radio news releases.

The main areas of concern of the program management staff and livestock technicians were:

- a. livestock and poultry production technology
- b. credit
- c. marketing
- d. farmers organization

The program started with one pilot project each, in a selected barrio in one of 10 provinces strategically located throughout the country. The main considerations in the choice of sites were the interest and cooperation of officials and people, livestock production potential, nearness to markets and transportation facilities, and accessibility to the program management staff.

The strategy called for as much participation as possible in the planning and implementation of the program by:

1. The officials of the major agencies/institutions involved in the project and in the problems of animal production, e.g. UPLB, BAI, CB-DRB, barrio officials, etc.
2. The Provincial Program Officers of the pilot provinces.
3. The manager and staff of the rural banks concerned.
4. The input-providing companies and marketing outlets such as feed miller/dealers, Food Terminal Inc., food processing firms, etc.

#### ORGANIZATIONAL ARRANGEMENTS

There was a Technical Committee for the Program

composed of representatives of the principal agencies/institutions involved. The leading role was played by the Program Director who was appointed by NFAC on recommendation of the Dean of the UPLB College of Agriculture. He was responsible for the over-all operation and management of the LPIPP. He was to implement policies formulated by the Technical Committee, act as liaison officer among cooperating agencies, coordinate with the livestock action officer of the NFAC, and conduct periodic evaluation of the progress of the individual projects.

The Technical Committee was to meet at least four times a year to review the progress of implementation and make plans and recommendations to improve the efficiency of operation.

Each BAI livestock technician was to be responsible for his assigned LPIPP project.

The different institutions/agencies involved had the following responsibilities:

1. NFAC- provide the funding support and over-all national overview and coordination.
2. BAI/APC<sup>1/</sup>- primary implementing arm of the program
3. CB-DRB- provide the needed credit through the selected rural banks
4. UPLBCA, UPCVM<sup>2/</sup>, ACCI<sup>3/</sup>- provide technical backstop needed

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<sup>1/</sup>Agricultural Productivity Commission (now Bureau of Agricultural Extension); <sup>2/</sup>U.P. College of Veterinary Medicine; <sup>3/</sup>Agricultural Credit and Cooperative Institute.

## PROGRAM EXPERIENCES

### 1. Planning

The planning was done in late 1971 and early 1972 by the project proponent who was to become the LPIPP Program Director. He was in consultation with the Deputy Executive Director of NFAC, Assistant Director of BAI, Deputy Commissioner of APC then (now Assistant Director of BAEEx), Assistant Director of the CB-DRB, and others as to the magnitude of the initial operations, the budget requirements, the criteria and procedure for selection of pilot sites and farmer cooperators, etc. Through the initial consultative group, the Technical Committee for the LPIPP was created.

### 2. Implementation of the Program

The first six months were spent in the establishment of the pilot project sites and the selection of farmer cooperators.

In the 3rd week of April, 1972, ten BAI livestock technicians were selected by the BAI Central Office and the Program Director. They were brought to the UPLB for orientation on the program, in-service training and field trips.

During the next two months, the technicians were deployed in the selected pilot provinces. In consultation with the Provincial Program Officers, the respective barrio sites were selected. The technicians and the Program Director prepared the Project Development Plan for the barrio

under the LPIPP scheme.

The following criteria were used in the selection of the pilot barrio sites:

1. availability of resources
2. potential for expansion
3. accessibility to transportation and market points
4. evidence of cooperation and interest of local leaders and people

From July-September, the farmer cooperators were chosen by the technician and Program Director.

At least 20 farmer cooperators were selected from each of the pilot barrios based on their:

1. interest in the program
2. willingness to undergo training
3. good reputation in the community

The selected cooperators were given seminars by the LPIPP technician before the project was started. Subsequently, regular seminars were held to discuss progress and problems of their respective projects as well as to keep them abreast of developments in the industry and the program.

The LPIPP plan for the barrio was started after orientation and briefing of the farmer cooperators. Initial efforts were exerted toward the organization of the farmer cooperators in each pilot barrio into a farmers' association or group.



In October, 1972, the progress of the first six months was evaluated by NFAC.

The LPIPP Provinces and Barrios

- |  |        |          |
|--|--------|----------|
| a. San Mateo, Laoag City,                | )      | Northern |
| Ilocos Norte                             | )      |          |
| b. Paitan, Sual Pangasinan               | )      | Luzon    |
| c. Cacamilingal Sur,                     | )      |          |
| Camiling, Tarlac                         | )      |          |
| d. Pandan, Angeles City,                 | )      | Central  |
| Pampanga                                 | )      |          |
| e. Mallorca, San Leonardo                | )      | Luzon    |
| Nueva Ecija                              | )      |          |
| f. Catandala, Ibaan,                     | )      | Southern |
| Batangas                                 | )      |          |
| g. Calumpang, Tayabas,                   | )      | Tagalog  |
| Quezon                                   | )      |          |
| h. Agdangan, Baao,                       |        |          |
| Camarines Sur - Bicol                    |        |          |
|  | Region |          |
| i. Miranda, Pontevedra, Negros           |        |          |
| Occidental - Visayas                     |        |          |
| j. Baluarte, Tagoloan, Misamis Oriental- |        |          |
|  |        | Mindanao |

The majority of the sites are in Central Luzon and Southern Tagalog which are close to the Metro Manila markets and more accessible to the program management. Other sites were selected to give nationwide representation. They were likewise selected because of their proximity to big city markets.

Program Personnel

Francisco P. Vergara - Program Director,  
LPIPP, Assistant Professor of Animal  
Science, UPLB

Federico M. Alonzo (Pablo L. Garcia) -  
Research Assistant

Cesar C. Sevilla (Patricio S. Correa) -  
Agricultural Information  
Officer

LPIPP Technicians from BAI

1. Claroval Serna  
(Benjamin Bareng) - Ilocos Norte
2. Arsenio Tabar - Pangasinan
3. Priscilla Quimado - Tarlac
4. Jaime Velasco - Pampanga
5. Braulio Manabat - Nueva Ecija  
(Emmanuel Avila)
6. Domingo Lactaen - Datangas
7. Arturo Gerardo - Quezon  
(Vivencio Cabañeros)
8. Ricardo Comprado - Camarines Sur
9. Teodora Ardiente - Negros Occidental
10. Renato Zurbito - Misamis Oriental  
(Fred Figueroa)

The technicians were all graduates of the B.S. Agriculture Program, mostly with major in animal husbandry.

Program Fund and Other Support

The NFAC provided the following  
budget for LPIPP:

	1972-73	1973-74	1974-75	TOTAL
A. Personal Services	₱16,345	₱22,345	₱29,886	₱72,576
B. Maintenance and other Operating Expenses	48,600	48,600	48,600	145,800
C. Equipment	<u>14,380</u>	<u>-</u>	<u>-</u>	<u>14,380</u>
T O T A L	₱79,325	₱70,945	₱78,486	₱232,756

The above budget did not include the cost of the staff time contribution of the Program Director and 10 technicians.

### 3. Significant Accomplishments and Contributions

The LPIPP has served as a model scheme for promoting and intensifying small scale and backyard livestock and poultry production in the selected provinces. The BAI has adopted the approach as a significant component of its national extension program. Where before, the BAI through its provincial veterinarian and livestock inspectors was almost solely concerned with animal vaccination programs every year, now they are committed to a total program of livestock production and marketing.

The LPIPP, however, was not the sole cause of this new strategy of livestock extension. The Masagana 99, Masaganang Maisan and other supervised credit programs have

also influenced the strategy. The need for this type of an extension program is felt more urgent for the small scale backyard livestock and poultry raisers, considering their hard competition with the big integrated livestock firms, the high prices and lack of availability of feeds, the unstable prices of animal products, etc.

Significant achievements were attained in the three-year period of direct NFAC support to LPIPP and through provision of credit by the CB-DRB such as in the:

a) Number of livestock raisers assisted

	<u>Year I</u>	<u>Year 2</u>	<u>Year 3</u>
Swine	115	223	2,000
Poultry	79	120	154
Cattle	<u>1</u>	<u>48</u>	<u>1,536</u>
TOTAL	235	391	3,699

b) Number of rural banks which participated

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>
No. of rural banks	9	25	56

Amount of	₱558,000	₱1,399,194	₱11,167,318
loan			

Loans for backyard and small scale livestock and poultry projects were very limited at the start of the LPIPP in 1972. Only a few rural banks in Batangas province were already giving loans at the time, largely for cattle fattening. Through the LPIPP, arrange-

ment was made with the CB-DRB so that credit could be made available to raisers in the pilot provinces.

c) The Multiplier Effect

In the third year of the Program, each regional office of the BAI conducted a three-day seminar on supervised credit and the LPIPP scheme. The seminar was attended by extension technicians of the BAI and of the rural banks. The LPIPP technicians in the respective regions acted as resource persons.

In addition, newly hired extension technicians of the BAI were given a one-month training on livestock production, agri-business and extension at the UPLB before they were fielded.

- d) The LPIPP has also demonstrated the actual realities such as the problems and shortcoming of all parties for the present or later supervised credit programs to correct. Thus, it was a small investment in pilot testing for a national livestock extension program.

4. Significant Problems Encountered and Solutions Tried

- a) Lack of technical know-how-how in animal production

Many of the cooperators barely had the knowledge of breeding, feeding, care and management of livestock and

poultry. They were, however, interested in the undertaking because of its challenge and potential benefits. They were quick to imbibe the recommended practices by the LPIPP technicians. The presence and concentrated attention of the technicians had much to do with the education of the farmers in the newer technology of animal raising. The technicians also ensured and facilitated the vaccination of the animals which was a most important component in small and backyard livestock production since the bulk of annual losses in small and backyard raising of livestock and poultry in the rural areas are those due to diseases.

b) Credit availability and repayment

The lack of capital was already known right at the beginning, hence the supervised credit from government through the rural bank at low interest rate and without collateral was a great encouragement.

Due to the very limited experience of the rural banks in a supervised credit program at the start, loan application processing was quite slow. This was remedied by the persistence of the technicians and through follow-ups with the CB-DRB main office.

Repayment was generally not a problem for the first loans. However,

it became a problem later on.

c) Procurement of animal stocks, feeds and other inputs

In many of the projects, where and how to get animals of reasonable quality without incurring high overhead expense in the procurement, soon became a problem. This was also the case for mixed feeds. The technicians had to get the cooperators together to organize their production schedules and procurement of inputs. Arrangements with possible suppliers were made. Minimum delivery volumes had to be assured before suppliers of inputs would agree, hence there was the necessity of organizing the cooperators and coming up with production schedules. This collaboration among the cooperators did not last long. Many reverted to their independent arrangements.

In some projects, some of the cooperators as planned by the Program raised their own quality sows and boars to supply their barrio's demand for weanlings to fatten. At the same time, they sold most of their weanlings in the local town market.

d) Marketing

The technicians helped contact different possible market outlets like institutional buyers and wholesalers.

The Food Terminal, Inc. (FTI), Purefoods Inc., wholesalers in the Vitas National Slaughterhouse, hotels and restaurants in the pilot areas were contacted.

Programmed production facilitated better marketing of the finished hogs and broilers.

In early 1975, the inflow of cheap Australian beef into the country drastically lowered the prices of animal products (including fish). That action of the government was a serious letdown to the LPIPP and other animal production efforts which it was supposed to be promoting.

- e) There was mismanagement by the officers of some farmers' associations in the LPIPP projects, largely due to dishonesty. This is typically the main cause of many failures in the history of cooperatives in the Philippines.
- f) There were also frequent changes in technicians and PPO's in some of the projects and the lack of proper turnover of the project. On the part of the Program Management, there should have been continued monitoring in the fourth and fifth years when the project was already fully taken over by the BAI.

## 5. Monitoring and Evaluation

The program director monitored the progress of the individual projects through



monthly reports from the technicians. He also made occasional visits to the project sites.

An annual evaluation of the individual projects was made through evaluation conferences attended by the program personnel, invited resource persons, the PPO's of the provinces concerned, and representatives of the farmer-cooperators and rural banks. This was done at about the end of the fiscal or project year to assess the progress, problems and needs, and prospects of the individual projects and of the total program. This was held in May 1973, at UPLB and in May 1974, in Bacolod City. None was held at the end of the third and final year of the program. Instead, the program provided for a formal survey evaluation conducted by an expert team in 1975-76.

#### NOTES ON THE INFORMATION PROGRAM

One of the significant components of the LPIPP efforts was the extension information backstop. A number of circulars on livestock and poultry production were supplied regularly to the technicians and PPO's. In addition, a bi-monthly newsletter known as the "Livestock and Poultry Research News" was produced by the Program and regularly sent to the same clientele. However, these publications were not restricted to them. Many copies of each issue were produced and sent to all the livestock and poultry production technicians in the country and concerned agencies/institutions. The research news made available

to the clientele end-users the recent findings in research in the Philippines on livestock and poultry production and health. Relevant results from abroad were also included.

At present, the LPRN is very much a regular publication of the UPLB/NFAC program.

#### SOME IMPLICATIONS FOR ACTION AND RESEARCH

The idea of a supervised credit program and scheme of implementation such as the LPIPP is generally sound. How else can the small farmers or livestock and poultry raisers participate in the socio-economic activities of a developing country, make their proportionate contributions to national development, and derive equitable benefits and rewards except through the financial support and assistance of the government and its various agencies/instrumentalities?

What seems very necessary and urgent is a fully committed and persistent implementation of such a program. To begin with, the program must be a scale and design that is suitable to the needs of the farmers and the markets. The implementors, particularly the government technicians, must always be on top of the situation, able to identify and anticipate problems so as to bring timely and proper remedies. To be sure, some of the problems are naturally beyond the technician's control and capability, for which government must be equally concerned with and committed to the nature of policies, support/assistance.

What research is still needed? So far, there have already been too many research findings and reports. What seems needed is complete sorting, proper analysis and synthesis for modification or improvement of the

action program.

Interdisciplinary applied research on the technical and socio-economic constraints of the action program may be necessary. This may be of a general nature to the country or region but may vary in some respects from community to community depending on the farm and market situations. In small farms, one research area is the technical and economic feasibility of integrated or mixed farming systems for better complementary use of resources, nutrients and wastes and for increasing of total farm income. For example, to reduce the amount of purchased feed for poultry and swine needs, producing some feed grains, rootcrops and green feeds on the farm might be introduced. Vice-versa, to increase the income of a rice or upland crop farmer, he may need to raise some livestock and/or poultry.

My contention is: act first based on what is already known; then conduct research on the problems and needs of the action program to improve it.

#### CONCLUDING STATEMENT

The LPIPP scheme of a livestock Supervised Credit Program implemented in 10 pilot barrio sites, one each in 10 provinces in 1972-75 proved relatively successful in generating economic activity in those selected barrios and radiating it into adjacent barrios. Credit was granted to the farmer cooperators thereby enabling them to undertake the activity which they benefited from and enjoyed doing. To a large extent, the cooperators were generally successful in marketing their products in the first two years with the leadership and assistance of the assigned technicians.

In 1975, however, the high prices of feeds and the low prices of meat, aggravated severely by the dumping of Australian beef in our markets, resulted in severe problems of marketing for most of the cooperators as well as for all the other livestock products, big and small. Many suffered losses and were not able to repay their loans to the rural banks. In turn, the banks refused to give further loans, hence there was nearly a total cessation of the projects. In one project however, even when there was no marketing problem yet, it was the farmers' association officers who mismanaged the association by not turning over the loan repayments of the members to the bank.

Nevertheless, the scheme has shown some viability and potential. What is difficult and elusive is the functional mechanism of a farmers' association or cooperative.

The proper support and attitude of government (national, provincial and local) are necessary. The supervising technicians, be they provided by the BAI or by the rural banks, are a most critical component. The human resource is always the most important. After all, is not man the real object and beneficiary of development? The training and education (includes values and attitudes) of the farmers is paramount. But the technicians must set the proper example through their competence, integrity and commitment.

Given these three elements of human potential and consistent government support, I am confident of success in the implementation of any well-planned and sound socio-economic program for the small farmers.

## CHAPTER 8

## THE FARM SYSTEMS APPROACH

Teodoro Rey\*

INTRODUCTION

The farm systems approach, a strategy which FSDC is attempting to evolve in its small scale pump irrigation cooperative program otherwise known as the Barangay Irrigators' Service Association (BISA) was launched in line with the government's accelerated thrust towards rural development. It is designed to harness potential opportunities presented by the conditions prevailing in the farm areas, (e.g. untapped irrigable areas and farm lands beyond the reach of NIA's projects) and to minimize constraints that hamper the development of the community. The Program recognizes the scarcity of agricultural resources and the need to maximize their utilization. It is premised on the realization that an effective irrigation system is the result of the integration of resources, support, assistance and cooperation of both the government and farmers concerned.

The Building Block: The ISA

The basic tool utilized to effectively implement the BISA program is an organization: the Irrigators'

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\* Administrator, Farm Systems Development Corporation; Phil. Veterans Bank Building, Metro Manila.

Service Association. Such an organization not only places the farmers in a better position to overcome the high cost of agricultural inputs, but also facilitates the effective management of farm resources.

The ISA is composed of farmers organized in a cooperative which serves as a channel for technical and financial assistance essential in the acceleration of rural development.

The ISA has the following features:

- a. It is education-oriented. It is concerned with continuing education in areas of production, association management and information.
- b. It is innovation-oriented. The system is being developed continuously to accomodate better, innovative ideas of management.
- c. It is system-oriented and ensures the maximum utilization of available resources.
- d. It is institution oriented. The association is subjected to the "institutionalizing" effects of management support systems inherent in the organizational structure of the ISA.

Figure 1 shows its organizational chart.

#### FUNCTIONS OF THE ISA

The General Assembly- is the supreme power and exercises final authority in all matters affecting the ISA; it acts as final arbiter in any dispute or disagreement which may rise between or among the Board of Directors, committees, officers and individual

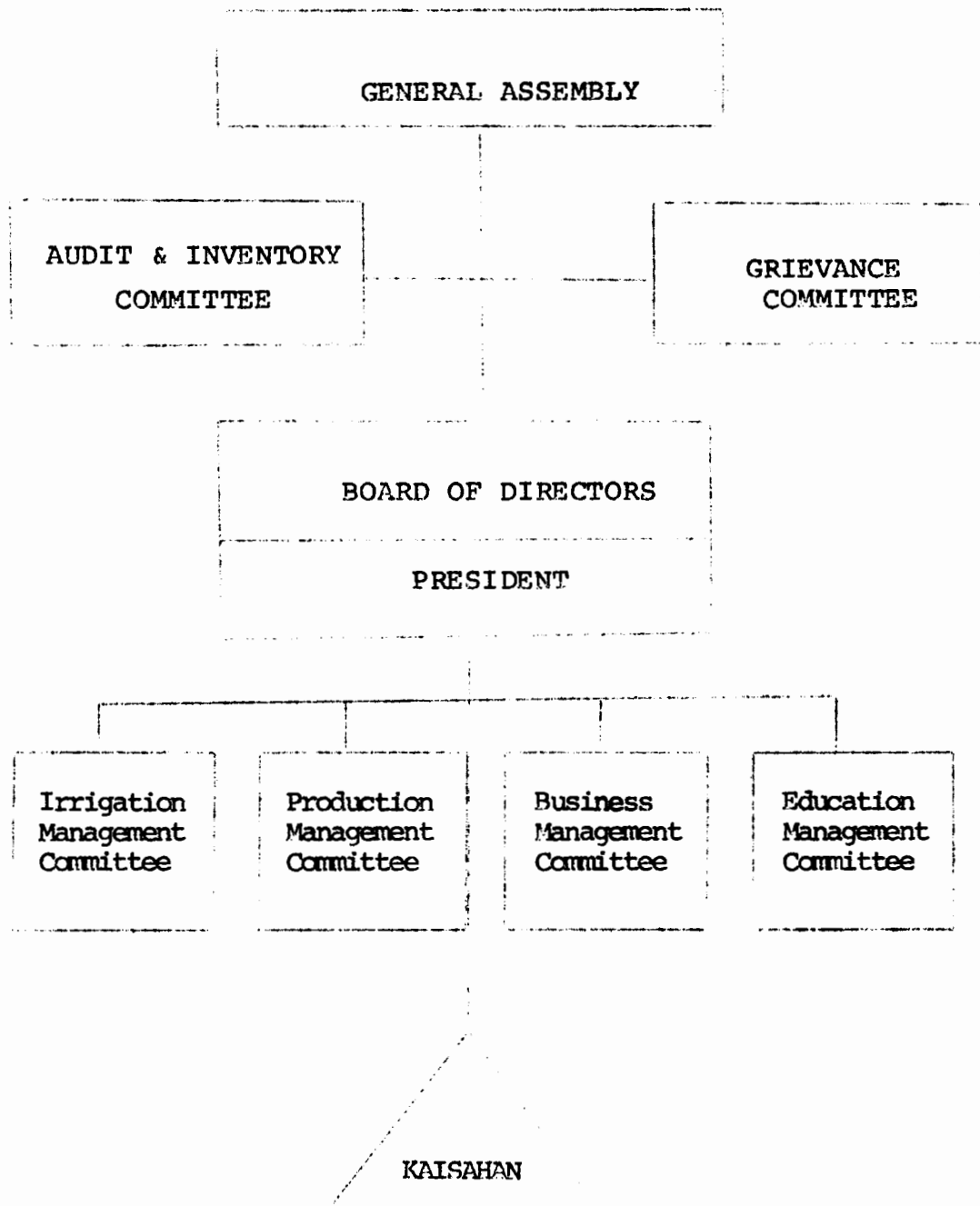


FIGURE 1. ISA ORGANIZATIONAL CHART

members and takes official decisions regarding any drastic change on organizational policies.

The Board of Directors (BOD) - is composed of five members: a chairman concurrently the President of the ISA, and 4 directors all elected by the General Assembly.

BOD takes charge of the affairs and property of the association and shall:

- formulate rules, regulations and policies not inconsistent with the ISA by-laws
- decide on matters of fees, fines and other dues
- elect and/or appoint officers not elected by the general assembly
- enter into contract or authorize any officer to enter into any negotiation, contract or agreement with any person/firm or entity which it may consider necessary for the interest of the association.

The Audit and Inventory Committee (AIC) - develops and recommends to the Board policies, systems and procedures for auditing accounts and for inventory of all assets of the association, and at the same time carries out its auditing functions.

Grievance Committee (GC) - develops and recommends to the BOD systems and procedures on effective investigation and handling of complaints or grievances of the members. It receives complaints, conducts investigation and recommends appropriate actions/decisions.

The Business Management Committee (BMC) - takes



charge of the ISA's business affairs like canvassing, procurement, savings campaign, collection of fees, fund raising and use of funds. It also develops and recommends business policies and procedures to the BOD.

The Irrigation Management Committee (IMC) - is responsible for the maintenance and repair of the irrigation system, the programmed and organized distribution and use of water, and the development of systems and procedures for these activities.

The Education Management Committee (EMC) - takes an active role in the education of the ISA members. It is responsible for identifying the training requirements of the ISA as well as for conducting regular, periodic and special training programs.

The Production Management Committee (PMC) - is responsible for initiating, developing, recommending and supervising programmed and organized production activities of the ISA. It takes charge of the ISA's pooled resources--farm tools, equipment and other production inputs.

The Kaisahan - is the smallest organizational unit of the ISA. Composed of 10-15 members, it seeks to promote effective and efficient management of the ISA resources and to facilitate planning and implementation of the ISA programs.

The Kaisahan, organized on the basis of the ISA's irrigation structure/lay-out, serves as the center of production, water distribution and manpower development of the association.

## Objectives

The objectives of the ISA include:

1. Irrigation Development - the establishment of small-scale pump irrigation systems. Included in the agency's irrigation development activities are the construction, installation, operation of new pumps and the expansion and/or rehabilitation of existing projects started by the National Irrigation Administration.
2. Organizational Development - the organization/training of ISA farmer-members into able owners and managers of the irrigation system. It is in this light that FSDC has embarked on training programs designed to equip the farmers with the necessary entrepreneurial skills essential to the management of their systems.
3. Adaptative Farm Technology Development - the accelerated pace of production resulting from the introduction of both irrigation and organizational development, necessitates the use of appropriate farm equipment. The extension of commodity loans to eligible ISA farmer-members is anticipated to enhance existing production facilities and post-harvest activities. These commodity loans are in terms of production and post-harvest tools and equipment such as power tillers, hand tractors, sprayers and other farm implements.

### The BISA Program

The Development of the BISA Program involves three (3) Stages:

#### Stage I - The Development of Farm-Level Associations

Phase I: The two major activities undertaken under Phase I are as follows: (a) The organization of farmers into ISA's; and (b) The construction, installation and operation of pump irrigation systems

#### Phase 2: The Development of ISA Entrepreneurship

This phase aims to enhance/develop the farmer-members' managerial and productive abilities for the purpose of maximizing economic returns. Specifically, it consists of the following: (a) Education and training of ISA members on organizational and irrigation management; (b) Introduction of management systems and procedures; (c) Evaluation and refinement of the irrigation system; and (d) Introduction/implementation of management schemes for production, credit marketing, use of farm equipment.

#### Phase 3: The Development of ISA Enterprises

Phase 3 intends to strengthen the institutional base through the continuous implementation of innovation packages and project development. It includes: (a) Introduction/implementation of various cropping patterns and livestock production; (b) Provision of marketing services such as price information,

grading/standardization, temporary storage, drying, processing and the like; and (c) Introduction of an all-purpose center for storage of farm implements for maintenance purposes.

#### Stage II - Economic Integration

Stage II involves the administrative/physical integration of resources and socio-economic factors affecting ISA farmer-members to promote efficiency and economies of scale.

##### Phase I: Establishment of the ISA Federation

Phase 1 involves the organization of viable ISA's into district federations to operate central economic facilities for the systems. The federation of ISA's is anticipated to considerably enhance the bargaining power of the farmer-members.

#### Stage III - Union of ISA's at the Provincial Level or Regional Level

This stage envisions the further integration of the ISA district federations into provincial or regional unions. These unions, of a definitely larger dimension, shall undertake marketing, technical and other specialized functions such as the provision of warehouses, price information, marketing outlets, transport for the buying/selling of farm inputs and products.

#### Program Implementation

The Organization- at the corporate level, the basic activities involve both planning and program implementation. The former includes: (1) the

formulation of long range development plans; (2) conceptualization of agricultural/farm development projects; (3) maintenance of a regular evaluation system to ensure the program's responsiveness to the needs of the small farmers; (4) negotiation for loans to finance the funding requirements of FSDC's projects; and (5) preparation of technical and financial feasibility studies.

At the implementation level, the corporation undertakes the following activities: (1) supervision over training programs at the corporate and local level units such as the Provincial training staff of the ISA; (2) supervision over technical activities of FSDC (i.e., topographic survey, design and estimates of proposed projects, procurement of pumps/motor accessories, assistance on operation and maintenance of the system and/or components of a farm support system; and (3) supervision over field personnel/activities.

### Provincial Level

The implementation of the BISA program at the provincial level is effected through the joint efforts of the Provincial government and the FSDC. FSDC, in coordination with the Provincial government and other government and private agencies, provides the necessary financial, technical, institutional support and assistance to the ISA's in their agricultural, organizational and business undertakings. For every province, an FSDC Program Manager handles the supervision of the BISA Program and is also responsible for maintaining liaison and coordination with the provincial government.

### Project Level

It is at the project level where the actual implementation of the BISA program is realized. FSDC engineers and other field personnel take the responsibilities delegated by top management to the areas of coverages. Institutionalization of the ISA's is handled by FSDC institutional officers (IO's) who are virtually the moving forces of the BISA program at the project level.

The IO's are mainly responsible for motivating the farmer-members to avail themselves of the assistance and training programs which the IO's conduct for the association and various committees.

The institutional officer is the main link between the BISA program and its recipients at the project level. Since the IO's role is very vital, the FSDC sees to it that he undergoes extensive training in Irrigation, Association, Production, and Financial Management.

The IO's tasks/functions include the following:

- (1) Conducting ISA membership campaigns;
- (2) Conducting Pre-organizational Training for ISA prospective members;
- (3) Organizing the ISA;
- (4) Conducting the Training of ISA members and officers on irrigation and association management as well as on production skills;
- (5) Extension of assistance to farmers in registering with SEC, securing loans for the irrigation system and for other ISA projects;
- (6) Conducting of periodic refresher courses for ISA officers, committees and members; and
- (7) Evaluating/monitoring/reporting of ISA progress.

### Manpower Resources

Manpower resources are essential factors in the effective implementation of program activities. FSDC's employees fall into two categories: office based and field based.

Table 1. Manpower resources of ISA (Number)

	1975	1976	1977
Office-based	280	348	427
Field-based	<u>370</u>	<u>542</u>	<u>642</u>
TOTAL	<u>650</u>	<u>890</u>	<u>1,069</u>

Table 1 indicates the increasing number of FSDC's manpower. This is reflective of the expanded operations of the BISA program.

Management has expressed preference for younger employees (both office and field-based) with a background/experience in agricultural development. However, to cope with the highly diversified activities of the Corporation (staff and selected line functions) preference is likewise given to employees with orientation in various other discipline, (e.g. Industrial, Engineering, Economics, Finance, Business Management, Behavioral and Social Sciences). Emphasis on the recruitment of young employees is in view of the corporation's basic need for dynamism, commitment and the enthusiasm of youth.

However, there are also experienced and more mature technical personnel. Expertise in highly specialized fields such as irrigation management, research and evaluation, is drawn from a staff of consultants.

Field-based employees basically include those

involve in field operations, supervision, training and institutional development. Field personnel (specifically those involved in institutional activities) are subjected to intensive training to equip them with the necessary knowledge and skills which they in turn transfer to farmers. Field supervisors/officers undertake the task of imparting FSDC's development program to the farmers, including the extension of entrepreneurial skills essential in the management of the farm systems.

#### Organization Linkages

The nature of FSDC's work program is directly linked with the activities of various government institutions.

Among these key institutions are:

(1) Provincial Governments

The provincial government assists FSDC in securing the involvement and cooperation of agencies and institutions from the provincial down to the lowest level- the barangay or barrio-level.

(2) National Irrigation Administration (NIA)

FSDC agreed to jointly undertake with NIA, a program for the institutional development of farmers in communal irrigation systems, specifically gravity systems in 1000 has. and below, and pump systems in areas not covered by the BISA program. The set-up is known as the Barangay Irrigation Development Association Program (BIDA Program).



(3) National Electrification Administration  
(NEA)

NEA provides extension of power lines for electrically-operated pump projects.

(4) National Grains Authority (NGA)

NGA considers the ISA farmer's produce as a source for its massive grains procurement program. With NGA, ISA farmers are assured of standardized pricing and stable market for its produce.

(5) National Food and Agriculture Council  
(NFAC)

NFAC seeks to facilitate implementation of the innovation packages by providing assistance to the farmers in securing production loans, training of ISA's on farm plans and budget preparation, determination of high-yielding varieties suitable to specific localities and, in general, the inclusion of BISA-irrigated areas in its Masagana 99 Program.

(6) Agricultural Credit Administration (ACA)

One essential need of farmers is credit or loans for securing basic production inputs. ACA ensures that this need is met. ACA has agreed to extend to the ISA's its production credit financing complete with its credit investigation scheme, processing, approving and releasing of loans as well as the setting aside of loan funds.

(7) Human Settlements Commission (HSC)

The HSC shall supply FSDC with expertise, mostly pertaining to by-product utilization like organic wastes, bio-gas or other resources that may be tapped for possible application in the ISA areas.

FSDC Program Evaluation Design

Evaluation is considered a vital component in the administration of the FSDC program. Evaluation results permit key program personnel to see at certain points in time whether the Program needs adjustments. For cooperating agencies, evaluation results justify whether an on-going extension program needs further support.

The evaluation office, being most heavily exposed to feedback from the program is in a position to identify operational problems and to field-test proposed solutions prior to their incorporation into the program implementation. The foregoing tasks suggest research and evaluation activities to complement program execution. To these, FSDC is quite responsive.

Evaluation framework

The evaluation system of FSDC is based on a logical framework matrix which has been developed to clarify the program design and to obtain a common frame of reference in the variables on which the program is going to be evaluated. The evaluation system will seek to analyze the causative linkages among the different evaluation variables classified into goal, purpose, output and input. The process

of analysis follows the vertical progression of the project:

- 1) If adequate inputs are provided, then planned outputs are produced.
- 2) If the outputs are produced, then purpose will be achieved.
- 3) If purpose is achieved, then a planned degree of progress towards a higher goal will be attained.

Assessment of Program Effectiveness- a sound criterion evaluating the success of the program is to compare the accomplishment of the year with the year's targets. Once the problem of measuring inputs, outputs, purposes and goals has been solved, the measurement of effectiveness will be a simple matter of comparing actual performance against planned targets. The most important single measure of effectiveness is the project's purpose, namely, the increase in farmers' income.

For evaluation purposes, the project will be considered ineffective if it fails to achieve 65% of its targets in any given year. A target achievement of 65-75% will be considered moderately effective, and more than 75%, very effective.

#### ACCOMPLISHMENTS

##### IRRIGATION DEVELOPMENT

The establishment of small-scale irrigation systems in project areas of the BISA Program is one of the primary undertakings of the FSDC. In line with the accelerated drive of the government to open

the country's riches to farmers, the BISA Program's irrigation development in 27 provinces has achieved the following as of May 31, 1977: 428 pumpsets installed; 30,470 hectares irrigated; 262 ISA's benefited; ₱25 M loans released; and 16,000 farmers benefited.

#### INSTITUTIONAL DEVELOPMENT

Corollary to the development of irrigation, the FSDC has pursued its policy of developing a well-informed, educated and involved group of farmer-beneficiaries who have been organized into Irrigators' Service Associations.

Throughout its existence, the BISA program has been regularly conducting training programs designed to equip farmers with entrepreneurial and management skills necessary in the development of rural leadership.

In this aspect, the BISA Program, as of May 31, 1977 has the following accomplishments: 396 ISA's organized; 20,448 farmer-members; 1,855 training courses conducted; and 51,164 participants trained.

#### ADAPTIVE FARM TECHNOLOGY DEVELOPMENT

In line with the desire to strengthen the ISA organization and to further sustain agricultural productivity, adaptive farm technology development activities have been done, primarily to maximize labor, capital and land utilization. Commodity loans in the form of farm tools and equipment were granted to ISA farmer-members, thus making possible the use of modern mechanical farm devices.

As of May 31, 1977, BISA Program has recorded the following: ₱494,000 loans released; 48 ISA's

benefited; and 7,189 hectares covered.

#### PROBLEMS ENCOUNTERED

Periodic monitoring of various projects shows different problems encountered in the field level. In the organizational stage, farmers sometimes show skepticism towards the Program. This may be the result of previous unpleasant experiences with other programs. At the operational stage, the problem of factionalism arising from divergent loyalties, is oftentimes encountered. This problem is frequently experienced in multi-barrio ISA's. Among single-barrio ISA's, this problem seldom occurs.

So far, no single solution has been evolved for these problems. Approaches vary from case to case, or from region to region. This is where the indigeneous Institutional Officer (IO), in his knowledge of such peculiarities in his own locality, can become most effective. Through periodic meetings with key personages in the community, we formulate strategies of action. Most often these involve intensification of the educational packages or the intervention of opinion leaders or respected members of the community.

#### IMPLICATIONS FOR ACTION AND RESEARCH

The farm systems approach, with its view of rural socio-economic life as a network of interlocking systems and its elements performing specific functions, has unlimited fields for research and development.

Presently, emphasis is being stressed on the following:

1. Studies on the management of irrigation

associations to determine the factors affecting the performance of the association.

2. Study on appropriate/adaptive farm infra-structures.
3. A computer-assisted Agricultural Development Programming/Simulation Model which aims to achieve optimum allocation of resources and alternative enterprises within any farming system covered by FSDC.
4. A computer-assisted Integrated Feasibility study Model for each ISA which analyzes the possible impact of the innovation packages on the ISA and the individual members.
5. Impact Studies which will attempt to determine the effects of the BISA project on the socio-economic status of various sectors within the community that the ISA is in.

#### CONCLUDING STATEMENT

In the coming years, the FSDC will continue to pursue its program to reach the northermost fields of Luzon and the southermost farms of Mindanao. It will advance in earnest the institutionalization of progressive farm systems in all areas of the country. In so doing, it hopes to minimize agricultural productivity in the country and increase the income of farmers in the rural areas.

Guided by P.D. 681, the decree which created the Farm Systems Development Corporation, the agency, in carrying out its tasks for rural development, expects to see the beginnings of a partnership between the Filipino farmer and the government- a common bond manifested in their concerted efforts for

national stability and growth. The FSDC is confident that within a foreseeable period this partnership will harvest gratifying results: mutual benefit and a renewed sense of self-reliance and well-being.

This bright tomorrow is the commitment of President F. Marcos to the small Filipino farmers.

THE SAPARI ISA: A REPRESENTATIVE CASE

## A. Assessment of the Project Area

1. Project Location<sup>1/</sup>

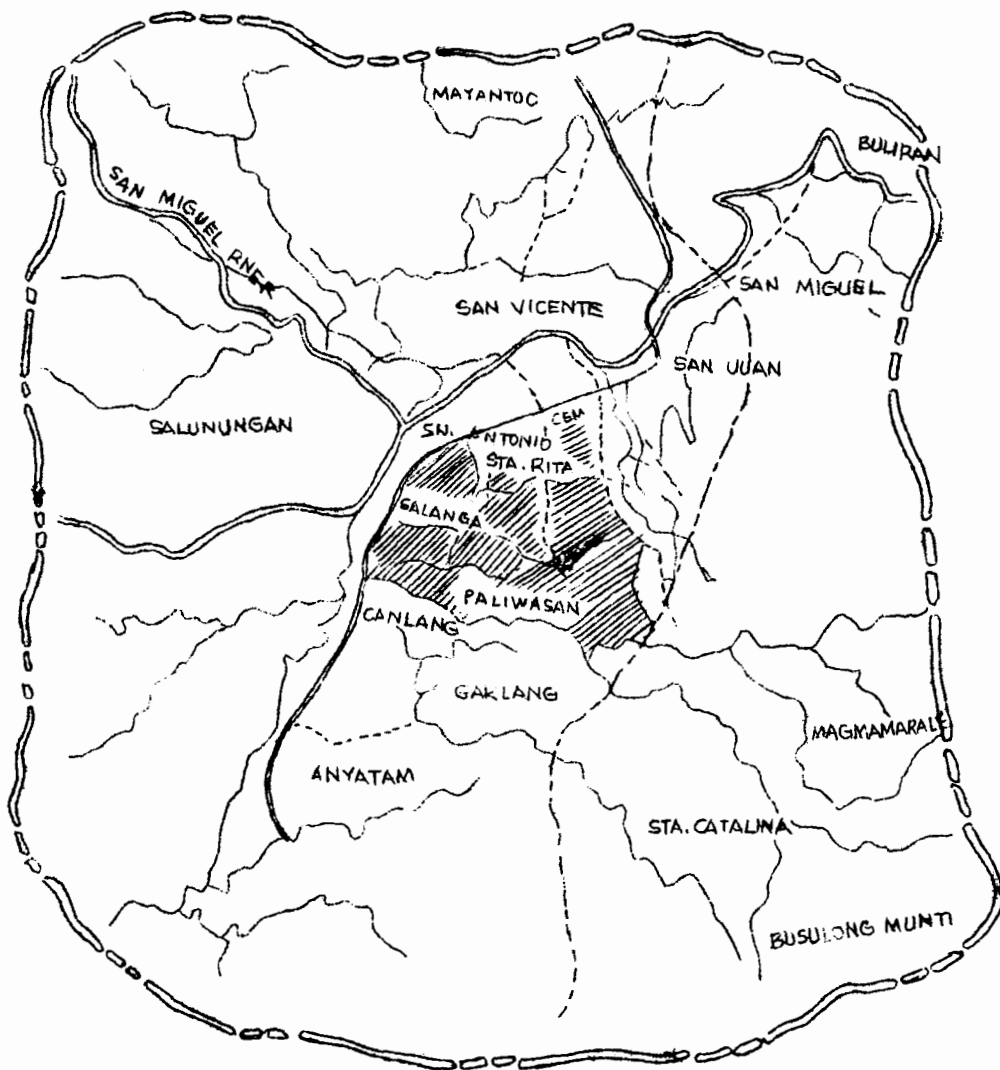
The Sapari Irrigators' Service Association is located in San Miguel, Bulacan.<sup>2/</sup> It is composed of farmers from three barrios from which its name was derived, namely: Salangan, Paliwasan and Sta. Rita. The design area covered by the irrigation system is located in Barrio Salangan along the eastern side of the Cagayan Valley Road. The project area is bounded on the west by the San Miguel River, from which it draws its water supply. Further on its eastern part is the Sierra Madre Mountain Ranges. It is barely two (2) kilometers from the poblacion of San Miguel, Bulacan and is bounded on the eastern and southern part by the municipality of San Ildefonso. The area is quite accessible by land and is near populous areas which serve as markets for its produce.

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

<sup>1/</sup> Please see attached location Map (Figure 1)

<sup>2/</sup> An Irrigators' Service Association (ISA) is composed of farmers organized into a cooperative to eventually own, manage, operate and maintain an irrigation system built with the assistance of FSDC. Furthermore, it serves as a channel for technical and financial assistance needed in the acceleration of rural development.





LEGEND:

-  - NATIONAL HIGHWAY  
 (CAGAYAN VALLEY ROAD)  
 - PROJECT AREA

LOCATION MAP OF THE  
 SAPARI IRRIGATORS'  
 SERVICE ASSOCIATION

## 2. Weather/Climate

The area has two (2) distinct seasons: wet from May to November and dry with occasional rains, the rest of the year. Typhoons often occur during the period June to September and sometimes cause overflowing of the San Miguel River. The average rainfall experienced in the area is 187.92 mm. with the highest, 400 mm., occurring during the month of August.<sup>3/</sup> The annual mean normal temperature is 27.2°C, with the month of January registering the lowest at 25°C.

## 3. Physical Characteristics

The project area has a generally flat terrain. It has predominantly two (2) soil types, <sup>4/</sup> namely: silt loam which covers the western, southern and middle east portions of the ISA and is suitable to corn, cowpea, pole sitao, mongo, watermelon and squash; and sandy clay loam, covering the northern and middle portions, suitable to lowland rice, corn, sweet potato and squash. The total cultivated area is 206 hectares, 186 of which can be irrigated in the wet season and 136 hectares during the dry season.

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<sup>3/</sup> Refer to Figure 2 - Monthly Rainfall and Temperature in Bulacan 1951-1970

<sup>4/</sup> Refer to Figure 3 - Soil Map of the Sapari ISA

The ISA's water requirements are adequately met by the San Miguel River which supports the irrigation system and underground water resources which satisfy the household demand.

#### 4. Demography

The project area has a population of 525 of which 33% are farmers. Each farmer's household has an average of seven members. Of these, 73.9% or approximately five (5) members are capable of engaging in productive enterprises while the rest are generally of pre-adolescent age. Only two of the five (5) household members capable of working are engaged in farming. The remaining three (3) are idle most of the time due to the lack of job opportunities within the area.<sup>5/</sup>

#### 5. Tenurial Status

The majority of farmers in the project area are tenants: 87.7% are lessees, 15.6% own parcels of cultivated land, 9.1% are share-tenants and only 5.2% are owner-cultivators. Landholders cultivate a total of 34.1 hectares of riceland, while tenants account for 171.9 hectares.

On the sharing arrangement, leases are covered by the existing land rental of 25-75, i.e., 75% of the output goes to the farmer-

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<sup>5/</sup> Refer to Figure 4 - ISA POPULATION - DISTRIBUTION OF HOUSEHOLD MEMBERS BY AGE AND MAJOR OCCUPATION, 1976

FIGURE 2. MONTHLY NORMAL RAINFALL AND TEMPERATURE<sup>1/</sup>  
IN BULACAN 1951-1970

<u>MONTHS</u>	<u>RAINFALL</u>	<u>TEMPERATURE</u>
1. JANUARY	75 mm.	25°C
2. FEBRUARY	40 mm.	26°C
3. MARCH	40 mm.	27°C
4. APRIL	75 mm.	28°C
5. MAY	160 mm.	29°C
6. JUNE	300 mm.	28.5°C
7. JULY	325 mm.	28°C
8. AUGUST	400 mm.	27.5°C
9. SEPTEMBER	350 mm.	27.5°C
10. OCTOBER	275 mm.	27.5°C
11. NOVEMBER	150 mm.	26.5°C
12. DECEMBER	<u>75 mm.</u>	25.5°C
T O T A L	<u>2255 mm.</u>	
A V E R A G E	187.92 mm	

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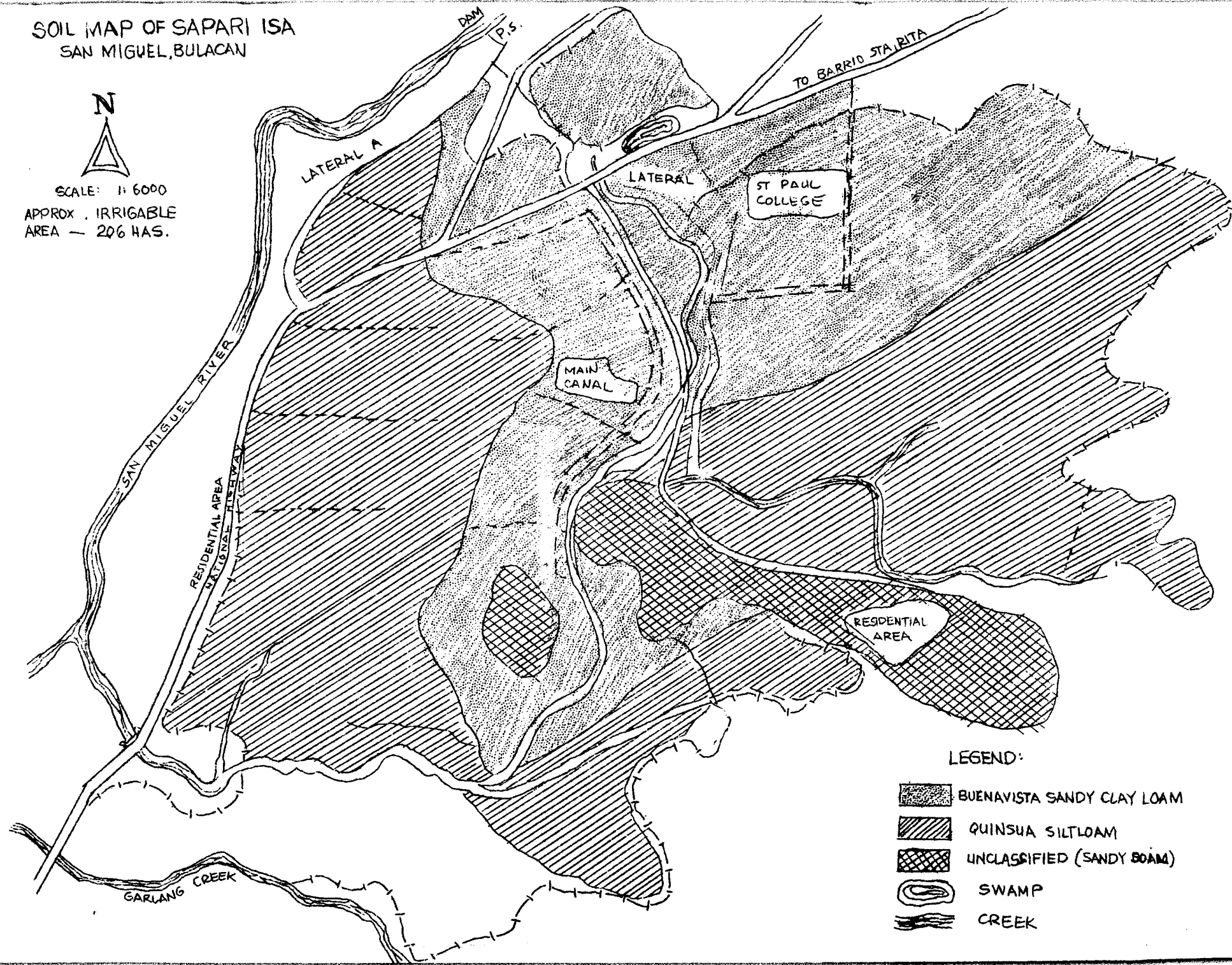
<sup>1/</sup> Socio-Economic Profile, Province of Bulacan, 1974.

3 SOIL MAP OF SAPARI ISA  
SAN MIGUEL, BULACAN








SCALE: 1:6000

APPROX. IRRIGABLE  
AREA - 206 HAS.



LEGEND:

-  BUENVISTA SANDY CLAY LOAM
-  QUINSUA SILTLOAM
-  UNCLASSIFIED (SANDY SOAM)
-  SWAMP
-  CREEK

tiller and 25% goes to the owner with all production costs shouldered by the farmer. Some farmers and lessees pay fixed rentals at the rate of 16 cavans per hectare per year. Share-tenants have a 55-45 sharing arrangement. Fifty-five percent (55%) goes to the tenants and 45% goes to the landowner with the cost of production shared by both, depending upon their mutual agreement.

#### 6. Economic Profile

The major sources of income of farm families in the Sapari ISA project area are rice, animal and watermelon production comprising 82%, 13% and 5%, respectively of total income.

The average annual family income is estimated at ₱4,300 without irrigation. This can be attributed to the low level of production which is typical of rainfed areas. With the introduction of irrigation and the subsequent increase in production, the average farm income can initially be increased to ₱5,482.

The average landholding of farmers in the SAPARI project area is 2.8 hectares. A farm family's assets, consisting of farm tools/equipment, household belongings and domestic animals are estimated at ₱3,290.

#### B. Problem Identification

The situation that existed in the project area prior to the introduction of the BISA program can be attributed to several factors,

FIGURE 4. ISA POPULATION - DISTRIBUTION OF HOUSEHOLD MEMBERS BY AGE AND MAJOR OCCUPATION, 1976

<u>AGE &amp; OCCUPATION</u>	<u>NUMBER OF PERSONS</u>	<u>PER CENT (%)</u>	<u>AVERAGE NUMBER PER FAMILY</u>
Above 10 years old			
Farmers	175	33.3	2
Students	149	28.4	2
Employed	4	.8	
Stay at home	60	11.4	1
Below 10 years old	<u>137</u>	<u>26.1</u>	<u>2</u>
T O T A L	<u>525</u>	<u>100.0</u>	<u>7</u>

foremost of which are inadequate opportunities for technical and other forms of assistance. This is best exemplified by the fact that only 50% of farmers in the project area use high yielding varieties of rice. For lack of soil classification, there are no efforts to adopt the crops planted to the soil type and avail of modern methods of crop protection. The intensity of fertilizer and herbicide application is left to the farmers judgement due to lack of supervision from production technicians. As a result, these production inputs have contributed minimally to the increase in farm output.

Another problem existing in the area is the inadequacy of farm equipment, which is vital towards increasing the productivity of land and human resources. Seventy-two percent (72%) of the farmers rely on carabaos for tilling, with most farm implements consisting of plows and harrows. Of the total farmers in the area, only 50% own sprayers which are still insufficient to cover the project area. Post harvest operations such as threshing are still done manually, thereby leading to substantial grain losses. The lack of facilities such as milling machines, dryers, and warehouses oftentimes forces the farmers to sell their output at the earliest time possible.

There is also a lack of marketing systems as characterized by a disunited approach in selling farm produce and procuring farm needs. This is shown by the fact that only 27.8% of the farmers sell palay to the National Grains Authority (NGA) with the rest selling directly to local traders.



The lack of post-harvest facilities and marketing systems have resulted in unstable prices for both production inputs and farm produce.

Livestock production is at a satisfactory level with 79% of the farmers raising carabaos, 5%, cattle, 44%, hogs, 5%, goats, and 62%, poultry. There is, however, still ample room for the development of the livestock industry which is a source of supplemental income for the farmers.

Obtaining credit is still another problem facing the farmers. The major sources of financing are the Agricultural Credit Association (ACA) from which 33% of the farmers obtain loans, and the Rural Banks of San Miguel and San Rafael, Bulacan where the rest get their credit. The farmers, however, are encountering difficulties in approaching these lending institutions due to calamities in the past which have resulted in their default in the payment of loans, thereby impairing their credit-worthiness.

#### C. Potentials of the Project Area

The Sapari ISA project possesses tremendous potentials for development. On water requirement, the San Miguel River to the west can adequately supply the ISA area during the dry season. The soil which is silty loam to sandy clay loam is suited not only for rice-growing but for vegetables as well. Marketing of produce is facilitated by the area's proximity to the town proper and to Manila markets. Prevailing climate and available resources like labor, financing institutions and water resources will allow the

farmers to intensify cropping throughout the year. Likewise, livestock raising can be well adopted not only to complement rice production but also to utilize available labor resources and farm by-products in the area. These and some other possible areas of development in the area can be undertaken for the benefit of the farmer-members themselves. For example, with the introduction of irrigation, palay yield could be increased by 98% or from 38 cavans to 75 cavans per hectare per crop. Taking rice alone with the other source of income as constant, it shows that with adequate irrigation, increment in yield provides 27.50% higher income to the farmer and 107.36% if irrigation and improved practices in growing rice are adopted.

#### D. Development Plan

##### 1. Program Status

The Sapari ISA has undergone the first two phases of the program strategy of the BISA program: the establishment of the ISA and the development of the ISA entrepreneurship. Currently, it is undergoing the initial stages of Phase III which is the development of the ISA enterprises. The third phase is meant to strengthen the institutional base through the continuous implementation of the innovation packages utilizing the resources of the ISA's and providing project development training. The introduction and implementation of different cropping patterns and caged-livestock produc-

tion which are major components of this phase are embodied in the current development plan for the SAPARI ISA.

## 2. Components of the Development Plan

The development plan for the Sapari ISA shall embrace crop production, introduction of innovation packages, livestock raising and farm residue utilization.

Under crop production, the predominant project is the cropping system. With it, soil management, water management, crop protection and rat control shall be integrated.

The development plan also embodies the introduction of the innovation packages. These are designed to provide ISA members with useful managerial know-how especially on farm management and techniques. Moreover, through the innovation packages the farmer's yield can be further enhanced by 15% more and his income increased with savings realized from discounts and additional profit brought about by organized buying, selling institutional credit, seed production and use of high quality seeds.

On livestock production, skills on the management aspect shall be emphasized using the available stock in the area. Later on, once the farmers are already adopt to this, the livestock project will branch out to include fattening, breeding of hogs and poultry raising. While the management skills of the farmers are being strengthened, less

capital-requiring projects like goat-raising and native poultry-raising shall be introduced.

Farm by-product utilization, such as the bio-gas project which converts animal manure into methane gas for use in refrigeration, cooking and lighting, will be undertaken. This project has already been started with the construction of a bio-gas plant in the barrio of Salangan. This plant which was inaugurated last January 7, has a daily output of 75 cubic feet of methane gas. However, this is only one of several possible projects intended to utilize farm by-products.

The development plan designed for the Sapari ISA follows a pattern which is applied to all ISA's covered by the Program.

### 3. Strategy of Implementation

#### a. Crop Production

Under crop production, focus shall be the planting, initially on a limited scale, of selected crops identified feasible after having considered the soil, water availability, marketability and potential demand.

As the farmers gain more experience and confidence in the production of these other crops, they can then decide on their desired cropping patterns.

The crops that will be considered other than rice are the following: mongo, watermelon, corn, pole sitao, and sweet potato.

Introduction of appropriate cultural practices shall be undertaken, taking into account the farmers' familiarity, or lack of it, with these crops. During the process, the following basic cultural practices shall be integrated.

- 1) Soil Management - activities like proper land preparation, improving fertility; proper use and timing of fertilizer application
- 2) Water Management - effective and efficient water allocation and distribution
- 3) Crop Protection - identification of pests and diseases, insects and disease control practices, use of chemicals and timing of application
- 4) Rodent Control - minimizing crop damages due to rodents
- 5) By-product Utilization - the use of farm waste as fertilizer and fuel or for other productive purposes

b. Introduction of the Innovation Packages

FSDC's innovation packages consist of:

- 1) The Seed Production Project- This seeks to ensure that certified quality seeds

are available at a low cost to ISA members for continuous production. Likewise, the technical capability of the farmers will be developed so that they can produce high quality seeds.

- 2) The Organized Buying Project - is designed to enable farmers to buy farm inputs such as fertilizers and insecticides in a faster and easier manner to get them on time at prices they can afford. This is possible through the ISA acting as a cooperative pool and a bargaining body in behalf of members.
- 3) The Organized Selling Project- aims to strengthen the bargaining power of members by developing a market set-up that will offer higher income. This involves the creation of a systematic, organized flow of products and profits in markets that are both competitive and favorable.
- 4) The Institutional Credit Project- intends to simplify the negotiation for capital and removes the strain and stress of long-winded farm loan transactions. The ISA, acting as a legal entity, registers faster than individuals and assures financial security for members.
- 5) The Farm Tool and Equipment Pool Project- will enable the farmers to have ready access to farm tools and equipment otherwise expensive for an individual member to acquire. Again, the cooperative concept goes to work through

the ISA. All members are owners of tools and equipment and are mutually responsible and liable.

- 6) The Organized Rice Production Project - aims to at least double rice production through the use of current technology. This project programs production and trains members in effective rice production techniques.

The introduction of innovation packages is expected to minimize production cost and optimize the utilization of land and labor resources.

The adoption of the Seed Production Project is estimated to reduce the cost per cavan of seeds by ₦44.00.

The level of farm production will be enhanced with the introduction of the Organized Rice Production Program which is expected to contribute to an increase in the yield per hectare by 15%.

The introduction of the Farm Tools and Equipment Pool Program is seen to result in a decrease in labor cost and grain losses of 15% and 2% respectively.

Organized buying and selling is estimated to reduce the cost of farm inputs by 10% and increase the price of rice per cavan by ₦5.

The introduction of the Institutional Credit Program is expected to reduce the cost incurred in obtaining credit by 90%.

#### c. Livestock and Poultry Production Project

As reflected in the survey report of FSDC on the Sapari ISA, the livestock and

poultry production in the locality may be further intensified through better management in animal raising.

In this light, the development plan for the livestock and poultry of the ISA aims to improve these enterprises as it is a good means of augmenting the farmer's income.

To achieve this goal, the plan intends to:

1. introduce and disseminate recommended technology
2. provide technical and support services
3. utilize locally available feeds
4. utilize idle and under-employed labor

The foregoing activities shall be undertaken through training and demonstrations.

During the training, the ISA members will be encouraged to put up projects using available resources and stocks until such time that they are capable of undertaking a more sophisticated project like a breeding center which can provide good stocks to the members and at the same time improve or upgrade the swine industry of the ISA.

At the appropriate time, a breeding center will be set-up by the ISA consisting of several improved or pure breed stocks of sows or gilts. The center will be managed by the ISA under the supervision of the BAI and the Model ISA Project Team. Initial



capital requirement for housing, foundation on stocks, feeds, medicines, and other inputs shall come from the Institutional Credit scheme on livestock.

Offsprings will be sold to farmer-members at reasonable prices. At this stage, organized buying of feeds and other requirement will be implemented. Also, organized selling of marketable hogs is undertaken. Farmer-members will be able to put up this individual project wherein this training on management skills will be applied. Excess piglets may be sold to non-members at prices agreed upon by the ISA members.

If feasible, the ISA may set up its own small scale feed mill to supply the feed requirements of the breeding center and livestock raised by members. Later on, the feed mill may expand its operation to supply the needs of non-members.

## CHAPTER 9

## THE NUTRITION PROGRAM

Florentino S. Solon<sup>\*</sup>INTRODUCTION

The extent of malnutrition today may be gleaned from a current nationwide weight survey of pre-schoolers. Latest reports of this survey show that of some 4.3 million children weighed, 78 percent were found undernourished, with 47.1 percent in the first degree, 24.9 percent in the second degree and 5.8 percent in the third degree. The 4.3 million children reported by the survey represent only half of the total estimated Filipino children under six years.

Three out of four of these preschoolers are anemic, and about the same number are deficient in Vitamin A. Of the number of deaths registered every year, 50 percent are of children below five years. One out of two deaths among these children is due to diseases aggravated by malnutrition.

Several factors are cited as having caused malnutrition in the country. Among them are low purchasing power of the people, inadequate food supply, ignorance and lack of education, and inadequate health services. Economic growth and social services can hardly cope with the increase in population.

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\* Executive Director, National Nutrition Council and Nutrition Center of the Philippines.

From 1903 to 1970, the Philippine population increased by 380 percent, with an annual rate of 1.9 percent in the 1940's to 3.1 percent in the 1950's. It is estimated that with the present growth rate of 3.0 percent, the 43 million (as of 1975) population is expected to double by the year 2000.

Philippine government and private efforts to solve the nutrition problem started more than half a century ago. Initial activities, however, were sporadic and confined to scientific circles. It was not until after the Second World War that nutrition became a government policy concern.

The post-war nutrition efforts attracted more public and private institutions and made significant progress in research. In 1967, the first government program on public health nutrition was launched. In the meantime, the private sector came up with valuable models for nutrition and health delivery.

In 1971, the need to coordinate nutrition intervention and food production evolved a four-year Philippine Food and Nutrition Program which drew participation from the government and private sector. Up to 1974, however, a nationwide system that could oversee program implementation from the national to the village levels still remained to be organized.

On July 2, 1974, President Ferdinand Marcos promulgated a Presidential Decree making nutrition a top priority concern of the government and creating the National Nutrition Council to formulate and coordinate the Philippine Nutrition Program (PNP).

On the same date, the President's First Lady, Imelda Romualdez Marcos, founded the Nutrition Center

of the Philippines, a private foundation dedicated to mobilize the resources of the private sector in support of the PNP. The Nutrition Center seeks not only to channel financial and material support from private groups into the PNP but also undertakes research and communications programs to disseminate information and provide commodities and systems prototypes for PNP use.

The simultaneous organization of the National Nutrition Council and the Nutrition Center of the Philippines symbolized the firming up of the bond between the public and private sectors in the nutrition campaign.

#### OBJECTIVES AND TARGETS

With this common front, the government and the private sectors seek to achieve the ultimate objective of the PNP to have a nutritionally healthy population that approaches desirable standards indicative of good nutritional status.

Most affected by malnutrition are the vulnerable groups by reason of their highly physiological needs. The vulnerable groups are infants, preschool children, pregnant and nursing mothers, those engaged in heavy manual work, the aged and other groups suffering from illness with nutritional implications. While it is the child that gets top priority among the targeted malnourished population and who becomes the indicator for nutrition intervention, it is the family that will eventually benefit from the nutrition efforts. The family as a basic unit serves as the focal point through which effects of a package of nutrition services could be effectively demonstrated. Thus, in

order to ensure the fullest participation in the rehabilitation and protection of its members, the program employs the family-centered approach.

Program implementation shall give priority considerations to the improvement of food intake and of nutritional status of low income groups in depressed areas identified through their OPT (Operation Timbang) results. The areas defined as depressed or severely affected by malnutrition are those municipalities with a total second and third degree malnourished preschool population exceeding the national average of 30.6%.

Specifically, the objectives of the PNP for the different targets groups are:

1. Preschool children:

- to reduce the prevalence of total second and third degree malnutrition from 30 to 17%;
- to increase the proportion of preschool children with normal weights-for-age from 22 to 30%.

2. Pregnant and nursing mothers:

- to motivate pregnant and nursing mothers to adopt desired nutrition, health, family planning practices and food production techniques;
- to increase average per capita consumption of calorie by 12% (from 1680 to 1880 calories), of protein by 12% (from 46.5 to 54.5 grams) and of fat by 16% (from 26.7 to 31 grams) through intensive nutrition education and information of mothers.

3. Special undernourished group (Those affected by iron-deficiency anemia, vitamin A deficiency, goiter, etc.):
  - to reduce the prevalence of anemia among children, pregnant women and nursing mothers, of vitamin A deficiency, and of goiter in endemic areas by identification and implementation of curative and preventive measures among affected population groups.
4. School children:
  - to reduce prevalence of total second and third degree malnutrition among the school-aged children from 14 to 3%;
  - to increase the proportion of school-children with normal weights-for-age from 41 to 55%.

#### STRATEGIES AND APPROACHES

The program strategies are as follows:

First, set up the organizational structure at all levels. This is to ensure proper implementation and monitoring of activities.

Second, train the working personnel at all levels. Training is conducted in such a way that those trained can become trainers at the next lower level, e.g. regional level workers will train the provincial nutrition workers, and so on, down to the village level.

Third, locate the malnourished at the village level initially through "spot mapping" which shows the location of every home and family in the village.

Weighing teams then weigh children under 6 years under "Operation Timbang" or OPT. The children are then classified according to their levels of nutrition (normal or 1st, 2nd and 3rd degree malnutrition).

Fourth, on the basis of survey results, the action program for the village is formulated. The substance of the PNP consists of five intervention schemes: food assistance, food production, nutrition education, and information, health protection and family planning.

Food assistance seeks to give the severely malnourished preschool children emergency supplementary protein and calorie-rich food supplement produced by the community, donated to existing feeding programs, or prepared by the mothers under the individual guidance of the village worker. Emphasis, however, is on the use of locally available food sources. For this purpose, the Nutrition Center has formulated an energy-and protein-rich food supplement called Nutri-Pak, a package consisting of ground rice, cooking oil, skimmed milk powder, and dried "dilis (anchovies), shrimp or mongo beans in powdered form.

This food supplement will be processed in Regional Plants to be established by the Nutrition Center of the Philippines (NCP) and in Municipal Nutri-Pak Processing Centers to be established by local governments and/or private local organizations. Table 1 shows the agency targets on the number of processing plants to be established within the plan period while Table 2 shows the target population to be reached by food assistance.

Health protection is done through emergency medical treatment of severe cases and through regular

immunization, dietary and hygienic advice to parents and pregnant women.

Malwards (nutrition rehabilitation wards) shall be established in all hospitals whenever possible to provide hospitalization to the severely malnourished. Discharged cases from malwards are referred for follow-up to the proper agency/ies. To augment the limited facilities of these malwards which have a capacity ranging from 5 to 10 beds only, Nutre-huts or Nutre-units shall be established. These units will closely approximate conditions in average households particularly in rural areas, making teaching of mothers and the conduct of demonstrations more relevant.

For the plan period, 100 Nutre-units in 20 selected provinces and cities will be established yearly. The establishment of these units shall depend largely on local government counterpart. Table 3 shows the agency targets for health protection.

To prevent and control iron deficiency anemia and goiter, distribution of iron pills to pregnant and nursing mothers, and iodized salt to people in endemic goiter areas shall be intensified.

Nutrition information and education seeks to provide nutrition knowledge and motivate people to practice sound nutrition. Approach is made through the mass media (radio, TV, movie, print), schools, and other interpersonal channels. Nutrition education is an integral part of the school curriculum at all levels.

The food production scheme is implemented by promoting production of selected crops in homes,



TABLE 1. Projected number of food processing plants to be established by various agencies for the years 1978-1982.

A G E N C Y	TARGET GROUPS	1978	1979	1980	1981	1982
1. N C P						
Maintenance of Regional Nutripak Plants (No. to be maintained)	2nd & 3rd degree malnourished preschoolers	4	4	4	4	4
2. N N C						
Support in the establish- ment of Nutripak Processing Centers (No. of centers to be supported)	2nd & 3rd degree malnourished preschoolers	10	15	20	25	30

# Health Protection (Continuation.....)

A G E N C Y	TARGET GROUPS	1978	1979	1980	1981	1982
3. Nutrition Center of the Philippines						
a) Malwards	3rd degree Mothers					
b) Nutri-huts	3rd degree Mothers					
c) Barangay Mobile Van Project	Vulnerable group:					
	pre-schoolers	11	11	11	13	13
	pregnant mothers	1	1	1	1	1
	Lactating Mothers	1	1	1	1	1
d) Municipality/ City Nutrition Package Delivery Models	Vulnerable group:					
	Pre-schoolers	8	8	8	8	8
	Pregnant mothers	1	1	1	1	1
	Lactating mothers	1	1	1	1	1

TABLE 2. Projected number of individuals (in thousand) to be served by the food assistance program for the period 1978-1982.

A G E N C Y	TARGET GROUPS	1978	1979	1980	1981	1982
A. PRE-SCHOOL BREEDING PROGRAMS <sup>1/</sup>	National Pre-School Targets	2536	2376	2235	2098	11979
1. <u>D S S D</u> DSSD/CRS Day Care Centers	2-6 yr old malnourished children working mothers from low income families	218	233	248	263	278
DSSD-Neighborhood/ Home based feeding	3rd degree malnourished pre-schoolers who cannot be served thru malwards, & 2nd degrees who cannot be served by Day Care Centers	631	553	482	414	354
2. <u>C R S</u> Mothercraft	6-11 months normal & 1st degree	25	28	31	39	36
TMCHP	6-71 months 2nd & 3rd degree children	481	530	588	636	695
	Pregnant & nursing mothers	169	187	206	225	244
3. <u>C A R E</u> TMCH	0-71 months children	100	120	210	300	400
4. <u>DOH (N N S)</u> Mothercraft	2nd & 3rd degree malnourished pre-schoolers	26	26	26	27	27
DOH/CRS Malwards	0-6 year old 3rd degree children	2	2	2	2	2
DOH/CARE Malwards & Pediatric wards	3rd degree pre-schoolers	170	250	376	507	634
DOH/CARE Obstetric Wards	Pregnant & Lactating	85	125	188	254	317

**Food Assistance (Cont.....)**

A G E N C Y	TARGET GROUPS	1978	1979	1980	1981	1982
5. <u>B A E X</u> IPB	0-18 month old infants	113	128	143	158	173
RIC Children/s Center	2-6 years old 2nd & 3rd degree children	136	154	172	190	208
6. <u>N C P</u> Nutrincode supply	2nd & 3rd degree malnourished pre-school	22	22	22	22	22
Nutribakery Products supply coverage	2nd & 3rd degree malnourished pre-school children	11	11	11	11	11
7. <u>P N R C</u> Food Assistance	2nd degree pre-schoolers	2	2	2	2	2
8. <u>P B S P</u> Food Assistance	Pre-schoolers; families	No projections submitted				
	Pre-school Outreach	1937	2060	2313	2572	22841
	National Targets	2616	2432	2262	2109	11969

<sup>1/</sup> Computed by taking 50% of the total 3rd degree population and 30% of total 2nd degree population. This include feeding in disaster, squatter, and cultural minority areas.

Food Assistance (Cont.....)

A G E N C Y	TARGET GROUPS	1978	1979	1980	1981	1982
B. SCHOOL FEEDING PROGRAMS <sup>2/</sup>						
DEC-CARE	Malnourished 7-14 years old	3600	3600	5680	5675	55670
DEC-WFP	7-14 years old	1000	1000	-	-	-
DEC-CRS	7-14 years old	275	275	275	275	275
DEC-ANP	7-14 years old	1600	1600	1600	1000	11000

<sup>2/</sup> Composed of individual whose standard weight for age are less than 89% of norms.

schools, and community. Wherever feasible, a processing plant for producing nutritious food supplement may be established in a municipality. Livestock, poultry and fish production is also encouraged.

Family planning, as a complementary program of the PNP to keep family size within manageable level, is pursued through an information campaign and referral of acceptors to family planning clinics.

A basic feature of these schemes is the maximum use or development of local facilities and resources, since their success is ultimately measured in terms of how they make the community self-reliant and self-productive. Planned and implemented at the village level, these intervention schemes ensure a comprehensive delivery of nutrition services to the program targets. In combined form, they aim not only to protect and raise the nutritional status of the family. On the whole, they provide the basic infrastructure for the total development of the family through community effort.

#### ORGANIZATIONAL ARRANGEMENTS

The PNP is a systematic integration of all government and private nutrition efforts through an organizational set-up which ensures effective delivery and monitoring of services down to the village and family levels. At the top is the National Nutrition Council (NNC) composed of heads of six government Departments (Agriculture, Health, Social Welfare, Education and Culture, Local Governments and Community Developments, National Science

TABLE 3. Target number of individuals (in thousand) to be served by different agencies for health protection for the period 1978-1982.

A G E N C Y	TARGET GROUPS	1978	1979	1980	1981	1982
1. Department of Health						
a. Case finding	Pre-school age	9106	9341	9585	9716	9943
	Pregnant and lactating women	673	688	703	713	123
b. Rehabilitation						
1) 0-5 clinics	a) Government hospitals & community health centers					
	b) Pre-school age targeted	500	500	1000	1000	1000
2) Malwards or Nutre-wards	a) Government hospitals					
	b) Patients targeted	10	15	19	24	29
c. Preventive						
1) Mothercraft & its modified forms	a) Mothers (pregnant & lactating, & mothers of malnourished children	66	132	264	528	105
	b) Pre-schoolers	98	294	882	2646	-
2) 0-5 clinics	a) Mothers (pregnant & lactating, & mothers of malnourished children	66	132	264	528	105
	b) Pre-schoolers	98	294	882	2646	-
3) Nutre-Units	Rural Health Units in depressed areas					
4) Urban Nutrition Program	a) Industrial establishments					
	b) Women workers					
2. Department of Education and Culture						
- Medical/dental/nursing & deworming	7-14 year olds (School children)	2960	3404	3915	4502	5117

Development Board) and three private institutions (Nutrition Center of the Philippines, Nutrition Foundation of the Philippines and Philippine Medical Association). NNC policies and decisions are implemented by a secretariat headed by the NNC executive director.

On the premise that the solution to malnutrition should begin in the home, the organizational effort starts with the policy maker closest to the family. Since the municipal mayor is the only government official at the local level closest to the program who is vested with all three powers - executive, legislative and judicial- the municipality has been pinpointed as the focal point of planning and implementation of the nutrition program.

The Municipal Nutrition Committee creates a planning staff and invites representatives of different agencies in the community to discuss problems of malnutrition and share experiences and information on their own ongoing programs.

Under the city/municipal nutrition committee is the Barangay (village) Nutrition Committee, which assumes responsibility for implementing and coordinating the nutrition program at the barangay level. It organizes the Barangay Network which is composed of a teacher-coordinator, purok (zone) and unit leaders, and some 20 families under each unit leader.

#### PROGRAM EXPERIENCES

##### Planning

At the national level, the National Nutrition Council is the nerve for planning and coordination.



Since its creation, it has embarked on a national nutrition planning exercise aimed at giving definite national directions for nutrition and establishing appropriate policies to support them. Currently, there are about twenty-four government and private agencies and organizations undertaking one or more nutrition and nutrition-related activities under PNP.

At the local level, the PNP has identified the municipality as the focal point for planning and implementation, using data obtained from Operation Timbang as basis for action. In this way, the planning process starts from those closest to the problem. In the municipal planning process, the first step is to describe the extent of malnutrition in a given area including the critical areas needing priority attention. The objectives are then defined; intervention schemes are selected; personnel and logistics required are listed; time schedules are set; and agencies to be involved are identified and their roles defined. The plan is then submitted to the city/municipal council for funding assistance, since some aspects of the plan may require support from the municipality. Finally, the plan is submitted to the National Nutrition Council for coordination and support.

#### Implementation of Program

##### Management and Coordination

Through the NNC, the coordination of nutrition activities implemented by various sectors has been facilitated. By having a continuous dialogue with the cooperating agencies on the formulation of plans and

implementation of action programs as well as with the National Economic and Development Authority (NEDA) and with regional, provincial and municipal government offices, the chances of success at program planning and coordination have increased.

Policy directions which establish the framework for planning and implementing the Program are mutually agreed upon after thorough discussions among the highest technical officers of the various cooperating agencies. Necessary guidelines for action down to the implementing level are then provided.

#### Achieving Objectives and Targets

In a move to further intensify and guide the coordinated efforts of the PNP in carrying out its objectives within the plan period, President Marcos issued LOI 441 on July 31, 1976, assigning principal responsibilities to the various cooperating agencies.

#### Food Assistance

The Department of Social Services and Development was designated as the principal agency in charge of a nationwide food assistance program to reach malnourished preschool children identified by Operation Timbang, utilizing supplementary foods based on local foods processed at the municipal level, and on donated food commodities to be distributed through the barangay network.

### Nutrition Information and Education

Designed to improve the diets of both children and of pregnant and nursing mothers, nutrition information and education should be the principal responsibility of the Department of Education and Culture and the Bureau of Agricultural Extension. The DEC was required to include subjects on basic nutrition and techniques in nutrition education in the school curriculum at all levels and in allied courses such as medicine, nursing, agriculture, education, midwifery, social work and education.

In the community, the task of extending nutrition education to farm housewives throughout the country was given to the BAEx of the Department of Agriculture employing the personal approach by direct contact between the extension worker and the target population.

### Health Protection

The Department of Health was charged with the responsibility of overseeing the treatment and rehabilitation of severely malnourished children utilizing the malwards in its hospitals and its Rural Health Units for the purpose. In addition, preventive measures to combat recognized deficiencies (e.g. anemia, goiter) especially in pregnant and lactating women were to be intensified within the plan period. Measures aimed at protecting the population from infectious diseases were also to be the concern of the DOH.

### Food Production

Through the National Food and Agriculture Council, the Department of Agriculture was principally made responsible for an intensified food production program to augment the available supply through backyard and school gardens. The program was to be conducted in coordination with the Green Revolution Movement (in the community) and the DEC (in the schools).

### Family Planning

The vital relationship between population and nutrition is well recognized. As such, all agencies are enjoined to include population education in their activities particularly in relation to pregnancy spacing and limitation of family size.

### Dealing with Clientele and Other Agencies

All efforts at improving nutritional status may prove futile if the populace to whom these are addressed remains ignorant of the achievements and efforts. To bridge this gap, the nutrition sector will embark on a massive nutrition information campaign to be launched on a nationwide scale making use of a two-pronged attack on education. The first method will be the personal approach by direct contact between the field worker and the target population. Visual aids like flip charts, illustrations, slides and the like will be used to supplement lectures and group discussions. A total of 131,841 field workers are targeted to be provided with visual aids on four nutrition messages over

the five-year plan period. To ensure uniformity and coherence in the message to be disseminated, canned messages will also be used to address the target groups.

The second and less personal method is the indirect approach through the mass media, (print, broadcast, film, slides). Radio messages to be aired over some 239 radio stations all over the country are aimed towards the whole population in general. Maximum utilization of mass media will help overcome the problem of limited outreach, inconsistency of messages and misinformation and misinterpretation by community workers.

#### Program Personnel

The multifaceted nature of the malnutrition problem necessitates the involvement of trained personnel from various disciplines. To adequately equip nutrition workers in the community with knowledge of and skills in nutrition concepts and practices, interdisciplinary types of training and seminars sponsored by agency cooperators will be undertaken. Through the program, it is intended that manpower needs especially at the delivery level will be sufficiently met.

The PNP relies on available manpower resources of implementing agencies in the provinces, cities, municipalities and barangays for the delivery of various nutrition services. At the rate of 5 community leaders and volunteers for every barangay, total manpower needs

at that level number about 200,000 workers. By 1982, this number of field workers is expected to be oriented and trained to deliver nutrition services. Likewise, 760 provincial and 14,410 municipal administrators will be given refresher courses twice during the plan period to reinforce acquired nutrition knowledge and skills.

For CY 1978 alone, the projected manpower requirement for nutrition totals to 88,579 from both private and government agencies involved in the implementation of the PNP (Table 4).

#### Program Fund and Other Support

A detailed summary of the agency resource requirements for nutrition for 1978-1982 is given in Table 5. Aside from government-alloted budget on nutrition, the PNP relies on the private and international sectors for support. Thus, the active participation of the private sector in the nutrition program shall be maximized by organizing and mobilizing its resources in a coordinated partnership with government to achieve greater program outreach and expanded implementation.

#### Significant Accomplishments and Contributions

Since its inception more than two years ago, the PNP has achieved far greater results than expected. Government, private and international agencies have rallied forth and pooled together their manpower as well as financial resources in the nation's fight against malnutrition. This, in itself, is a significant achievement of the PNP. It has fostered greater

LE 4. Personnel Requirement - Nutrition 1978-1982.

	1978		1979		1980		1981		1982	
	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time
Government										
DSSD *	3987	964	4487	993	4987	1221	5487	1446	5987	1718
DLGCD		4424		4812		5000		5300		5500
DA: BAI	1125	5	1406	7	1647	7	1682	8	1748	8
BPI		100		100		100		100		100
BAEx	2390		2790		3190		3590		3990	
NEAC	No Projections									
DNR (BFAR)		513		591		651		719		798
DAR	184		184		184		184		184	
DOH (NNS)	317		337		357		377		397	
DEC		41029		46348		51369		57434		62550
NSDB (FNRI)	313		352		413		461		522	
NMPC (NCO)	5		5		5		5		5	
UP (Home Economics	22		28		29		40		40	
UPLB (Human Ecology)	29		30		28		-		-	
NNC	191		210		228		247		225	
T O T A L S	8563	47035	10229	52851	11068	58348	12073	65007	13238	70674

\* Majority are Day Care Workers paid by the local governments and socio-civic organizations, etc.

Personnel Requirement ( Cont.....)

	1978		1979		1980		1981		1982	
	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time
Private										
CRS	311	31560	340	35060	369	38560	398	42060	426	45560
CARE*										
NCP	100		110		120		130		140	
NFP	30		30		30		30		30	
PBSP*	Projections are prepared annually (None for 1978-1982)									
PMA	No count of volunteer physicians									
PNRC	120	800	120	800	120	800	120	800	120	800
TOTALS	561	32360	600	35860	639	39360	678	42860	816	46360

\* No projections available.



TABLE 5. Budget Projection (thousand pesos) in Nutrition 1978-1982.

A G E N C I E S	1978	1979	1980	1981	1982
<b>A. Government</b>					
DSSD	₱ 56,506	₱ 82,256	₱ 103,396	₱ 120,201	₱ 133,684
DLGCD	168	174	182	189	196
DA: BAI	8,911	11,587	13,894	14,096	114,544
BPI	708	737	768	800	835
BAEx	5,184	3,456	3,456	3,456	3,456
NFAC	51	54	66	86	89
DNR (BFAR)	7,156	8,307	8,631	8,950	10,507
DAR	1,826	2,004	2,200	2,200	2,200
DOH (NNS)	15,834	16,417	17,060	15,000	13,000
NSDB (FNRI)	5,831	7,468	9,296	11,301	13,940
DEC	69,001	87,909	108,549	127,737	144,608
NMPC (NCO)	Budget is integrated with NMPC				
UP (College of Home Economics)	College Budget is not specific for each activity				
UPLB (Home Economics) (Built-in)	1,288	1,674	2,176	2,829	3,677
NNC: General Appropriation	13,497	15,350	17,818	19,600	21,382
UNICEF	2,164	2,096	2,309	1,850	1,850
USAID	7,400	7,400	7,400	7,400	7,400
<b>T O T A L</b>	<b>₱ 195,523</b>	<b>246,888</b>	<b>297,202</b>	<b>335,695</b>	<b>371,309</b>

# Budget Projections (Cont.....)

A G E N C I E S		1978	1979	1980	1981	1982
B. Private						
CRS	CRS Counterpart	₱ 7,784	9,794	10,067	11,684	12,914
	Handling cost of food commodities	9,674	20,529	33,338	48,102	64,350
	Cost of Donated Food/scales/miscellaneous	62,937	59,940	54,945	47,952	38,961
CARE		260	260	223	223	223
NCP		2,175	2,537	2,900	3,262	3,625
T O T A L		₱ 82,831	₱ 93,060	₱101,474	₱ 111,224	₱ 10,073

understanding and cooperation among the varied sectors of society.

The organization of nutrition committees, which is vital to the program's effective implementation, is almost complete at all levels. All 76 provinces and 60 cities have organized nutrition committees. At the municipal level it is 37% complete while the barangay level it is 57%.

Training of nutrition workers has likewise reached the village level. Some 2,500 training courses have been conducted and more than 3,000 field workers, government officials and volunteers have been trained.

More than 4 million preschool children were weighed through Operation Timbang and the severely malnourished given food assistance. Some 100,313 preschool children, representing 27% of the target, have been given food assistance in the form of Superpan, Nutri-Noodle and Nutri-Pak.

Nutri-Pak processing plants are being put up to meet the increasing demand for this food supplement. A total of 27 processing plants have been established: 1 at national level, 11 at provincial, 6 at city, 53 at municipal and 1 at barangay level.

Health protection seeks not only to rehabilitate malnourished children but also to prevent malnutrition by the delivery of a package of essential health services: immunization procedures, maternal health and child care, advice on health and hygiene. A little over 288,000 preschool children have been treated and the rest given preventive measures. This number represents 60% of the targeted preschool children.

Long-term measures aimed at reduction of mal-

nutrition rate such as nutrition information and education, food production and family planning are also intensely pursued under PNP. Seventy two percent of the target mothers have benefited from the conduct of mother's classes, reinforced by nutrition messages from the multi-media. Seventy two percent of the target families have been reached by the food production campaign and family planning, 47%.

#### Significant Problems Encountered and Solutions Tried

##### Deficiency in Operational Coordination

Because of the multidisciplinary and multi-agency approach to the nutrition problem, the Council faced organizational and operational problems particularly at the lower levels where responsibilities and functions overlapped or competed with one another.

However, with the recent issuance of LOI 441 principal responsibilities were assigned to the various cooperating agencies. Hopefully, this Presidential mandate may remove the overlapping or passing of responsibilities and functions among the cooperating agencies.

##### Lack of Technical Expertise

Another weakness was the lack of technical expertise at the local levels as a result of inadequate training. This led to inadequate generation of field data needed as bases for decision-making and program evaluation. The lowest levels are closest to the problem and can only be effective implementors if the program is well understood. Thus, orientation, training and information dissemination are being intensified at the lower levels to increase knowledge on nutrition

as well as the program.

#### Leadership Problem

Some mayors, who were supposed to initiate the nutrition program at the local level, were involved in other programs and neglected nutrition; others were not sufficiently motivated to undertake the program. Similarly, some unit leaders accepted their designations but had no time to attend to the 20 or so families under each unit.

An effective training program should motivate the local leaders sufficiently to gain their full support toward the nutrition program. Hopefully, the strengthening of the organization of local nutrition committees will stimulate members as well as leaders in the effective implementation of the program.

#### Lack of Logistical Support

Resources came not only from the national funds but from local government funds and other local sources. However, these were never enough. Help needed from the national government was slow in coming. This explains the program's stress on self-reliance. Local nutrition committees are encouraged to tap and coordinate all available local resources that can be siphoned to the program.

#### Terrain Difficulties

Some villages do not have adequate road facilities or are isolated by difficult terrains and are therefore infrequently reached by services. It is therefore necessary to train local people in the delivery of nutrition services. This is attained by the Barangay Nutrition Health Scholar program under the PNP.

## Monitoring and Evaluation

A responsive feedback system is vital to support management in continually assessing the effectiveness of the program, validity of concepts and the status and progress of implementation. Thus, steps to improve the existing monitoring and evaluation system are underway for efficient management of the PNP. The design of the system involves the determination of performance indicators to gauge the pace at which set objectives are attained, and to measure the impact of the program.

## SOME IMPLICATIONS FOR ACTION AND RESEARCH

The nutrition program conducts in-depth studies of various aspects including relevant areas outside the nutrition field. Through behavioral studies, relevance of various program approaches can be determined: through food consumption and nutritional status surveys, data needed for planning and evaluation are provided. Outside the field of nutrition (health education, agriculture, social services, fisheries, extension services), emphasis should be given on ways that would make their respective programs more effective and efficient.

### Increased Supply of Nutritious Foods

The quantity and quality of the diet are conveniently measured in terms of calories and protein. Measures should be introduced to increase the supply of indigenous foods to levels that would adequately provide for the needs of the population, e.g. products from home, school and community gardens, augment available supplies from agricultural production and would

do much to alleviate the hunger confronting especially the lowest income groups. Such increased supplies would enable families to derive income partly from their sales, thus providing an economic incentive for increased production. Related to this is the development of village food processing technology, to enable food surplus from home production to be properly stored for future use.

#### Food Import-Export

Although the country's food exports provide an important contribution to dollar reserves excess exportation of foods with nutritional implication should be regulated, allowing, on the other hand, the importation of nutritious foods not available locally.

#### Food Fortification

Certain nutrients lacking in the diets of most people for various reasons have far-reaching effects that cannot be remedied in a short time. Plans for food fortification and similar measures should be implemented immediately to minimize the effects of these deficiencies, specifically Vitamin A, iron, and iodine, and to control the conditions under which they tend to thrive.

#### Improved Food Distribution System

The food distribution system within a municipality needs to be systematized to provide for the needs of all families, not only those near the central distribution points but

also those who live far. Some effective marketing schemes need to be worked out, to enable all sectors of the community to participate in the business of food procurement, especially of those foods that are available in their own backyards.

#### Concluding Statement

The Philippine Nutrition Program would not have gained much headway considering the multifaceted nature of the nutrition problem without the strong support of the highest levels of authority.

There have been problems in the past and there certainly will be more in the future. However, with the dedication and vigor everyone concerned has exhibited, we are confident that we can hurdle whatever problems may crop up.

As the overall success of the program rests heavily on its effective implementation at the grassroots level, we are pinning our hopes on the grassroots workers, the life of the Philippine Nutrition Program.



## CHAPTER 10

THE PHILIPPINE POPULATION/FAMILY  
PLANNING PROGRAM TODAY

Benjamin de Leon \*

INTRODUCTION

The population and family planning program of the Philippines today stands at a major crossroad. Behind lies a history of substantial success in achieving awareness and acceptance of concepts which were virtually unknown a decade ago. Furthermore, these changes in knowledge and attitude have been accompanied by massive changes in actual practice. A great number of public and private agencies share the responsibility for these accomplishments.

But the past decade has also taught us several important lessons. The most significant, perhaps, is that a vast area of need for services cannot be reached through the program's traditional structure and approaches. We need today not merely a consolidation, a fine-tuning of the existing mechanism, but a fundamental change in the basic philosophy and strategy of service.

The past two years have been a time of ferment in the population program, as the necessary strategies have been identified and developed. Today, the program has embarked on a series of new initiatives.

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\* Deputy Executive Director, Commission on Population, PCF Building, South Superhighway, Makati, Metro Manila

These initiatives, if carried through effectively, will make a major contribution to the National Development effort to improve the quality of life for all Filipinos. The impact of this program will be strongest in the rural sector, as it is the rural filipino whose situation and whose needs provide the basis of this fundamental re-direction of the program.

A second major lesson has emerged strongly during the past few years: Family Planning needs and services cannot be viewed in isolation. At first glance, the program would seem to be a model of integration--multi-agency participation has been a central concept from the beginning. But this is simply integration from the viewpoint of the channels for service delivery. We have learned that the more important viewpoint is that of the client.

We have become aware that, in a very real sense, "Development begins at home", and that even the best of services will not be utilized unless they "fit" into the individual's own sense of his overall needs and goals.

Traditionally, our focus on analysis, planning, and service delivery has been primarily national, based on our understanding of economic and social development at the macro level, and the critical importance of the population variable in achieving national development goals.

Today, we have come to realize the limitations of a centralized program, and that it is at the level of the individual and the immediate community that service delivery must be based. What is more, the active involvement of the community itself in actually identifying and meeting needs is essential if

we are really to fulfill our responsibilities to the individual. This is only possible if family planning is seen as an essential component of self-development.

The challenge that faces us here is one of balance--balance between the need to integrate and relate family planning activities to the broad range of development activities, and at the same time the need to maintain a vigorous, active response to the need for specific family planning services. This challenge will test our organizational and managerial capabilities to the fullest during the coming years.

#### BACKGROUND

The rapid rate of population growth in the Philippines alarmed a few farsighted individuals as early as the 1920's when modern family planning started in the country. Quietly and discreetly, and against monolithic odds, these dedicated individuals carried on their crusade through the 1950's. By the 1960's, the population problem had become an explosive global issue. There was the realization that there were just too many people for the earth's limited resources. The Philippines had one of the world's highest growth rates (3.4%). From 7M in 1591 to 7.5M in 1903, our population has grown to 41.8M as of 1975.

In 1964, the Population Institute of the University of the Philippines was established to cope with the growing demand for demographers to analyze population characteristics and trends. In 1965, the planned parenthood movement of the Philippines was organized by the national council of churches in the Philippines, Catholic participation, on the other hand,

came with the founding of the family planning association of the Philippines later that same year. Four years later, these two groups merged to form the present family planning organizations of the Philippines.

By 1966, the Department of Health was providing family planning services in all of its 40 health centers, while about a hundred private family planning clinics were operating around the country.

In 1967, President Ferdinand E. Marcos, together with 17 heads of state, signed on human rights day, the United Nations declaration on population by world leaders. Alarmed by the problem of unplanned population growth, these leaders, realizing that the opportunity to decide the number and spacing of children is a basic human right, underscored that "the population problem must be recognized as a principal element in long-range national planning if governments are to achieve their economic goals and fulfill the aspirations of their people". In 1968, the project office for maternal and child health was established in the Department of Health and was charged with the responsibility of administering a population planning program. Later in the year, the groundwork was laid for the establishment of a commission on population, under the office of the President.

A series of studies and executive orders led to the passage of Republic Act 6365, otherwise known as the Population Act of 1971, which established the legal mandate of the commission. The Philippine Population Act declared, as a national policy, the following: "For the purpose of furthering national

development, increasing the share of each Filipino in the fruits of economic progress and meeting the grave social and economic challenge of a high rate of population growth, a national program of family planning which respects the religious beliefs of the individual involved shall be undertaken".

The advent of the new society added new dimensions to the National Population Program. Presidential decrees, general and department orders and letters of instructions were issued; all of them aimed at further strengthening the program.

#### OBJECTIVES AND TARGETS

The objectives of the program can be summarized as two closely interrelated goals:

1. At the individual level, to make high quality family planning services available to all who are in need, regardless of their location or ability to pay.
2. At the national level, as a direct result of these services, to assist in the reduction of fertility levels throughout the nation, contributing to a reduced rate of population growth consistent with overall development objectives.

Viewed from the national perspective, the problem of rapid population growth springs from the imbalance between fertility and mortality. The tremendous decrease in the death rate during this century has not been accompanied by an equal decline in the birth rate. As a result, the number of births during a year is now approximately three times the number of deaths, leading to an annual increase of roughly

1,000,000 persons per year.

Eventually, this balance between births and deaths must be restored, but when, how, and at what final population size? Figure 1 shows three alternative projections. The lower curve shows the pattern of population growth that will occur if fertility can be lowered into balance with mortality by the end of this century- only one generation away. The population would continue to grow for several decades more, leveling off at approximately 110,000,000 persons. The middle and upper lines show the implications of delaying this balance for an additional 20 and 40 years. In the later case, the final population size would be roughly 265,000,000 people, almost 2 1/2 times as large. Clearly, action must be immediate.

The long-term goal proposed for the Philippine population and Family Planning program is to assist in reducing fertility to balance mortality by the year 2000, as indicated by the lowest pattern in Figure 1. The difficulty of meeting this goal becomes apparent when looked at from another viewpoint. Today, the average Filipino family has more than four children. To restore the balance, a two-child family must become the norm. The challenge now becomes not merely the technical task of providing the services required, but a need for massive changes in social attitudes and practices. The norm of smaller family size must be communicated widely, evaluated individually, and adopted as a personal objective before even the best of services can be utilized. The concept of family planning must be related to the entire development process, for it is only when a smaller family makes sense to each couple in light of the development

process as they are aware of it, that they will adopt the practice.

The short-range targets of the program relate to the implementation of new service mechanisms, and to the actual utilization of these services. In the first category, the major mechanism being implemented today is the population and family planning outreach structure. Over 3000 full-time workers have been recruited, screened, trained and deployed of mid-1977. These full-time outreach workers are responsible in turn, for establishing a network of service points at the barangay level.

This involves a process of community organization, including mapping, baseline surveys, community analysis, training and ongoing support. By the end of this year, it is anticipated that roughly one-third of the barangays in the country will have been covered in the network.

At the same time, services continue to flow through the existing urban-based clinic structure, and are beginning to flow on an accelerated scale through the new community-based channels. As a result, it is anticipated that the proportion of married couples who are actually protected from pregnancy will rise from the current level of roughly 25% to 35% by 1980. The long-range objective for the year 2000 calls for 70% of all eligible couples to be protected from unwanted pregnancy.

#### STRATEGIES AND APPROACHES

Some of these are: First, the approach of the program is entirely non-coersive in nature. Emphasis has been made on providing a wide selection of services

to meet individual needs, and combining this with an extensive campaign of information and education, stressing complete freedom of individual choice.

The second major approach is multi-agency participation, rather than implement an independent delivery mechanism for family planning services, the program emphasizes broad support of existing service agencies, and has encouraged many outside agencies to add family planning messages and services to their basic operations. Thus, the program has supported not only clinics and hospitals, but also such agencies as the DLGCD, DAR, DSGD, DEC, and many others.

Third, a new major strategy the "population and family planning outreach project" has been developed during the last two years. This project is designed to supplement the existing network of "passive" clinic-based services, with a structure capable of reaching out beyond the areas covered by the clinics. The key aspects of this strategy are the deployment of a corps of full-time population workers at the municipal level, the direct involvement of provincial and city governments in the management of the program, and a basic emphasis on overall community development as a framework for family planning services.

With the outreach project as the backbone of the national program, a full range of support activities including training, clinic services, IEC, logistics, finance, research and evaluation is conducted or coordinated by the commission on population.

#### ORGANIZATIONAL ARRANGEMENTS

The most significant aspects of the program from an organizational viewpoint are:



1. The coordinated functioning of over 30 separate participating agencies under the umbrella of the commission on population;
2. The increasing decentralization of management functions from POPCOM's Central Office to its regional offices;
3. The heavy involvement of local government as the implementing mechanism for the outreach structure, with local population workers seen as full-pledged employees of the local government itself;
4. The rapid development of an entire organizational structure at the barangay level, with individual selected, trained and supported in providing community-level services on a purely voluntary basis.

In keeping POPCOM's mandate to coordinate all population and family planning activities, the scope of the program is nationwide, with services extending to virtually every municipality in the country.

While the funding for population activities in the past has come largely from international sources, during recent years the Philippine government has been assuming an increasing share of the burden. Today, the national government provides support for almost all activities of a traditional nature, while innovative activities continue to receive substantial international support.

From July 1, 1975 to December 1976, the total financial assistance made available to the program totalled ₱198 million. Of this amount, the government of the Philippines (GOP) contributed 55.7%, U.S. agency

for international development (USAID) 29.4%, United Nations fund for population activities (UNFPA) 10.7% and other donor institutions, 4.2%.

### PROGRAM EXPERIENCES

#### Planning

Basic data is needed to support a sound plan. In this program, the availability and the reliability of field-level data is still rather limited. This makes it somewhat difficult to assess the current status, as basis for realistic planning. For example, such basic data as current birth and death rates can be measured only roughly.

A second challenge is the national effort to decentralize planning as rapidly and as completely as possible to the regional level. At POPCOM we have been delegating an increasing share of the responsibility for planning to our field offices, and while many problems remain, a lot of progress has been made. The difficulty is perhaps especially great in the population program because of the involvement of such a large number of agencies in the delivery of services, and the need to coordinate with their own planning processes. This task is naturally more complex when all the regions are involved, especially with time constraints.

The third challenge is for the future. The outreach project has paved the way for full decentralization of the key elements of planning beyond the regional level, to the provinces and cities, and ultimately to the municipal and barangay levels. However, if the concept of a truly self-reliant

community is to be realized, then the community-based planning becomes an obvious future necessity.

### IMPLEMENTATION

In the operation of the national program during the last six or seven years, our experience indicates that change is essential-- a program that does not continuously adapt to its ever-changing environment quickly becomes obsolete and ineffective. Yet it is precisely the process of change that poses the greatest managerial challenge. Over time, problems which seemed insurmountable were overcome, once enough experience had developed and appropriate systems had been worked out.. The fundamental issue, however, is not whether to innovate, but how to innovate and learn quickly.

The key to this seems to be communication. An effective system of communication is essential between those at the "front lines" of the program in the field, and those with responsibility for corrective action and replanning. In fact, this is one more persuasive argument for decentralization of responsibility for planning and control, moving this closer to the field, where more complete and up-to-date information exists.

At the same time, management principles remind us that decentralization can be a dangerous process, unless those to whom the responsibility is given have been carefully selected and trained. It is for this reason that our outreach project, for example, has placed such a heavy emphasis on training and development at the supervisory level of the structure.

There seems to be a need for programs to share fully their problems and achievements in developing

effective supervision so that this need can be met.

#### SIGNIFICANT ACCOMPLISHMENT AND CONTRIBUTIONS

The traditional patterns of high fertility in the Philippines are changing. Evidence from the census, from national demographic surveys, and from recent, more focused, small-area fertility surveys consistently indicate a strong downward trend in birth rates. These trends, of course, are the result of a wide variety of factors: Social, cultural, economic and individual. The national population and family planning program and other participating agencies have channeled family planning services to several million couples since the start of the program.

#### PROBLEMS AND SOLUTIONS

In summary, it can be said that the program has successfully met the principal challenge of the first phase to gain a widespread understanding of the population issue and of family planning as a desirable and a necessary response. Awareness is high, overall attitudes are positive, and the actual practice of family planning is very substantial, particularly in the areas close to the existing clinical facilities.

The next phase of the program, upon which we are now embarked, involves a new challenge - reaching out beyond the clinics to the rural majority, and providing them, as their urban counterparts, the access to his vital service as an integral part of the rural development process.

The response to this challenge, as we have said, is the outreach project. Its success will be

determined largely by the commitment and the services of the front-line field-workers, upon whom so many of our programs depend. The ultimate success of the program rests in our faith in the capacity of these vital individuals to carry the burden of this massive social change. Our experience to date, in the months since the first team was fielded, has given us ground to be optimistic.

#### MONITORING AND EVALUATION

The issues involved in monitoring and evaluation of population activities are basically similar to those involved in other rural development programs. However, there is one point we would like to stress. This is the question of how closely the field activities of the program are linked to its "ultimate" objectives.

Where this linkage is very direct, monitoring and evaluation become much more straight-forward because the progress toward ultimate objectives.

Where this linkage is very direct, monitoring and evaluation become much more straight-forward because the progress toward ultimate objectives can be seen immediately, and provide a sound basis for management control. Certain agricultural projects, for example, display this close linkage, to the extent that the success of activities can often be measured in objective terms of crop yields in the immediate future.

In other programs, such as population, the ultimate objective of overall fertility decline follows service delivery only after a substantial time delay. What is more, the tools needed to measure fertility

decline on a current basis are not available. This means that, on a month-to-month, or even on a year-to-year basis, success must be measured in terms of intermediate objectives.

In a program such as ours, great care must be taken to select the correct measure. The corrent measure may even be different at various stages of the program and this makes matters complicated. Thus, in the population program, the emphasis during the initial phase was on the recruitment of large numbers of "new acceptors" into the program. However, as the program matured, it became clear that the focus had to be shifted from recruitment to on-going continuous service. The true family planning needs of a couple are not simply assistance in starting a method, but continued support of services so that protection from unwanted pregnancy would continue uninterrupted, as long as the need exists.

In fact, the population program has recently restructured its planning, monitoring, and evaluation process such that the focus is on the proportion of couples in need of family planning who are actually being protected from pregnancy on a continuing basis. As with any major change, a period of adjustment is required before the concepts are fully implanted in the field. Nevertheless, a major step has been taken to avoid the distortion which can result from using measures of performance inappropriate to the realities of the program.

#### IMPLICATIONS FOR ACTION AND RESEARCH

Although the calls for further action and research are many, for our present purpose, there is one

particular issue which we would like to raise to the forefront once more. This is the need for integration and coordination. Our objectives are identical: Development, in the broadest sense. We share a common focus for our efforts: The needs of the individual, the family, the community. Only by working together as a team can we present our separate services as a rational answer to these needs. Only by communicating with each other can we benefit from our total experience, and understand to the fullest the situation of those we aim to serve.

#### CONCLUDING REMARKS

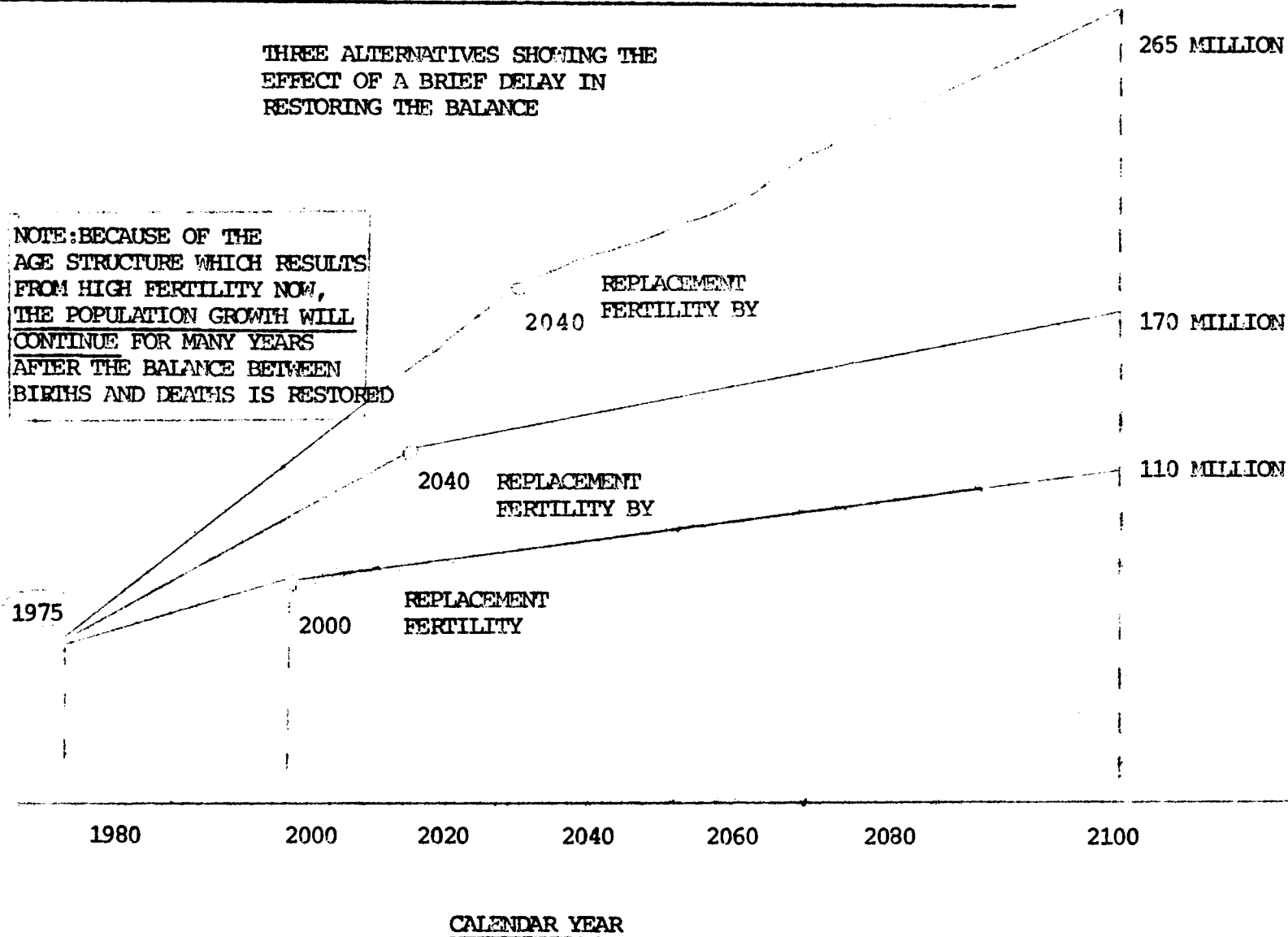
We have given you an overview of the Philippine population and family planning program, in particular the direction we feel it must take. It is clear that the program cannot stand in isolation. While population cuts across all development processes, yet it must seek and enlist the support of all sectors. We must forge among ourselves a lasting partnership. This partnership is one that promotes a team of development specialists with one ultimate objective—helping our own Filipino people achieve a better quality of life.

FIGURE 1

WHAT WOULD BE THE CONSEQUENCES OF A DELAY IN BALANCING FERTILITY AND MORTALITY?

THREE ALTERNATIVES SHOWING THE  
EFFECT OF A BRIEF DELAY IN  
RESTORING THE BALANCE

NOTE: BECAUSE OF THE  
AGE STRUCTURE WHICH RESULTS  
FROM HIGH FERTILITY NOW,  
THE POPULATION GROWTH WILL  
CONTINUE FOR MANY YEARS  
AFTER THE BALANCE BETWEEN  
BIRTHS AND DEATHS IS RESTORED





## CHAPTER 11

## THE BARRIO DEVELOPMENT SCHOOL

Tito E. Contado<sup>\*</sup>INTRODUCTION

Creating a dynamic rural community, remains a tough challenge to development leaders and scientists. While the introduction of innovations in agriculture and community development projects has helped solve some of the numerous problems of barrio improvement, the fundamental problem of creating a sustained and dynamic development of the barrio remains a serious problem. Low productivity of labor, unemployment, underemployment, underutilization of material resources and unattractive human settlements have remained common characteristics of the Philippine barrio. The answers seem to be in the use of new technology that will increase productivity of labor and the proper education of rural people so they become more imaginative, skillful and productive.

However, despite high expenditures in research, extension and formal education, there is very little advancement in the barrio. Recently for example, SEARCA Director J.A. Drilon has pointed out that only 17 to 50 percent of the available rice technology is

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<sup>\*</sup> Associate Professor of Agricultural Education, Project Leader of the BDS and also the UPLB Director of Extension.

being utilized by the farmers of Asia.<sup>1/</sup> According to IRRI economists, the actual farm yield of rice is about 1.6 tons per hectare<sup>2/</sup> compared to about 4.5 tons, if he would only apply the known rice technology.

Clearly, education of the rural Filipino is a key factor. But what kind of education? Myrdal notes that education in developing countries would not help because "the educated tend to regard their education as the badge that relieves them of any obligation to soil their hands".<sup>3/</sup> This observation does not exempt the Philippines. For example, Isidro reports that a survey of 200,000 youth ranging in ages from 15-35 years revealed that more than one-fourth were jobless and about one-half were financially dependent upon their parents and relatives.<sup>4/</sup>

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<sup>1/</sup> The SEARCA DIARY, Vol. VI, No.3, March 1977, p.3.

<sup>2/</sup> Robert W. Herdt and Randolph Barker, "The Status and Potential of Food Production in Asia", A paper presented to the IRRI-UN University Workshop on "Interfaces Between Agriculture, Nutrition and Food Science," Los Baños, Feb. 28-March 3, 1977.

<sup>3/</sup> Myrdal Gunnar. Asian Drama: An Inquiry Into the Poverty of Nations (New York: Pantheon, 1968), pp. 16-46.

<sup>4/</sup> Antonio Isidro, Trends and Issues in Philippine Education, Quezon City: Alemars Publishers, 1968, p.17.

Isidro notes that while a large number of them seek employment, much of their efforts are fruitless, because the students prefer to work in clerical positions or white-collar jobs. Even the graduates of agricultural schools are not much different. Placement studies consistently revealed that only between 16-20 percent go back to their barrios and become farm operators.<sup>5/</sup>

Under these circumstances, it seems clear that the fundamental problem of creating a dynamic barrio development program calls for the use of education as the strategic approach. However, it should be a kind of education that is barrio development oriented- an education for the youth who will live and work in the barrio, and who will be self-employed. Trained to use available technology in their chosen enterprises and the services available in the locality, the graduates of this kind of school should be productive. They should be active participants and leaders in making the barrio a more attractive and better place to live in.

The Barrio Development School is designed to produce that kind of rural manpower. It is an educational approach to rural development at the secondary level systematically operated in the barrio or community, and designed for rural youth 14 years of age or older, who decide to live and work in the barrio and who desire to develop proficiency

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<sup>5/</sup>ICA/NEC, A Survey of the Public Schools of the Philippines Manila: 1960, p. 209 and UPCA Dept. of Agric. Education, "Agricultural Education in Some Asian Countries", Mimeograph, College, Laguna, UPCA, 1970, p. 158.

in farming and related occupations. As an educational program, the BDS is not a preparation for college. It is a training program for self-employment. By means of a supervised farming program, the student strives to get himself established in farming and be self-employed at the end of his training.

As an educational program, the BDS is non-formal and formal. It is non-formal in the sense that it is not a part of the regular school curriculum or system of examinations, credits and certificates. It is formal since it is institutionalized, chronologically graded (first year to fourth year) and is under the jurisdiction of the Department of Education and Culture.

The salient features of the BDS may be presented as follows:

1. The core of the instructional program is supervised farming which is conducted on the home farms of the students. The program provides the students with the opportunities to: (a) choose, plan and start an agricultural enterprise; (b) operate and manage farming enterprises in a business-like manner; (c) produce farm commodities efficiently; (d) use and conserve natural and other resources; (e) use institutional credit (from the bank) and other agricultural services; (f) purchase inputs economically and market products advantageously; (g) learn cooperation and wholesome farm and community living; and (h) get established in farming or related occupations.
2. Classroom instruction in agriculture is given

for half a day so that the students would learn new ideas, practices, information and agricultural principles which are useful in the successful conduct of the supervised farming program. The other half of the day is devoted to supervised farming activities.

3. Marketing and farming for profit are equally emphasized. The students learn credit and savings by actually using the bank for their credit needs and for keeping savings. Locally available tools and equipment are used for instructional purposes. Students are encouraged to accumulate capital assets needed in their farm business operation. Competence in social participation, cooperation and leadership abilities is developed through the various activities of the Future Farm Operators Association in cooperative projects such as livestock insurance, pooled supply service, etc.
4. The medium of instruction is a mixture of English and Pilipino (local language) depending on whichever facilities understanding and learning of new ideas. The agriculture and supplementary subjects teachers are required to reside in the barrio where the school is located.
5. The school, which is never far from where the students live, is a partnership venture between the barrio people and the government. Financially, it is partly supported by the community people through the tuition fees of students and the contribution of their

labor and money for certain school projects. This gives all those involved, particularly the parents, a sense of commitment and a voice in the school program. Policies and decisions affecting the school and the community (local matters) are made by a Local Advisory Council (LAC), composed of the barrio captain, the Parents-Teachers Association president, one outstanding farmer leader, the school principal, and the agriculture teacher. The district supervisor serves either as a regular member or as an adviser. Other members may be added whenever advisable. The ultimate measure of the success of the BDS is the establishment of the graduates in economic-scale farming or related occupations. It is anticipated that the economic value of the output generated by the BDS students will more than pay for the cost of operating the school program.

#### The Background Situation: An Analysis

When one goes to one of the 34,000 barrios in the country, there are three facts that he will not fail to observe: (1) the barrio has persisted for generation, (2) but it has remained relatively unchanged and (3) the population has not increased proportionately to the number of babies born in the place.

However, these facts can be explained easily. The barrio persistently exists because there are always some young people who replace the old ones

who have died or migrated to other places. But while the barrio persists, its economic and social conditions remain underdeveloped. It remains unproductive, socially stagnant and unattractive to live in. This is so because the young people who replace the old are not really better off than their predecessors. Even if they have one or two years more of elementary education, this is hardly adequate to cope with the ever growing and more complex demands of farming and making a living in the barrio. Fifth grade is the average level of Filipino education.<sup>6/</sup> Therefore, with the succession of generations of youths who are no better off than their predecessors, the cycle of barrio underdevelopment continues. Of course, the population of the barrios does not grow any bigger despite the number of babies born there, not so much because of infant mortality, but more so because many young people who grow up in the barrio migrate to other places. Most of them go to either cities or big towns to work and live there.

These observations about the Philippine barrio suggest five educational implications that led to the conception of the BDS.

1. The observations seem to point out that the underdevelopment of the barrio is related to the capability of the people who stay in the locality: that as long as the capability of the people in the barrio remains unimproved, the cycle of barrio underdevelopment will continue.

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<sup>6/</sup>Senate S. No. 965, "An Act to Institute a Charter for Barrio High School."

2. The youth who remain in the barrio are usually those who have either low education or little training for improving life in the barrio.
3. The educational system in the country beyond the common basic education are geared towards preparation for a "good life", not in a rural, but in an urban setting. The barrio youths trained under these programs acquire ideas, values and abilities that find expression and fulfillment not in the barrios but in towns and cities. These secondary school programs meet the needs of the barrio youths who will eventually leave the barrio.
4. The youths who remain in the barrio have little opportunity to prepare themselves for better life. The few short courses offered them that develop specialized skills for employment do not find relevance in their becoming future self-employing farm operators; neither do these courses help much in seeking outside employment since such opportunities are very scarce in a barrio.
5. If the cycle of the barrio's underdevelopment is to be broken, the youth who are to stay, live and work therein should be given functional training which will be useful in making rural life more economically productive, socially dynamic and environmentally attractive.



### Present Secondary Schools Not The Answer

The Vocational Agricultural School. The Philippine vocational agricultural schools were originally aimed at training future farmers for proficiency in farming. There were 107 such schools in 1970.<sup>7/</sup> But vocational agricultural schools cannot meet the needs for trained barrio farmers because of the low percentage of graduates who go back to their barrios of origin and become farmers. Placement studies showed that only between 16 to 20 per cent of the graduates returned to the farm.<sup>8/</sup>

Vocational agricultural schools in the Philippines are boarding-type schools located far away from the homes of the students who move into the school and live in school dormitories or in student cottages inside the school. This setting, sociologically, leads to:<sup>9/</sup>

(a) student's alienation from his barrio, (b) change of group identity from barrio to the academic subculture, (c) artificiality of student's farming experiences obtained in the school, and (d) serious problems of getting started in the barrio due to lack of capital, and unfamiliarity with the specific barrio conditions.

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<sup>7/</sup> T.F. Contado, G.T. Castillo and M.V. Jarmin, "A Search for Trained Young Men in Farming: A Study of Vocational Agricultural Seniors' Choice of Occupation." Agric. & Industrial Life (Vol. XXVII, No. 6, June 1965).

<sup>8/</sup> Bureau of Vocational Education. Statistical Bulletin, 1970-71 and Annual Report of the Bureau of Vocational Education, 1969-70.

<sup>9/</sup> For elaboration, see Barrio Development School Resource Book, pp. 18-20.

The Barrio High Schools - According to Dr. Pedro Orata, promoter of this type of high school now known as the Barangay High School, these schools were created for most barrio youths too poor to get out of the barrio beyond elementary level. However, since these were college-preparatory-oriented, they did little to help solve the problem of youths who remain in the barrio.

In 1968-69, there were 1,188 barrio high schools with an involvement of about 118,193.<sup>10/</sup>

The Unique Training Requirements of  
Future Farmers

Training programs for a vocation in the country are mostly employment-oriented. Hence, a prospective clerk prepares for employment by developing skills and abilities in typing. A prospective driver has to learn the skills and abilities of good driving, know the rules of correct driving, pass a test, secure a driver's license and get a driving job. A prospective teacher studies and learns the subject matter and the methods of teaching in order to get a job as a teacher. The trained clerk, the driver, and the teacher do not need a typewriter, a truck, or a classroom of their own, respectively. On the other hand, the training of prospective farm operators should be entrepreneur-oriented because they are prepared to employ themselves and possibly others.

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<sup>10/</sup> First National Conference on Barrio High School, "Why Barrio High School," p.4. Also in Appendix A, BDS Resource Book, p. 117.

This makes the training needs of future farmers inherently different and unique.

Production is only one facet of the farming vocation which, in the modern sense, requires the farm operator to be a planner, a buyer of inputs and raw materials, a production worker and manager, a product processor and a marketing man. The prospective farm operator should be trained, not in an artificial environment, but in the natural setting of his own parents' farm where inherent day-to-day problems have to be studied and solved. In the process, the future farm operator does not only acquire the skills of farm production but also develops the skills and abilities to cope with the supply, labor, credit, marketing, record keeping and other management requirements of modern farming in his own locality.

#### OBJECTIVES AND GOALS

The prototype Barrio Development School (BDS) project in Masaya, Bay, Laguna, was conceived and experimentally operated following some concise statements of project objectives, educational objectives and placement goals.<sup>11/</sup> The project objective was "to improve the socio-economic conditions of the barrio people by operating a pilot barrio development school that emphasizes occupational training in agriculture for at least four years".

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<sup>11/</sup> Tito E. Contado and Severino R. Santos Jr., "UPCA/BNE Pilot Barrio Development School", (For Farming Occupations), pp. 2-3.

The four educational objectives: (1) to develop a better rural life; (2) to develop better homes; (3) to increase production and income/and (4) to develop an actively participating citizenry.

The BDS was conceived as an educational scheme to serve as a means to the socio-economic development of the individual student and his community. Because these objectives imply that the student must put into practice what he learns in the school, the BDS has been, from the beginning, guided by a set of occupational placement goals which are (1) self-employment, 70 percent; (2) agriculture-related employment, 20 percent; and (3) college education, 10 percent.

Ideally, the placement goal of the BDS should be 100 percent for self-employment occupation. Nevertheless, some BDS graduates may end up as employees while a few may manage to find their way to college. What is important is that most of them will find their training useful enough to make them attain the objectives of the school and their purposes in enrolling there.

Indirectly, the BDS has also a conscious goal of improving the entire community. New technology or ways of doing things adopted by the students in their Supervised Farming Projects are expected to be adopted also by their neighbors. Annually, the BDS sponsors an Achievement Day to allow people to see new ideas and possibilities and encourage them also to do better. The agriculture teachers as well as advanced students give advice and technical services to the farmers in the locality.

Conceptually, the BDS helps in the development of the country in the following ways:<sup>12/</sup>

1. With trained farmers, extension work will be more efficient and effective.
2. Credit programs will not be as expensive because trained farmers will not require as much supervision.
3. Farming will help develop the non-agricultural sector since trained farmers will create a high demand for products from the non-agricultural sector.
4. The trained farmers should be more productive than the untrained, therefore, the BDS graduates should contribute to the production of larger volume of agricultural commodities for food and raw materials for industries.

#### STRATEGIES AND APPROACHES

To achieve the objectives and goals of the project, the major strategy used was production-oriented occupational education for self-employment among the youth of the rural barrio. This strategy makes training and development of out-of-school youth a means of achieving material and economic resources development. It also creates a sustained, progressive and continuing rural development which is the result of purposeful and systematic human resource development. Furthermore, it corrects the general thinking of people that education is only for those

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<sup>12/</sup> For elaboration, see BDS Resource Book, pp. 33-35.

who are going to college and out of the barrio.

To minimize the alienating effect of sending barrio youth to boarding schools, to make their training realistic, and to allow the student to accumulate capital while still studying, the strategy used was to locate the project in the barrio itself and let the students conduct their farming programs on their home farms.

So that the barrio people would not think that the project was a dole-out, and to get the local people's support, the BDS project was considered as a partnership between the barrio people and the school.

### Some Educational Approaches

Several new approaches in education were conceived and tried out in the BDS. Among them are the following:

1. Three-need area approach in curriculum making namely:
  - a. Need to increase productivity and efficiency (Agriculture and economics subjects)
  - b. Need to improve ability to continue learning (Tool subjects)
  - c. Need to know and participate meaningfully in one's community and country (Citizenship subjects)
2. Supervised farming approach in teaching farming.
3. Half-study and half-work approach to time

utilization.

4. Representative local advisory council approach to making the programs relevant to local needs and to secure local support.
5. Guaranteed Loan Fund Scheme to provide credit and opportunities for true-to-life credit education.
6. Achievement and Recognition Day approach to motivate, develop pride and confidence and to develop strong identification with one's barrio.
7. Two-language approach (Pilipino and English) to communicate more effectively to the students.

The approaches in many respects distinguished the BDS from other school programs beyond the sixth grade level.

#### ORGANIZATIONAL ARRANGEMENTS

In the BDS original plan, the project organization consisted of: (a) a Project Advisory (Policy) Council, (b) Project Team, (c) Subject Matter Consultants and (d) a Local Advisory Council. In practice, however, the Project Advisory Council which was composed of ranking officials of the National Board of Education (NBE), the Bureau of Vocational Education (BVE), The Bureau of Public Schools (BPS), The U.P. College of Agriculture (UPCA) and The Project Adviser, was never able to exercise its functions because BDS matters were directly discussed at the National Board of Education meetings. The subject matter consultants were never called but many

subject matter specialists from the UPCA were consulted as the need arose. However, the Project Team and the Local Advisory Council (LAC) were well-organized and very active.

In the barrio, the Project Team worked with the rest of the school system through the school principal. The project team worked with the community through the representative Local Advisory Council and the Parents and Teachers' Association.

While the Project Leader was a part-time professor of the UPLB and resided on the UPLB campus, all the teachers were full-time and were required to reside in the barrio. One of the agriculture teachers was designated teacher in-charge in the barrio.

The BDS in Masaya was supported for six years by the Philippine National Board of Education. Its total support for six years (1970-1976) was approximately ₱177,090.00 or an average of ₱29,515.00 annually.

### Experiences with the BDS

#### Planning and Legitimation

The BDS project was a case of a rural development scheme where the initial planning was done by University professional educators. The pattern followed was similar to research project planning.<sup>13/</sup>

The Dean of the College of Agriculture approved the plan and submitted it to the National Board of

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<sup>13/</sup> See Appendix A, BDS Resource Book, pp.117-128.



Education for approval and support through former Senator Kalaw, the chairman of the Senate Education Committee and member of the National Board of Education. The signing of a Memorandum of Agreement between the UP President and the Chairman of the National Board of Education fully legitimized the plan. Then the acceptance by the Division Superintendent, the district supervisor and the barrio authorities was secured through meetings and letters of endorsement. The barrio, however, accepted the plan by a resolution made by the barrio council of Masaya after a series of meetings with the mayor, the barrio councils and parents to explain the BDS scheme and to determine whether the people liked the project.

#### Program Implementation

As soon as the BDS plan was approved by the UPLB and NBE authorities, the Project Team was set up. A Project Adviser and a Project Leader were appointed. Subsequently two teachers, one for agriculture and another for tools and citizenship subjects, were hired. A benchmark survey of the barrio, an organization of the Local Advisory Council, and the formulation of the courses of studies, followed.

The Local Advisory Council proved to be a useful management and coordination mechanism both in dealing with the Bureau of Public Schools (the school principal and district supervisors were members) and the community. Later, the Parents and Teachers' Association was organized as a means of dealing with student-teacher-parent concerns and problems. As a training means for leadership and group action the students were also organized into the Future Farmers of Masaya.

The BDS teachers were required to reside in the barrio. During the first two years, only two teachers were hired according to the plan. The agriculture teacher served as the teacher in-charge and provided all the supervision of students' supervised farming programs. The tools and citizenship subjects teacher did the school room type of activities and looked after the small library. During the third year, another agriculture teacher, was hired. The fourth teacher was hired during the fourth year of BDS' operation to help teach the tools and citizenship subjects. Roughly, the ratio was one teacher to a class. During the fourth year of the program, an Assistant Project Leader was added and in the fifth year, a clerk-typist was hired.

In terms of program support, the BDS got an annual grant from the National Board of Education in the total amount of ₱117,090.00 for a period of six years, or an average of ₱29,515.00 annually. The amount was released quarterly to the UPLB. Because the BDS project had to propose its budget annually to the NBE, the actual grant reflected a more accurate estimate of the annual and total cost of operation (taking into account inflation, other unanticipated increases) than what was originally proposed for a four-year period.

The other support of the BDS in Masaya came from the barrio and the parents in terms of tuition fees, and services such as fixing the school rooms, securing a three-room RP-US Bayanihan School Building and helping conduct Achievement Days. To solve the credit problem of the BDS students and to give them opportunities to have actual credit education experiences, the Barrio Book Foundation, Inc., the Church Among the Palms in

Los Baños and Dr. Benito Vergara, provided some guarantee funds. The guarantee funds were in the form of time deposits with the Los Baños Rural Bank which allowed the bank to lend money to the students upon presentation of a project plan signed by the parents, the agriculture teacher and the project leader. The Rotary Club of Los Baños and some private business firms gave their support by providing prizes to outstanding students and contest winners during the Achievement Days.

#### Attaining Objectives

In general, with the limits of socio-economic development measures, the broad objectives of the project, as will be shown in the next section, were fairly well-attained at least within the short-term range. There were however difficulties in achieving some of the specific targets set in the original plan. For example, only a little over half of the targets for enrollment and tuition fees were attained. In the placement of graduates, Table 1 shows that the farming placement projection of 70 percent could not be fully attained as only 48 percent were found to be farming and helping in farm work. It should be noted that the projection for employment was surpassed while those who went on further studies was less than 20 percent projected.

Table 1. Placement status of BDS graduates as of October, 1976.

Placement category	Projected for BDS 1970 (%)	Placement Oct. 1976 (%)	Difference
Farming (including farm. help and with part-time wages)	70	48	-22
Employment (full-time without farming activities)	10	36	+26
Further studies	20	16	-4
	100	100	

### Significant Accomplishments and Contributions

The significant accomplishments and contributions of the BDS in Masaya, Bay, Laguna, could be categorized educationally and socio-economically.

Educationally, the BDS project in Masaya has contributed the following:

1. The conception of education as a means of breaking the cycle of barrio underdevelopment.
2. Strong production and work orientation led to the use of (a) supervised farming approach and (b) credit education for trainees.
3. The enrichment of the philosophy of education and development in the Philippines. The BDS was discussed in conferences, meetings and classes and has been visited by thousands

of educators and development leaders.

4. The BDS scheme was adopted by the Department of Education for Central Luzon and Central Mindanao, with partial support from the Second World Bank Loan.
5. The publication by EDPITAF with Ford Foundation funding of the book Barrio Development School: A Resource Book by T.F. Contado.
6. The improvement in capabilities and personal qualities of the barrio youth in Masaya who attended the BDS. To a certain extent, the "multiplier effect" of education in their parents and neighbors was also observed.
7. The improvement of peace and order. According to the people of Masaya, peace and order improved because many of the delinquent out-of-school youth found new meaning in life at the BDS. A survey of parents and BDS students in 1973 showed that 86 percent of parents and 98 percent of students agreed that peace and order was better after the BDS was established.

Socio-economically, the BDS may be seen in the value of students' supervised farming program and the adoption by the parents and neighbors of new technology and practices introduced through the BDS students. In supervised farming, for example, the BDS students in 1973-74 conducted projects in swine, cattle, broilers, rabbits, ducks, horses and crops. Table 2 shows the value (sales + home consumption + inventory value-supervised farming projects worth) of these different

enterprises presented by class. It may be noted that the most common project was swine. The value of the second years' SFP was higher than that of the fourth years' SFP, however, there were 18 second year students and only 12 fourth year. In conducting their projects, the different class groups did not necessarily follow the length of time they had been in the school.

Another way of looking the economic impact of the BDS, is to examine the yearly value of students' supervised farming projects, the number of students enrolled, tuition fees paid and BDS project budget, Table 3. It should be noted that it was only in the first year and sixth year that the value of the SFP was lower than the BDS operational budget. But as a whole, over a six-year period, the average annual budget was ₱29,915.00 while the average value of SFP of students was about ₱65,825.00.

Table 2. Summary values of the different supervised farming projects of the BDS students by class, school year 1973-74.

Projects	1st year class	2nd year class	3rd year class	4th year class	Total
Swine	₱18,665.00	₱28,490.00	₱23,239.20	₱27,654.00	₱98,048.20
Cattle	5,040.00	2,666.00	790.00	-	8,496.00
Broiler	1,434.00	-	-	735.00	2,189.00
Rabbit	145.00	70.00	-	2,481.00	2,696.00
Duck	-	715.00	-	-	715.00
Horse	-	1,014.00	-	2,555.00	3,569.00
Crops	-	2,628.00	-	145.00	2,773.00
<b>TOTAL</b>	<b>₱25,284.00</b>	<b>₱35,583.00</b>	<b>₱24,029.20</b>	<b>₱33,570.00</b>	<b>₱118,466.20</b>

Source: BDS Resource Book, p.178.

Table 3. Supervised farming projects, enrollment and tuition payment of BDS students.

School year	Value of SFD	No. of students	Tuition paid	Project Budget*
1970-71	₱ 4,993.10	17	₱ 1,166.00	₱16,901.00
1971-72	33,616.45	35	1,908.00	13,923.00
1972-73	93,874.60	51	3,468.00	21,939.00
1973-74	118,466.20	66	1,576.00	36,100.00
1974-75	103,802.00	60	1,039.00	40,780.00
1975-76	40,944.00	55	1,246.00	47,547.00

Source: BDS Plan of Operation for 1977, p.3.

\* Does not include the salary of the Project Leader Adviser and Asst. Project Leader who are all part-timers. It does not also include the Guarantee Loan Funds of the Barrio Book Foundation Inc., the Church Among the Palms and Dr. B. Vergara, on a total of ₱21,000.00

Influence upon the Parents. The 1970 total enumeration benchmark data and the 1973 NSDB supported sample survey of Masaya parents consistently showed trends that the BDS has some influence on their economic life. Table 4 shows the average number of animals raised by the families in 1970 and in 1973; showing significant increases in number of swine, chicken and rabbit. In fact, no rabbit was raised before the BDS was organized.



Table 4. Average number of poultry and livestock raised by the Masaya families in 1970 and in 1973.

Kind of animal	1970	1973
1. Swine	1.12	2.55
2. Chicken	5.40	16.09
3. Cattle	0.073	0.02
4. Horse	0.035	0.03
5. Rabbit	0	0.68
6. Carabao	0.202	0.08
7. Duck	0.047	00.06
8. Goat	0.035	0.04

In the use of fertilizers and chemicals, Table 5 shows the increase in usage from the 1970 to 1973 level. It also shows that chemical usage by the parents of BDS students was higher than that of parents whose children were not enrolled at the BDS. The rate of chemical application also increased in 1973 and the parents of BDS students used more than the parents without BDS students, Table 6.

Table 5. Farmers using chemical farm inputs.

Farm input	1970		1973		BDS /73		Non-BDS /73	
	No.	%	No.	%	No.	%	No.	%
Insecticides	19	8.19	116	63.74	34	76	82	60
Weedicide	20	8.62	117	64.29	35	78	82	60
Fertilizer	21	9.05	124	68.13	35	78	88	64

Table 6. Fertilizer per hectare used by farmers (bags/hectare).

Kind of fertilizer	1970	1973	BDS/73	Non-BDS/73
Urea (45-0-0)	1.13	2.35	2.75	2.30
Complete (12-12-12)	0.12	0.53	0.71	0.47

Projects are an index of income change. For the BDS, two ways of investigating change were made. The first was to see the average family income from poultry and livestock. Table 7 shows that the 1973 income from different animal enterprises was much higher than that in 1970.

In thinking about the economic impact of the BDS upon the students and their families, it becomes tempting to conclude that the BDS, at least under the achievements reviewed is an economically feasible education approach to barrio development. However, as

pointed out in the section on objectives and target attainment, the placement consideration of the graduates is something that the BDS in Masaya could hardly attain.

Table 7. Average family income from poultry and livestock.

Kind of animal	1970	1973
1. Swine	₱44.89	₱190.38
2. Chicken	0.52	59.34
3. Cattle	0	1.92
4. Horses	0	0
5. Rabbits	0	6.39
6. Carabao	0	13.74
7. Duck	0	1.09
8. Goat	0	1.92
TOTAL	₱44.91	₱274.78

#### Problems Encountered and Solution Tried

The BDS project encountered several problems which could be categorized into (a) problems that persisted throughout the operation, (b) early operations problems and (c) midstream problems.

### Problems that Extended Throughout

Every year, it was always difficult to have enough youths in the BDS. Those who had no plans to go to college, school drop-outs, low achievers in school, poorly motivated students, economically deprived students, etc. need a different kind of psychology and teaching techniques. This problem of working with the residual segment of the young population may be less serious in areas that are further away from the growth centers. Another perpetual problem in the Masaya area is the lack of land area for the students' farming programs.

### Early Operations Problems

At the start, there were problems of lack of school rooms and facilities, lack of starting capital for farming programs, student discipline, theft of students' project items, and working with parents. In due time, however, practically all these problems were solved through the Local Advisory Council. A school room was renovated, then two unused, dilapidated rooms were fixed by the parents with the BDS supplies. Finally by the act of the Barrio Council and the Local Advisory Council, a three-room RP-US Bayanihan Building was provided. Theft of students' project items was stopped by the Local Advisory Council and the barrio captain, while student discipline was carried out by the teachers after the Local Advisory Council gave its sanction. LAC members were effective in helping the teachers explain to parents the cooperation needed from them in the conduct of students' supervised farming projects. The lack of capital was partly solved by the LAC through the rabbit chain and

"swine paiwi". The most effective solution to the lack of capital problem was the guarantee loan fund scheme.

### Midstream Problems

As soon as the BDS was well-underway, the problems of marketing, loan repayment, teachers' insecurity on a project payroll, teachers' commitment and competence became real. Marketing of students' products was a continuous problem because market behavior was not within the BDS control. Planning contractual production-marketing was tried but the dynamics were so fast that no lasting solution could be guaranteed. Loan repayment was high during the first two years but became a problem after that. Parents meddled with their sons; supervision became more demanding with more students using capital; quality of supervision decreased; and a widespread attitude developed that "if nobody pays the bank, then why should I?"

The problem of repayment is far from being solved. As of January 1977, unpaid principal loans was about ₦29,685.49 while the unpaid interest was about ₦7,690.00. After all persuasive approaches shall have failed, the usual bank procedure of collecting loans will be used.

A person hired on project money has no tenure, so the moment there is a better and more permanent job, he transfers. After four years, making the teachers stay in the barrio became difficult. And as the problems of the students became more technical and complex, the teachers were longer of much help. There was also the problem of lack of initiative and imaginativeness among the teachers. The project

leaders' supervision became infrequent and a change of project leadership also negatively affected the teachers' performance.

At the end, the most basic and critical problem that confronted the BDS is seemingly a part of Filipino culture itself. The general comment is: "BDS is good, but the graduates are not able to go to college." This cultural expectation which equates education to a college degree is not only expressed by the barrio folks but also by some Filipino educators.

#### MONITORING AND EVALUATION

The BDS did not have a planned monitoring system other than the use of periodic reports on the project operation. It had specific plans for a periodic and continuous evaluation. The plan was to hold annual evaluation sessions. But instead, the annual report of the operation team was always discussed at the National Board of Education (NBE) meetings. In addition, the NBE commissioned three people outside the project team (one each from the National Board of Education, The Bureau of Vocational Education and The University of the Philippines at Los Baños) to evaluate the BDS in 1974-75. It would have been beneficial to the project if the yearly evaluation sessions were carried out as originally planned and if a monitoring system were designed at the beginning.

#### Some Implications for Action Research

The six years experiences and problems with the BDS in Masaya suggest many important implications for action and research. First, on the search for

an educational approach to barrio or rural development, the BDS idea promises a lot of possibilities. The BDS, if conducted properly, is economically feasible, when cost of education is considered as an investment, even within the short-term range. Secondly, because of the intensive recorded experiences of the BDS in Masaya and the publication of a resource book on BDS, it would be relatively easy and manageable for the Department of Education to organize several BDS as long as these are assigned to a special division during the initial years of operation and supervision.

Thirdly, the experience in Masaya, indicates the critical importance of the place where the BDS should be located. Because of its self-employment bias in agriculture, the BDS must be located in communities where there is ample land space for the students' future farms. Locating the BDS away from urbanized centers would minimize the tendency for the BDS to get the very poor segment of the youth.

Fourthly, in the light of the repayment problems in the BDS in Masaya, lending and supervision schemes should be made more business-like and possible misapplication of loans granted by the bank prevented. This should include non-cash issuance of loans and more rigid selection of students who may be helped to obtain loans.

A fifth implication is in the area of further action-research on an expanded concept of the BDS. In a barrio, a Barangay Development School may include three programs, namely: (1) Occupational training for self-employment; (2) General secondary for those who will leave the barrio and (3) Adult or continuing education program for adults. Such an action program

should be worked out such that the Department of Education will be able to take over the project in three to four years time.

Because of the occupational placement in a BDS located in a barrio like Masaya where there are more job opportunities than in isolated agricultural areas, there seems to be a need to have a research on the comparative advantage of investing scarce money resources in training young men and women who are not yet farmers or investing that money in training for higher agricultural productivity and higher levels of living among men and women who are already farming. Results of this kind of study should be used in making policies regarding expenditures in general education and education for rural development.



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## CHAPTER 12

A NON-FORMAL EDUCATION STRATEGY FOR  
AGRICULTURAL DEVELOPMENT:  
THE CASE OF THE BULACAN FARMERS TRAINING CENTER

Rogelio V. Cuyno, Zenaida Ubaldo  
Emmanuel Genio, and Celia Correa\*

INTRODUCTION

Numerous international conferences in the past five years or so have time and again exposed the failures of developmental strategies during the fifties and sixties in their inability to raise the living condition of the people in the countryside. A high FAO official recently remarked: "Why is there an increase in poverty, hunger, and want despite international action?" He answered his own question. "We have begun at the end, not at the beginning; at the top, not at the bottom; with big and not small scale industries. It is the struggle to reverse this order that could win Asia's most significant other war."

It is quite common in the Philippines to see isolated flashes of rural development successes. We hear reports about some projects doing pretty well in some municipality, barangay, or in an urban slum area. Both these successes are not only limited

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\* Staff member of the Philippine Training Center for Rural Development, Assistant Professor in Agronomy, Development Communication and Agricultural Education and UPLB consultant to the Bulacan Farmers Training Center; Training Director, Bulacan Farmers Training Center; Assistant Professor, UPLB; and Graduate Assistant, UPLB, respectively.

geographically; they are also quite shortlived which reinforces a stigma that we are often reminded of in this country. The so-called "ningas kōgon" trait, the tendency to initially flare up in enthusiasm and energy only to fizzle out leaving behind gloomy vestiges of what was once glorious.

This lack of sustained momentum in the area of rural development can perhaps be traced to the nature of past developmental programs of the government. Most of them were externally determined and many times imposed upon the people. Of course, the people benefit from these programs because they are provided basic infrastructure such as roads, schools, rural industries and institutional services. But such external forces and directions also create dependency upon the outsider and prevent the development of internal capability for self-determination, local initiative, self-reliance and self-direction. No wonder that when the government man leaves the village, the impetus, initiative and direction for developmental activities dies down too.

To reverse this trend, what is needed is a strategy that will evoke local will, generate local energy and channel these into internal growth and development. There is an emerging approach to help realize this objective. This approach tries to improve the quality of the human person through non-formal education. As a purposive and systematic set of learning experiences it does not follow the systems and procedure of formal education. Rather, it is oriented to behavioral changes related to the needs, problems, goals and interest of the learner rather than the teacher/change agent or his agency.

This approach of education attempts to continuously and responsively provide learning opportunities to rural folks and access to information, knowledge and resources which are needed for their transformation. This grass-roots oriented education makes possible the infusion of new inputs of technology, opportunities, skills, perspectives and commitments that will energize the inner systems such that its transformation may be hastened.

The non-formal education approach starts with the individuals- the people- the most important resource of the community. Unless there are changes in the basic resource, the community becomes tradition bound, assumes a static condition and maintains the status quo. Thus, the most vital investment is in improving the human capital.

Such theory hinges on the assumption that, in the absence of external inputs into the rural system, that system would predictably become tradition-bound and concerned with the maintenance of the status quo. A system that is closed also assumes a static condition. All these affect the way the people in that system think and also shape the image they have of their world.

The actors that will transform the rural system are the people, the individuals. They are the most vital resource of the system. This is why societies with insufficient financial capital resources have to invest more in the improvement of the human capital. For the improvement of the human capital has a multiplier effect. Improving the quality of the human capital will increase the capacity of the system to adapt to changes in the environment.

The system will produce life-long learners through a non-formal way. It will also lead to redistribution of national resources and provide more opportunities for self-development.

But improving human capital is also a process of totally transforming the person's level of knowing, doing, inspiring his whole way of life. Every new learning experience that a person encounters adds to his total structure of knowledge which, when accumulated over time, can lead to a threshold resulting in what Kenneth Boulding refers to as "systems break" or a break away point or reorganization of the total system. This is really what social change is and development is a special type of social change.

Non-formal education is basically a strategy of building human capital by means of widening the person's sphere of learning experiences that is immediately rewarding because it is functional to his present actuations-needs, problems, interests and resources. These continuing series of learnings will eventually bring about greater system dynamism, greater productivity, higher economic prosperity, and ultimately greater attainment not only by the individuals but of the bigger system of which they are a part.

### Brief History

"Masagana 99", a national rice production program was launched by President Ferdinand Marcos on May 1973. The purpose of this national program was to attain self-sufficiency in our basic foodstuff-rice, in as quick a time as can be. The program was launched in the midst of a crisis precipitated by a string of

natural calamities- typhoons drought, and an epidemic and devastating infestation of a virus disease-tungro. Internationally, the stock of rice was also low because the same problems that hit the Philippines were also experienced by the rice-producing countries in the whole of South East Asia.

There was therefore a need for a massive mobilization of technological, institutional, organizational, and political resources and systems to implement the program. Like many other provinces, Bulacan was faced with a major constraint of lack of personnel to implement the program. Governor Ignacio Santiago of Bulacan realized that his extension field personnel, numbering about 70 at that time, were inadequate to seriously undertake supervised credit, agricultural extension activities, and other support activities in the 543 barangays (the lowest political unit) in the 25 municipalities throughout Bulacan.

In response to this need, Governor Santiago thought of an idea of utilizing successful farmers with leadership qualities to serve as local demonstration agents and local "technicians". The farmer leaders, however, cannot perform this new task unless they themselves know the recommended new package of rice technology as well as the government procedures for supervised credit. This led to the conception of establishing a training center for farmers.

The initial construction of the Bulacan Farmers' Training Center was done in September, 1974 at the present site, the foot of the Sierra Madre ranges, some 17 kilometers from the poblacion. A new road had to be etched into this hitherland to make the place accessible. The funds for the construction of

the original two buildings came from the provincial government and partly from the Palayan ng Bayan Project.<sup>1/</sup>

Awaiting completion of the training facilities, Governor Santiago solicited the assistance of the University of the Philippines at Los Baños (UPLB). He designated a member of his Provincial Development Staff to serve as the training director of the Center. He immediately instructed her and a Peace Corps Volunteer to make contacts with UPLB.

The first training class was conducted on December 2-7, 1974 with UPLB assistance. One UPLB rice production expert came to serve as a resource person. Other agencies involved in this first class were the Bureau of Soils, the Bureau of Plant Industry, the National Food and Agriculture Council, the Bureau of Agricultural Extension and the Department of Local Government and Community Development.

#### The Bulacan Farmers' Training Center Facilities

At present, the training center complex has six buildings- a kitchen and dining hall, a two-story administration building that serves as staff sleeping quarter and ladies' dorm, two-story dormitory- classroom buildings, a guest house, and a farm machinery shed. Undergoing construction is an amphitheater-

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<sup>1/</sup> Under the sponsorship of the First Lady, Madame Imelda R. Marcos, this program was launched to make resources available, through loans, to Provincial Governments to develop new lands to produce rice, corn and other food crops.

basketball court facility.

Water and electricity are provided through a generator. The Center's Communication link with the front office in the provincial Capitol is a single band radio. Two vehicles - a jeep and a travel-all are permanently assigned to the Center. Instructional facilities and materials consist of a slide projector, sets of instructional slides and tapes, farm machinery and equipment (small tractors, dryers, small-model rice mill, small tools), rice display-plot, practicum plots, charts, pictures, print materials and print-illustrated materials.

Through a loan from the World Bank, the BFTC will receive additional facilities from the national government in the form of a new administration building, staff housing, some site development, and additional instructional facilities.

#### Administration and Management

The BFTC is directly under the Office of the Governor. It gets an annual appropriation for personnel, maintenance, trainees' subsistence, supplies and other operating expenses. Agency and personal donations in kind and in cash come often through the personal influence of the Governor. To give an idea of the funds involved within a period of two fiscal years, here is a report from the BFTC accountant.



FISCAL YEAR - 1974-1975

Appropriated Amount	₱ 41,591.25
Donation	<u>40,500.00</u>
Total Amount Received	₱ 82,091.25
Total number of Participants	321
Expenses per head per week	₱ 255.73
Expenses per head per day	36.53

FISCAL YEAR - 1975-1976

Appropriated Amount	₱ 201,248.00
Donations	<u>68,775.00</u>
Total Amount Received	₱ 270,023.00
Number of Participants	832
Expenses per head per week	₱ 324.54
Expenses per head per day	₱ 46.36

Presently, the Center has 10 personnel under its budget: A Training director, an assistant training director, a curriculum development officer and trainor, an administrative assistant, a secretary, one artist-illustrator, one training aide, one typist, one driver, one janitor-messenger and one security guard.

The accounting and auditing of funds is done through the regular government systems and procedure. Disbursement of funds is done through the provincial treasury and any financial donation is also deposited and entered into the books at the provincial treasurer's office. As far as tuition is concerned, in all of the programs at the BFTC Bulacan participants are free while those from other provinces pay ₱20.00 per day for board and lodging and training materials.

#### Specific Programs at the Center

To date, a total of 2,180 farmers have studied at the Center with varying time duration, purpose, content, clientele, cooperating agencies and admission system. Of this number, about 50 have come from other provinces such as Bataan, Nueva Ecija, Zambales, Antique, Catanduanes and Davao Sur. A brief description of the program offered by the center is given below.

1. Regular Rice Production Technology Course- This is one-week program dealing on package of new rice technology. The objectives of the program are to:

- (1) acquire information on the technology recommended by the National Masagana 99 program;
- (2) understand the concepts and principles behind the recommendation;

- (3) diagnose rice production problems and come up with solutions;
- (4) acquire additional rice production operational skills based on new technology; and
- (5) know the systems and procedure of the supervised credit program of Masagana 99 including all other support services under the program.

One thousand six hundred seventy nine (1,679) farmers have laready gone through this program, which is given once a month. Applicants for training may be recommended for admission by Center alumni, government technicians or local groups and associations. The Center's staff evaluates the application and makes the allocation to different municipalities and barangays based on distribution of previous trainees, leadership role, and strength of recommendation. Part-time farmers are excluded; so are chose who cannot read and write and those below 18 years of age. The cooperating agencies in this program are the Bureau of Agricultural Extension, the Bureau of Plant Industry, the Bureau of Soils, the National Grains Authority, the Rural Banks, the Philippine National Bank, the National Food and Agriculture Council and the University of the Philippines at Los Baños.

## 2. Re-training Course on Rice Production-

The purpose of the course is to prepare would be Barangay Technicians (BT). A more detailed description of the BT program can be found in another section of this paper. The course consists of three parts:

- (1) A review of rice production technology particularly on the recommended cultural practices of the Masagana 99 program;
- (2) Preparation of farm plan and budget and other bank procedures; and
- (3) Local leadership and effective communication.

These are the areas of competency necessary for the task of a BT. The course duration is one week. Participants are admitted based on local leadership, standing as a farmer, successful attendance of the first rice production course, and willingness to serve as BT. An applicant has to be recommended by the bank that he will serve later or a local organization or government technician. Two hundred-sixty-six (266) individuals have gone through this program. Out of this number, only 188 have been given appointments as BT's by the provincial governor. The same agencies as in the regular rice program provided the resource persons.

3. Out-of-School Youth Training on Rice Production - A one-month course on scouting and rice production was given to twenty six (26), 15-20 year old out-of-school youths in March 1976. The purpose of the program was to prepare the participants to obtain employment in rice production under corporate farming system, self-employment, or employment in the province Palayan ng Bayan Project. The same agencies as those in the regular rice program cooperated in this program.

4. Training on Livestock Diseases First-Aid - Livestock is a very important industry in the province. When the province was hit by a series of typhoons and

strong rains in May and June in 1976, there was an immediate on-set of livestock diseases. To help contain the spread of diseases and to prevent high mortality, first-aid measures were needed. Towards this end, the BFTC jointly sponsored a series of 3-day seminar-workshops on first-aid on livestock diseases with the Bureau of Animal Industry and the UP College of Veterinary Medicine. The seminar workshops were conducted for all the 24 municipalities of Bulacan within the whole month of June 1976. A total of 580 farmers received this training.

5. Livestock Re-Training Program - Following the concept and experience of the rice BT, the BFTC jointly sponsored and conducted with BAI a one-week training on livestock production and management to 56 participants. The livestock BT is the counterpart of the rice BT. The content of training was a combination of production technology, supervised credit, and extension-communication.

6. Post-Harvest Technology Seminar - With the hope of reducing after-harvest loses, which are quite substantial (estimated to be from 10-25%), the BFTC jointly conducted a 3-day seminar on post-harvest technology with NGA. One hundred thirty participated in this program which was offered in two sessions.

7. Training on Compact Farming - Basically the same as the regular rice production program, the NIA concept and procedure of compact farming were added. This program was participated in by 41 NIA technicians and compact farm leaders.

### The Learning System

Over a period of almost three years, the BFTC has established some patterns with respect to curriculum planning, designing, and development, instructional methodology and techniques which are invariably applied to any training program it manages. The BFTC always jointly prepares curricula with technical agencies concerned. For instance, all its rice training programs were jointly designed with BAEx, BPI, BS, and UPLB experts during a workshop designed for the purpose. In its livestock training program, the curriculum design was jointly prepared with representative of BAI and UP College of Veterinary Medicine. The post-harvest course was designed with NGA experts.

The instructional strategy used is multi-channel, that is, a variety of teaching strategies and techniques are used over the whole training duration. If the objective is to learn certain operational skills or procedures, method demonstration followed by field practicum is used. If the objective is learning to identify rice production problems, a combination of slides, actual specimens, pictures and field trips is used. For this purpose, the Center maintains a display plot where a collection of varieties are planted. Trainees are brought to this plot to study varietal characteristics and recommended cultural practices. In the classroom, chalk-board and charts are commonly used. Instructors are encouraged to employ the informal dialogic and discussion techniques for high participation and to encourage interchange of experiences among participants.

Experimentation on the use of modern instructional

technology was done at the Center by UPLB experts. A slide-tape production was pre-tested and five sets were eventually produced by UPLB for the Center. These slide-tapes are now regularly used in the rice training programs. The use of video-tape recorder to record trainees' section during training was experimented on. This project is still at the initial stage.

The other features of the training design are: physical exercises every morning before breakfast, flag raising ceremony just before the first session in the morning, socials and quiz shows in the evenings and ground improvement either early in the morning or after the last session in the afternoon.

In an in-depth study of teaching styles and techniques used at BFTC conducted by UPLB researchers, the following instructor characteristics stood out as most important as mentioned by the trainees:

(1) mastery of the subject matter; (2) ability to keep a class alive and attentive; (3) personality that inspires confidence and respect yet pleasant in manner; and (4) organized presentation using the vernacular, delivered in a loud voice, and relating the subject to actual conditions.

#### External Linkages

As an institution, the BFTC has established cooperative working relationships with various specialized agencies and institutions. This can be seen in the frequency of teaching by resource persons from these agencies as shown in Table 1. This period covers the years from 1974 to 1977.

Table 1. Resource Persons at the BFTC (Number)

Agency/Institution

	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977 (up to June)</u>
National Irrigation Administration	-	6	15	15 -
Bureau of Soils	2	15	18	11
National Grains Authority	-	2	15	10
Bureau of Plant Industry	1	2	8	14
Philippine National Bank	-	2	8	5
Central Bank	-	2	3	-
University of the Philippines at Los Banos	1	17	36	8
Barangay Technician	-	-	35	20
Bureau of Agricultural Extension	4	35	37	9
National Food and Agriculture Council	1	5	4	2
Department of Local Government and Community Development	1	4	5	5
International Rice Research Institute	-	4	-	-
Rural Bank	-	1	2	-
Unified Rice Applied Research Training and Information Program	-	19 (one session)	-	-
Department of Agrarian Reform	-	-	2	-



The participation of BAEK is quite substantial. It is to be expected that the BFTC as a non-formal educational institution supporting agricultural development has to have close interface with the agricultural extension system. As a matter of fact, one World Bank expert commented that this is the kind of institution that the agricultural extension organization ought to have to support its field programs.

Another observation is the increased involvement of UPLB in 1975 and 1976. This is because of a formal tie-up between the Province of Bulacan and UPLB. The agreement provided that UPLB would extend technical assistance/consultancy to the BFTC for a period of three years. More specifically, the following areas of assistance were pinpointed: curriculum and program development planning for site and physical development, planning for the development of instructional system, and staff development.

All these project areas have been substantially worked out to date. UPLB assistance has been sought and provided for, in all the curricular programming at the Center. UPLB has been instrumental in including the BFTC into the network of the Philippine Training Centers for Rural Development (PTC-RD) for which the BFTC will receive financial assistance for physical development, development of instructional facilities, and staff development. Through UPLB's request, IRRI has accepted two staff members of BFTC into six-month rice specialist course. One has already returned to the Center and has been very valuable not only to the Center but to the whole rice program of the province as well.

Next year as the UPLB's BFTC participation

phases out, as per agreement, the PTC-RD will provide support to the BFTC.

One very important development in the instructional program of the BFTC is the sudden emergence of the Barangay Technicians as instructors in 1976 and 1977. Since Bulacan started to use selected BFTC graduates to serve as auxiliary extension technicians (para-professionals), a growing number of them have stood out to be effective teachers. So, the BFTC decided to tap some of them to serve as instructors in its rice production training program.

In the recent in-depth study of teaching style and strategies used at the BFTC, the following statements were mentioned by the trainees concerning the farmer-instructors: (1) "they give us boost, inspiration, and good example," (2) "their approach is heart-to-heart," (3) "we understand them easily," (4) "they have a more direct approach to the subject and to the participants," and (5) "we believe what they say because they say what they have experienced".

Another evidence of external linkage established by the BFTC is in the number of institutions, agencies and individuals that have given donations in cash and in kind. The following is the list of donors as of June 1977:

Ford Foundation  
National Grains Authority  
Palayan ng Bayan (National)  
Planters Products  
Bulacan Federation of Rural Banks  
Rice Millers Association of Bulacan  
Mr. Felipe F. Cruz

Impact of the Bulacan Farmers' Training Center  
The Barangay Technician Program

The main features of the Barangay Technician Program (RTP) of the provinces of Bulacan are as follows:

- a. Selected farmer graduates of the BFTC are given re-training on new rice technology: Masagana 99 systems and procedures, supervised credit, leadership and extension-communication techniques. The basis of selection are: leadership in the community, should be a progressive rice farmer, and willingness to serve the community. After re-training, the graduates are appointed by Gov. Santiago as Barangay Technicians and assigned to the rural banks that service their area.
- b. The Rural Banks in turn utilize these Barangay Technicians to assist about 30 farmers in their own Barangays in the preparation of the farm plan and budget in the proper application of production inputs and in the care and management of the crop. Furthermore, they organize seminars and adult education sessions where local farmers share experiences or rice production technology. During their contacts with assisted farmers, the latter are reminded of their credit obligations.
- c. The Rural Banks provide the BT's an incentive allowance of ₱1.00/farmer-assisted/month for a maximum of 5 months per cropping season.

In addition, the BT's get ₱6.00/farmer-assisted upon full payment of the production loan before the due date.

- d. The Department of Agriculture field personnel, on the other hand, provide technical assistance to the BT by serving as resource persons in their seminars or by providing more technical information on a given problem during their field visits.

In summary, the Barangay Technician scheme utilizes the following concepts: (1) functional, work-related, non-formal education to local farmer leaders; (2) use of farmer leaders as auxiliary rice production technicians to provide local technical assistance and educational services; (3) private agribusiness enterprise absorption of some of the costs of technical services; and (4) government agricultural technician's provision of professional and technical assistance through a local channel - the change agents - rather than to individual farmers, allowing him to service a much larger area. If this scheme is ultimately followed throughout the country, the number of additional extension workers to be hired will be reduced considerably.

The BT's have accomplished the following:

1. In phase VII (ending Nov., 1976), the 64 BT's that were assigned to 19 Rural Banks and 3 PNB's worked out a total release amounting to ₱4,020,410.00. This was the total amount borrowed by 1,977 farmers assisted by the BT's. (Source: BFTC 1976 Annual Report)

2. Average yield of farmers assisted by BT's

in phase VII of Masagana 99 program was 83.5 cavans/ha. as compared to the 73 cavans/ha. provincial average (Source: NFAC survey, April 1977).

3. In phases V and VI of the Masagana 99 program, the BT's registered repayment (of their assisted farmers) from 90-100% depending on the community and the particular bank (Source: Rural Bank and Philippine National Bank report in Bulacan). The provincial repayment average for phase V was 88% for RB's and 82% for PNB's.

Some probable reasons for this repayment performance were:

- (1) More contacts between the growers and the local supervised credit advisor (Barangay Technician). In these contacts there was greater interpersonal influence through persuasion and non-formal education.
- (2) Greater social pressure was exerted on the borrowers because the supervised credit advisor (BT) was from the locality and knew the borrowers quite well.
- (3) There was more selectivity on who should be provided credit. Those with bad reputation as borrowers were avoided by the Barangay Technicians thus preventing the bad credit risk from utilizing credit funds.
- (4) There was greater credibility in the new technology due to the advocacy by the Barangay Technician who came from the locality. Because of this, adoption of new superior production technology was

more widespread and quicker and resulted in greater yield performance.

4. As of June, 1977, one hundred eighty eight (188) BT's had already been appointed and assigned to RB's and PNB's in Bulacan.

There was a substantial change in rice production practices after attendance in a one-week rice production course at the BFTC. On the use of high yielding varieties alone, the percentage of adoptors jumped from 38% to 94% among 260 respondents surveyed (Source: E. Genio, PhD thesis).

From an average yield of 57 cavans per hectare before training, the yield of 260 respondents surveyed nearly doubled (107 cavan/ha), after training. However, there could have been influence coming from other sources such as mass media, neighbors, technicians, etc. But the provincial average in cavans/ha for the period of the survey was 70. (Source: E. Genio, PhD thesis).

As can be inferred from Table 1 the BFTC has served as an integrating mechanism bringing the various institutions, agencies, and individuals to make their inputs for agricultural development. It is extremely doubtful whether the 15 agencies and institutions listed in the table along with the donors listed and the others who have given assistance to the Center would voluntarily get together for the agricultural development cause, outside the context of the Center.

Through the linkage with BFTC, UPLB has gained substantial, knowledge, insight and experience on non-formal education and its role in agricultural

development. Also, through this project, UPLB has generated extension/training material prototypes. Furthermore, UPLB students, visitors and faculty have been exposed to the real problems of agricultural development and learning the non-formal education dimension of the problem.

The viability and validity of the non-formal education concept demonstrated by the BFTC has helped national and international decision-makers to support the establishment of five other similar farmers' training centers all over the country with funding from the World Bank. Some provincial governments are also contemplating to put up similar institutions out of their own resources.

#### CONCLUSION

The Bulacan Farmer's Training Center is a case for a strategy in agricultural development that principally uses the non-formal education approach through the establishment of a local institution for this purpose. It is a learning resource center for rural folks to complement and supplement the existing agricultural programs.

In the company of other learners from other places, confined in an institution where the value and norms of change are impressed upon the participants, a farmer participant gets an opportunity to break away from what might be already a dysfunctional and obsolete technology. Through exposure to new information, experiences of other farmers from other places, analysis of self, and to a totally new world of experience: the person develops new perspectives, accepts new challenge, centers on new resolutions,

and becomes renewed.

All these processes could take place in a training center. And this is the rationale for an institution-based non-formal education approach to support the field programs in agricultural extension.

The following principles and generalizations are proposed:

1. A non-formal educational institution for agricultural development has to establish functional and cooperative linkages with technical agencies and institutions and has to obtain wide public acceptance and sponsorship. It has to obtain this public recognition and prestige in order to instill pride among the participants who study there.
2. To be effective, the Center has to be responsive and supportive to the learning : needs of the field extension program. It should avoid alienating and antagonizing field programs or avoid taking a totally separate tract from the field programs. On the other hand, this kind of an institution can become an effective catalyst or agent of change and an integrating point to channel the various forces for agricultural development.
3. The total experience that such an institution must provide the participant has to be rewarding in terms of beneficial results and has to be personally pleasant. The offerings and learnings that one gets at



the Center have to be useful and practical.

4. Such an institution has to impress in the participants, in subtle but systematic persistent ways, developmental values and norms.
5. Non-formal educational institutions have to be establish a mechanism for the clientele sector to actively participate in curricular program planning and development and in teaching in its training programs.
6. The staff of the non-formal educational institution has to understand the nature and processes of the approach and has to internalize the crucial principle that distinguishes it from other approaches. This is the clientele or receiver or learner-biased viewpoint of education and the staffers have to be committed to this calling and really know the total culture and situation of the clientele.

## CHAPTER 13

## THE SOCIAL LABORATORY

Tito E. Contado\*

INTRODUCTION

In spite of the rapid advance of science and technology, the rural areas of the country are still beset with low productivity and widespread poverty. The pace of agriculture and rural development has remained slow and majority of our farmers continue to live at subsistence levels.

The UPLB has always viewed itself as an instrument for rural development since it is not only a repository of knowledge but also as an active agent of rural change. But an institution of higher learning should not only deal with the study of agricultural technology and science but must be in constant touch with rural people to be relevant and be a constant source of new ideas, approaches, innovations and experiences in the human and socio-economic aspects of development based on true-to-life rural condition. Under this perception of the role of a College of Agriculture or a State University, Dean Chi-wen Chang, UPLB/SEARCA visiting Professor

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\* Associate Professor of Ag. Education, Project Leader of the BDS and also UPLB Director of Extension.

declared that "we need a Social Laboratory<sup>1/</sup> where we can demonstrate and study patterns of rural development." He argued that "If chemists have their laboratory and the agricultural scientists have their experiment station, then social scientists should have their Social Laboratory".<sup>2/</sup> With the Social Laboratory, an institution of higher learning like UPCA (now UPLB) can serve as a path finder in the continuing search for effective approaches and solutions to the socio-economic dimensions of rural development.

As a generic concept, a Social Laboratory is an outfit or a "facility" of an institution of higher learning for demonstration, research and training on the human and socio-economic aspects of rural development. Dean Chang defines it as a "pilot project on agricultural and rural development conducted by an institution of higher learning such as the University of the Philippines, College of Agriculture, with emphasis on the development of people for training and demonstration purposes."<sup>3/</sup>

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<sup>1/</sup> Social Laboratory was first used in China when its five leading Universities jointly organized to sponsor a Social Laboratory with Rockefeller Foundation assistance in 1930. This is indicated in Chi-Wen Chang, Rural Asia Marches Forward, UPCA Textbook Board, College, Laguna, 1969, p. 94.

<sup>2/</sup> Chi-Wen Chang, A Strategy for Agricultural and Rural Development in Asian Countries, College, Laguna, SEARCA, 1974, p. 46.

<sup>3/</sup> Ibid, p. 39-40.

In general, a Social Laboratory should have three kinds of output which contribute more directly to rural development, namely:

1. The social and economic development of the people in the social laboratory area.
2. The new ideas, approaches and socio-economic development innovations which when applied regionally or nationally, would lead to more effective rural development.
3. Contribution to the relevance and true-to-life experiences of training participants and visitors to the Social Laboratory area.

It was in this context that in 1970, the first Social Laboratory in the Philippines was established at Pila, Laguna by the UP College of Agriculture and the Southeast Asian Regional Center for Graduate Studies and Research in Agriculture with the cooperation of the officials of Pila and Laguna. Since 1972, ten other Social Laboratories have been established in the Philippines with SEARCA/NSDB and EDPITAF support.

#### The Social Laboratory Program in Pila

The Site. Pila, an old municipality which shows Spanish and Chinese influence, is in the province of Laguna, is bounded by a mountain range in the east and the Laguna Lake in the West. It had 13 barrios and a population of about 10,000 in 1970 and is only 5 km north of Santa Cruz, the capital town of Laguna, and about 28 km south of the U.P. at Los Baños. The major source of income is farming. Rice,

coconut, and duck raising were the dominant farming activities of the people in 1970. The reported average family income was ₱1,625.00.

The municipality of Pila was chosen as the Social Laboratory area because it met the following criteria: (a) not too near or too far from UPLB, (b) accessible by jeep, (c) with potentials for agricultural development, (d) exhibited potentials of local leadership and (e) expressed interest in the Social Laboratory idea by the local people and leaders.

The key problems. Obviously, rural underdevelopment was the focal problem in Pila. The benchmark survey of the first five barrios in 1970 showed that many rice fields were rainfed and harvested once a year. The average yield during wet season was 55 cavans per hectare. While this was higher than the national average, it certainly was lower than the achievable farm potential of about 100 cavans per hectare. The average farm size was only 1.5 hectares, even smaller than the Laguna average of 1.8 hectares. The household heads had an average of four years of schooling. This is because the highly educated had moved to urban centers, notably Metro Manila. The reported income was very low and the individual farmers complained that they had no irrigation, lacked capital, had inadequate farm supplies and were not getting good prices for their produce. The duck farmer sold duck eggs to the merchant at one centavo less per egg as an interest to the cash that he might have borrowed. This continued until his debt was paid. Many farmers borrowed money at planting time from private lenders on condition that for every ₱20.00 borrowed, 1 cavan of palay was the

repayment, and this at the time had a market value of ₦30.00.

Although several attempts had been made to organize farmers in the past, in 1970 there was no such functional organization in Pila. The key problem was anchored on the farmer who viewed farming problems as individual and never as common nor collective. It was also observed that the government services in Pila tended to be individual-approach-oriented; hence, their delivery coverage was very limited. As shown in Figure 1, the individualized perception of problems by farmers and the individualized-delivery-of-services-approach by service agents tended to duplicate or concentrate on a few big or advanced farmers while there is apparent shortage or neglect among the many small farmers. The individualized approach was expected to diffuse innovation from big advanced farmers to the small farmers; but in reality, this was not happening where packaged and complex innovations were being introduced. While many constraints were perceived by the Pila farmers, it became clear that the basic problem at hand was structural. The mental structure of the people and service agents was individual-oriented while the problems and constraints to increasing productivity and rural development called for collective and organized effort.

#### Program Objectives

The objectives of the Social Laboratory in Pila consist of a long-range and specific operational objectives. The long range objective is "to mobilize human resources to fully develop land and water

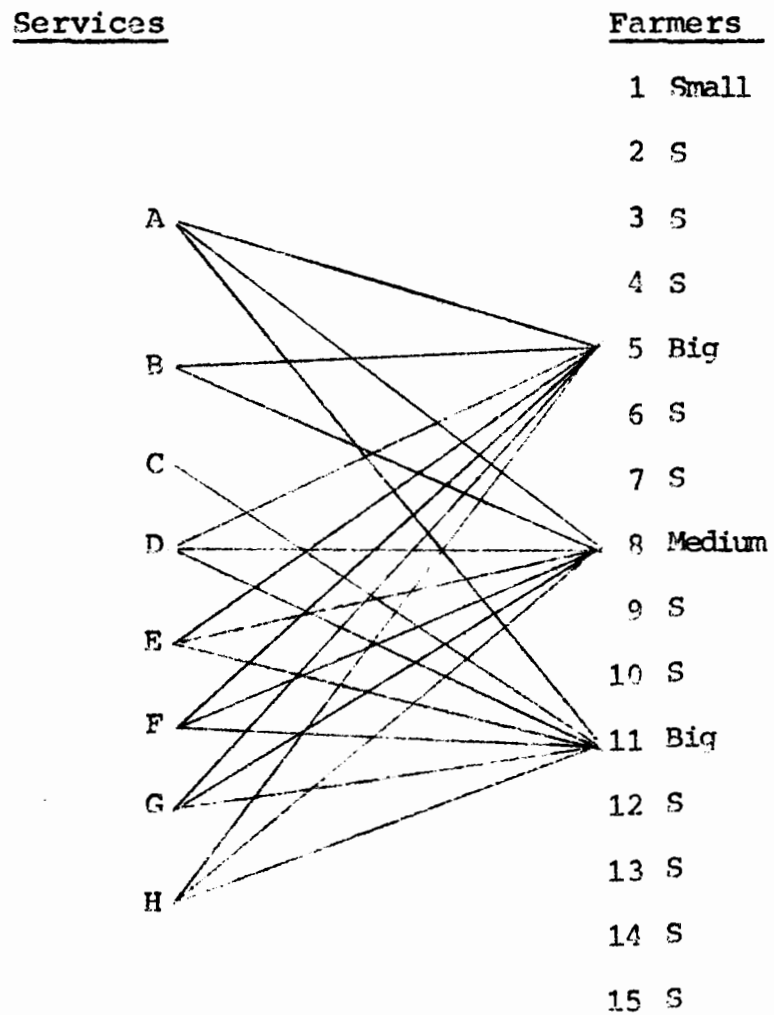


Figure 1. The relationship between the service agencies and the farmers under the individual oriented approach.

resources and to transform the present traditional farming into modernized commercial agriculture in order to raise the standard of living and accelerate rural progress."

The operational objectives are the following:

1. To increase agricultural production
2. To develop credit and market facilities
3. To lay the foundation for a steady progress of agricultural and rural development.

The first two objectives are for meeting the immediate needs of the farming population and gaining their confidence, while the third is for paving the way for a much more comprehensive development program later.

### Strategy and Approaches

To achieve these objectives, the Social Laboratory adopted a basic strategy, the mobilization of people so that they can take advantage of new technology and the services provided by the government. As Dean Chang used to say, "The best way for men to help men is not do things for them; but rather, to do things with them and, perhaps better still, help them to remove the hindrances to their doing things themselves."

For the strategy to work, three interrelated approaches to rural development were conceived. These were: (a) institutional or group approach, (b) training support and (c) service linkage establishment.

The institutional approach would take the form of a farmers' association (now called Samahang Nayan).



The association serves as a mechanism (see Figure 2) of collective thinking, perception, and action on agricultural and rural development problems, particularly those problems in (a) irrigation, (b) credit, (c) farm inputs, (d) marketing and the use of new knowledge and technology. Furthermore, the association would serve as the mechanism of channelling and integrating the different services of the government for rural development.

The farmers' association however, would not work unless the members, prospective members and the people in the area are trained on the workings of a functional association. Even the proper application of innovations in farming and farm living could not be achieved unless the farmers are trained. To make the linkage between the farmers' association and the government and private agencies work, training is also necessary. In short, in the Social Laboratory, the "people are trained, organized and assisted to form associations through which government and private services can be channeled effectively for the benefit of members and the community."

#### Five-Year Experiences

After five years of Social Laboratory operation, one may ask the question: Did the strategy and approaches work? Are the objectives being achieved? This section will attempt to relate the five-year experiences with the Social Laboratory so that answers the questions could be drawn.

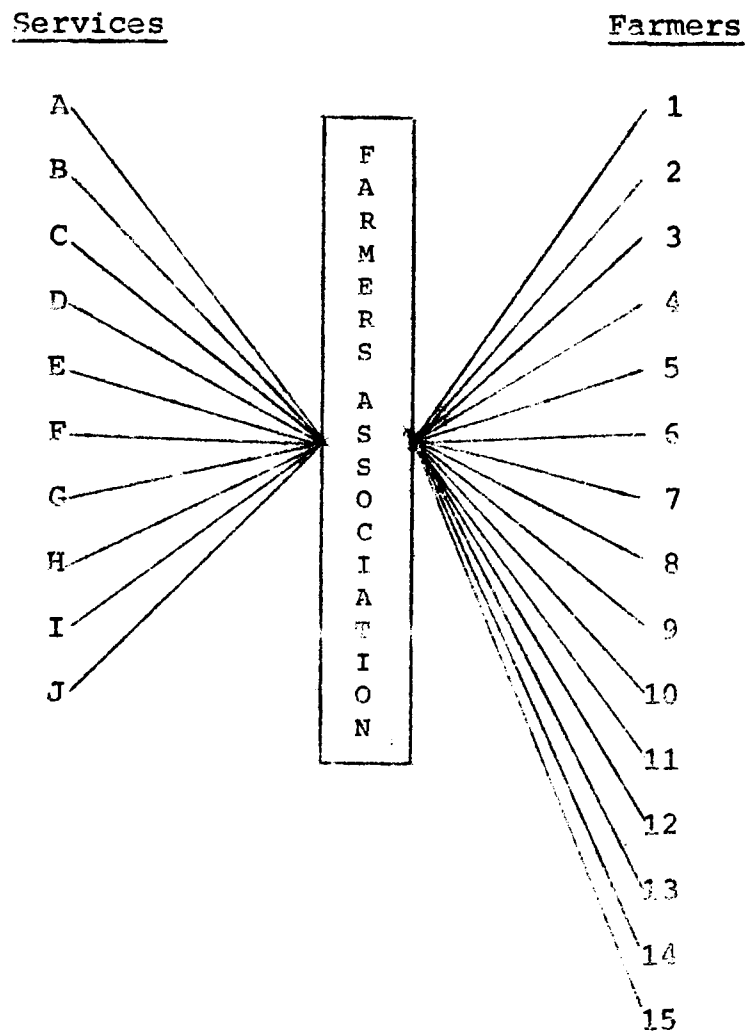


Figure 2. The relationship between the services and the farmers with a farmers' association as the linkage and integration mechanism.

### The Task of Organizing Farmers

Organizing the Pila farmers into associations was not easy. To begin with, the farmers claimed they had been members of one form of cooperative or another before and they openly declared they had nothing to do with it, that it wouldn't work, etc. They exhibited what is known as "learned resistance."

The situation suggested that the problem was educational and unless an initial success could be achieved in one barrio, it would not be possible to cover the entire municipality within a reasonable period of time. An educational or extension approach using the leading questioning technique was needed. By asking leading questions, the Social Lab technician soon discovered that the farmers should see their problems collectively; that they needed an association, and that many things were not correctly carried out in previous attempts. From individual conversations, the Social Lab technician formed small discussion groups among those he visited individually. The small discussion groups gave the farmers the opportunity to exchange ideas with other farmers. Then, they asked to be organized, but the technician cautioned them against being hasty. He suggested that a project must first be identified before actual organization could be carried out. After a project e.g. an irrigation pump project was identified, the association was formed and registered with the appropriate government agency. But in so doing, the Social Laboratory staff discovered that about half of the farmers did not have residence certificates which were required for registration. So, the Social Laboratory technician had to conduct an on-the-spot

orientation on the need of residence certificates for membership purposes.

At the beginning, the process was very slow. But because it was intensive and meaningful to the farmers, it radiated to other farmers in other barrios in the municipality. With the use of the leading questioning technique and the radiation effect strategy, the Social Laboratory staff was able to organize the first barrio farmers' association within four months. It then took the other associations lesser time. In organizing the other associations, farmers from the first association were used to "educate" the farmers of the other barrios. Within 2 1/2 years, all 13 barrios of Pila had organized farmers' associations. From 36 members in 1970, the associations' membership increased to 867 in 1975 and this number is still increasing.

#### Increasing Production and Income

One of the objectives of the Social Laboratory was to increase the production and income of the farmers through their organized efforts. Indeed, no farmer will join and remain with the organization unless he benefits directly from it. The influence of the Social Laboratory program on income and income distribution is shown in Table 1. A comparison is made of average family incomes in 1970 and 1975. But more importantly, it shows the income-equity distribution effect of the institutional approach. In 1970, the income distribution was badly skewed to the low income, 65% of the farmers had an income of only ₱2,000 and below, but by 1975, this percentage decreased to only 27. In 1975, there was an almost

Table 1. Income and equity effect of the Social Laboratory program in Pila,  
Laguna, 1970-75.

Income Levels	Percent of populations		Change
	1970	1975	
₱2,000 and below	65	27	-38
2,000- ₱ 4,000	17	29	+12
4,001- 6,000	3	23	+15
6,001- 8,000	4	10	+ 6
8,001 and above	6	11	+ 5
Total	100	100	
Average annual family income of FA members	₱2,471.56	₱4,425.00	

normal distribution of income. But two questions have always been asked in relation to this result, namely: (1) Is the increase in average family income due to the devaluation of the peso or to inflation?; and (2) with constant size of landholding among the farmers, how did the income distribution occur?

Actually, no attempt was made to correct the average family income for inflation. It can be argued that the income increase could have been due to inflation but that is not the only factor. Farmers' production actually increased. In rice, the average yield per hectare during wet season increased from 55 cavans in 1970 to 90 in 1975, Figure 3. The yearly increase trend was fairly constant except in 1973 when a combination of tungro, brown leafhopper and typhoons forced down the yield of rice in the area to an average of 58 cavans per hectare, a figure still higher than the 55 ca./ha. in 1970. In many areas which were rainfed before the associations installed irrigation pumps, the increase of rice production on the yearly basis more than doubled because of two crops instead of one, and increased yield per season, because of better water control and use of the right package of the new rice technology. Furthermore, yield of dry-season rice, made possible by pump irrigation, is generally higher than that of the wet season. In broiler production, the farmers in the Social Laboratory program produced 517,800 broilers or an average of 86,300 birds annually. In only 3 years: 1,109 heads of fattened pigs, 90 beef cattle and 60 carabaos were marketed. About 31,000 ducks were raised in 1974 alone.

Two things explain the income distribution

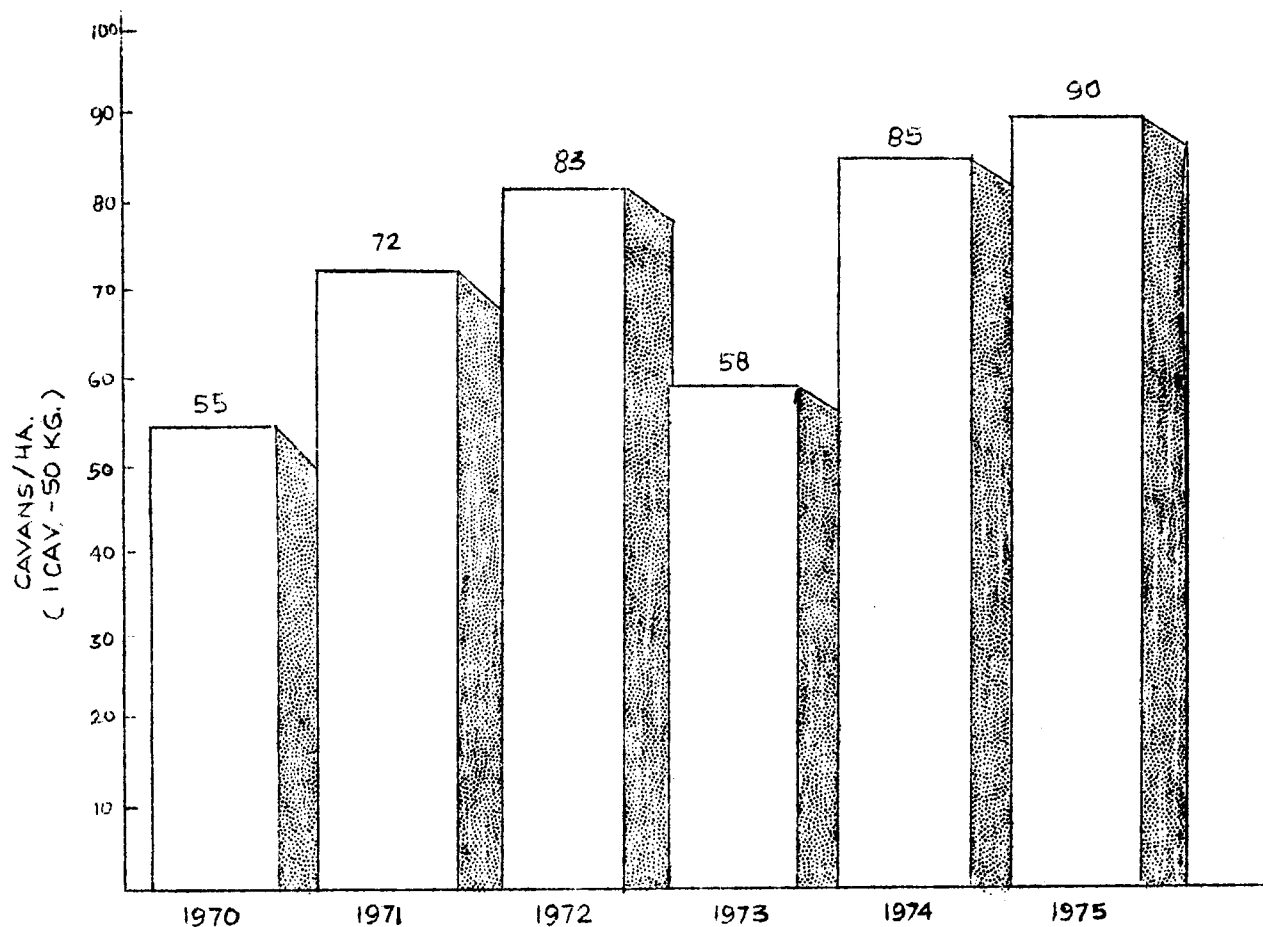


Figure 3. Average-rice yield in cavans/ha. (wet season only) among members of the associations

Source: A Report of TAC, *ibid.*, p.15

improvement. First, the installation of the association pumps revolutionized the production of rainfed rice farmers. Those with high income in 1970 had already good irrigation facilities. Secondly, success in the rice projects usually lead to diversified farming. Many small farmers raised poultry, swine and backyard vegetables and bananas.

#### Credit, Marketing and Assets

Through the associations, much of the credit and marketing problems of the members have been worked out. This is reflected in the yearly credit that the members of the association obtained and the assets used for handling farm products for marketing and for farm operation.

The use of credit from the rural bank progressively increased from ₱35,300.00 in 1970 to ₱3,279,137.00 in 1974, Table 2. In 1975, however, the amount loaned went down to ₱2,308,200.00 since some farmers had still big loans to settle as of 1974.



Table 2. Loans from the Rural Bank through the farmers' associations (1970-75).

Year	Farmers using Credit*	Amount loaned	Percentage change over previous year
1970	17	₱ 35,300	
1971	163	326,031	823
1972	288	407,092	25
1973	451	910,461	123
1974	943	3,278,137	260
1975		2,308,290	295

\* Some members had two or more projects with separate loans each.

\*\* Data not complete.

Up to 1973, the loan repayment was very high except when typhoon and floods damaged broiler production worth ₱85,000.00. Starting in 1974, percentage wise the repayment rate declined. This was partly due to brown plant hopper infestation in many rice fields but another reason could have been the farmers' use of loans money for other purposes which did not give immediate returns. In 1975, about ₱40,000.00 still unpaid.

On capital build up for marketing and farming operations, considerable achievement was made. It

could be said that the capital build up was from virtually zero in 1970 to P639,894.00 in 1975. Table 3 shows that the 12 associations varied considerably in their capital formation accomplishments. They also had different ways of investing their money. The more common ways were in irrigation pumps, office building of the association (also serves as warehouse, supply and market points) in handtractors, rice dryers, sprayers, motorboats, etc.

Table 3. Assets acquired by the 12 organization in  
the Social Laboratory areas as of June 1975.

Association	Major Assets	Value in pesos
1. Pinagbayanan SN	Irrigation pumps, office building and warehouse, office equipments	₱ 90,572.00
2. Lingga SN	Irrigation pumps	26,699.00
3. Labuin SN	Irrigation pumps, rice dryer and sprayers	18,133.00
4. Bagong Pook SN	Hand tractors	5,646.00
5. Tubuan Tanza SN	Hand tractors	12,165.00
6. Tubuan Grande SN	Hand tractors & sprayers	13,020.00
7. Concepcion Motor SN	Hand tractors & sprayers	9,559.00
8. San Antonio SN	Hand tractors & sprayers	6,516.00
9. Aplaya SN	Office building & warehouse and motorboats	88,574.00
10. Pansol SN	Hand tractors	18,574.00
11. Lingga Livestock and Poultry Raisers' Assoc.	Office Building and warehouse and office equipment	338,297.00
12. Pansol Mini-Coop Assoc. (women's group)	Store & supplies	8,750.00
Total		₱ 636,894.00

### Service Linkages and Adoption of Innovations

Through the farmers' associations the Pila farmers developed functional linkages with the rural banks, The National Irrigation Administration, The Bureau of Plant Industry, The Bureau of Animal Industry, The Bureau of Agricultural Extension, the UPLB, the Local Government and Community Development, the municipal government, The Food Terminal Market, private suppliers of farm inputs, etc. The linkages not only increased in number but also resulted in mutual benefits to the farmers and the service agencies. Three rural banks served the Pila farmers. Even the Pila Rural Bank which hardly extended credit to the small farmers before, had to do so, because of the collective credit deal and the possible loss of business to nearby banks. In irrigation pump distribution, the NIA found it relatively easy to deal with the organized farmers who got the pumps at government terms and prices.

A very interesting example of how the institutional approach worked for the benefit of the majority of farmers and efficiency of government service was the case of rat control. Previously, the rat control technician would go to the barrio and try to teach control measures to a few contact farmers who individually would apply the control measures in their own respective farms. But because the adjacent farmers did not do the same, before long the rats would be back again. With the association, however, the situation completely changed. When the members of the association were disturbed by rat infestation, they invited the rat control technician on a Saturday morning. When the technician came, the farmers were

not only assembled, they were also mentally prepared to follow the advice. Since the technician was invited ahead of time to help solve an indentified problem, he came prepared. So in an hour's meeting with the assembled farmers, he was able to communicate his message effectively, which he could not do in one week or even a month in the individualized teaching approach.

The farmers' adoption of innovations in farming increased considerably with the formation of associations. Such an increased rate of adoption could be attributed to (a) more information through the association; (b) group pressure; (c) conditions for adoption becoming favorable. e.g. in the case of pump irrigated fields, having available credit, etc.; (d) farmers' aspirations becoming higher; and (e) pressure to cope with new work demands; for example, more harvest led some farmers to resort to a mechanical thresher or blower.

#### People's Capability for Improvement

Improving the people's capability in a broad sense is a central concern of the Social Laboratory. For this paper, three indicators are used to illustrate capability improvements, namely: self-reliance index, family income and new family acquisitions.

Figure 4. compares the self-reliance index of the farmers in the Social Laboratory area before (1970) and five years after (1975). In all barrios covered, the self-reliance index more than doubled except in San Antonio where the self-reliance index

Table 4. Farmers' adoption of rice practices before and after the organization of the ~~Pinag~~Pinagbayan Farmers' Association.

Rice cultural practices	Before orga- nization		After orga- nization		Difference in percentage
	No.	%	No.	%	
Selecting seeds before harvesting	9	50	14	78	28
Testing seed germination	10	56	17	95	39
Planting recommended varieties	2	11	17	95	84
Planting in straight-rows	5	28	18	100	82
Irrigating ricefield (intermittent flooding) (2.5 to 7.5 cm)	2	11	11	61	50
Using rotary weeder	2	11	17	95	84
Using chemicals for weeding	5	28	16	89	61
Applying fertilizer before final harrowing	1	5	9	50	45
Applying fertilizer at panicle initiation	5	28	16	89	61
Spraying chemicals against pest and diseases	6	33	17	95	62
Controlling rats with chemicals	4	22	16	89	67
Using power-driven stationary thresher	-	-	2	11	11
Using power-drive mechanical blower to clean palay	-	-	3	17	17
Using power-driven mechanical grain drier in drying palay	-	-	9	50	50

Source: Balandra, Rolando. The Changes of Farming Practices Among the Members of the Pinagbayan Farmers' Association, Unpublished Undergraduate Thesis, Department of Agricultural Education, UPCA, 1972, p. 16.

was already high in 1970. San Antonio is along the National Highway.

After five years, the annual income of the farmers within the Social Laboratory guidance increased from ₱2,471.56 in 1970 to ₱4,425.15 in 1975. On the other hand, those not directly influenced by the Social Laboratory had only an average of ₱2,514.78 in 1975. The follow-up study in 1975 indicated that the association members, acquired 11 television sets, 7 gas stoves, 4 radios, 4 radio phonographs, 4 electric fans, 3 each of stereo sets, refrigeration and pitcher pump. To improve work performance, 9 acquired rotary weeders, 14 sprayers, 11 hand tractors, 4 sewing machines and 1 irrigation pump. These are in addition to what was already in the hands of some farmers before the Social Laboratory.

#### The Management of the Social Laboratory

For purposes of management, the UPLB/SEARCA Social Laboratory was conceived to have three complementary functions, namely: (a) field operations, (b) planning and evaluation, and (c) training and information. Major decisions and policies are made at the UPLB/SEARCA level with advice from an advisory council that included the Governor of Laguna, representatives of national agencies in Laguna and the Mayor of Pila. A joint working Committee (UPLB/SEARCA) and an adviser assisted the Program Leader in making major decisions. Technical help is obtained from various UPLB departments and the technical agencies of the government.

Figure 5 shows the Social Laboratory organizational chart. In 1974, when the Social Laboratory

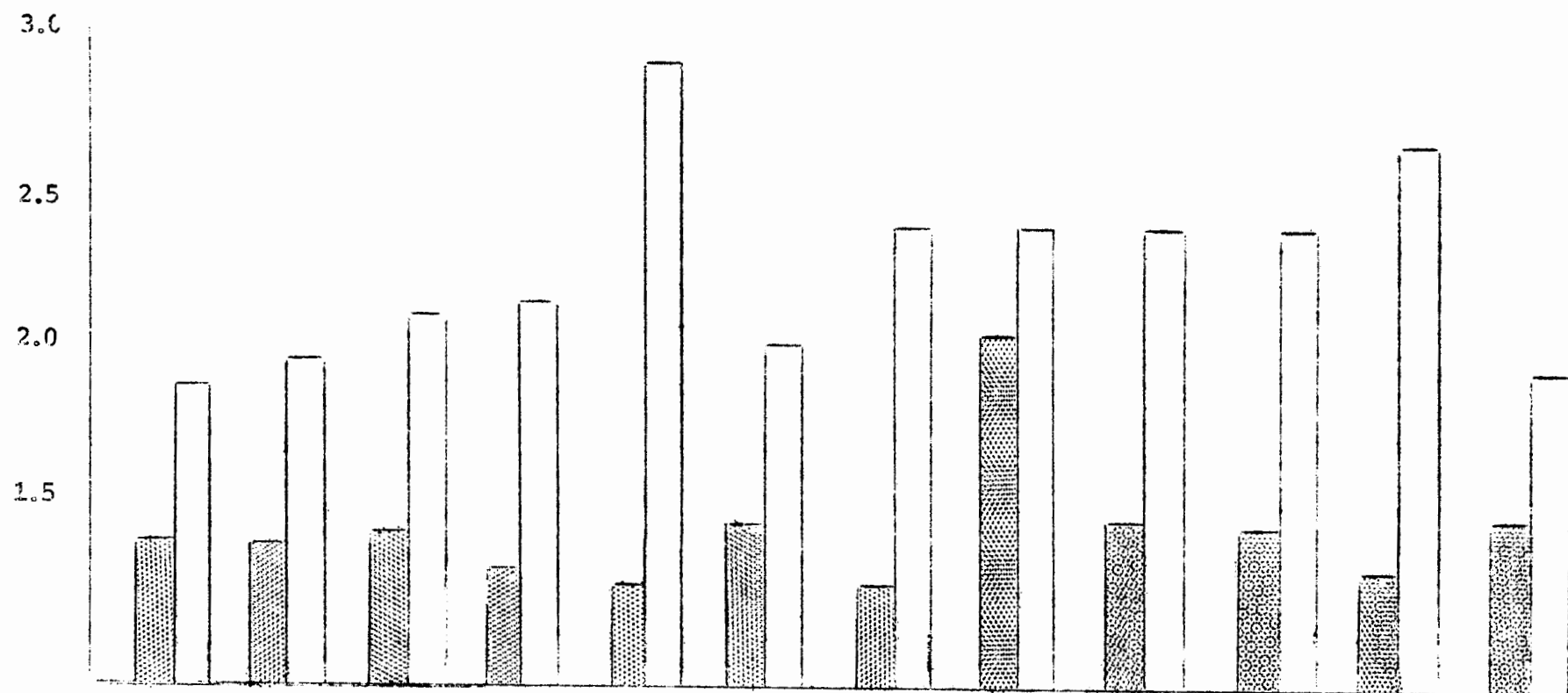
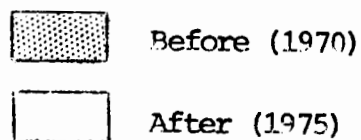


Figure 1. Self-reliance index of farmers at the Social Laboratory before (1970) and after (1975).  
 Source : A Report of the Technical Advisory Committee, p. 17.





was placed under a Social Laboratory Policy Board composed of the Chancellor as Chairman, Director of SEARCA and Director of EDPITAF as members, the Program Leadership was given to a professor of the UPLB while the Director of Extension served as executive secretary of the Policy Board.

Within six years, the Social Laboratory has been working on a total cost of about ₱1,100,000 or an annual average of ₱183,351.00 coming from five sources. About 46.36 per cent of this amount came from UPLB, 34.26 per cent from SEARCA (of which 12.44 was contributed by the Australian Freedom From Hunger Campaign), 14.76 from the Philippine Business for Social Progress and 4.62 per cent from the Educational Development Project Implementing Task Force. The breakdown of the fund allotment showed that 48.97 percent was used in field operations; 23.90 percent on training, 16.11 percent on planning, research and evaluation; 3.29 on facilities and 7.75 for maintenance, operation and others. When one looks at the money used in the Social Laboratory during the past six years and analyzes the accomplishments of the farmers in Pila (plus the lessons learned by the 3,834 visitors to the Social Laboratory in Pila), there can be no doubt that the benefits outweigh the costs.

#### Some Lessons and Problems

While the Social Laboratory has taught us innumerable lessons in rural development, there are six which are significant.

1. The income equity effect of the institutional approach was a big surprise to all involved in the

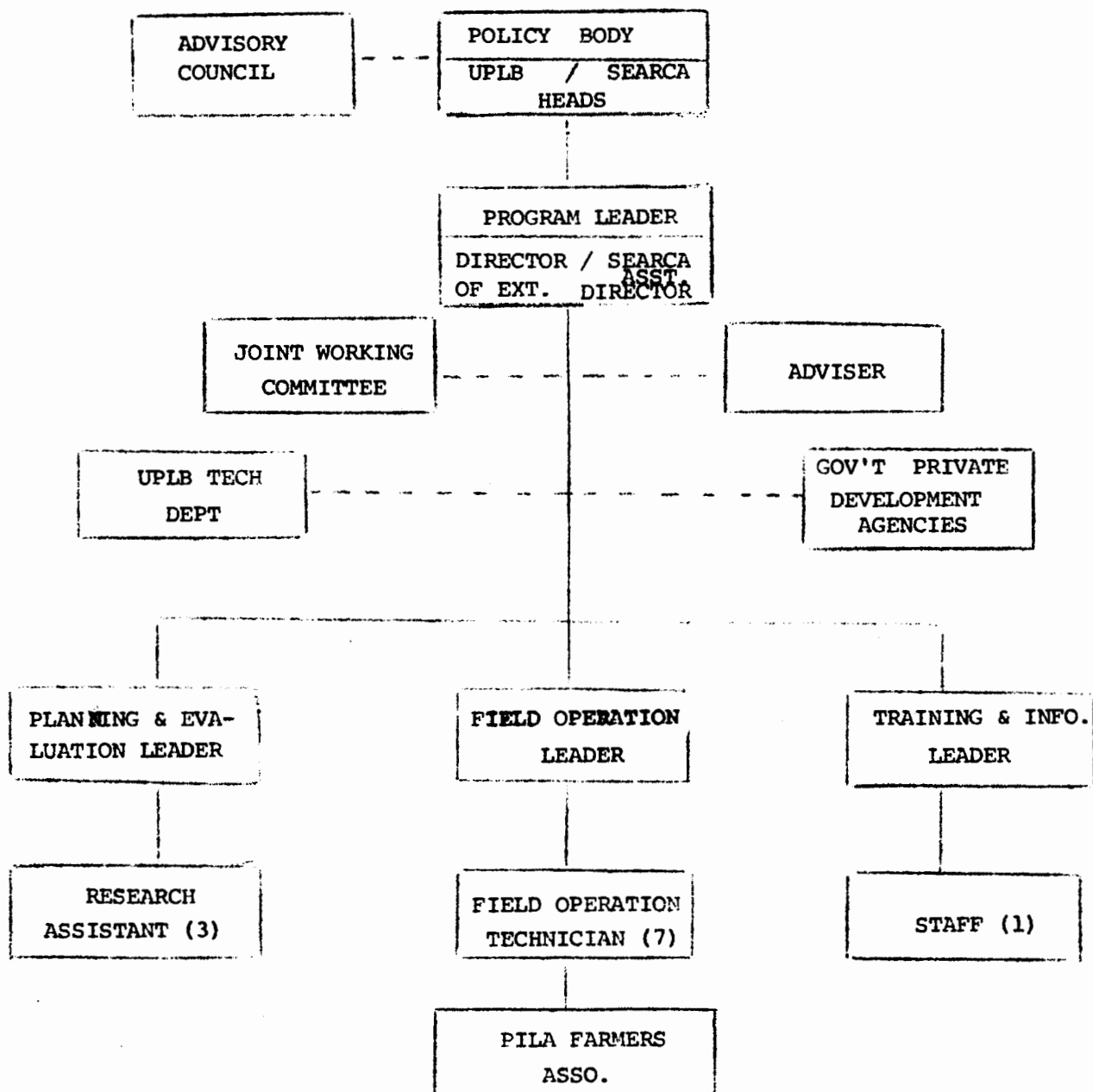


Figure 5. The organizational set-up of the UPLB/ SEARCA SOCIAL LABORATORY

Social Lab. This was not a conscious objective at the outset but it turned out that the strong drive for increased production proved to be more favorable to the lower income group. The high income groups also increased their income but not as much as the low income groups who were in rainfed areas before the associations put up the irrigation pumps. When low-income farmers diversified their farming activities from plain rice growing to include broilers, fattening pigs, backyard planting, this too helped beef-up their income, again in a proportionately bigger rate than that of the established high income farmers. In the broiler production project, a quota system was adopted so that the big farmer members could not monopolize the market.

2. Rural development. Rural development does not proceed in a continuous linear upward movement. When development indicators such as productivity, motivation and participation of people are observed carefully, the changes could be plotted in a step by step manner. Success in drive (a) never continues but tends to be arrested at a definite point (b) Figure 6. The next tendency is maintenance at that level (b) or more commonly a down trend, (c) which partly makes the ningas cogon phenomenon understandable in unguided rural change and development. If the downward trend is not arrested, the gain in the drive is completely lost returning to the original condition(d). This observation makes sense when one examines closely the nature of change which is a component of development. The nature of change as suggested by observation in the Social Lab

DEV. INDICATION  
 - Productivity  
 - Motivation  
 - Participation

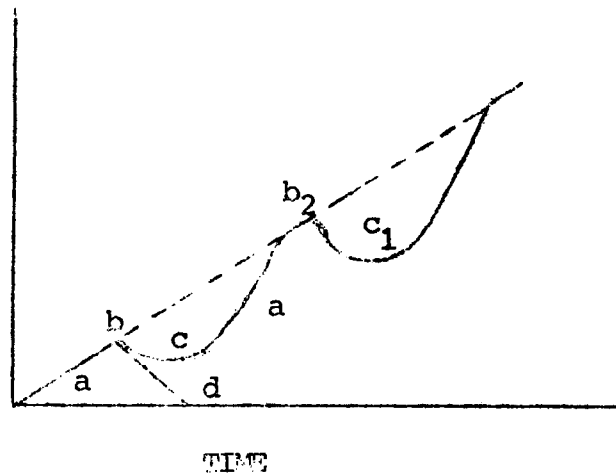


Figure 6. A conceptual model of the step by step process of change and development

is as follows:

- a. Change is problem specific. All change begins with the correct analysis of the problem situation.
- b. Identified problem must lead to the identification of innovation/technology that will correct the situation.
- c. Some adjustment of the situation must be made for the innovation to work.
- d. The innovation must be applied thereby creating a new situation.
- e. The new situation introduces many new problems (so called secondary problems) which the innovation that brought about it is no longer capable of solving.

Before higher levels of development are achieved,

the new situation must be analyzed correctly again. In this process of situation analysis and consequently identification of appropriate innovation, and the downward trend sets in (c). But when the appropriate innovation is applied, the direction of the process goes up again (a).

There are two important implications here, namely: (1) In rural development, there must be continuing research for different levels of development; and (2) unless the rural people shall have been trained very well, they will need guidance constantly in analyzing and finding solutions to new problems at higher levels of development.

3. Institutional linkages or partnership being about the economic values of interdependence. When the farmers' associations worked with the banks and the market all three parties benefited. The farmers got loans that allowed them expand production and in getting loans the bank increased its income. The farmers had surplus products to sell and the market served as an outlet for such surplus. Interdependency of economic sectors or sub-systems stimulated each other's growth resulting in greater aggregate productivity.

4. Promoting the well-being of small farmers is not easy. There is a definite ceiling to the uplift of small farmers in a given area, dictated by the policies and general levels of development of the country. This lesson was clearly demonstrated in the poultry and swine production projects. For almost two years, the growth rate of broiler production was increasing steadily. A point was reached however, when the farmers could not grow any more

broilers. The association could no longer get bigger market quota. The chicks were limited and, when quality was poor, these were usually sold to the small raisers. When there was feed shortage, the first to suffer were the small farmers. When cheap meat was dumped into the Philippines, the small growers got poor prices for their pork and many farmers became discouraged.

5. Some conflicting national policies made it difficult to work with farmers in the SL area. First these was the policy of promoting small poultry and livestock farming together with the development of vertically integrated poultry and swine enterprises. As an indicated earlier, the small raisers were placed at the mercy of the integrated enterprises who controlled the chicks, feeds and market in the case of poultry. Second was the instruction to re-register the SEC registered Farmers' associations into Samahang Nayon with DLGCD. Many farmers could not understand why they had to start all over again and qualify for re-registration when their associations had already been working for three years. The third instance was the conflicting emphasis on DLGCD in the Samahang Nayon movement and the Masagana 99 Program of the Department of Agriculture. In strengthening the Samahang Nayon as a rural institution for development, every member was required to save 5% of every loan that he made and give the association 1 cavan of palay per harvest/hectare as contribution to the SN savings fund. Then the Masagana 99 Program came with a package of credit, supplies, technology and advice. The farmers did not need to be members of SN and were not required the 5% and 1 cavan contribution/to savings fund. Many members of the Associations felt

cheated because they were already members of the SN.

6. The Social Laboratory has many uses to the University. It has kept many of its staff in actual confrontation with the problems and realities of rural development. Discussions on rural and agricultural development have become richer and decisive because of the actual, not second-hand, experiences at the Social Laboratory. It has become one of the University's attractions. From 1970, to Mid 1977, 3,059 Filipinos and 772 international students, officials, teachers, decision makers, etc. have visited the Social Laboratory. Some 119 staff and 10 colleges of agriculture have been trained at the Social Laboratory. Eight theses have been conducted at the Social Laboratory and some 20 technical and progress reports have been written. Indeed, the Social Laboratory has become an acknowledged innovation for institutions of higher learning in agricultural and rural development and it has served as a source of innovations in agricultural and rural development.

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## CHAPTER 14

## THE BICOL RIVER BASIN DEVELOPMENT PROGRAM

Ramon L. Nasol\*

INTRODUCTION

The Bicol Region occupies the Southeastern tip of Luzon island. It constitutes one-sixth of the land mass of the country and ranks ninth in territorial size among the 11 regions. Historically, the region is said to be economically depressed. A 1968 UNDP-NEC study of Bicol<sup>1/</sup> found the following facts:

- 1) Population growth of 2.3% is less than the national average of 3.1% indicating loss of population through outmigration, a basis sign of economic weakness and lack of employment opportunities in the region.
- 2) The region ranks second-lowest in terms of contribution to Net Domestic Product of the country.
- 3) Employment in secondary and tertiary sectors is second lowest among the 11 regions.
- 4) Due to inadequate infrastructure, the region is virtually isolated from the rest of Luzon and Metro Manila.

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\* Associate Professor and Executive Director, Center for Policy and Development Studies, U.P. at Los Baños, College, Laguna.

<sup>1/</sup> Frank T. Mastocci, "Physical Regional Planning in the Philippines," UNDP, Manila, 1968, p. 60.

- 5) Between 1961-1969, value added of the region grew by 5.3% per year compared with the country's average of 5.5%.

The Bicol River Basin area proper is 312,000 hectares, 80 per cent of which is prime arable land. The area's economy is basically agricultural, with rice and coconut as the dominant crops. Its population of 1.4 million (1970) is predominantly rural and the average household size is 6.22. The median annual family income was only ₱1,874 in 1971 and ₱2,172 in 1974 or only one-third of that of the Metro Manila average family. There is a maldistribution of income. Ninety per cent of total households in the area account for only 57 per cent of total income while the remaining 10 per cent of households account for 43 per cent of total income.

The agrarian structure is characterized by a relatively large number of landed estates on one hand, and a large number of small landowners with tenants, on the other. The basin area proper contains 76 per cent of the rice and corn tenants in the region.

The physical infrastructure in the area is characterized by its low density compared to the national average. Irrigation facilities cover only 54,000 hectares during the wet season and 46,000 hectares, during the dry season. Annual floods occur affecting 42,000 hectares of prime rice land and causing considerable damage to crops and property. There are only 3,600 km. roads, 70 per cent of which require major rehabilitation and upgrading. The road density is 0.45 km/sq. km. while the national average is 0.60 km/sq. km. There is also saline intrusion through the Bicol River Basin affecting about 10,000

hectares.

The state of some social services is as follows: one physician per 4,600 population; one hospital bed per 1041; insufficient and inadequate potable domestic water supply. Infant mortality rate is a high 6.3% of live births.

The interplay of such forces and factors resulted in acute poverty, outmigration and low public and private investment in the program area. Consequently, value grew slowly at 5.3% and is expected to decline to 4.1% in 1985 if problems prevailing in the area are not solved.

In August, 1972 an ad hoc interagency study group was organized to evaluate existing development efforts in the province of Camarines Sur and evolve a comprehensive development program for the Camarines Sur portion of the Bicol River Basin which comprise 70 per cent of the total Basin area. The group submitted its report to an ad hoc cabinet coordinating committee (CCC) on September 17, 1972 and was further commissioned to develop a comprehensive Bicol River Basin Development Program (BRBDP) with emphasis on the lower portion of the Basin area. The plan was finished and submitted to the CCC in February, 1973 with the following major recommendations:

- a. Incorporate BRBDP as a "pilot project" in the NEDA Four-Year Development Plan.
- b. Create a Bicol River Basin Authority to be headed by an Executive Director and a management team composed of Deputy Directors for Social Infrastructure, Physical Infrastructure, Plans and Programs, and Administration and

Budget.

- c. Availment of foreign technical and financial assistance.
- d. Tap U.P. at Los Baños to provide technical expertise support for the program.

By May, 1973 Executive Order No. 416 was signed by the President of the Republic. The Program Office Management Staff was appointed on July 1, 1973 with the budget initially provided by DANR, DPPTC, DLGCD and NEDA. The USAID subsequently funded several BRBDP projects.

On April 28, 1976, Presidential Decree 926 was signed by the President reorganizing the BRBC and the Program Office. Also the decree made more stable and regular the budget for the BRBDP program office at Canaman, Camarines Sur. Furthermore, "The Program is declared an integrated area development program of the national government under the supervision and direction of the CCC-IRDP of NEDA with the following policies adopted for effective implementation: (a) to integrate national and local government programs and projects within its jurisdiction; and (b) to decentralize the planning and implementation of rural development projects.<sup>2/</sup>

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<sup>2/</sup> P.D. 926. Modifying the Organizational Structure for the Bicol River Basin Program Providing Funds Thereof and For Other Purposes, April 28, 1976.

### Strategies and Approaches

The BRBDP is being pursued in a systems framework integrating the means to attain program objectives more effectively. Hence, each program component is seen in terms of its interrelationships with one another.

The systems approach is utilized to interlink multi-sectoral efforts towards the concentrated delivery of investments into well defined "critical areas" with high growth and development potential. In operational terms, the strategy makes comprehensive appraisal of the area resources and how the potential of such resources can be fully developed: taking into account the physiography, land, water, human and institutional resources. Resolution of identified problems such as flooding, takes into account the total dimension of the problem, its alternative solutions, and how those alternatives affect the other sectors within the area.

An important element in the development strategy is the utilization of space as a venue for integration. Thus, attention is given as well to the development and strengthening of functionally linked rural-urban activity systems and agro-based industrial support systems. Moreover, the entire program area has been subdivided into 10 development areas, each characterized by distinct hydrology and physiography and boundaries of which, were delineated by the extent of major physical infrastructure undertakings critical to their transformation. These IDA (Integrated Development Areas) serve as basis for identifying local institutions for harnessing local participation in the development process.

Such institutional integration into the overall is viewed as a critical link in making development plans meaningful to the people who are the ultimate beneficiaries of BRBDP.

Table 1. Projected area (in thousand hectares) to be grown to selected crops and their expected production (in thousand tons) for 1975, 1985, 2000.

Crop	1975		1985		2000	
	Area ha	Production ton	Area ha	Production ton	Area ha	Production ton
Palay	103.9	183.9	112.5	505.0	143.3	1,532.3
Feed- grains	52.9	105.7	38.0	225.8	38.0	319.4
Coconut	176.1	66.9	176.1	176.1	176.1	528.3
Abaca	10.2	3.2	24.9	13.7	28.3	19.8
Sugar- cane	4.8	13.7	16.2	92.3	18.9	179.7
Vegetables, legumes, tubers, etc.	12.9	102.4	17.8	374.8	23.7	732.2
Fruits	18.9	41.8	43.8	319.3	108.9	1,288.2
Others	3.0	9.0	2.0	16.0	1.0	12.5
TOTAL	382.7	521.6	431.3	1,723.0	538.2	4,612.4

### OBJECTIVES AND TARGETS<sup>3/</sup>

The major objective of the BRBDP is to increase

<sup>3/</sup> This section is derived primarily from the "Bicol River Basin Development Program" February 1973 and "Comprehensive Development Plan, 1975-2000," BRBDP 1976.

per capita income in the area especially that of rural families, through the following supporting objectives:

- a. Increase agricultural productivity;
- b. Increase employment opportunities;
- c. Promote agro-industrial and industrial development in the Program Area; and
- d. Provide for more equitable distribution of income and wealth.

Table 1 shows the projected targets for crop area and production of all crops in the program area. The total cultivated area is to increase from 382.7 thousand in 1975 to 431.3 thousand in 1985. However, total production is projected to increase from 521.6 thousand metric tons to 1,723 thousand metric tons. Implicit in this projection is increased efficiency and productivity. Overall crop yield per hectare is to increase from 1.36 metric tons in 1975 to 3.99 metric tons in 1985 or an increase of nearly three times.

Livestock population in 1975 was 2.6 million and is expected to increase to 5.9 million by 1985 and 21.3 million by year 2000. In 1975 meat supply in the region accounted for 51 per cent of recommended nutritional standard. Total meat supply is projected to increase from 7.6 thousand metric tons in 1975 to 23.5 thousand metric tons in the year 2000.

Fish production, both inland and marine, is expected to increase from 20.0 thousand metric tons to 48.4 thousand metric tons in 1985 and to 88.4 thousand metric tons in the year 2000.



Table 2 shows the projected production and requirement of selected food items. In food crops, poultry, and meat the program area is expected to be more than self-sufficient by 1985. In rice alone, the area is about self-sufficient at present. In terms of fish supply and requirements, there is still a substantial gap up to 1985. However, even at present the area exports some amount of fish, especially dried fish and sells, outside of the program area.

Table 2. Projected production and requirement of selected food items in BRBDP program area, 1975, 1985, 2000. (metric tons)

Items	Require- ment	Product- ion	Surplus (Deficit)	Require- ment	Product- ion	Surplus (Deficit)	Require- ment	Product- ion	Surplus (Deficit)
Food									
Crops	396.5	282.9	(113.6)	464.6	1,129.8	665.2	619.6	3,285.3	665.7
Meat and Poultry	16.9	10.4	( 6.5)	19.9	29.9	10	26.5	149.4	122.9
Fish	49.4	20.2	( 29.2)	57.8	48.4	( 9.4)	77.1	88.4	11.3

The important input requirements to achieve crop production targets may be classified into a) capital inputs and b) operating inputs. In crop production, the most important capital inputs are irrigation facilities; operating inputs are high quality seeds, fertilizers and agro-chemicals. It is assumed that agricultural labor will continue to be abundant in the area. However, both human and animal powers will

have to be supplemented in later stages of development as crop intensification progresses. There is then a need to look into the requirement for increasing mechanical power input on crop farms.

For crop production alone, the targets would entail a projected fertilizer requirement of over 4 million bags in 1985 and 8.0 million bags in the year 2000.

The program targets for agriculture are projected to be complemented by linkages which are designed both to sustain growth and productivity in agriculture and to provide long-term price stability for agricultural commodities. These linkages are agricultural input supply, credit, marketing facilities, by-product processing, support facilities and forward linkage processing. Moreover, the program also provides for the establishment of rural-based manufacturing and exploitation of mineral resources of the program area, e.g. limestone, perlite, clay and coal. The perlite deposit in Albay province constitutes 76 per cent of the country's known deposits.

The population of the program area is projected to increase from 1.54 million in 1975 to 1.81 million in 1985 and 2.41 million in the year 2000. This projection is one of the important determinants of projected demands for various food and services for the area.

In terms of economic targets, value - added per capita is to increase at the rate of 6.2 per cent in 1985 from a low rate of 3.1 in 1975. The objective is for the area to catch up with the national average income by around 1990. Hence, total value-added per

capita is to increase from a rate of 7.0 per cent in 1975 to 8.5 per cent in 1985.

Table 3. Projected sectoral employment (percent)

	1975	1985	2000
Primary	59	51	43
Secondary	11	18	22
Tertiary	22	27	32
Unemployed	8	4	3

Table 3 shows that the primary sector (agriculture, fishery, forestry, mining) will continue to be very significant in the BRBDP area even in the year 2000. However, it is around 1990 that the primary sector is going to be overtaken by the secondary and tertiary sectors in terms of employment.

To achieve the target outputs, increase in productive capacity through incremental investment is required. This is to be achieved by both private and public investments. Up to 1985, an incremental investment of about P4.0 billion is required to achieve target outputs in that year. About P2.4 billion of this is supposed to be private investment and the rest, public or government investment. For the whole 25-year period, a total of P11.7 billion of additional investment is required, with the private sector contributing P9.5 billion and the public sector, P2.2 billion.

### Organizational Arrangements

Initially Executive Order 416 provided for a Bicol River Basin Council composed of NEDA Director-General, Department Secretaries of DANR, DAR, DLGCD, DPWTC, and the Governor of Camarines Sur. The Secretary of DPWTC was the Chairman of the Council and the Executive Director of the Program Office, the secretary. The Program Office organized under the council, was composed of the Executive Director with four Deputies taking care of four departments: Plans and Programs, Social Infrastructure, Physical Infrastructure and Administrative and Budget. The Program Office was funded through a NEDA Special fund for the BRBC, contributed by the different agencies represented in the council.

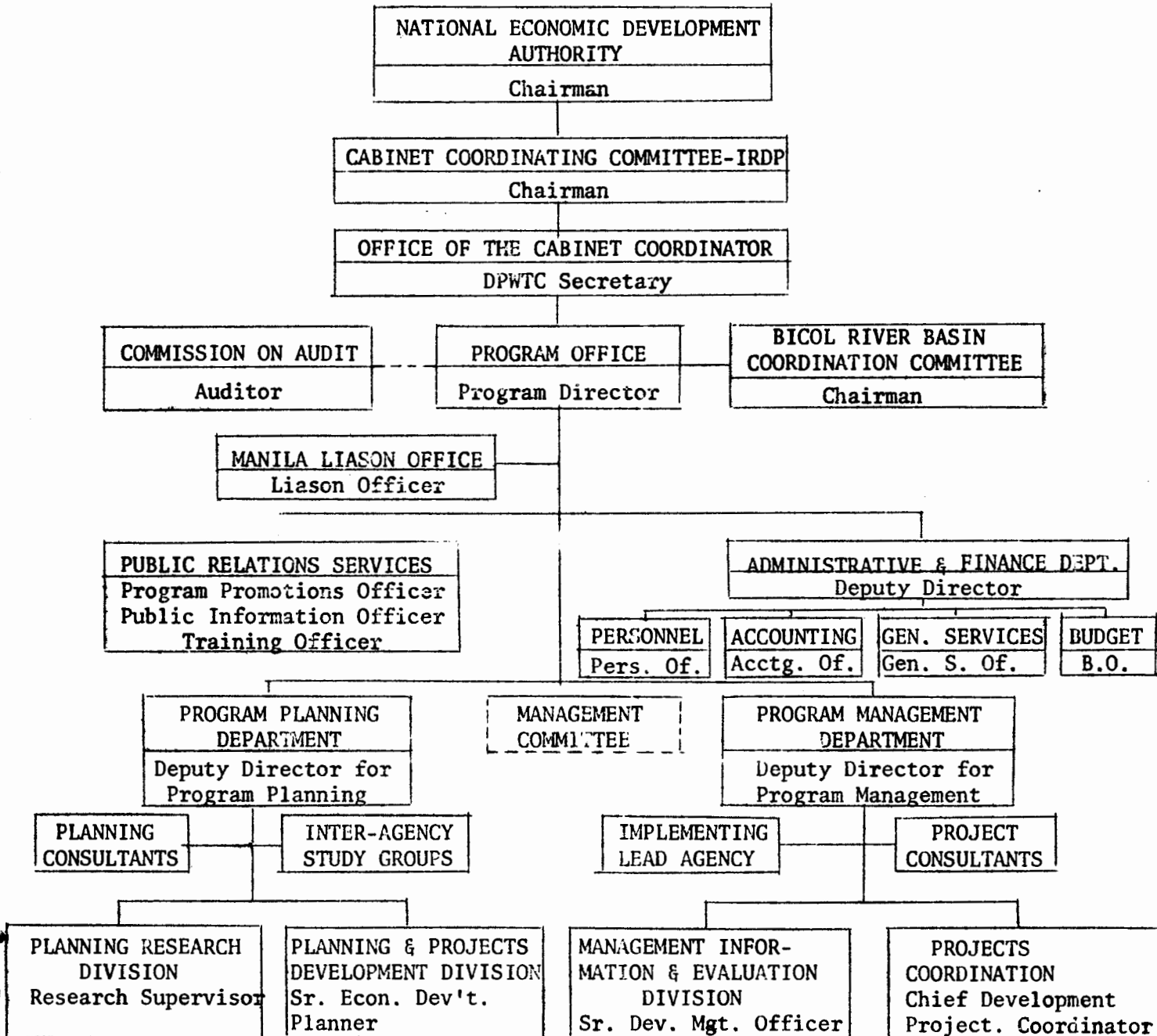
In April 1976, a decision was made that a new organizational structure was needed to improve on the management efficiency of the one organized under EO 416 in 1973. One of the major constraints then was that the program was highly dependent on agency contributions for funding, and being created by an Executive Order, it did not carry any appropriation. Moreover, the Council itself was not as functional as expected because it was composed of national officials while the program was regional.

Thus, P.D. 926 was signed by President Marcos on April 18, 1976 organizing the program under CCC-IRDP with the DPWTC Secretary as the cabinet coordinator in-charge. Figure 1 shows the present organizational structure and Figure 2, the coordination structural chart as created under PD 926.

The new law reorganizing the BRBDP Program Office also provided for budgetary outlays of

Figure 1

ORGANIZATIONAL STRUCTURE



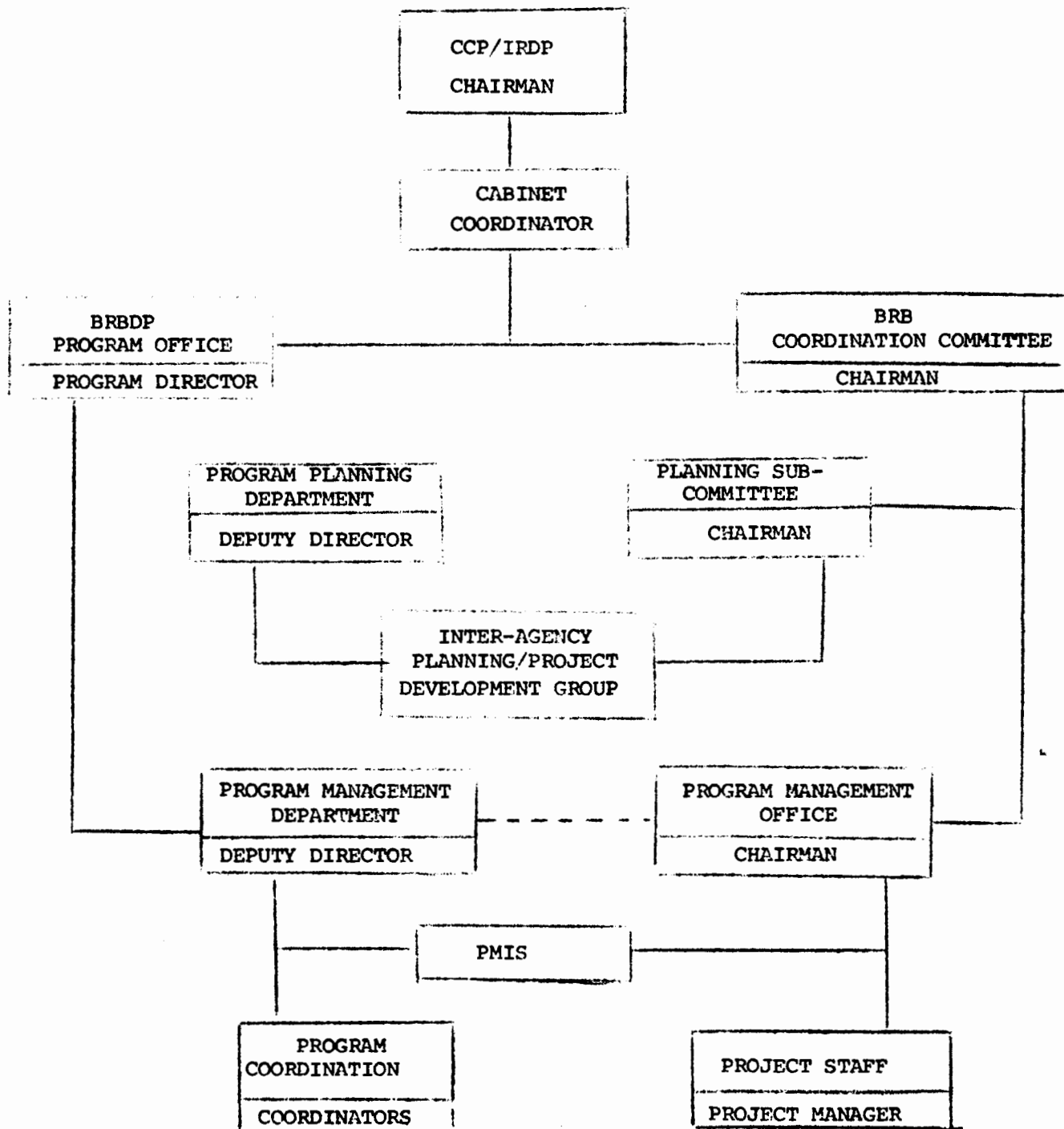


Figure 2. Coordination structural chart for Bicol River basin development program

₱5 million; ₱750,000 of which is for the Program Office operating expenses and ₱4,250,000 for financing of the comprehensive operational plan of the BRBDP. PD 926 also gives the Program Office the following functions and powers:

1. Serve as a coordinating center for inter-agency planning and management of Bicol River Basin projects;
2. Identify rural development projects in the Bicol River Basin for inclusion in the IRDP as authorized by the CCC-IRDP;
3. Prepare feasibility studies for identified projects for the Bicol River Basin as authorized by the CCC-IRDP;
4. Monitor and evaluate the progress and effects of project implementation in the Bicol River Basin;
5. Maintain a continuous feedback system with national agencies involved in Bicol River Basin projects;
6. Promote and encourage private enterprises and government agencies and instrumentalities to plan, develop and implement projects necessary or conducive to the accelerated development of the Bicol River Basin.
7. Apply for, receive and accept grants and donations of funds, equipment, materials and services needed by the Program from sources within and outside the Philippines; provided, that funds received herein shall be exempted from the provisions of Presidential Decree No. 711;

8. Call on the appropriate department, bureau, office, agency, or other government instrumentality for assistance in the discharge of its duties; and
9. Perform such other related functions as may be necessary to attain the objectives of this decree.

Three major operating departments were created to perform these functions, namely: 1) Program Planning; 2) Program Management; and 3) Administrative and Finance.

#### Coordination

BRBDP's operation is premised on the active participation of regional offices of national agencies, local governments and the private sector of the area. While the Program Office may initiate development activities, the concept is for the office to remain as a catalyzer and coordinating center, with implementation undertaken by line agencies and local governments. This concept is operationalized under PD 926 by creating a BRB Coordination Committee (BRBCC) composed of 16 Regional Directors of national line agencies, the governors of Albay and Camarines Sur, and the Program Office Director. The BRBCC is charged with the following functions:

1. Provide planning and management policies and guidelines for the day-to-day operations of the Program Office;

2. Insure that plans and programs for the BRB area conform with the overall regional development plan;



3. Serve as a forum to resolve problems of interagency coordination at the Bicol River Basin area level and propose and/or institute remedial measures; and

4. Perform such other duties as may be assigned to it by the CCC/IRDP.

The BRBCC meets regularly every second Wednesday of the month. It has formed Sub-Committees for specific projects and activities.

The operational strategy is through the use of interagency Study/Planning Groups for project planning and development and interagency Project Management Office for the implementation of multidisciplinary projects.

#### Programs Experiences and Accomplishments

The BRBDP has been implemented since July 1973 and has gone a once-over reorganizational exercise. Below are some of the notable experiences and accomplishments:

Planning. The concept of maximum participation in designing and planning of programs and projects in the BRB area has been continually practiced. Involvement of local leadership, e.g. political, civic, religious business and professional, in planning and project development is nearly institutionalized in the area. Moreover, this institutionalization is happening both at the program area level as well as in the IDA or in each of the 10 Homogenous Integrated Development Area.

Mainly because of the degree of sophistication that the planning process in BRB has evolved over

the last four years, many funding agencies are now interested in funding projects in the area. As of the moment, two major projects in the area are fully funded namely:

- 1) The Libmanan-Cabusao Integrated Area Development Project and
- 2) The Feeder Roads Project. Investment in the two projects is around ₱200 million. Plans for 5 new development projects are now in advanced stages and the World Bank and ADB are sending appraisal missions in early 1978.

Management and Coordination. As indicated earlier, both planning and implementation are undertaken through interagency efforts with the BRB providing the catalyzing effect. Coordinating along and among all levels is provided for by a BRBCC at the program level and an area development council at the IDA level. Implementation of funded projects is interagency with the added feature of the lead agency concept. Although the Project Management Office is interagency, the Project Manager usually comes from the lead agency. For example, the Libmanan-Cabusao IDA Project Manager is a NIA man because the largest component of the project is irrigation. In a similar manner, the Feeder Road Project Manager is a DPH man.

Achieving Objectives and Targets. It is too early at this stage to quantify welfare benefits resulting from the program. In fact, it was only during the second year of the operation of the program that investments on development projects began to be realized. However, based on insights

derived from the design of the projects now funded, it is very likely that substantial benefits are going to accrue to a significant portion of the rural households in the area. For example, the immediate result of the feeder roads project was to increase access of rural families to wider markets and hence increase their production and income opportunities. The irrigation component of the Libmanan-Cabusao IDA Project hoped to increase yield and productivity of rice in the area.

Program Personnel. The Program Office is staffed by young, articulate technocrats mostly recruited from the area. Moreover, there is a continuing staff recruitment and development. At this moment, the core staff of the Program Office has no equal in any other region. This partly accounts for the sophistication of their planning and project development activities.

Program Fund and Other Support. Under PD 926, the Program Office gets an annual operating budget which started at ₱750,000 and a program budget of ₱4,250,000. Subsequently, the budgets are determined by needs of programs/projects that are to be operationalized in any given year.

Monitoring and Evaluation. There is a division in the Program Office exclusively charged with monitoring and evaluation - the Project Monitoring Information System. It monitors all projects and programs in the Program area. The on-going projects render regular reports to this office, which are evaluated and summarized for use by the Program Office Management and the Project Management themselves.

One of the major contributions of the BRBDP is its experience in conceptualizing a developmental program based on multisectoral efforts targeted at an area with developmental problems of low income and productivity but with perceived potential for growth and development. The planning process which evolved as a result of the efforts at developing the area, is a distinct contribution to the expanding experience in rural development. The fact that the program area has a "shopping list" of priority projects for implementation makes it easy both for national and international agencies to come into the region and fund projects. Resources are now coming into the program area more rapidly.

#### Problems Encountered and Solutions Tried

A major problem at the early stage of the BRBDP was coordination with local officials both of national agencies and local governments. This tied down the ability of the program office to move as quickly as possible into operationalizing some very obvious development projects. This problem was, however, relieved through a redesign of the organizational and linkage structure of the program office through PD 926.

#### CONCLUSIONS AND IMPLICATIONS

The coordination structure and its actual management at the BRBDP deserve to be studied and perhaps adopted in other similar areas. It has proved to be effective in some degree especially in both project planning and in implementing new projects.

However, what needs to be evaluated is the cost/benefit characteristic of the BRBDP effort itself. There has been substantial input of scarce manpower as well as finances to get it operational.

The concept of integrated area development has been talked about, written about and was put to trial in Bicol. BRBDP is operational; it is getting attention all around; and it is drawing in resources for rural development.

## CHAPTER 15

MOBILIZING LOCAL LEADERS FOR RURAL DEVELOPMENT:  
THE CASE OF THE PEOPLE'S SCHOOL OF THE  
INTERNATIONAL INSTITUTE OF  
RURAL RECONSTRUCTION

Juan M. Flavier<sup>\*</sup>

INTRODUCTION

Throughout its half century of experience, the International Institute of Rural Reconstruction (IIRR) and its predecessor, the Mass Education and Rural Reconstruction Movement, have concentrated on developing appropriate technologies in helping to raise the economic and social standards of the rural poor. Cognizant of the fact that developing countries have not only a scarcity of capital but also a great dearth of trained professionals. IIRR has sought for ways whereby the talents and energies of the people themselves are mobilized and directed to carry on their own life improvement.

OBJECTIVE OF THE PEOPLE'S SCHOOL

The ultimate objective of the People's School is to raise the economic and social standards of the rural people by self-help and mutual help.

Its more immediate objective is to develop a

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<sup>\*</sup> Vice-President, International Institute for Rural Reconstruction, Indang, Cavite.

curriculum and methodology for training community-selected villagers to serve as diffusers of technology in their respective villages, in not only agricultural production but all the other aspects of rural reconstruction such as rural health, family planning, nutrition, literacy education, village drama leadership. Through mobilizing and maximizing human and material resources in the villages themselves, the People's School aims to make appropriate science and technology available to an increasing segment of the rural population at a cost they can afford.

#### CONSOLIDATION OF IIRR'S PRIOR EXPERIENCES

The province of Cavite in the Philippines serves as IIRR's social laboratory where rural reconstruction strategies are tested and implemented. Cavite, which has 300-odd villages and half a million people, represents a diversity of socio-economic patterns. The lowland areas represent the typical paddy-rice system of Southeast Asia and are characterized by many features associated with this production pattern. The upland portions feature intercropping where coconuts, coffee, pineapple, sugarcane, papaya and a variety of other crops are grown. Numerous fishing villages are also found in the province. Moreover, because of Cavite's proximity to metropolitan Manila, a strong urbanizing influence affects the area, a situation typical of rural areas in many developing countries.

Prior to the launching of the People's School, IIRR had undertaken a number of studies to identify the training needs of the villagers, determine the appropriateness and relevance of newly introduced technology, and develop appropriate training methodology.

It also prepared and tested training materials adapted to the level of the people so that they can understand, apply and share with others, and evolved village institutions to spearhead and supervise development activities.

For example, one of the earlier studies made by IIRR together with the Cavite Inter-Agency Conference (CIAC) known as the Farmer-Scholar Program, involved the diffusing of agricultural technology in 39 villages by trained village men and women. Farmers selected by their fellow villagers were trained by IIRR, each in one discipline of agricultural production, such as upland or lowland rice, piggery, poultry, vegetable growing, fruit trees, feed grain or cooperatives. Upon return to their respective villages, they shared what they learned with others, who in turn shared further with others. Thus in three years, 343 Farmer Scholars, 1,224 Demonstration Farmers, and 1,843 Extension Farmers were trained. The project substantially increased the income that farmers derived from their agricultural specialization. The approach and techniques used in this training program were later adopted by several other agencies in the Philippines in their programs as well as by the Department of Agriculture in its National Training Center and Regional Training Centers for farmer-technicians.

Another useful study, was conducted in eight villages, and concentrated on how to identify genuine village leaders and develop village-level institutions to take on the responsibility of rural reconstruction.

An important finding of the study was that existing political and economic institutions in the villages were often unprepared to exert any meaningful leadership



for rural reconstruction. Many are moribund and their functions mainly ceremonial. In this study, real leaders were sought out and organized into committees, which were sanctioned by the constituted leaders to act in their stead. Training these new leaders proved much easier than training those with little interest. Under these newly formed committees, development activities ranging from road repair and toilet construction to the organizing of native string bands and other self-help projects, were initiated. The study has thus demonstrated that village-level institutions could be effectively established and galvanized into action. It also brought out valuable insight into the dynamics that went with such a change.

These and other experiences of the IIRR laid the foundation for the People's School and helped shape its broad framework. Nonetheless, the People's School is regarded by IIRR as an evolving experiment, its concept and methods of implementation still to be improved and refined as the program progresses.

#### IMPLEMENTATION OF THE PEOPLE'S SCHOOL

The People's School was initiated sometime in October of 1975. It serves two municipalities of Cavite: Silang in the upland, with 40 villages and 40,000 people, and General Trias in the lowland with 18 villages and 27 people. By 1978, the School will extend its services to two additional municipalities, and in five years it aims to cover the entire province. To establish the necessary benchmark data, IIRR's Operational Research Group undertook a comprehensive socio-economic survey of the two municipalities using key-informant techniques.

To legitimize the operation of the School, IIRR first met with the Governor of the province and the mayors of the municipalities. It also held many consultations with the officers and workers of both government and private agencies working for rural people in the province, to obtain their support and collaboration.

Until new School facilities more in keeping with existing rural conditions are put up, IIRR is using its own facilities for the classroom training. Field training is conducted right in the villages.

Conferences with Barangay (Village) Captains of the 58 villages. No matter how ineffectual the elected Barangay Captains and the Barangay Councils might have been in the past, experience has shown that it would be a grave tactical error to by-pass them. The purpose of the conferences was to sound them out on the feasibility of opening up a People's School for the villages. The group also decided on the name of the school, and the choice was Paaralan ng mga Anak Pawis or PAP, which literally means School of the Children of Sweat or People's School. The phrase children of sweat refers to those who, though downtrodden, are capable of rising above it all. Hence, it is a powerful name. The conferences also served to obtain suggestions from them on what courses would be of interest and use to the village people and to learn from them how best to establish supportive institutions at the village level.

At the conferences of the Barangay Captains, the mayor of the municipality involved was also invited to participate in the deliberations. This served to legitimize the work of the Barangay Captain and his

Council and to enable the mayor to communicate directly with the village leaders.

As an indication of their commitment to the program of the People's School, the villages agreed to pay for the transportation and food of the trainees, while the IIRR would charge no tuition and provide training materials and lodging for them.

Organization and Training of the Rural Reconstruction Committees (RRC's). Upon their return to the villages, the Barangay Captains conferred with their respective councils to discuss the People's School and its implementation. Those interested in making use of the School proceeded with organizing a RRC which served as the administrative body responsible for implementing the program at the village level. This committee not only selects the trainees, determines the courses which they will take and raises funds to send them to the School but also supervises their activities after their return.

One of the major tasks of the Barangay Council is to select the five members of the RRC. As this was carried out, different patterns of membership emerged. One village chose only members of the Barangay Council. The majority opted for a combination of new leaders mixed with some members of the Barangay Council. The selection was usually by consensus rather than by village-wide elections.

Members of the RRC's were then invited to the IIRR for a two-day training seminar. Topics of discussion included a thorough briefing on the purpose of the People's School, the integrated approach to rural reconstruction, a review of the courses offered and their contents, the criteria for the selection of

the trainees, and project planning. During the seminar, the Barangay Captain of each village was invited to participate as the adviser of his delegation. The relationship between the committee and the Barangay Council, a key element towards the success of the program, formed one of the discussion topics of the seminar.

Selection of the Barangay Scholars. General criteria in the selection of the trainees who were called Barangay Scholars were set up in cooperation with the RRC's. These included literacy requirement, permanent residency in the village, social characteristics acceptable to the villagers and willingness to share their newly gained knowledge with others. Specific criteria for each course included some degree of experience in the particular subject, the availability of sufficient resources to try out the technology, and eagerness to acquire more information on the particular training course.

A strong social contact was established between the trainee and those who selected him. For a while, the Barangay Scholars were committed to share with the village whatever knowledge and skills they would acquire at the School: their work was voluntary in nature. In some courses, they were to train others as Associates and Cooperators. In others, they were merely to disseminate information and to serve the community at large, as in health and youth leadership training.

Follow-up and Supervision. The objectives of this phase of implementation were to determine to what extent the Barangay Scholars and their communities could actually benefit from the training course

extended to them and to assist the villages in establishing support institutions to maximize the effectiveness of the "village technicians". The weakness in the training course that would need the re-training of the Barangay Scholar and the revision of the training material and methodology were also to be identified.

The key organization at the village-level is the RRC. It is responsible for guaranteeing to the village that the Barangay Scholar it sent for training, from funds raised by the village, would faithfully discharge his responsibilities.

The painstaking, dedicated effort that goes into the training undertaken in the People's School would come to naught if it is not pursued with equal vigor and sense of mission beyond the threshold of that school and into the very heart of the Barangay Scholar's community. It must be made certain that the science imparted in the training is in reality brought to the people - that "the technical know-how of the specialist is translated into the practical do-how of the villager": that the village which sends the Barangay Scholar enthusiastically shares what he has learned, thus passing from the practice of self-help to that of mutual-help which is one step further in human reconstruction/development.

To follow-up system embraces continuing education, support, supervision, evaluation, continuing motivation and maintenance of morale: involving not only the Barangay Scholar, but also those in whom he has implanted the "multiplier effect", the Barangay Council, the Rural Reconstruction Committee and all levels to which these components may be applicable.

It likewise involves action aimed at institutionalization of approaches towards making the People's School training a truly efficacious instrument for the release of barrio people's potentialities.

The overriding focus of the follow-up is the interrelatedness of each discipline to, and its ability to reinforce and be reinforced by, the other disciplines and the rest of the rural reconstruction program.

Certain major aspects of the follow-up system are contemplated to become, in time, self-help, self-reliant barrio people's activities, for which purpose corresponding methods to be employed are designed to meet the three-way test of simplicity, economy, and practically, as requisites for duplicability.

It cannot be over-emphasized that follow-up is to be continuing and regular, thorough and scientific. Its various components are not isolated, unrelated activities, but activities so intertwined as to consistently form a coherent, dynamic whole, a real system.

The Institute expected the establishment of supportive village-based organization in order for technology to really affect the development of the communities. This was especially true when the spirit of the training was geared not only toward self-help but also towards mutual help. A great deal of attention was given towards the strengthening of village organizations including the Rural Reconstruction Committees and the Barangay Councils for they would jointly be responsible for integrating in their respective villages all the developmental activities being channeled to them from different agencies.

They needed to develop expertise in order to properly determine their own goals of development and to control the different activities at a pace consistent with both development ends and the culture of their communities.

### SOME ENCOURAGING RESULTS

In 1976, and the first half of 1977, the People's School offered 25 courses, given in three semesters, one from January 5 to May 15, the other from October 1 to December 13, and another from January 13 to May 31 (1977): all during the months when the farmers were relatively not so busy planting and harvesting.

The courses were classified under the four major areas of rural reconstruction:

Livelihood: Upland rice, lowland rice, vegetables, mushroom production, mushroom spawn culture, pineapple and papaya, coffee, feed grain, poultry, piggery, cattle raising, cooperatives.

Health: Health auxiliaries, nutrition (basic and advanced) toilet making (all three courses are with Family Planning components).

Education and Culture: Literacy teaching, rural drama, choral, native string band, development communication.

Self-government: Youth leadership, women leadership, training for secretaries of Barangay Council and Rural Reconstruction Committees, leadership training for





Barangay Captains/Councilmen & RRC members.

A total of 827 Barangay Scholars was sent by the 58 villages. The average number of courses selected per village was 9.9. In addition, seminars were held for 456 members of the RRC's and 109 members of the Barangay Councils. The performance of the Barangay Scholars from initial indications is encouraging. For example, in lowland rice, five of the newly trained Barangay Scholars increased their production to 85 cavans per hectare, and 60 of the trained Rural Reconstruction Associates increased their production to 80 cavans, whereas their average was 35 cavans before. In upland rice, production of ten of the Barangay Scholars and 17 of the Barangay Associates increased to 69 cavans per hectare compared to an average of 25 cavans before. Of those trained under the Farmer-Scholar Program, 23 have been designated by the Secretary of Agriculture as Deputy Technicians in rice for Cavite. Their production has gone up to 103 cavans per hectare.

In animal production, the Barangay Scholars demonstrated their ability to vaccinate animals so well that they have been authorized by the Secretary of Agriculture to perform this duty, which previously was only done by the professional veterinarians. A total of 7,750 birds were vaccinated against avian pest, 852 pigs, against hog cholera, swine plague and hoof and mouth disease, and 1,658 cattle/carabao, against hoof and mouth disease and hemorrhagic septicemia. The mobilization of the trained Barangay Scholars in Cattle to administer the vaccination of cattle/carabao against hoof and mouth disease in the villages was the main reason that Cavite was spared the

epidemic that spread throughout the rest of the Luzon region.

Confronted by a serious problem of high cost of feed, a number of Barangay Scholars, Associates and Cooperators in animal production have also organized themselves into the Cavite Farmer's Feedmilling and Marketing Cooperative, the first of its kind in the province. This undertaking was made in collaboration with the CIAC.

The Barangay Scholars are now recognized by their fellow villagers as capable technicians in treating sick animals and giving these first aid. They are requested by local Bureau of Animal Industry personnel to assist during their rounds in the barrios.

In health, even though the villages have to pay for sending the Scholars to the School, 41 men and women from 32 villages have enrolled in the course for health auxiliaries, representing approximately 54% of the 58 villages in the two municipalities. Their tasks include the dissemination of information on health maintenance and disease prevention, treatment of common illnesses, linking of villages to referral centers, and promotion of the integrated four-fold program. The Scholars now treat illnesses in the villages and refer those they cannot handle to the government's Rural Health Units, the Provincial Hospital and the Philippine General Hospital.

Government health personnel have now recognized the Barangay Scholars in health as their parents in the delivery of health care to the rural masses. The Provincial Health Officer has also approved the monthly supplementary training and practice of the Scholars at the Rural Health Units which greatly

facilitated referrals made by the Scholars to the Units and enhanced their prestige in their prestige in their villages. Twenty-one of the 35 scholars have developed a medicine supply system in their villages. This saves the village people time and money.

In literacy and culture, the training of Barangay Scholars has prompted the municipality of Silang to launch a campaign to wipe out illiteracy in the municipality. Seven civic organizations have agreed to contribute towards the Barangay Scholarship Fund to make it possible for every village to send one Scholar to the People's School. Musicals and cultural events have been organized and performed by the Barangay Scholars trained in choral and native string bands to raise funds for Barangay Scholars in other disciplines in their respective villages.

In self-government, 196 village youth leaders have been trained representing 40 villages in the two municipalities. Under the guidance of the RRC's, they have undertaken various community development projects, such as clearing and repair of village roads, construction and repair of village halls and chapels, village beautification. Many have also become Barangay Scholars in other disciplines. Women have always played an important role in rural reconstruction in IIRR's program. With the establishing of the People's School, they are moving towards greater involvement, especially in income-producing projects. Forty three women from 23 villages attended the School's Womens' Leadership Training. Many are starting projects in piggery, poultry, food processing and prevention. A group of 17 women in one village and 23 women in another, have organized pre-cooperative consumers'

stores to meet the need of their villages.

### EVALUATION

IIRR's Operational Research Group is in charge of monitoring the progress of the People's School; evaluating the selection process, quality and performance of the Barangay Scholars as well as their impact on the villages, and the effectiveness of the Rural Reconstruction Committees and their relationship with the Barangay Council. The weekly meeting of the IIRR's Inter-group Committee of Planning and Implementation (composed of those in charge of the technical and supervisory groups) and the weekly assemblies of all the technical and field staff also serve as useful forums where problems are discussed and solutions recommended.

Among problems that have surfaced far, the following are basic:

1. Inability of some of the Barangay Scholars to fulfill their responsibilities. This may be attributed to a number of reasons, such as improper selection of the Scholars, their lack of capital to initiate projects for which they are trained, lack of adequate supervision by the RRC's and inadequacy of training methodology and materials.

Greater care is now being exercised by the RRC's in the screening and selection of the Scholars, and more training is planned for the members of the RRC's, particularly in project planning and supervision. As to credit for projects, IIRR is working towards the establishing of

a Farmers' Cooperative Bank from which villagers may be able to obtain loans more readily. Meanwhile, CAFFARR (Cavite Federation of Farmers Associations for Rural Reconstruction), which was organized with the help of IIRR, is extending small amounts of credit to the people.

2. Need for greater support by IIRR staff of the Barangay Scholars and the RRC's. Although the RRC's are responsible for the supervision of the Barangay Scholars in their respective villages, there is still need for technical follow-up by experienced specialists, especially with the more difficult subjects. Moreover, RRC's themselves need supervision and assistance in directing the activities of the Barangay Scholars.

As mentioned before, the School now serves 58 villages in two municipalities, 40 in the upland and 18 in the lowland, many of them with poor road connections. The IIRR staff is experiencing some difficulty in giving follow-up guidance to the 58 RRC's and the increasing number of Scholars. It is working on improving its system of supervision to make it more effective in providing the necessary technical backstop.

3. Difficulty of some villages in raising funds to send their Barangay Scholars to the People's School. Various means are now being used by the villages to remedy this problem, including holding musicals and other cultural events and selling tickets,

soliciting contributions from civic groups, requesting special appropriations from the municipal government.

Looking further ahead, IIRR must also study other aspects of the operation of the School. For example, who should be the instructors of the People's School, what should be their qualifications, and how should they be trained? Right now, the instructors are seasoned by IIRR's reconstruction with years of experience in the villages. IIRR has found some of the Barangay Scholars particularly effective in sharing their knowledge with the Associates and Cooperators. It plans to test these, now designated as Barangay Monitors, as future instructors, working under the supervision of IIRR specialists.

Also to be studied is the administrative set-up of such a School, its operating costs, its financing, the minimum facilities it should have, its location.

Most importantly, IIRR aims to develop a model that might be replicated by other agencies, either in certain aspects or in its entirety. For although the People's School is contributing towards the economic and social development of the rural people of Cavite, its ultimate purpose is to serve as a demonstration and a model.

#### SUMMING UP

Despite some of the problems encountered, the program of the People's School made such an impact in the area that mayors and villagers from neighboring municipalities are clamoring that the School open its doors to include them.

Some possible reasons for its success are:

1. Careful planning and preparation for the launching of the School, including the previous studies made by the IIRR.
2. Involvement of the government officials in the province, including the Governor, the Mayors, the Barangay Captains and those of various development agencies.
3. Designing the training curriculum in consultation with village leaders and people and in response to their expressed needs.
4. Emphasis on an integrated approach to rural reconstruction. While trainees may take one or two courses, included in each course is a briefing on the integrated program and the interlocking nature of the basic rural problems, thus increasing their awareness that the solution of one depends on the solutions of the others.
5. Emphasis on not only self-help but also mutual help. Self-help alone may create a new class of village elite, while mutual help will generate a new spirit of cooperation and village solidarity. The concept and importance of mutual help is discussed in the classroom and reinforced during the implementation of the projects in the field.
6. School Instructors' (IIRR specialists) experience in field adaptation of their technical knowledge.
7. Team spirit on the part of IIRR's interdisciplinary staff who plan their projects

in consultation with each other and work closely in the field.

Summing up, in developing appropriate technologies to help train the people for their own economic and social improvement, IIRR is guided by its credo for its workers:

Go to the People

Live among the People

Learn from the People

Plan with the People

Work with the People

Start, with what the People know and Build  
what the People have.

Teach by showing: learn by doing

Not a showcase, but a pattern

Not odds-and-ends, but a system

Not piecemeal, but integrated approach

Not to conform, but to transform

Not relief, but release.



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## DISCUSSIONS

Arturo A. Gomez & Leodegario Ilaq<sup>\*</sup>

The articles in parts I to IV were presented in a three-day symposium held at UP Los Baños in June 1977. Participants in the symposium were the authors and selected authorities in rural development. Immediately after the presentation of each paper, adequate time was allowed for questions and discussions. The questions and discussions revolved around a few issues that seem to be of common concern among most development programs. This is probably to be expected since many of the development programs have very pronounced similarities. We have, therefore, decided to summarize the discussions into a single chapter instead of the usual procedure of presenting it immediately after each article. In doing this, we are able to highlight the most important issues without being repetitive.

We have arbitrarily grouped the discussion into well defined issues. As indicated above, an issue may have been brought up in more than one paper and could have been discussed by several participants. To simplify the presentation, we have avoided the usual procedure of identifying the participants who contributed into the discussion of each issue. Neither have we identified the article(s) that triggered the discussion. We have, however, ordered the

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<sup>\*</sup> Professor in Agronomy and Associate Professor in Economics, UPLB.

presentation such that the issues that were discussed lengthily and in several papers are presented first.

Issue No. 1: Integration of development program  
There are several line agencies of government and some private organizations whose primary responsibility is the development of rural areas. While the orientation and guidelines of the activities of these agencies may differ, they share a common clientele - the rural households. Thus, it is not uncommon for one rural community to have several development programs being implemented separately by different sponsoring organizations, whose program workers and leaders are separate, and whose implementing guidelines are separately evolved at their respective national headquarters. A barrio household, therefore, could be working with several development workers whose advice may not be mutually reinforcing. Aside from the obvious waste of resources, uncoordinated programs can, at the worst, result in confusion and mistrust among both the rural household and the rural development workers. Clearly, coordination and even integration among programs could go a long way in improving their effectiveness. A mechanism for such an integration brings us to the next issue discussed below.

Issue No. 2. Local leadership of development programs. There are at least two lines of leadership which is provided by the elective officers of the country. Second, is the technical leadership, coming from the line agencies of the government. Examples of political leadership are those of the provincial governor, the municipal mayor, and the barrio captains. Examples of the technical leadership are those of the regional directors of government bureaus, the

provincial agriculturist and municipal program officer. Many of the development programs such as those presented in the preceding chapters are planned and implemented by the line agencies of government. Consequently, implementation of such programs are done through the technical leaders. To some extent, as in Masagana 99, the political leadership such as the governor and the town mayors are drawn into the program for valuable support. Nevertheless, much of the national policy is decided by the line agencies of the government instead of the political leaders. The symposium participants strongly endorsed the notion that the political leaders be given more authority and more involvement in the implementation of development programs in their respective communities. As a matter of fact, when several programs are to be implemented in one community, the political leaders are probably the most natural integrating leaders. The political leadership is usually neutral as to the various line agencies. Its primary interest is the development of its constituency instead of the sectoral orientation of most line agency programs. Such neutrality is essential if different programs from different institutions will have to be integrated under one leadership.

Issue No. 3: On the transferability of development strategies found successful in pilot communities. New ideas in rural development are usually tried in small pilot communities before they are implemented on a large scale. The pilot test is necessary to insure that the strategy is viable and the problems attendant to its implementation are solvable. Past experiences have shown, however, that when pilot programs are elevated to larger areas, much of the

success at the pilot level does not materialize at the national level. Problems in management and personnel motivation which are much easier to handle at the pilot level became major difficulties when large areas and more people are involved. How valid then is performance in the pilot communities as an indicator of performance on a national scale? Lengthy discussion along this question highlighted the notion that success at the pilot level is easier to duplicate if it is based on a new technology whose advantage over the prevailing method is very substantial. Caution was expressed on elevating pilot programs whose main basis of success is the motivation and dedication of its workers. Such successes are obviously difficult to duplicate on a large scale.

Issue No. 4. On the length of existence of pilot programs in pilot communities: A major basis for the success of a pilot program is the continued adoption of the innovation it has introduced even after the program has been phased-out and the program workers have left the community. Such continued adoption is a good indication of the program viability and its possible implementation on a wider scale. A rural community however, will adopt a new technique on a continuing basis only if it is convinced of its viability and only if the rural population is confident in their ability to manage the new technology. Such a requirement does not materialize easily but is developed slowly under the guidance and motivation of the development program. How long a process may take, depends largely on the complexity of the innovation being introduced. The general view was that production programs can be completed in shorter periods, say four to six years, while integrated programs may

take longer. In any case, it was emphasized strongly that the phase-out must be based on the fact that the innovation it has introduced into the community can persist in the absence of program personnel.

Issue No. 5: On the role of private and public sectors in rural development. While the demarcation between the public and the private sectors' participation in rural development is not easy to define, the underlying incentives for their involvement are usually distinct. The primary incentive for the private sector's input to rural development is profit while that of the public sector is the production of public goods that cannot be internalized into private profits.

Issue No. 6: On the repayment of rural credit. Although Masagana 99 is successful in many aspects, the reported 78% repayment rate of rural credit cannot be continually sustained. The rural banks most specially cannot continue with non-collateralized loans under such repayment rates. New credit instruments will have to be devised to serve such massive rural development programs as Masagana 99.

# LIST OF SPEAKERS/AUTHORS

Abelardo G. Samonte	Chancellor, U.P. at Los Baños, College, Laguna
Florentino Librero	Executive Director, Philippine Training Center for Rural Development, UPLB, College, Laguna
Amando M. Dalisay	Professorial Lecturer, Center for Policy Development Studies, UPLB, College, Laguna
Virgilio R. Caranquil	Network Coordinator, Multiple Cropping, International Rice Research Institute, College, Laguna
Arturo A. Gomez	Vice-Chancellor for Academic Affairs, U.P. at Los Baños, College, Laguna
Cledualdo B. Perez, Jr.	Dean, College of Agriculture, U.P. at Los Baños, College, Laguna
Florentino Solon	Executive Director, National Nutrition Council and Nutrition Center of the Philippines, NCP Building, South Superhighway, Makati, Metro Manila
Benjamin de Leon	Deputy Executive Director, Commission on Population, PCF Building, Metro Manila
Tito E. Contado	Director of Extension, U.P. at Los Baños, College, Laguna
Roxelio V. Cuyno	Deputy Executive Director, Philippine Training Center for Rural Development, U.P. at Los Baños, College, Laguna
Ramon Nasol	Executive Director, Center for Policy and Development Studies, U.P. at Los Baños, College, Laguna

Julian Flavien

Vice-President, International  
Institute for Rural Reconstruction,  
Indang, Cavite

Burton Oñate

Chief Statistician, Asian  
Development Bank, 2330 Roxas  
Boulevard Pasay City, Metro  
Manila

Teodoro Rey

Administrator, Farm Systems  
Development Corporation;  
Philippine Veterans Bank Bldg.,  
Metro Manila



### COORDINATING COMMITTEES

Overall Coordinator	: Mr. Rolando V. Labios
Planning	: Dr. Arturo A. Gomez Dr. Tito E. Contado Dr. Leodegario M. Ilag Dr. Ely D. Gomez Dr. Florentino Librero
Program and Invitation	: Mr. Arnulfo G. Garcia
Hall, Accomodation and Food	: Mr. Reynaldo A. Santos Miss Milagros J. Masacupan Mr. Pablito A. Jopia
Physical Arrangements, Transportation and Security	: Mr. Percival V. Perez Mr. Serafin A. Francisco Mr. Isidoro D. Gotengco
Rapporteur-Secretariat	: Miss Madeline Mag-uyon Miss Marilyn Campbell Miss Ester Manique Miss Maria Fe M. Banasihan Mrs. Milagros Tetangco Mrs. Felicidad V. Baradas Mr. Federico A. Cruz Mr. Herculano V. Sabas Miss Lily G. Orda Miss Elizabeth M. Libas
Logistics and Registration	: Mr. Octavio Ramon L. Lijauco Miss Nieves V. Sibai Miss Perla A. Cuervo Miss Editha S. Aranguren Miss Sonia A. Reyes Miss Senen de los Reyes Mr. Cesar D. Limpiada