

RURAL DEVELOPMENT PLANNING STRATEGIES  
FOR THE PROVINCE OF WEST SUMATRA OF INDONESIA

by

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D E C L A R A T I O N

Except where otherwise indicated, this sub-thesis is my own work.

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## A C K N O W L E D G E M E N T S

The author is much indebted to many teachers in the Development Studies Centre in the Research School of Pacific Studies at the Australian National University, from whom he received considerable extra knowledge in the field of agricultural development economics.

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## A B S T R A C T

This study attempts to find relevant strategies of rural development planning for the province of West Sumatra, Indonesia, by using the theory, international experience, and present conditions of the province as tools of analysis. The background and reasons for the study are set out in Chapter One.

The basic concept of rural development is discussed briefly in Chapter Two. It includes the definition of the rural development planning strategy; the distinctions between agricultural and rural development; and goals, elements, stages and phases of rural development. It shows clearly that the process of rural development is an extremely complex and complicated matter. The main function of planning is to help rather than to hinder the development process. Without planning, the process might be slow or misdirected.

Some types of rural development strategies include: the Minimum Package Strategy, Comprehensive Approaches, and the Sector and Special Schemes. These are distinguished in Chapter Three. The experience of many developing countries in using these strategies is discussed. It includes the experiences of China and Taiwan and the comprehensive approaches, Malaysia with the "Redbook" planning procedure, Ethiopia with the Minimum Package Program and the Chilalo Agricultural Development Unit project, Kenya with the Kenya Tea Development Authority program, Bangladesh with the Comilla Projects, and Indonesia with the programs of Rice Intensification, Project Management Unit, of rubber, Village and District Subsidy, and a number of Special and Sectoral programs.

To complete the tools of analysis the conditions and potential of the province are outlined in Chapter Four. Major attention is given to the



economic and social problems with respect to rural development.

The analysis of what was discussed in the four chapters is made in Chapter Five. It includes: analysis of a general model for achieving rural development goals; planning approaches; planning systems; and relative priorities in planning.

The results of the analyses are concluded in Chapter Six. A number of recommendations is also made.

The general model for achieving a self-sustaining rural development, as described by Waterson (1975), is likely to be relevant to the province. Although the comprehensive strategy is very important and quite reasonable for success, for the present conditions of the province it can only be seen as a long term planning objective. Various preparations are suggested for using the strategy.

Suggestions are made to improve the present strategies to make them more effective and to increase the participation of the local community. It is recommended to launch a two-way traffic planning procedure, in which proposals come from rural people, while guidance, consideration and decisions are made at the top by the government. The establishment of a rural development training institution to provide various aspects of rural development training for public servants and rural people should be considered by the Government. Upgrading courses for village heads and informal leaders should be continued in a regular manner to speed up the social process in the province.

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## CHAPTER ONE

### INTRODUCTION

The topic of this study is "Rural Development Planning Strategies for the Province of West Sumatra of Indonesia". This chapter introduces the background, importance, objectives and structure of the study.

#### 1.1 Background and Importance of the Study

In developing countries, "rural development is the key to the whole process of development, and the key to rural development lies in the hands of millions of peasants" (Weitz, 1971, pp.21-22). This view is quite reasonable when we pay attention to the general characteristics of developing countries.

First, the majority of the people live and find their livelihoods in rural areas. For example, in Indonesia, about 82 per cent of the people live in rural areas and about 70 per cent of the manpower work in agriculture (Birowo, 1972). In this study, "agriculture" is defined as "man's treatment of suitable plants and animals for the production of food and certain organic raw materials" (Wittfegel, 1971, p.3). Therefore, agriculture covers crop production, animal husbandry, forestry, and fishery.

Second, "of the population in developing countries considered to be in either absolute or relative poverty, more than 80 per cent are estimated to live in rural areas" (World Bank, 1975, p.4). Approximately 85 per cent of the 750 million poor in developing countries are considered to be in absolute poverty and the remaining 15 per cent are judged to be in relative poverty. In this study, absolute poverty is defined as those with per capita income of \$US50 or less. If the annual per capita income



is above the equivalent of \$US50, but below one-third of the national average per capita income, the situation is called "relative poverty". Based on the result of a survey conducted by the Directorate General of PMD (Rural Community Development) of the Ministry of Interior of Indonesia, in 1971-72, the average per capita income of rural areas of Indonesia was only Rp.12,000, approximately equivalent to \$US29.<sup>1</sup> The average national per capita income in the year of the survey was Rp.29,000, or about \$US70. The per capita income of the nearest village was only a quarter of the national average per capita income (PMD, 1973, p.7).

Third, the majority of the households in rural areas of developing countries are agricultural households. For example, about 93 per cent of the people in rural areas of West Sumatra find their livelihood from agriculture.

Fourth, the rural areas are much more backward than the urban areas. Poor infrastructure, inadequate health facilities, few water and electricity systems, few of the inhabitants able to send their children to school, subsistence and traditional production systems, and other aspects of under-development are common characteristics of developing countries' rural life. In this case, Indonesia is no exception.

While many governments talk a great deal about the importance of rural development, few translate the speeches by giving high priority to rural development activities in their development plans. In many countries, commitment to rural development at the national policy level is lacking (World Bank, 1975, p.6). According to Kulp (1970, p.4), although almost every developing country has had its rural development projects, most of them have generally failed to reach most of the rural population.

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1. The exchange rate used is \$US1.00 = Rp.415.00.

Various reasons have been advanced as to why rural development projects have failed to reach most of the rural population: there has been a lack of working method or planning techniques (Kulp, 1970, p.4); unsuitable strategies have been used (Kotter, 1974); planning has been based on (i) inadequate knowledge of local conditions and constraints, (ii) different programs being the responsibility of different agencies, and (iii) the specific means for achieving goals being often nearly articulated (Lele, 1974, pp.125-126); often goals of rural development and specific policy instruments are not linked together with rural development implementation (Yotopoulos and Nugent, 1976, p.422); the pattern and direction of rural development policies have not been clearly formulated either for the short term or the long term (PERHEPI, 1973, p.3). The pathology of rural development planning is discussed in Appendix A, and the extent of its failure in West Sumatra is discussed in Chapters Four and Five.

Meanwhile, a number of countries such as China, Taiwan, Malaysia, Bangladesh, Ethiopia, Kenya, and Indonesia have been relatively successful in some aspects of their rural development. The strategies that have been used by these countries are not all the same, as will be seen later in Chapter Three. Further, selected success stories are not meant to deny that these countries continue to face substantial problems in rural development aims.

China, through multi-purpose communes, has attained increases in production and yields of agricultural products. Expansion of educational and medical facilities in rural areas has been achieved (Wheelwright and McFarlane, 1971, Ch.10). Taiwan demonstrates that with a comprehensive rural development strategy the farmers of a developing country can achieve a high degree of prosperity on one hectare farms. Malaysia has done an

exceptional job of laying foundations for comprehensive rural development with its dramatically efficient physical infrastructure program (Kulp, 1970, p.188). Bangladesh illustrates through its Comilla projects that progress in rural organization would depend initially on the willingness of villagers to try something new, and this will require faith and trust in their own local leaders and in the academy staff. Thus, the attitudes and priority of the village leaders were the first concern of the development strategists (Raper, 1970, pp.14-15). Ethiopia and Indonesia have used the Minimum Package Program<sup>2</sup> to increase production and yields of basic food crops. Kenya, with a special program under the direction of the Kenya Tea Development Authority, has substantially increased the production and income of smallholder tea growers.<sup>3</sup>

The major conclusions that can be drawn from the above are that (1) Rural development is the key to the whole development process in developing countries; (2) success or failure of a development project depends upon many factors and these factors are not always the same for each country but depend upon the conditions and situation of each country as pointed out later in Chapter Three; (3) the problems of rural development are not only important, but may also be crucial.

Accordingly, the study of how to solve these problems is very useful. One aspect of the problem is the relevant strategy for rural development planning. The main focus of this study is the appropriate rural development planning strategies for West Sumatra.

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2. The Minimum Package Program is defined in Chapter Three (section 3.1).
  3. More detailed experiences of these countries in rural developments are discussed in Chapters Three and Five.

## 1.2 Why the Province of West Sumatra?

The selection of the province of West Sumatra as a region for detailed study is based on the following reasons.

First, the author is familiar with the region and an overview of West Sumatra in the light of international experience is lacking.

Second, Indonesia comprises a conglomeration of sub-economies in a land of many cultures so that it is impossible to apply a single model for the whole of Indonesia. In her review of rural development in Africa, Uma Lele noted that "rural development strategy might be different from region to region due to the fact that the interactions between policies, institutions, trained manpower, physical resources and technology are complex and immensely diverse" (Lele, 1974, p.159). For similar reasons, it is highly unlikely that there is a single package that is universally applicable for all regions of Indonesia.

Third, about 86 per cent of West Sumatra's population live in rural areas, and about 72 per cent of its households are agricultural households. Moreover, about 60 per cent of its regional gross product comes from agriculture, and nearly 100 per cent of its exports consists of agricultural commodities which are mostly produced by smallholders (BAPPEMDA, 1973, p.43).

Fourth, the matrilineal social system of the region is unique within Indonesia. According to Epstein and Penny (1972, p.249), regions with matrilineal social systems have low development potential. If this is true, it makes the task of rural development that much more difficult and emphasises the need for a careful and systematic study of alternative strategies.

### 1.3 The Objective and Structure of the Study

The main objective of this study is to find the relevant strategies of rural development planning for the province of West Sumatra, given the social, economic, and physical constraints discussed in Chapter Four, and the goals of rural development in the region.

The goals of rural development of the region must be in line with the national and regional development goals. The ultimate goal of the development of Indonesia is "to create a just and prosperous society for all people materially and spiritually based on *Pancasila* (the five principles of the Indonesian way of life) . . . . "

The ultimate goal cannot be reached in a short time period, so it will have to be achieved in stages. The goals of each stage should be formulated according to the respective stage of development. At the present stage, the general goals of national development have been stated in the Second Five Year Development Plan (Repelita II), namely:

- (1) to increase the level of living and welfare of all people;
- (2) to lay a solid foundation for national development in the subsequent periods;
- (3) to increase production and income, to distribute the development gains in an equal manner, and to expand employment opportunities, and these three aims should be carried out in an integrated and balanced manner;
- (4) to tackle more intensively the problems that have not been solved during Pelita I (the realization of Repelita I).

The above broad aims are also the goals of the rural development of the nation. A specific goal for rural development is "the achievement of a strong basis for self-sustaining growth and development of the rural community".

This goal will be achieved through the following programs:

(1) providing and expanding employment opportunities in the agricultural sector, small industries and homecrafts; (2) effecting resettlement/local transmigration; (3) designing and introducing special development programs for backward rural areas; (4) improving and expanding rural infrastructure; (5) disseminating more knowledge and skills within the rural community; (6) improving rural community health by establishing more health centres and other sanitation facilities; (7) making plans to improve the land tenure system; (8) increasing the effectiveness of the "BUUD/KUD" (Village Unit Co-operatives); (9) raising rural community participation for development activities through "Lambaga Sosial Desa", or "Village Community Council"; (10) increasing the ability and capability of village government apparatus.

The goals of development of the province, including its rural development goals are expressed in very general terms: "To increase the contribution of the province towards achieving the national goals according to the conditions, situation, and potential of the region" (BAPPEMDA, 1973, p.22). The conditions and potential of the province are discussed in Chapter Four.

Thus, this study is concerned with alternative policies and strategies of rural development to achieve the relevant goals. The structure of the study is based on a systematic study of the experience of Indonesia and other countries in rural development planning.

Chapter Two outlines the basic concept of rural development planning. The main aim of the chapter is to summarise the "theory" of rural development.

The third chapter examines strategies and approaches that have been applied in some developing countries in carrying out their rural development planning. It tries to find the relationship between the strategies

that have been applied and the results of the rural development projects. Clarification of the differences between each strategy will be attempted. The chapter also aims to summarise the keys to success and the causes of the failure of the different rural development strategies for the later purpose of comparison with West Sumatra.

Chapter Four summarises the conditions, situation, and potential of the province of West Sumatra with regard to the process of rural development in the province. It also aims to find the social, economic, the physical constraints of the region in order to formulate relevant strategies of rural development planning for the province.

Chapter Five discusses and analyses the proper rural development planning strategies for West Sumatra. Discussions and analyses are based on goals, constraints and theory of rural development planning in the previous chapters, and the experiences of some developing countries as discussed in Chapter Three.

Finally, Chapter Six gives the conclusions of the study and recommendations.

## CHAPTER TWO

### THE BASIC CONCEPT OF RURAL DEVELOPMENT

This chapter is concerned with the basic concept of rural development and the contrast between rural development and agricultural development. It also includes questions revolving around the definition, goals, elements, stages and phases of rural development.

An important and recurring phrase in this study is "rural development planning strategy". This needs to be clearly defined.

#### 2.1 Definition of Rural Development Planning Strategy

The "Rural Development Panel Seminar" that was held in New York in July 1973 summed up the meeting's discussions by emphasising the need for a suitable definition of rural development (USA, 1975). There are a number of possible definitions.

Hirsch (1963, p.49) defines rural development as a process of change: change in the physical, in the economic and in the social environment of rural areas. An example of the physical change is where the land has been divided by a man into fields, cultivating crops and planting trees in an orderly fashion. The economic environment changes from subsistence agriculture with a barter economy to production for profit with a monetary basis. The social environment changes from being closed and isolated to being a more open society.

Kulp (1970, p.14) defines rural development as a system. He says:

Rural development as a system may be defined as that set of economic and social development activities peculiar to the process of transforming the traditional sector as a whole.



These activities require a set of planning techniques different from those used for the modern sector.

Fish (1972) defines rural development as -

. . . a set of policies or goals with the two main ends. First must be the promotion of the well-being of the rural majority. Second is the production of a surplus of a size and nature that will enable the fulfilment of a reasonable part of those national development requirements that are not exclusively rural.

Rural development is defined by Lele (1974, p.17) as "improving living standards of the mass of the low income population residing in rural areas and making the process of their development self-sustaining". She added that there are three important features in the definition. First, improving living standards of the low income population involves mobilisation and allocation of resources in order to reach a desirable balance over time between the welfare and productive services available to the subsistence rural sector. Second, mass participation requires ensuring that resources are allocated to low income regions and classes, and that the productive and social services actually reach the mass of the subsistence population. Third, making the process self-sustaining requires development of the appropriate skills and implementing capacity and the presence of institutions at the local, regional and national levels to ensure the effective use of existing resources and to foster the mobilisation of additional financial and human resources for continued development of the subsistence sector.

Rural development is defined elsewhere by the World Bank (1975, p.3):

. . . as a strategy designed to improve the economic and social life of a specific group of people, the rural poor. It involves extending the benefits of development to the poorest among those who seek a livelihood in the rural areas. The group includes small scale farmers, tenants and the landless.

From the above five definitions, we can draw the following conclusions:

1. The definitions of rural development of Hirsch and Kulp may be seen as objective definitions. For them development is a process, a process of change or a process of transforming the traditional sector. They define rural development without stressing a special group of people such as the poorest or the low income population in rural areas.
2. Fisk's definition may be called a democratic definition. For him, rural development is a set of policies that must promote the well-being of the rural majority, but is, necessarily, a part of national development.
3. Rural development as defined by Lele and the World Bank is much influenced by the meaning of development in Seers (1970) where he stresses that a period should be called a period of development if and only if poverty, unemployment and inequality decrease from high levels. But if one or two or them are growing worse even if income per capita doubles, it is difficult to say that development is occurring. For Lele and the World Bank the definition of rural development is identical with the policy or strategy objectives of rural development.

We do not know whether these five definitions fit the requirements of the New York seminar since the participants gave no criteria for what they considered a suitable definition.

This study, however, will propose a definition of rural development in order to add to or to combine them.

In the point of view of this study, rural development is a continuing process of change in the physical, economic and social environment that is carried out by human beings to increase the level of living of all members of the rural community, both materially and spiritually. The pattern, direction, degree and speed of the process depend upon strategies, policies, and approaches in managing rural development.

This definition shows that: First, rural development is a continuing process of change. This means that with or without planning, policies, strategies and approaches, the rural development process will still exist. Without them the process may be slow or misdirected. Second, the process of change concerns the physical, economic and social environment. The relationships between physical, economic and social changes are inter-dependent. It means if the one changes the other might change, too, and vice versa. For example, if the social environment changes from a closed to an open society, the economic and physical condition will change too. The economic system might change from barter to monetary transaction, and physical condition might change from shifting cultivation to sedentary cultivation. On the other hand, if the physical condition changes by establishing sufficient roads to a certain rural area which formerly had no road at all, the economic system might in time change from a subsistence economy to a profit-motive economy, and the social condition might be changed from a primitive society to a modern community. Third, the process of change is carried out by human beings so that the quality, ability and capability of the human beings determine the quantity and quality of the process. Fourth, the roles of strategy, policy and approach usually formulated in planning, are very important for managing rural development.

Their function is to direct or to speed up the process of change to reach rural development goals.

Fifth, rural development goals are not only concerned with material needs, but also with non-material needs such as the needs for mental and spiritual well-being.

We come now to the question of: What is Planning? The answer to this question can be found, among others, in Clawson (1966), Schickele (1969, p.27), Kulp (1970, pp.8-12), Sundrum (1972), and Caiden and Wildavsky (1974, p.25).

Clawson emphasised that "wise planning, which can really serve as the basis for action, must seek to foresee in advance as accurately as possible every relevant factor".

Schickele viewed planning as an art as well as a science where the art means doing and science stands for knowing. Or in other words, planners must not only know what should be done, but must also have a realistic sense of what and how it can be done.

Dror (in Sundrum, 1972) defined planning as "the process of preparing a set of decisions for actions in the future directed at achieving goals by optimal means".

Caiden and Wildavsky stressed that planning is not writing plans but providing strategies and priorities, and ensuring that planning is taken to implement policies. Or in other words, planning does not stand for writing plans but to provide the implementation of policies with relevant strategies and to determine relative priorities.

Kulp prefers to use schematic figures rather than a written definition. For him, planning is a system. It means that any real activity has a control system and a processing system. The planning system takes place in between these two systems, as can be seen in Figure 2.1.

FIGURE 2.1  
THE PLANNING SYSTEM

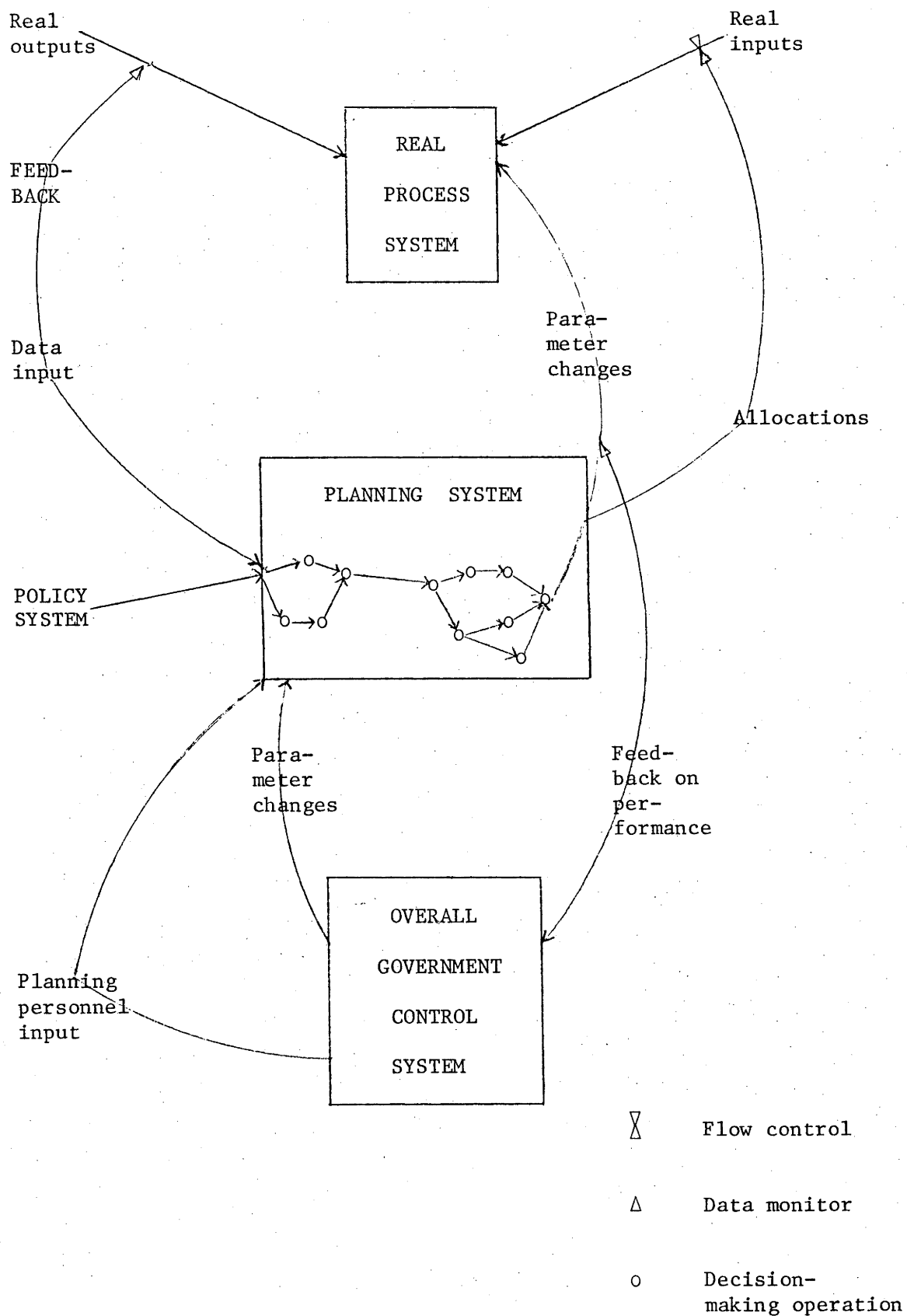


Figure 2.1 (from Kulp, 1970, Figure 1.3, p.11) shows the decision making operation in planning systems is based on: (i) policy system; (ii) overall government control system which consists of parameter changes and planning personnel input where both of them are as the result of feed-back on performance of real process system; and (iii) data input and feed-back of real output from real process system.

The result of the decision-making operation in the planning system is the allocation of real inputs to the real process system. If there is any change in parameter before entering the real process system, it will go back to overall government control system through feed-back on performance line.

The output of the real process system which is also the goal of the planning system is shown by real outputs. These real outputs will be the information that flows back to the planning system through feed-back lines, as data input for the next process in the planning system.

Figure 2.1 also gives evidence of the interrelationship between the systems where they are interdisciplinary. It shows too that the planning system is a process of preparing a set of decisions for actions as stressed by Clawson (1966) or as emphasised by Dror (in Sundrum, 1972), to provide every relevant factor. It also shows that the planning system takes place as the implementation of policy as concluded by Caiden and Wildavsky (1974, p.25) which features as an arrow line from policy system to the planning system.

The planning system is a complex activity. It can be imagined as a network of decision-making operations, as also shown by Figure 2.1. The structure of the planning system can be simplified as shown by Figure 2.2.

FIGURE 2.2  
THE STRUCTURE OF THE PLANNING SYSTEM

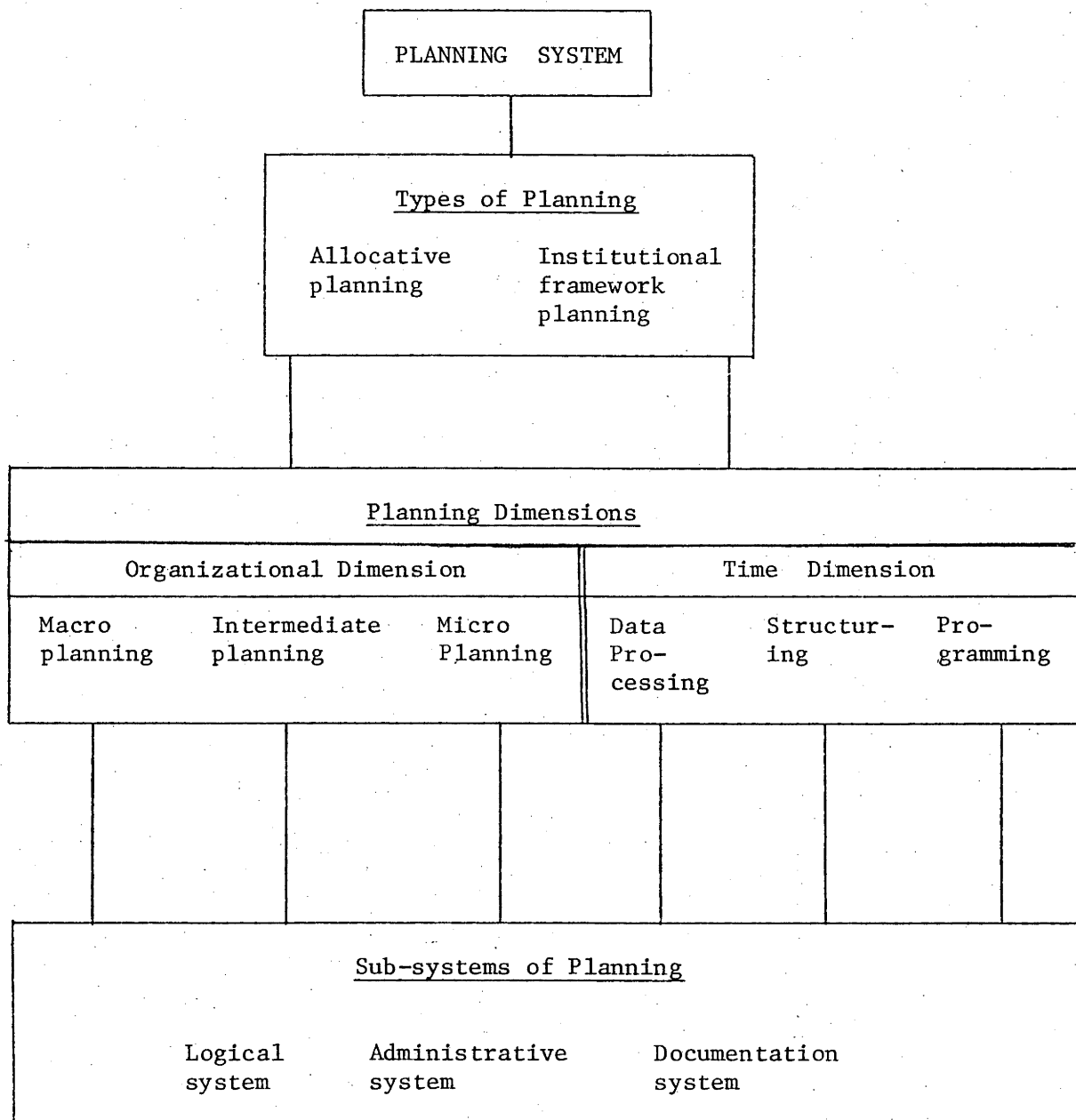


Figure 2.2 shows that there are two types of planning in such a planning system, namely, allocative planning and institutional planning. Both types have two planning dimensions, namely, the organizational dimension and the time dimension. The organizational dimension consists of: Macro planning; Intermediate planning; and Micro planning. The time dimension comprises data processing, structuring, and programming. Each element of the planning dimensions has sub-systems of planning, namely, logical system, administrative system, and documentation system.

The detail of the planning system structure, including planning pathology and criteria of a good planning system can be seen in Appendix A.

In conclusion, the meaning of planning is a process of preparing a set of decisions for action in the future. Decisions are based on policy, data input and feed-back on performance to meet goals by optimal means. In undertaking its roles, planning is a system which takes place in between the real process system and the overall government control system. The interrelationships among the systems are interdisciplinary.

Finally, the question of what is meant by a "strategy" in the context of rural development needs to be answered.

Kulp (1970, pp.265-266) explains the meaning of the strategy as follows:

The term strategy is used in operations research to describe the establishment of decision rules applicable to problems under the following conditions, where (1) decisions must be made at successive moments in time; (2) future circumstances are uncertain; and (3) the uncertainty diminishes with time.

From this explanation we can see that a strategy is a set of decision rules and as such is the method (or system) by which a stated objective is to be achieved. Or, in other words, a strategy may be seen as a mixture of programs and policies that are intended to alter the directions as well as the rate of change.



Thus, rural development planning strategy can be defined as a problem of which systems should be used in preparing a set of decisions for action in the future of the rural development process.

## 2.2 Rural Development and Agricultural Development

The importance of the distinction between rural development and agricultural development was stressed by Anker (1973) and King (1975). According to them, rural development must be distinguished from agricultural development because policies which are appropriate to achieve the one are not necessarily suitable for the other. Rural development is not the same as agricultural development, although the latter is obviously an essential part of it.

Many activities of the agricultural sector are not included in rural development. Only a set of project activities including extension, credit, supply, marketing, land titling, engineering services, and promotion of a particular farm product is included. On the other hand, rural development also includes activities outside the agricultural sector which require rural community activities. The activities include building and maintenance of small feeder roads, village schools and clinics, and other facilities for rural community like family planning programs, and paramilitary and civil aspects (Kulp, 1970, pp.14-15).

According to the "Symposium of Indonesia's Rural and Agricultural Pattern" that was held in Jakarta in November 1972, the distinctions between rural development and agricultural development are as follows.

Agricultural development emphasises the problems of the introduction and selection of technology, the selection and diversification of crops appropriate to natural conditions, the processing and marketing of agricultural products, and the problem of how to extend employment opportunities.

On the other hand, rural development concentrates on the questions of human potential, social institutions, culture, village administration, the improvement and establishment of rural production including non-agricultural products such as small scale industry, home crafts, marketing and processing units (PERHEPI, 1973, pp.2-3).

If we look into elements of agricultural development discussed by Mosher (1966) and the functional components of a modern agriculture which are also analysed by Mosher (1971) in a subsequent work, it is evident that the scope and elements of agricultural development are wide enough. But according to Fisk (1972) the ambit of rural development is much wider.

The elements of agricultural development discussed by Mosher consist of essentials and accelerators. These elements will be discussed later in detail (see Section 2.4).

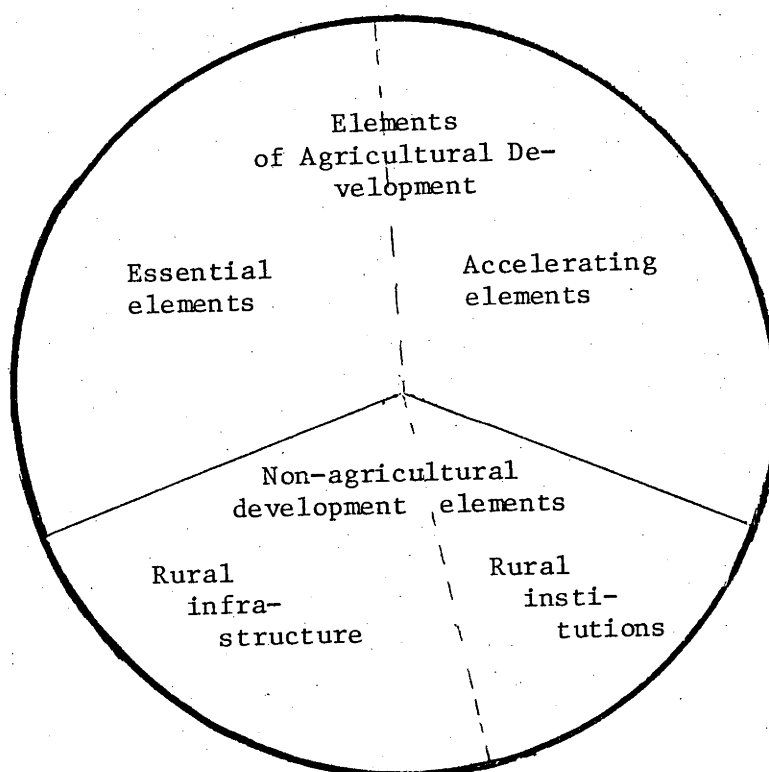
The functional components of a modern agriculture consist of farming, agri-support, and the agri-milieu. Agri-support consists of commercial and non-commercial elements. Commercial elements include production and distribution of farm inputs, marketing, processing, and distribution of farm products, and production credit for farmers. Non-commercial elements consist of research, extension, training of agricultural technicians. The agricultural milieu includes farmers' participation in political processes, government policies on land tenure, prices, taxes and agricultural development. Economic agri-milieu includes transportation, foreign trade, domestic industries and services. Cultural milieu consists of traditions, social structure, and general education (Mesher, 1971, pp.5-11).

The ambit of rural development policies that are discussed by Fisk (*ibid.*) includes:

. . . economic problems such as what to produce, and how much, and how to produce it, questions of taxation policy and incentives, or savings, credit, and investment, of specialization versus diversity of production, of world markets and terms of trade, and many other financial and economic matters. It also includes questions of population, employment, wage policy, land tenure, education policy, local government, preservation of law and order, administration of justice, provision of roads and communications, health and medical facilities, and many others.

FIGURE 2.3

## THE ELEMENTS OF RURAL DEVELOPMENT



The conclusions that can be drawn are that the difference between rural development and agricultural development are as follows (see Figure 2.3): (1) agricultural development elements are the major part of rural development elements; (2) agricultural development activities are wide enough but the ambit of rural development activities are much wider than the agricultural activities; and (3) the relationships between rural

development and agricultural development are very close indeed so that a simultaneous consideration of the activities of the former and the latter benefits both.

### 2.3 Rural Development Goals

The goals of rural development can be grouped into two kinds, namely, "common goals" and "specific goals". Common goals are the real goals that are valid for all rural areas. Specific goals are the goals that may only be achieved in certain rural areas or for a specific rural development project. Specific goals much depend upon the environmental or rural areas.

#### 2.3.1 Common goals

The discussion of common goals of rural development can be found, among others, in Hirsch (1963), Seers (1970), Mosher (1971), Biggs (1974), Lele (1974), Kotter (1974), Schickele (1969; 1971), and World Bank (1975):

The objective of rural development programs, however, may not only be increased overall productivity in a region but also increased participation in agricultural production and incomes, and reduced income disparities between classes of farmers (Lele, 1974, p.34).

The objectives of rural development, therefore, extend beyond any particular sector. They encompass improved productivity, increased employment and thus higher income for target groups, as well as minimum acceptable levels of food, shelter, education and health (World Bank, 1975, p.3).

For Seers, the objectives of rural development are at least to reduce poverty, to decrease unemployment levels, and to lessen inequality.

Kotter (*ibid.*) stresses that:

. . . the logical conclusion to be drawn is that a direct attack on rural poverty cannot mean palliative approaches of an isolated nature. It does not mean a rural transformation alone. In fact, it must aim at a basic revision of relationships between the backward and more developed parts of the society on all levels.

According to Schickele (1971) there are two fundamental goals of development, namely; the goal of establishing civic rights, responsibilities, and opportunities for every one's participation in public affairs; and the goal of increasing production for the main purpose of eliminating poverty.

One example of a common goal of rural development is the goal to make the process of rural development self-sustaining, as stressed by Lele (1974, p.17) and has been included in the Indonesian rural development goals (see Chapter One, section 1.3).

From the above opinions we can see that the common goals of rural development are to increase the level of living of all people in rural areas and to reduce inequality both material and non-material, and to make the rural development process self-sustaining.

These goals are logical because, as mentioned in Chapter One, more than 80 per cent of the population in developing countries live in rural areas. The inequality between rural and urban areas is very high so that to reduce the inequality is one of the important goals of rural development. The poverty and inequality that are faced by rural peoples are not defined only in terms of material goods but also in non-material measures such as education, skill, health, recreation facilities, and so forth.

It should be evident too that the goals of rural development of Indonesia, as set out in Chapter One (section 1.3) are in line with the common goals quoted above.

### 2.3.2 Specific goals

One of the best readings for determining the specific goals of rural development is a paper of Fisk (1972) "Development Goals in Rural Melanesia" reprinted by A/D/C, New York.

The paper stresses that the aims of rural development are not solely economic but are also concerned with the type of society and environment we are trying to produce. It means specific goals of a rural development activity are much dependent upon the environment of the rural areas, namely, physical, economic, social, cultural, natural and human resources.

A specific goal is important because some goals are stated very broadly, they give no indication of what lines of action are needed. For example, stating the goal of "improving the nutrition of people" gives no indication of what must be done. This broad goal must be broken down into a set of specific "program objectives" indicating lines of action such as increasing food production which are rich with animal protein, educating consumers about how to have a good diet, etc. (Schickele, 1969, p.28).

## 2.4 Elements of Rural Development

Elements of rural development are not only great in number but also complicated. For simplicity, they can be classified into three major categories, namely: Agricultural development elements; rural institutions; and infrastructure. These three major elements, as set out in Figure 2.2, especially refer to non-Communist societies with which this is concerned.

The elements of agricultural development are borrowed liberally from Mosher (1966). They consist of essentials and accelerators. The detailed elements of agricultural development are discussed in sub-section 2.4.1 of this chapter.

Rural institutions are all institutions or organizations which are needed for the rural development process. They include both public and private institutions or organizations which will be discussed in detail in sub-section 2.4.2 of this chapter. Some of these institutions provide each essential or accelerator with its driving force. Therefore, the relationship between rural institutions and the elements of agricultural development is very close indeed.

The term "infrastructure" is meant here as physical, economic and social infrastructure. Therefore, it does not only include social overhead capital such as roads and other transportation and communication systems, as well as water supplies, electric power and other public services, but also includes the health, skills, education and other qualities of the population. Detailed discussion of the infrastructure is given in sub-section 2.4.3 of this chapter.

#### 2.4.1 Elements of agricultural development

As we have mentioned, agricultural development is a major part of rural development so that the elements of agricultural development are also elements of rural development. The elements of agricultural development consist of essential and accelerating elements.

Mosher suggests five essentials:

1. Market for farm products - It means that there must be a demand for the products, a marketing system, and the confidence of farmers in the working of the marketing system. This is important because agricultural development increases the output of farm products. If there is no demand and marketing system for them, the price of the products would be lower so that the farmers may not repay their cash costs and they may lose financially.

2. Constantly changing technology - This is important because it is impossible to obtain much increase in yield by using the same old plant and animal materials and the same old soil in the same old ways.

3. Local availability of supplies and equipment - In order to increase agricultural production, special supplies or equipment such as seeds, fertilisers, pesticides, livestock feeds, medicines and tools, must be available at many local points in sufficient quantity and at suitable times to meet the needs of every farmer who may want to use them.

4. Production incentives for farmers - Incentive here primarily means economic incentive which consists of remunerative price relationships, a reasonable share of the harvest and the availability of goods and services that farmers would like to be able to purchase for themselves and their families. All of them in combination provide strong economic incentives.

5. Transportation - The importance of transportation is quite evident so it does not need a further explanation. The function of transportation is to bring supplies and equipment to each farm and to take products from farms to consumers in the towns and cities.

Mosher also suggests five accelerators, namely:

1. Education for development - This is an education that is appropriate for a society that wants to develop. It is an education that is selective in the new knowledge, abilities and skills that it tries to help each person acquire. It is an education that puts greater stress on some of the historic beliefs



and traditions of his society than it does on others. It is an education that draws on the past experience of other societies to the extent that this will help it move in the desired direction of development.

2. Production credit - It can be an important accelerator of agricultural development because to produce more, farmers must spend more to purchase new inputs and equipment.

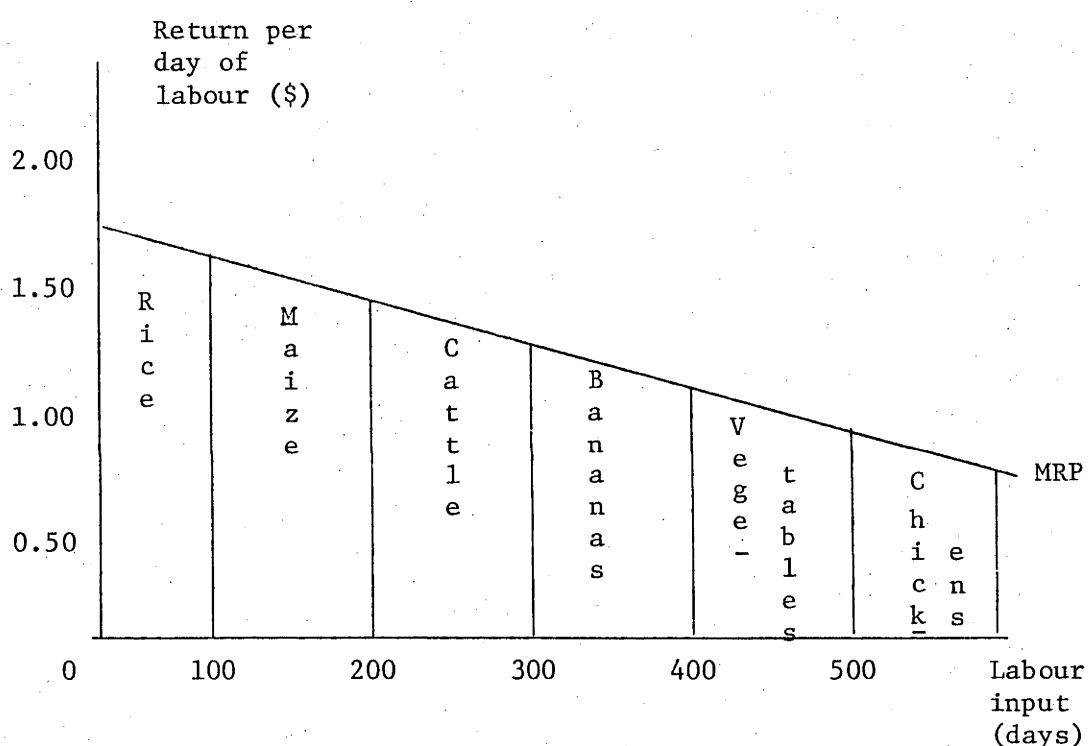
3. Group action by farmers - The individual farmer in developing countries is too small a unit to make services from government and private sectors economical. Therefore group action by farmers such as farming co-operatives or farmers' associations is a third important activity in accelerating agricultural development.

4. Improving and expanding agricultural land - This includes the improvement of the quality of the land that has already been farmed and the bringing of additional land into cultivation. Irrigation is one example of the improvement of the farm land quality.

5. National planning for agricultural development - In this case Mosher stresses that essential elements should be given the highest priority and planning because the accelerators can help where the essentials are present. Planning should be based on a region by region approach. Production and marketing possibilities should be jointly considered. And the emphasis of planning should be on increasing farm income rather than production. Planning should include critical assessments of what is already being done; and lastly, planning should be continuous.

The relationships between Mosher's elements of agricultural development and farming systems can be shown by using simple schematic figures. The farming system may be visualised in terms of the graph in Figure 2.4 (adapted from Kulp, 1970).

FIGURE 2.4  
A FARMING SYSTEM



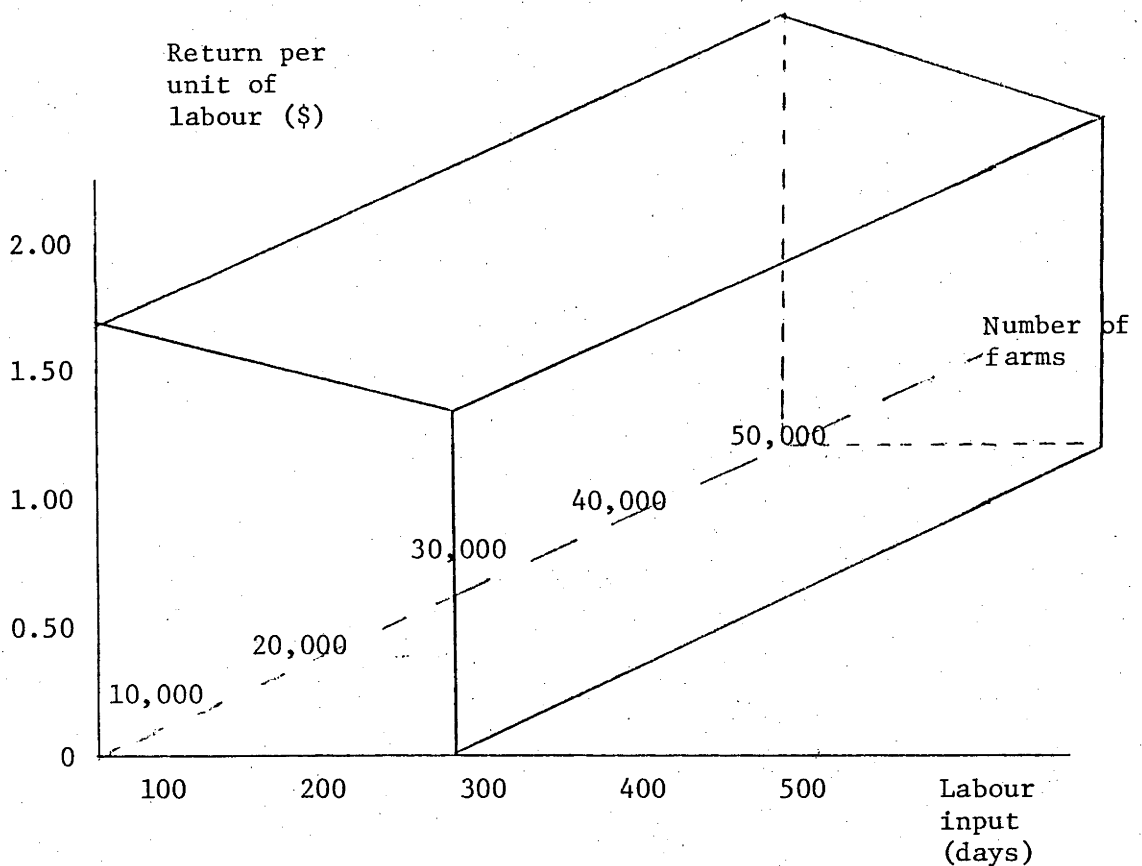
The vertical axis shows the return per day of labour in monetary terms. The horizontal axis shows the amount of labour input used in the farming system in terms of days. The hypotenuse defines the marginal revenue product (MRP) of the labour. The area under the MRP line represents the total income of the farm, including on-farm consumption. In this case, the farm consists of a number of enterprises, i.e., rice, maize, cattle, bananas, vegetables and chickens.

The term "enterprise" is used because each of these product lines is conceived of as a separate business. The term "system" is used because the various enterprises conducted by one farm are very tightly interrelated.

Another dimension can be added to Figure 2.4 in order to show a regional farm system. This can be seen in Figure 2.5

FIGURE 2.5

A REGIONAL FARMING SYSTEM



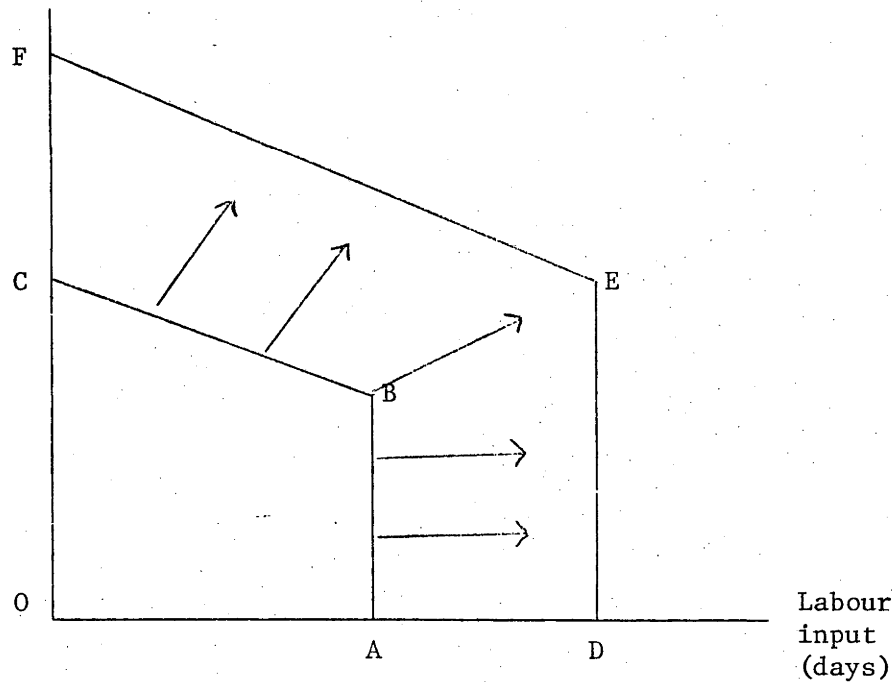
The third axis shows the number of farms in a certain region which follow the farm system in Figure 2.4. The area enclosed now represents the total income of the farmers of the region with the farming system as in Figure 2.4.

It is important to note that the graphs indicate return from labour only, not return from land. We can draw the same type of graph based on land input and get a radically different ranking of relative returns.

Suppose now we have a rural area with a homogeneous farm system with a single crop, i.e., rice product. Therefore there is only one farm system with a single rice enterprise. Before Mosher's five essentials are introduced into the rural area, the condition of the farm system is shown by trapezium OABC in Figure 2.6.

FIGURE 2.6

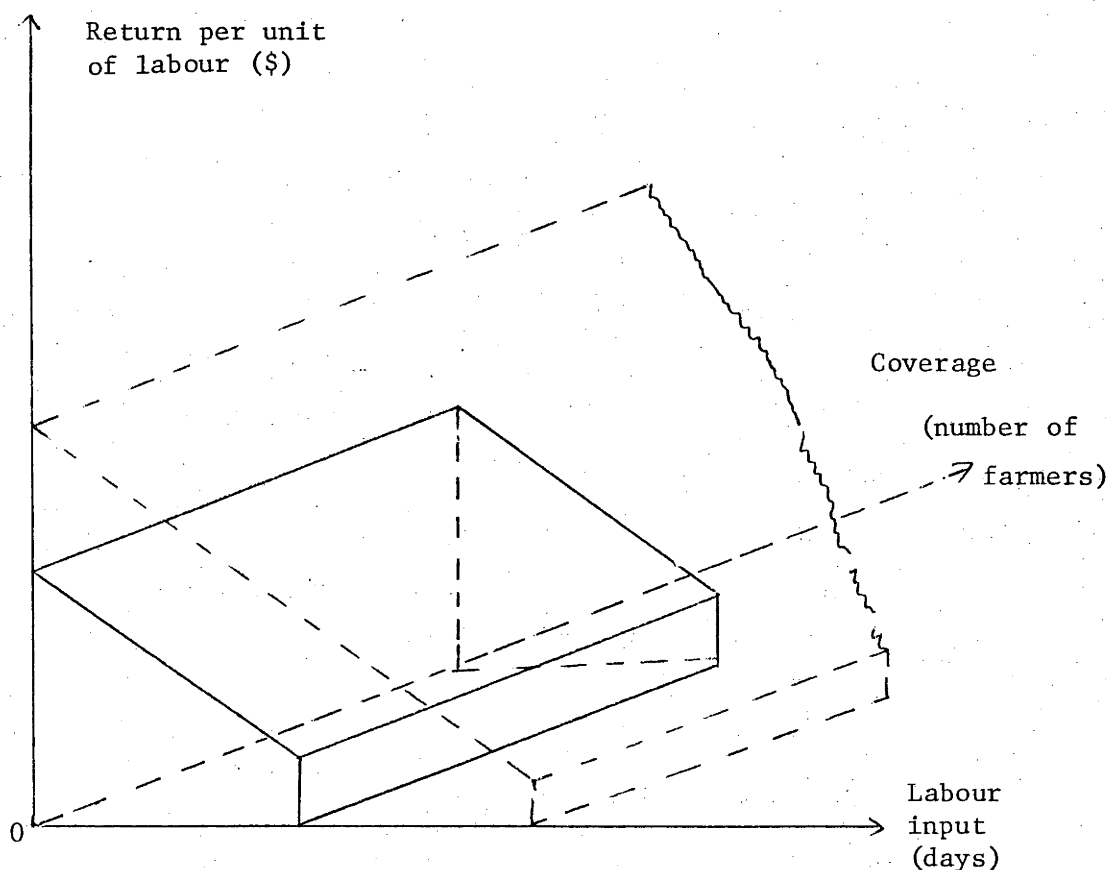
THE EFFECT OF FIVE ESSENTIALS ON A FARMING SYSTEM



After introducing the five essential elements in the rural area, the situation of the rice enterprise changes so that the technical and economic frontier of the enterprise is pushed outward. The new rice enterprise is shown by the trapezium ODEF. In this case, both the return per unit of labour and the labour input used by the farm system increase. The labour increase occurs as a direct result of the availability of supplies and equipment such as fertilisers, pesticides, and sprayers where the introduction of the fertiliser and pesticide needs additional labour. The increase of production also needs additional labour input for harvesting. And since the prices of the output and inputs do not change, the income of the farmer will increase also.

FIGURE 2.7

THE EFFECT OF FIVE ACCELERATORS ON A FARM SYSTEM



The effect of the five accelerators can be seen in Figure 2.7. The accelerators not only influence the labour input and the return per unit of labour but also affect the total number of farms adopting the essentials. It means although the five essentials are available, the number of farms which will use them much depends upon the accelerators. For example, supplies are available but the farmers are not able to purchase due to money shortage; thus, production credit should be provided to make supplies more effective. On the other hand, the accelerators will be effective only if the essentials exist.

#### 2.4.2 Rural institutions

The function of rural institutions is to give to each essential or accelerator its driving force. According to Kulp (1970, pp.38-39), the institution for each essential and accelerator consists of:

|                               |                                                                                                  |
|-------------------------------|--------------------------------------------------------------------------------------------------|
| <u>Marketing</u>              | - Local merchants, agribusinesses, co-operatives, marketing boards.                              |
| <u>Technology</u>             | - Research departments of Ministries, agribusinesses, agricultural faculties and institutes.     |
| <u>Supplies and Equipment</u> | - Local merchants, co-operatives, agribusinesses, government-owned distribution authorities.     |
| <u>Incentives</u>             | - Government price support agencies, and other institutions with respect to farmers' incentives. |
| <u>Transportation</u>         | - National and local public works agencies, railroads, shipping firms.                           |
| <u>Education</u>              | - Extension services, community development services, agribusinesses.                            |
| <u>Credit</u>                 | - Banks, co-operatives, agribusinesses.                                                          |
| <u>Group Action</u>           | - Farmers' associations, co-operatives, local development communities.                           |
| <u>Land Development</u>       | - Irrigation departments, land co-operatives, settlement authorities.                            |
| <u>Planning</u>               | - Ministry of Agriculture, planning commission, inter-agency planning committees.                |

The foregoing list shows that many institutions are multifunctional. PERHEPI (1973, p.9) defines "institution" as a "collective action in restraint, liberation and expansion of individual action". An organization or administration becomes an institution when the organization or administration has been supported by the entire community of the region. Co-operative organization in Indonesia has not yet been an institution although it has had good management and organization but has not yet been supported by the entire community of the nation.

Because it is difficult to measure the difference between organization, administration and institution, in this study the three terms are used interchangeably.

According to Kulp (1970, p.40) the development of institutions can be analysed and planned in terms of three basic elements, namely, (1) field service units, (2) staff, and (3) program.

Field service units are needed in order to make contacts between the institutions and farmers or rural people.

Staff means supervisory and supporting personnel and facilities behind the field service units.

The program of an institution can be broken down into three elements: policy, strategy, and routines. By policy is meant the roles and rules of servicing, or in broad terms, who does what and under which condition. Strategy means the phasing of expansion of coverage and services and the relationships with other institutions. Routine means the standard operating procedures of internal administration and of actual service to the rural population.

### 2.4.3 Infrastructure

The term infrastructure is meant here as:

. . . the underlying capital of a society embodied in roads and other transportation and communication systems, as well as water supplies, electric power and other public services. Sometimes called social overhead capital, the term is also often widened to include health, skills, education and other qualities of the population (Bannock, *et al.*, 1973, p.217).

Infrastructure is a vital part of the rural level of living and must be an integral part of planning for the rural economy. Some elements of the infrastructure cannot be categorised as essentials or accelerators (Kulp, 1970, p.43).

## 2.5 Stages and Phases of Rural Development

The main element of the rural development system is the process of agricultural development. There are some stage theories of agricultural development that can be also said to apply to the rural development process.

### 2.5.1 Kulp's stage of rural development

First, according to Kulp (1970, p.45) there are four main stages in the rural development process, namely:

- I. Traditional subsistence agriculture
- II. Institution-building development
- III. Institution-based development
- IV. Capital intensive development

The characteristics of stage I is the subsistence orientation of farmers and the absence of accelerator institutions. The farm system of this stage is usually based on cereal production enterprises. The average adult works about 100 days a year. In this stage, agriculture is not necessarily static but progress is exceedingly slow without the push of



government services or modern private service institutions (Kulp, 1970, p.46).

Stage II, in which government and modern private institutions begin promoting innovations, which result in more intensive labour application, is divided into two sub-stages, i.e., stage IIA, the preparatory stage, and stage IIB, coverage expansion.

In stage IIA, institutions grow by fits and starts. Extension services work with group action institutions in 10 to 20 per cent of the villages. In stage IIB, extension and supply expand effective coverage to most of the villages.

In stage III, the process of rural development "takes off" and acquires a self-sustaining momentum. Stage III is again divided into two sub-stages.

Sub-stage IIIA is based on more complex innovations. The institutions and services which did not get under way in stage IIB are launched and complete their coverage in this sub-stage.

In sub-stage IIIB, institutions develop their own momentum. Innovation is recognised by all as a concrete immediate source of profit.

In stage IV, investment and innovation turn to substituting capital for labour. Rural labour shortages appear; the price of farm labour goes up, and farmers apply capital to reduce the labour requirement per hectare.

#### 2.5.2 Fisk's stage of agricultural development

Second, Fisk (1973, pp.1-2) also divides the stage of agricultural development into four stages, namely:

1. Pure subsistence in isolation - At this stage there is no effective contact with the monetised sector, all consumption depends on self-subsistent production, and there is no specialization, no trade and no division of labour outside the group.

2. Subsistence with supplementary cash production - At this stage the essentials of life are still mainly produced by the group that consumes them, but supplementary production is undertaken in order to secure access to market goods and services not obtainable directly from their own resources.
3. Cash orientation with supplementary subsistence - In this stage, the producer is oriented mainly towards the monetised economy, and his main productive efforts are directed at earning a money income; however, some, even a substantial part, of the basic foods and other necessities may be home produced because in terms of factor cost, it is more economical to do so.
4. Complete specialization for the market - This is the stage where specialization and division of labour are exploited to the maximum, and the producer is dependent on the market for all the goods and services he requires.

#### 2.5.3 Mellor's stage of agricultural development

Third, Mellor (1966, pp.223-241) identifies three phases of agricultural development, namely:

- I. Traditional agriculture - It is a technologically stagnant phase in which production is increased largely through slowly increased application of traditional forms of land, labour and capital.
- II. Technologically dynamic agricultures: low capital technology - This is the phase of agricultural development in which agriculture can play a crucial role in overall development. In this phase, (a) agriculture still represents a large proportion of the total economy, (b) demand for agricultural products is rising rapidly due to both demographic and income effects, (c) capital for

industrial development is particularly scarce and returns are rising, (d) limitation to the pace of the economic transformation and pressure of population growth preclude enlargement of the average acreage per farm, and (e) use of labour saving agricultural machinery is largely precluded by an unfavourable labour-capital cost relationship.

### III. Technologically dynamic agriculture: high capital technology -

The key characteristic of this phase is the substitution of capital in the form of large scale machinery for labour. In this stage, agriculture occupies a smaller portion of the total economy and does not bear the heavy burden of financing the development of other sectors.

#### 2.5.4 Major characterisation of agricultural development stages

Fourth, Wharton (in Hayami and Ruttan, 1971, p.16) summarises the ten major characteristics of agricultural development from Stage I (static) through Stage II (transitional) and into Stage III (dynamic) as shown in Table 2.1.

#### 2.5.5 Conclusions

From the above four theories of agricultural development stages and phases, we see that basically the theories are the same, particularly in the first and the last stages, i.e., from traditional subsistence agriculture to modern economic agricultural stage. In the transitional stages, there are some differences among the four theories. The differences stem from the different approaches adopted in looking into the process of agricultural development.

Kulp (1970) views the process of the development from the institutional side, particularly in terms of accelerator institutions.

TABLE 2.1

SUMMARY OF TEN MAJOR CHARACTERISTICS OF AGRICULTURAL DEVELOPMENT FROM  
STAGE I THROUGH STAGE II AND INTO STAGE III\*

| General character                                                | Stage I<br>(static)                              | Stage II<br>(transitional) | Stage III<br>(dynamic)                       |
|------------------------------------------------------------------|--------------------------------------------------|----------------------------|----------------------------------------------|
| 1. General values, attitudes, motivations                        | Negative or resistant                            |                            | Positive or receptive                        |
| 2. Goals of production                                           | Family consumption, survival                     |                            | Income and net profit                        |
| 3. Nature of decision making process                             | Rational or traditional                          |                            | Rational or choice making                    |
| 4. Technology or stage of arts                                   | Static or traditional with no or slow innovation |                            | Dynamic or rapid innovation                  |
| 5. Degree of commercialization of farm production                | Subsistence or semi-subsistence                  |                            | Commercial                                   |
| 6. Degree of commercialization of farm inputs                    | Family labour and farm produced                  |                            | Commercial                                   |
| 7. Factor proportions and rates of return                        | High labour/capital ratio; low labour return     |                            | Low labour/capital ratio; high labour return |
| 8. Institutions affecting or serving agriculture and rural areas | Deficient and imperfect                          |                            | Efficient and well developed                 |
| 9. Availability of unused agricultural resources                 | Available                                        |                            | Unavailable                                  |
| 10. Share of agricultural sector in total economy                | Large                                            |                            | Small                                        |

\* This table is an attempt to synthesize the Perkins-Witt, Johnston-Mellor, and Hill-Mosher stage classifications.

Source: Clifton R. Wharton, Jr., "Research on Agricultural Development in Southeast Asia", *Journal of Farm Economics*, 45 (December 1963):1162.

Fisk (1973) investigates the process from the side of cash production and specialization. Mellor (1966) summarises the process from the point of technology. Lastly, Wharton (1963) tries to make a synthesis of the theories of some experts in the question of the stage of agricultural development. He pointed out ten major characteristics of agricultural development from the early stage into the last stage.

From the ten characteristics we see that most of the elements emphasised by Kulp, Fisk and Mellor are included. An exception is the degree of specialization. Furthermore, the avoidance of any specific attributes to the characteristics in the transitional stage is a serious omission of Wharton's classification.

If we look into the condition of developing countries, most of them are in the stage of transition from the stage of traditional subsistence agriculture to the higher stage with the main characteristic being that the share of the agricultural sector in the total economy is still large, i.e., above 50 per cent. In this stage, the role of agriculture in the development process is very important.

There are three distinct major roles that agriculture must play in the development process, namely: (1) to supply the food necessary to meet the inevitable rise in population, (2) to prepare working capital for non-agricultural development and to generate raw material for industry or to earn foreign exchange, (3) to stimulate other aspects of development such as industries for agricultural inputs and manufactures for consumer goods as the result of rising income in the agricultural sector (Rostow, 1966).

The theories of the stages and phases of development emphasise that the speed of rural development is determined by the integration of many factors. The more advanced phases and stages build on the lessons learned in earlier stages.

In conclusion, the study of the development process of rural areas is important in order to formulate more suitable strategies and plans so as to influence both the direction and speed with which rural development takes place.

## CHAPTER THREE

### RURAL DEVELOPMENT STRATEGIES

This chapter is concerned with the questions of rural development planning strategies. It examines strategies that have been applied in some developing countries. It also tries to find the relationship between a strategy and the results of its implementation in some developing countries.

There are three types of rural development strategy that will be distinguished in this chapter, namely: The Minimum Package Strategy, the Comprehensive Approach, and finally, Sector and Special Programs.

#### 3.1 The Minimum Package Strategy

The minimum package strategy is a strategy of rural development planning, where improvements in the level of living of rural people are achieved through increased agricultural output by providing farmers with a minimum package of inputs. The "minimum package" involves the provision of only those services considered to be particularly critical for a particular rural development situation. Typically they include the provision of seeds, fertilisers, pesticides, and possibly some equipment backed up by increased agricultural extension, credit and co-operative development.

Ideally, this program is started with experiments in a small area. Based on the results of these experiments, the program is adopted regionally and then nationally in ecologically suitable areas.

The great advantages of this strategy are the promise of relatively low cost, extensive coverage with comparatively simple objectives and operating procedures (World Bank, 1975, p.41).

On the other hand, the greatest handicap in the spread of the program is the slow development of an appropriate institutional framework for extension services and credit for small farmers. What may be successful in the pilot project may fail at the "full coverage" stage because properly motivated extension services are not easy to establish, especially in a short period of time. Training takes time, co-operatives grow and take root only slowly (Islam, 1974, p.xiv). Social and economic stratification in many developing countries would seem to preclude widespread application of the minimum package strategy (World Bank, 1975, p.42).

In order to make a detailed evaluation of the strategy, two case studies are selected as an illustration of the strategy in operation. They are BIMAS (Bimbingan Massal, or mass guidance or massive intensification) program in Indonesia, and the Minimum Package Program (MPP) in Ethiopia.

### 3.1.1 Bimas Program in Indonesia

The problem of food production, especially rice production, in Indonesia, existed long before it gained its independence in 1945. Since independence, the government of Indonesia has paid special attention to the problem.

The Bimas program is a new method of extension to increase rice production through intensification. In this program, rice farmers not only receive credit for purchased inputs and cost of living, but also receive direct help from agricultural college students. Those students live together with the farmers in villages for the whole of a rice



growing season and demonstrate how to grow rice better by showing how to use fertiliser, insecticides, selected seed, and so on.

One possible reason why the Bimas program gives credit for the cost of living is to prevent farmers from using the "ijon system". "Ijon is a transaction of buying or selling agricultural product while it is still green on the field. Ijon is a form of loan to be repaid by the agricultural product which, at the time of releasing the loan, is still green. The most important ijon is rice" (Partadiredja, 1974). Another possible reason is that during the "Paddy Centra Scheme" (1959-1962) credit that had been given to farmers for buying fertiliser and improved seed had been used by the farmers partially for consumption. Consequently, the scheme was only partially successful, and according to Penny (1966) only 20 per cent of the credit was repaid.

The Paddy Centra Scheme was the first effort to organise on a large scale the supply of inputs, especially fertiliser and improved seed, to rice growing farmers in Java. The government anticipated that by giving credit for inputs to the farmers and some extension information rice production will increase, but this was not the case. There are many reasons why the scheme was only partially successful, but the main one is that the government saw the rice production problem mainly as an economic problem (Rukasah and Penny, 1967).

The Bimas program, as a new method of extension, was conceived by Bogor Agricultural College. A small group of young men from the college, that is, twelve fourth and fifth year students, was sent to live in three villages for the whole of the 1963/64 rice growing season. Before the students set out they were given background information on the villages in which they were to work, some instruction in how to grow rice better, and a detailed outline of how they were to do their work among the rice farmers. This program was a part of the action research program of the

college. The students worked on 100 hectares of rice fields (*ibid.*). This program was very successful and the yield per hectare increased from 4.3 tons to 6.64 tons or increased by 54 per cent (Mears and Affif, 1968).

Since 1964/65, the Bimas program has been undertaken by the Indonesian Government. During the 1964/65 rice growing season, some areas outside Java were selected for pilot projects of the program. In this case, two areas in West Sumatra (50 hectares for each area) were selected. Those pilot projects were very successful too.

The main aim of the Bimas program is to show to rice farmers that there are five ways to better farming and better living. The five ways are called "Panca Usaha" or five-fold way which consists of:

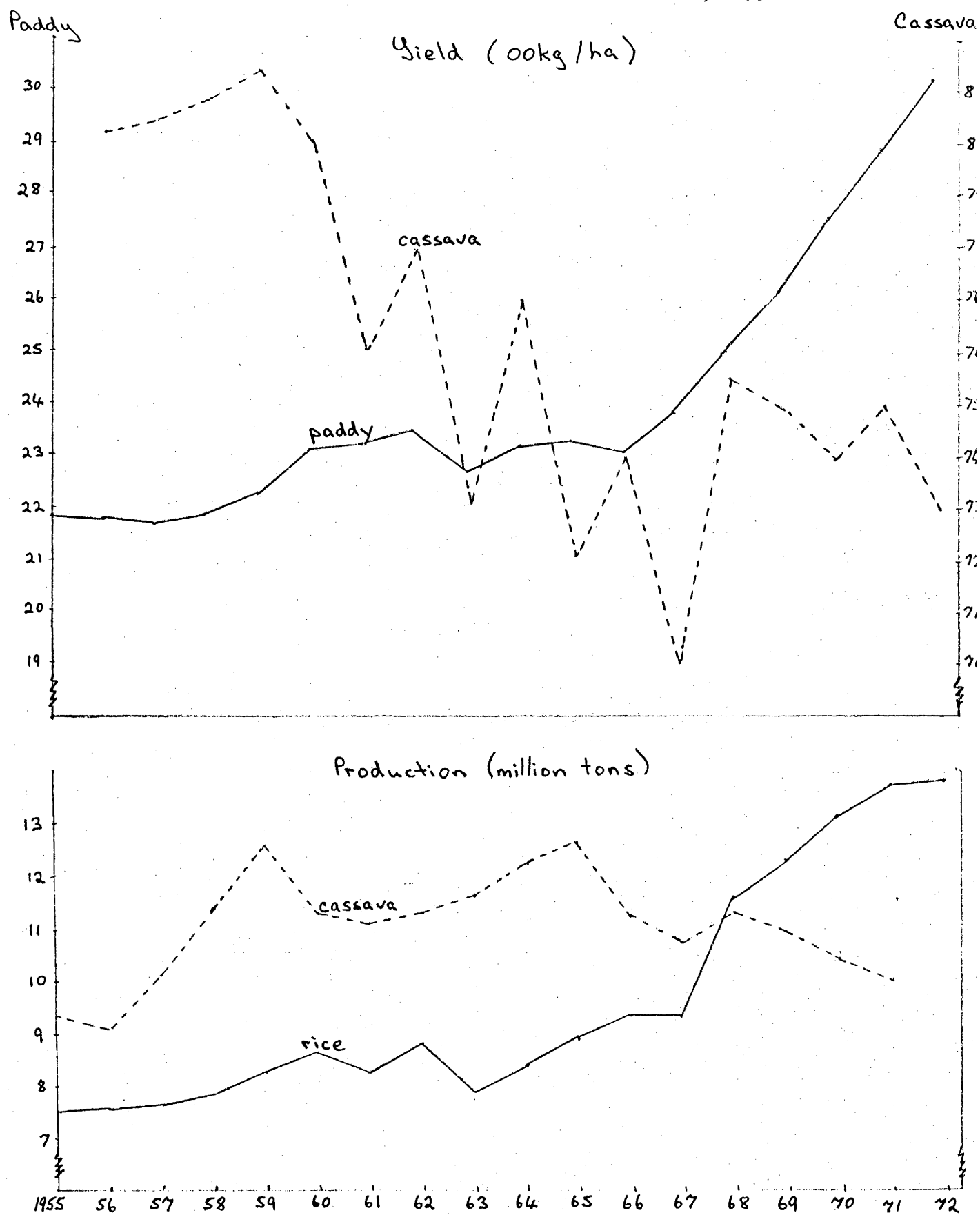
(1) improved water control; (2) use of selected seed; (3) use of fertiliser and pesticide; (4) better cultivation method; and (5) stronger co-operatives. It means by using the "Panca Usaha" the yield of rice could be increased and also the income of the farmers, as expected, could increase too.

The official basis for the choice of a Bimas project area is said to be: (1) the availability of a good irrigation system; (2) the availability of transport and marketing facilities, particularly road systems; (3) the existence of a possibility of increased yield of rice through intensive farming; (4) the desire for progress and co-operation on the part of the area inhabitants; (5) the possibility of expanding the experience gained into a larger area around the project.

The introduction of the Bimas program in Indonesia has resulted in a substantial increase in both production and yield of rice, as shown by Figure 3.1.

FIGURE 3.1

PRODUCTION AND YIELD OF RICE AND CASSAVA IN INDONESIA, 1955-1972



From Figure 3.1 we see that the production and yield of rice (with the Bimas program) had substantially increased since 1963. The increase had been much higher since 1967. This occurred particularly because of the introduction of the new IR high yielding varieties (IR5 and IR8) which was started in 1967 and because of the help of foreign aid agencies for the Bimas program which had been received from 1968 to 1971 (Sajogyo and Collier, 1973). On the other hand, the production and yield of cassava (without the Bimas program) had constant (production and decreasing (yield) trends. The trends in production and yield of other food crops such as corn, peanuts, sweet potatoes, and soya beans were nearly the same as cassava's trend during the period, because they have not been involved in the Bimas program.

In the province of West Sumatra the Bimas program was established in 1964. Since that year, the production and yield of rice in the province have also increased substantially. In 1963 production of rice in the province was only 305,240 tons. In 1964 production was about 325,775 tons. In 1973 production reached about 477,000 tons. Before the Bimas program the province had to import rice, while in recent years the province has become a province with a rice surplus. In 1969 the surplus was about 29,000 tons and in 1973 increased to 80,000 tons (UNAND, 1975, p.90).

Table 3.1 shows that gross production value per hectare of the Bimas program is always higher than the GPV of the non-Bimas, except for Kabupaten Padang-Pariaman in the 1969-70 season. Total money cost (TMC) is always higher for the Bimas program than the non-Bimas. It also shows that all the net benefit (NB) of Bimas is higher than the non-Bimas, except for Kabupaten Padang-Pariaman in the 1969-70 season. On average, in both Kabupatens, Bimas is more profitable than non-Bimas. But when

TABLE 3.1

NET BENEFIT PER HECTARE OF BIMAS AND NON-BIMAS PROGRAMS AND  
THE B/C RATIOS IN TWO KABUPATEN OF WEST SUMATRA  
FOR THREE GROWING SEASONS

| Item                  | Kabupaten<br>Padang-Pariaman |       | Kabupaten<br>Tanah Datar |       |
|-----------------------|------------------------------|-------|--------------------------|-------|
|                       | Non-Bimas                    | Bimas | Non-Bimas                | Bimas |
| <u>Season 1968/69</u> |                              |       |                          |       |
| Sample size           | 36                           | 24    | 15                       | 45    |
| GPV (Rp)              | 50368                        | 65517 | 48331                    | 87427 |
| TMC (Rp)              | 24205                        | 28455 | 19688                    | 50274 |
| NB=GPV-TMC            | 26163                        | 37062 | 28643                    | 37153 |
| B/C ratio             | 2.56                         |       | 0.278                    |       |
| <u>Season 1969/70</u> |                              |       |                          |       |
| Sample size           | 30                           | 30    | 20                       | 30    |
| GPV (Rp)              | 42241                        | 40972 | 39585                    | 48930 |
| TMC (Rp)              | 19987                        | 23272 | 19382                    | 23841 |
| NB=GPV-TMC            | 22254                        | 17700 | 20203                    | 25089 |
| B/C ratio             | -1.39                        |       | 1.09                     |       |
| <u>Season 1970/71</u> |                              |       |                          |       |
| Sample size           | 31                           | 13    | 27                       | 30    |
| GPV (Rp)              | 24650                        | 59882 | 33519                    | 57915 |
| TMC (Rp)              | 15053                        | 15973 | 14707                    | 22839 |
| NB=GPV-TMC            | 9597                         | 43909 | 28812                    | 35076 |
| B/C ratio             | 37.3                         |       | 0.77                     |       |
| <u>Average</u>        |                              |       |                          |       |
| Sample size           | 32                           | 22    | 20                       | 35    |
| GPV (Rp)              | 39086                        | 55457 | 40478                    | 64757 |
| TMC (Rp)              | 19748                        | 22566 | 17925                    | 32318 |
| NB=GPV-TMC            | 19338                        | 32891 | 22553                    | 32439 |
| B/C ratio             | 5.07                         |       | 1.7                      |       |

Source: Muchtar and Zein (1972, p.62).

Note:  $B/C \text{ ratio} = \frac{\text{additional output value}}{\text{additional money cost}}$

we look on a season by season basis, in Kabupaten Tanah Datar, only for the 1969-70 season is Bimas more profitable than non-Bimas; for the other two seasons, Bimas is less profitable than non-Bimas where the B/C ratio for those seasons is less than one. On the other hand, in Kabupaten Padang-Pariaman in the 1969-70 season Bimas is much less profitable than the non-Bimas where the B/C ratio is negative; for the other two seasons, Bimas is much more profitable than the non-Bimas where the B/C ratios are very big.

The conclusion that can be drawn from the B/C ratio analysis is that the Bimas program increases yields of rice and incomes of the participants on average, but in some cases it is not profitable.

The unprofitable situation was caused by several factors such as yield, price of the output, level of wage, etc. Price of local variety rice is relatively higher than the price of IR rice. It may also be caused by the Indonesian rice price policy which was primarily designed to protect urban consumers rather than rural producers. Since 1968 the government has embarked on a policy aimed at holding a balance between consumers and producers by determining the floor and the ceiling prices of rice, but in reality the price of rice in many village levels is still below the floor price. This is particularly because Bulog (Badan Urusan Logistic, or Government rice purchasing agency) does not reach down below kabupaten level (Partadiredja, 1971).

One possibility for increasing the income of the farmers is to design the rice price policy to protect rural producers. But according to Krishna (1973) if the aim is to accelerate innovation and the growth of agricultural output, it would be better to subsidise the package inputs than to guarantee minimum prices of outputs. His reasoning is as follows: If product prices are raised, farmers may or may not take to improved cultivation. On the other hand, if inputs are subsidised the

benefit of government expenditure can be derived by the farmers only in proportion to their use of improved inputs. It seems likely that the rice price policy to protect rural producers is impossible based on political consideration. Therefore, it is better that the government gives direct subsidies by lowering the price of the package inputs rather than the unpleasant indirect subsidy of forgiving credit that has not been repaid as we can see later in the following discussion.

Although the Bimas program has been successful in increasing rice production, it also faces some problems. One of them is the problem of credit repayment by farmers. Repayment rates under the Bimas program have had a decreasing trend both at the national level and in West Sumatra. This can be seen in Table 3.2 (for the national level) and Table 3.3 (for West Sumatra).

The low repayment rates were said to be due to the ineffectiveness of the credit agents at village level. Co-operatives were loosely organised and the village head had also shown his inability to consider the soundness of loans and better collection procedures. There are some reports the proceeds of loans or collections were misappropriated and that there were big differences in repayments among provinces and districts. This justifies the assumption that the repayment rates depend heavily upon the activities of kabupaten, especially of the Bupati himself.

A recent study (Asnawi, 1973) has analysed credit Bimas repayment in West Sumatra for the 1970-71 season. It found that the highest rate of repayment was in the Kabupaten Tanah Datar (more than 70 per cent) and the lowest rate was in Kabupaten Padang-Pariaman (less than 50 per cent). In Table 3.1, the Bimas program was much more profitable in the Kabupaten Padang Pariaman than in the Kabupaten Tanah Datar. Hence in this case there was no positive correlation between Bimas profit and repayment rates.

TABLE 3.2  
REPAYMENT RATES UNDER BIMAS PROGRAM IN INDONESIA

| Season     | Loan value<br>(Rp million) | Repayment<br>(%) |
|------------|----------------------------|------------------|
| 1966       |                            |                  |
| Wet season | 43                         | 96               |
| Dry season | 114                        | 86               |
| 1967       |                            |                  |
| Wet season | 789                        | 50               |
| Dry season | n.a.                       | n.a.             |
| 1968       |                            |                  |
| Wet season | 901                        | 77               |
| Dry season | 1098                       | 41               |
| 1969       |                            |                  |
| Wet season | 2086                       | 47               |
| Dry season | 167                        | 35               |
| 1970       |                            |                  |
| Wet season | 1648                       | 29               |
| Dry season | 124                        | 12               |

Source: BRI, *Rekapitulasi Laporan Kredit Bimas Akhir Bulan Desember 1970*, Jakarta, February 1971.



TABLE 3.3  
CREDIT OF BIMAS AND ITS REPAYMENT IN  
WEST SUMATRA PROVINCE: 1970/71-1972/73

| Season  | Loan value<br>(Rp million) | Repayment |    |
|---------|----------------------------|-----------|----|
|         |                            | Value     | %  |
| 1970/71 | 179                        | 117       | 65 |
| 1971    | 276                        | 133       | 48 |
| 1971/72 | 145                        | 27        | 18 |
| 1972    | 110                        | 44        | 40 |
| 1972/73 | 299                        | 52        | 17 |

Source: UNAND (1975, p.53).

About 88 per cent of the local administrators (Bupati, Camat and Wali Nagari) said that in the future they will never take stern measures because the delaying of repayment was not only caused by the farmers themselves but also by the local Bimas Committee. For example (as expressed by local administrators themselves) the loan was not in farmers' hands on time and the committees collected the repayment too late.

In conclusion, the decreasing trend of repayments in West Sumatra is heavily caused by the weakness of the local administrators. Therefore, to increase the repayment rates, the activities of the local administrator should be increased.

#### 3.1.1.1 Village Unit Co-operatives (BUUD/KUD)

In the long run, the idea of the Bimas program will be organised by local people themselves through village unit co-operatives (BUUD/KUD). If the idea of the Bimas stemmed from the Bogor Agricultural College, the conception of the BUUD/KUD came from the University of Gajah Mada, Yogyakarta, by carrying out a pilot project in Yogyakarta in 1971.

The main objective of the BUUD/KUD program is to try to show again that the level of living of rural poor can be increased through co-operative organizations. The failure of co-operative movements in the past in Indonesia does not mean that the principles of co-operatives are not suitable for Indonesia. Rather, failure was caused by mismanagement and other factors which can be corrected through the BUUD program (Hadisapoetro, 1973).

A unit of BUUD is concerned with a group of three to five villages consisting of about 600-1,000 hectares of "sawah", wet rice field, which has already served as the basic unit for the Bimas organization.

It is a multi-purpose co-operative with four main functions, namely, extension, rural credit, fertiliser distribution, and the processing and marketing of rice (BIES, July, 1973, p.5). In the long run, the role of BUUD is not only in the field of rice but also in other fields such as fisheries, animal husbandry, other agricultural products, and handcraft. The activity of the BUUD particularly emphasises economics, so that aims will be concentrated on credit provision and improvements in both production and marketing of village products (Hadisapoetro, 1973; and BIES, March 1975, p.23).

In West Sumatra, the BUUD program was introduced in June 1972 by establishing 5 units of BUUD. In 1973 their number increased to 60 units (UNAND, 1975, p.403; and RERI, 1974, p.2). According to a study conducted by the Regional Economy Research Institute (RERI) of the University of Andalas, 22 of the BUUD have had rice milling units so they have been engaging in rice processing activities. The activities of the BUUD in West Sumatra in 1973 can be seen in Table 3.4.

Table 3.6 shows that 30 per cent of the BUUD/KUD in West Sumatra in 1973 did not have any activity in the four main functions. This may be caused by the fact that the establishment of the BUUD is still directed to reach a population as large as possible. This can be seen in the fact that 60 units of BUUD had been established in one year only. In terms of management quality, the study also found that 43 units or 72 per cent of the BUUD/KUD were under bad management. Only three of them were under good management and the other 14 units were under medium quality management.

In addition, in the long run, the concept of the BUUD was also designed to co-ordinate all development efforts in the unit area.

TABLE 3.4  
THE ACTIVITIES OF BUUD/KUD IN WEST SUMATRA PROVINCE, 1973

| Activity                                 | Number of<br>BUUD/KUD | Percentage<br>of total <sup>b</sup> |
|------------------------------------------|-----------------------|-------------------------------------|
| Extension                                | 31                    | 52                                  |
| Credit                                   | 30                    | 50                                  |
| Fertiliser and pesticide<br>distribution | 29                    | 48                                  |
| Rice processing                          | 22                    | 37                                  |
| Rice marketing                           | 30                    | 50                                  |
| No activity at all <sup>a</sup>          | 20                    | 30                                  |

Source: RERI (1974, pp.7-8).

a. This means no activity in either extension or credit or distribution or processing and marketing.

b. The total number of BUUD in 1973 was 60. The total of the percentage is not 100 per cent because each BUUD does not only have one activity.

### 3.1.2 The Minimum Package Program in Ethiopia

The Minimum Package Program (MPP) was established in 1971 to provide the minimum benefits required by farmers throughout the nation. Like the Bimas program, the MPP uses the demonstrator field extension approach. But in Ethiopia each MPP area is divided into extension areas, each of which has its own marketing centre and a one-hectare trial demonstration plot. The Bimas program does not have a demonstration plot, but all Bimas areas can be seen as demonstration plots. The basic unit of the MPP is the minimum package area, each containing 10,000 farmers and located in close proximity to a 75 km stretch of all-weather road (Tecle, 1974). By mid 1972, about 18 MP areas had been established and until 1979 about 10 new MP areas will be opened each year (IBRD, 1973, p.7). The unit of the Bimas is based on a rice growing area where a unit of Bimas at least consists of 50 hectares of a compact rice growing area and other conditions as mentioned before.

The objective of both the MPP and the Bimas is similar, that is, to increase agricultural productivity, especially in food crops (rice in Bimas; teff, barley, wheat, sorghum, and maize in the MPP).

The MPP provides extension, production credit, co-operative development and feeder roads in the MP areas. Services are organised through specialised credit agencies and the Ministry of Agriculture, with no regional or local government participation (World Bank, 1975, p.41). In contrast to this, regional and local government in Indonesia not only participate in the Bimas program, but also are responsible for the program, including credit repayment.

The development of feeder roads is not included in Bimas. It is carried out by other special programs, that is, the village subsidy program and the Kabupaten program which will be discussed later in other

sections of this chapter. In the MPP there are students living with farmers for a whole growing season so that help is not only given directly to the farmers but also through demonstration plots. In the MPP, credit is given in kind only, particularly in the form of improved seeds, fertiliser and ploughing equipment, while in the Bimas, credit is also given in cash for the cost of living of the farmers.

Like Bimas, the MPP has resulted in increases in both crop yields and the average incomes of the farmers. So far, there is no information about real production under the MPP program. The IBRD (1973) has estimated production with and without improved inputs and the B/C ratio of it. The yields (quintals/ha) of wheat, teff, maize and sorghum without improved inputs are 9, 7, 19 and 12. With improved inputs under the MPP program the yields will be 19.6; 14.8; 36; and 26.8. These figures are estimated by using results of four years of trials under the country-wide FAO fertiliser program, results from the Institute of Agricultural Research, and two years of EPID's (Extension and Project Implementation Department) country-wide tests and demonstrations. The B/C ratio (incremental output value/incremental cash cost of production) of the MPP program on average is 2.4. This calculation is based on the projection of output and cost per hectare of cereal (the above four crops) on four representative farms in the MPP areas. The detailed calculation can be seen in IBRD (1973, pp. 20-22 and Annex 11, Tables 6, 7 and 8). In contrast to the Bimas program, credit repayment in the MPP was, on the whole, satisfactory. This may be because the supply of credit is directly done by the AIDB (Agricultural and Industrial Development Bank). Repayment collecting is also done by the AIDB. In addition, farmers who have good repayment records have opportunities to get more credit in subsequent years.

If the repayment rate in a sub-area falls below 90 per cent, AIDB would consider the suspension of credit facilities. They would take into consideration local crop failure and other relevant factors.

The conclusion that can be drawn from the experience of the two countries in implementing the minimum package strategy is as follows:

- (1) the minimum package program, in which the demonstrator field extension approach is used, was very successful especially in increasing agricultural output;
- (2) the increase in yield as the result of the program does not always increase the income of the farmers depending upon the ratio between the prices of inputs and output;
- (3) the program is constrained by the shortage of trained manpower and financial resources;
- (4) credit repayment rate is determined by the degree of discipline of the credit management;
- (4) the program is only one part of the entire rural development program;
- (5) the program becomes more comprehensive as more development components are added to the minimum package program.

### 3.2 The Comprehensive Strategy

The comprehensive strategy is an approach in rural development where improvements in the level of living of rural people are not only directed through the agricultural sector but also through other sectors.

The comprehensive approach can be either in the form of (1) Nationally Integrated Programs, or (2) Area Development and Settlement Schemes.

The nationally integrated program is a program of integrated rural development which is designed on a national basis. It means the projects of the program are distributed around the nation.

The area development and settlement schemes are the programs of the integrated rural development which are designed on a regional basis. It means that all projects of the program are concentrated on a certain region only and are not distributed throughout the nation. This is because

the best possibility of success lies in intensive effort in limited areas of great potential.

Mostly, programs under the comprehensive strategy are in the form of area development schemes. But some countries have pursued this on a national basis.

### 3.2.1 Nationally integrated programs

The characteristic of these programs are (1) detailed planning of preparation and implementation; (2) phasing of multisectoral components; and (3) extensive adjustments or complete restructuring of related institutions (World Bank, 1975, p.43). Organizationally, these programs also had three characteristics, namely: (1) management has been centralised and technocratic; (2) the organization has been largely independent of local field administration; and (3) there has been a strongly expatriate input in management and often in capital (Chambers, 1974, pp.15-16). We can see later that Chambers' characteristics are even more significant for the area development schemes.

The illustrations of the nationally integrated programs are taken from China which is a communist country, and Taiwan, which is a capitalist country. Both countries have been relatively successful in their rural development by using the comprehensive strategy. Other illustrations are taken from Malaysia and Indonesia where both countries are still at an early stage of nationally integrated rural development.

#### 3.2.1.1 China's rural development

Discussion under this section is mainly based on the books of Dennithorne (1967) and Wheelwright and McFarlane (1971).

Since 1958, rural development in China has been carried out by organising rural people into "communes". The urban people have also been organised into the commune, but the discussion here is concentrated on the rural commune.



The commune is an economic, social, and political unit, collectively owned and run by the people who live there. It organises agricultural and other production, but also caters to the educational, medical, welfare, and cultural needs of its inhabitants (Wheelwright and McFarlane, 1971, p.181).

The commune was established in 1958 by amalgamating all agricultural producer co-operatives and other co-operatives. At that time, almost all the peasants of China had been organised into agricultural producer co-operatives and agriculture was under a collective system (Dennithorne, 1967, p.17).

The historical objective of the commune is the desire to relate town and country, to introduce socialist norms and methods in the country to sketch an agricultural socialism. The aim of the commune system was the intensification of agricultural socialism to increase the marketable agricultural surplus and widen local agricultural and other investment opportunities. The approach that has been used is to bring about a stable pattern of living outside the main cities and to ensure that the people are not driven to the urban areas by need or frustration. For this, new jobs and new work places are created close to where they already live. The Chinese were able to develop communes because of the revolutionary traditions and initiative of the masses, and because the leadership did not have any vested interest in preserving the old norms. Major attention is given to the promotion of the human factor in economic development which is called "moral incentives" through intensive and effective political indoctrination (Wheelwright and McFarlane, 1971).

There is no doubt that Chinese rural development has achieved some success in various aspects of the rural economy and society, but how far the success has gone, is difficult to infer because the Chinese experience is too brief and too poorly documented (Johnston and Kilby,

1975, p.158). Meanwhile, it can be said that qualitatively it has been relatively successful in laying a foundation for self-sustaining rural development insofar as a number of elements for this process has been established.

China has been relatively more successful in rural development than the Soviet Union. This is particularly because the Chinese strategy appears to have been more pragmatic with somewhat less emphasis being placed on central control. In addition, Mao Tse-tung and most of the other leaders have had long and intimate association with the Chinese peasantry.

The pragmatism of the strategy can be seen in the following elements of its rural development model, namely: (1) rural people are introduced into a large scale organization that is the commune in this case; (2) rural development has been seen as a geographical concept and the problems have been tackled in a comprehensive manner so that the commune was a method of not only improving the agricultural sector but also other sectors in rural areas; (3) labour intensive techniques have been used where manpower is relatively more abundant than capital; (4) the agriculturally unemployed have been used on construction works in local areas to avoid urbanisation; (5) the industrial sector has been linked with the agricultural sector in such a way that agriculture supplies raw materials for industry and industry processes agricultural products and supplies agriculture with inputs and implements, and small industry with labour intensive techniques is located in rural areas to absorb the agricultural un- or underemployed; (6) the commune was also a unit of State power to better exploit the productivity of existing manpower and resources; (7) self-reliance, local initiatives, and incentives have been encouraged; (8) market centres for communes have been established;

(9) decentralised planning with ideological unity is a basis for rural development planning; and so forth.

The lesson that can be drawn from the Chinese experience in rural development is that success has been achieved by giving major attention at first to an intensive and effective indoctrination of communist ideology or Mao-ism in order to encourage political stability, while rural development is carried out in a pragmatic manner. This does not mean that the success of rural development is only dependent on a certain ideology. We can see later that whatever the ideology of a nation, success in rural development is possible by using relevant strategies according to prevailing conditions and situations, and potential of the nation.

### 3.2.1.2 Taiwan's rural development

Another country which has been relatively successful in comprehensive rural development is Taiwan. Preparations for comprehensive rural development were carried out at the beginning of this century. By 1905 a complete land survey was carried out and in that year land reform was launched by the Japanese colonial government. Another indigenous institution that was used by the Japanese to promote agricultural development as well as to maintain law and order was the organization of rural people into a system known as "pao-chia".

A "chia" was a group of about 12 households and a group of the "chia" was called a "pao" or village unit. The leaders of these "pao" were responsible for various obligations such as the mobilization of labour for road building and irrigation projects and improving farming methods. In addition, the most fundamental factor for the success of rural modernization in Taiwan was the substantial and effective support that was given to research. A central Agricultural Research Bureau was established in 1903 and agricultural experiment stations were created in

each of the major regions (Johnston and Kilby, 1975, pp.249-250).

Since the communist take-over of mainland China, Taiwan under the leadership of General Chiang Kai-shek has given more attention to rural population by comprehensive development. In 1951, the second land reform was launched in Taiwan by forcing landlords to sell their land to small farmers. Consequently, the distribution of land ownership based on farm size has become a normal distribution. Four-fifths of Taiwanese farms are within one acre of the average size farm and the top one per cent are 11.6 times the mean farm size of three acres or 1.2 hectares (*ibid.*, pp.15-17).

A feature of the Taiwanese experience was the important role played by the Farmers' Associations (FA). The FA was accomplished under the aegis of an autonomous central development agency known as the Joint Commission on Rural Reconstruction (JCRR). The success of this system is characterised by the rapid adoption of new technology by a large number of small farmers. The increase in output mostly comes from improved yields through the use of better inputs and the expansion of physical, economic and social infrastructure (Kulp, 1970, Chapter 6; and World Bank, 1975, p.43). High yields were achieved using human and animal draft power or bullock power. A study showed that the difference in yield between using bullock or tractor is not significant (Johnston and Kilby, 1975).

The comprehensiveness of Taiwanese rural development is characterised by the interaction between the agricultural and the industrial sectors and improvement in health, birth control and education. There are two types of rural industry, namely, industry which produces agricultural implements and industry which processes agricultural products. An outstanding feature of Taiwanese agricultural implements is the degree to which each tool has been designed for its special task in a specific

environment. The processed agricultural products, especially fruits and vegetables, involves labour intensive manufacturing techniques and most of the products are for export (*ibid.*).

As a result of improved health and family planning, the Taiwanese crude death rate has been decreased from 1.83 per cent in 1940 to 0.53 per cent in 1970 and the crude birthrate has decreased from 4.59 per cent in 1950 to 2.56 per cent in 1970 (*ibid.*, p.79).

The lesson that can be drawn from the Taiwan experience is that the strategy aimed at the progressive modernization of the entire agricultural sector ("unimedai"), together with the important interaction between the agricultural sector and the industrial sector, and the improvement of infrastructure, health, family planning and education, shows the significant advantages in achieving both the economic and social goals (*ibid.*, p.151).

During the period 1950-70, agricultural output grew by 5 per cent a year and farm income exceeded \$US300 per capita in 1970 (World Bank, 1975, p.43). The farm household on one hectare has been able to build new solid brick houses, to send children to secondary school, and to buy motorcycles and a variety of electrical appliances (Kulp, 1970, p.121).

### 3.2.1.3 Malaysia's rural development

Great attention had been given to rural development planning by the government of Malaysia shortly after the election of 1959. Tun Abdul Razak was appointed as the Minister of Rural Development as well as Deputy Prime Minister. The first priority was accelerating the construction of infrastructure.

The main obstacles for development were bureaucratic:

- (1) interdepartmental jealousy in the execution of government functions, as well as conflicting departmental policies on the ground;

(2) lack of co-ordination between the departments in what they are trying to do; (3) lack of complete day-to-day co-operation between government officers on the ground mostly due to a lack of understanding; (4) every department thinking their function is the most important; (5) lack of proper planning in the departments aimed to fit into a master plan for the whole country; (6) lack of a master plan at all levels for the purpose of achieving the maximum development of the country; and (7) lack of sufficient directive control at the top to ensure that the machinery of the government at all levels functions as an efficient machine of national and rural development (Rozhan, in Kulp, 1970, p.132).

Tun Abdul Razak aimed to fight these obstacles with a minimum of staff and cadre and a maximum of required planning techniques. For this, what is called the "Redbook" was issued. The Redbook contained guidelines for planning Malaysian rural development programs. Rural Development Committees were established in each level of the government from Federal level to rural level. At a district level, the District Rural Development Committee is a team to which is committed the task of improving the conditions of the rural people in the district.

There are two main aspects of rural development in Malaysia, namely: (1) the improvement of existing villages; and (2) the opening up of new areas of land with new villages.

The basic physical essentials of rural development which need careful planning, as set out in the Redbook are: roads and bridges; land development; water supplies; processing and marketing facilities for rural produce; rural industries; schools, health centres, and playing fields; irrigation for paddy areas; and electricity and telecommunications, where possible. There may be other essentials. Different districts have

different needs; these should be included in the district plan.

It is evident from the elements of rural development planning that rural development in Malaysia has been planned comprehensively.

Rural development planning procedure in Malaysia in the Redbook system is a two-way traffic planning where proposals come from rural people through the local village committee. Requests which are not practicable are rejected and village applicants are informed with regret.

The evaluation of the proposals is made by the District Planning Committee, while considerations and decisions are made by the State Planning Committee.

The Redbook planning system not only contains a standardised planning procedure, but also provides a standardised reporting system of the implementation of the planning. Both systems have made rural development planning in Malaysia more effective and efficient. In addition, the planning system has co-ordinated the departmental agencies in a good manner. At district, state, and national levels, and later at village levels, operations rooms were established. The operations room is very useful in giving a clear picture of the rural development process at each level of government.

It is not intended to discuss in this study the numerous specific programs and projects such as resettlement under FLDA<sup>1</sup> (Federal Land Development Authority) schemes, irrigation schemes, Farmer Association programs,<sup>2</sup> and so forth. What we want to show here is that rural development planning in Malaysia has been carried out on a two-way traffic basis

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<sup>1</sup> The FLDA program can be seen, among others, in the dissertations of Lim Sou Ching (1972), and Emrich (1973).

<sup>2</sup> A detailed study of the Malaysian Farmer Association can be seen in the thesis of Wahid (1975).

where the proposals come from the bottom, while consideration and decisions stem from the top. In addition, it has originated rural development techniques that have attracted attention around the developing countries, especially the Redbook which contains details of the planning system, reporting system, and operations rooms.

Malaysia has done an exceptional job of laying foundations for comprehensive rural development with its dramatically efficient physical infrastructure program (Kulp, 1970, p.188). Malaysian leaders realised that modernization and increased productivity required a change in values and attitudes, as well as change in the level of public investment, as shown in the Redbook planning system (Ness, 1967, p.228).

#### 3.2.1.4 Indonesia's rural development

An integrated rural development program in Indonesia was initiated in 1956 by establishing a special authority which was called PMD (Pembangunan Masyarakat Desa, or Rural Community Development). But because of political instability and other factors, the program was not successful (Hanafiah, 1972).

In 1969, when the political situation was relatively stable and when the government, under the leadership of General Suharto, started the realization of the First Five Year Development Plan (Repelita I), a new strategy for rural development was decided on by the Government. The strategy included the following concepts: (1) the formulation of a rural development plan must be based on the results of a detailed study of the rural situation so that the plan will be technically practicable, economically responsible, and politically acceptable; (2) rural development must be based on a comprehensive, integrated, selective and growth possibility approach; (3) the evaluation of a rural development project must be done by using quantitative, descriptive, and qualitative analysis, and definitive mathematical calculation (MDN, 1969, pp.67-74).



In 1971-72, as the realization of the new strategy occurred, the Directorate-General of PMD completed some phases of rural investigation. There were three targets in the rural investigation, namely: (1) to measure rural potential for development activities; (2) to investigate rural typology; and (3) to collect data for rural development plan formulation. The investigation also included the study of real per capita income of rural community, manpower resources and the rural development process, evaluation of Rp 10,000 government subsidy to each village, identification of variables relating to functional relationship between village administration and institutions in rural areas, and the case study of the pattern of rural systems (*ibid.*)

The investigation of rural potential had been done in all villages. It included 55,970 villages and finished in 1973. The study of village typology had been carried out in 100 Kecamatan (sub-districts) as samples through all provinces which consist of 1890 villages. The survey of real per capita income of villages had been done in 7 provinces by taking 15 villages as samples and will be extended to other provinces. The study of manpower resources and the rural development process had been carried out in Yogyakarta and Central Java provinces and will be extended to other provinces. The evaluation of the Rp 100,000 central government subsidy to each village had been carried out in Central Java and Yogyakarta provinces. The study of variables identification which have functional relationship with village administration and institutions had been done in the provinces of East Java, Bali, and North Sumarta (*ibid.*).

Based on the results of the study of rural types, there are nine basic types of rural areas in Indonesia as can be seen in Table 3.5.

TABLE 3.5  
NUMBER OF VILLAGES IN TERMS OF BASIC RURAL TYPES

| Natural<br>potential<br>Population<br>density | 1    | 2      | 3    | Total |
|-----------------------------------------------|------|--------|------|-------|
|                                               | Low  | Medium | High |       |
|                                               | (%)  | (%)    | (%)  |       |
| 200/Km <sup>2</sup> = H                       | 3.9  | 13.5   | 12.8 | 30.2  |
| 200-300/Km <sup>2</sup> = B                   | 2.6  | 3.9    | 4.5  | 11.0  |
| 300/Km <sup>2</sup> = K                       | 14.1 | 18.5   | 26.2 | 58.8  |
| TOTAL                                         | 20.6 | 35.9   | 43.5 | 100.0 |

Source: PMD (1973, Table 1).

If a distance of a village to a capital or a province or a district or a sub-district is added, the basic types of village will be 36 types (see Table 3.6).

Table 3.5 shows that the majority of the villages (58.8%) have high population density but their natural potentials are also good enough (35.9% medium and 43.5% high). The natural potential is determined by using land productivity, climate and land form conditions

Table 3.6 shows that there are only 13.45 per cent of the total villages still in the condition of isolation. But it does not mean that most of the villages in Indonesia are in good condition. The economic and social-cultural condition of the Indonesian villages can be seen in Table 3.7.

Table 3.7 shows that the majority of the Indonesian villages are in bad condition where village infrastructure is mostly minimal and as a result, village output is low. The low output is also partly caused by subsistence tradition, minimal education, and simple village institutions.

TABLE 3.6  
NUMBER OF VILLAGES IN TERMS OF 36 BASIC RURAL TYPES

| Potential \ Orbit | I<br>(%) | II<br>(\$) | III<br>(%) | IV<br>(%) | Total  |
|-------------------|----------|------------|------------|-----------|--------|
| H <sub>1</sub>    | 1.92     | 0.64       | 0.64       | 0.64      | 3.84   |
| H <sub>2</sub>    | 1.28     | 1.92       | 5.13       | 5.13      | 13.46  |
| H <sub>3</sub>    | 4.49     | 3.20       | 1.26       | 3.84      | 12.81  |
| B <sub>1</sub>    | 0.00     | 0.64       | 1.92       | 0.00      | 2.56   |
| B <sub>2</sub>    | 0.64     | 2.56       | 0.64       | 0.00      | 3.84   |
| B <sub>3</sub>    | 0.00     | 1.92       | 1.92       | 0.64      | 4.48   |
| K <sub>1</sub>    | 2.56     | 7.68       | 3.20       | 0.64      | 14.08  |
| K <sub>2</sub>    | 0.64     | 10.26      | 6.40       | 1.28      | 18.58  |
| K <sub>3</sub>    | 9.71     | 12.80      | 2.56       | 1.28      | 26.35  |
| Total             | 21.24    | 41.62      | 23.69      | 13.45     | 100.00 |

Source: PMD (1973, Table 3).

I = in the orbit of a province capital or a city, a town, a main harbour, an interinsular harbour, and an industrial centre.

II = in the orbit of a district capital or a transportation terminal, a light industrial centre, etc.

III = in the orbit of a sub-district capital or a small town, an inter sub-regional transportation terminal, etc.

IV = an isolated village and far from I, II and III.

TABLE 3.7

NUMBER OF VILLAGES IN TERMS OF ECONOMIC AND SOCIAL-CULTURAL CONDITIONS

| E C O N O M Y      |                                  |                          | S O C I A L   A N D   C U L T U R E |                  |                                |                                     |
|--------------------|----------------------------------|--------------------------|-------------------------------------|------------------|--------------------------------|-------------------------------------|
| Livelihoods<br>(%) | Village<br>infrastructure<br>(%) | Village<br>output<br>(%) | Tradition<br>(%)                    | Education<br>(%) | Village<br>institutions<br>(%) | Self help and<br>mutual help<br>(%) |
| Primary            | Minus<br>(poor)                  | Low                      | Subsistence                         | Minus<br>(poor)  | Simple                         | Latent                              |
| 93.6               | 65.37                            | 62.18                    | 51.3                                | 71.8             | 10.9                           | 5.13                                |
| Secondary          | Average                          | Medium                   | Transition                          | Average          | Expand                         | Transition                          |
| 2.56               | 30.13                            | 17.3                     | 41.7                                | 21.8             | 67.3                           | 30.77                               |
| Tertiary           | Sufficient                       | High                     | Modern                              | High             | Sufficient                     | Modern                              |
| 3.84               | 4.5                              | 20.52                    | 7.0                                 | 6.4              | 21.8                           | 64.10                               |

Source: PMD (1973, p.13).

The study of real income per capita of the villages resulted in the conclusion that there is a relationship between the location of a village and its real income per capita. If the location of a village is much closer to a province capital, the real income per capita of the village will be much higher and vice versa.

Based on these study results, detailed planning of rural development can be made after analysing the study results. The data which were collected by those studies were relatively comprehensive where the data consisted of various aspects of rural life. The "livelihoods" data not only consisted of agriculture, but also covered handicrafts, rural industry and services. Data on village infrastructure not only included physical infrastructure, but also social and economic infrastructure. The conditions and situation of tradition, health, education, institutions and organizations in the rural areas were also included.

The new rural development strategy does not mean that rural development activities should be delayed until the rural development plan has been based on the detailed study of results of rural conditions and situations. While comprehensive and integrated rural development planning is under preparation, rural development activities are carried out by various government departments such as the Bimas program discussed in subsection 3.1.1 and other programs and projects which will be discussed later in various sections of this chapter.

So far, rural development activities in Indonesia have been relatively comprehensive, but have not yet been integrated. It means that rural development activities in Indonesia have covered not only the agricultural sector but also other sectors such as rural industry, education, health, and so forth. But these activities, mostly, have not been linked in an integrated manner. This is because integrated rural development planning needs time to be applied. It needs various

preparations to make it effective and efficient which can be seen later in Chapter Five.

### 3.2.2 Area development schemes

The regional rural development scheme is also an integrated rural development strategy. The projects of this strategy are only designed on a regional basis. This means that all projects of the scheme are concentrated on a certain region only, not distributed throughout the country.

The reasons for emphasising rural development projects on a certain region only, basically stem from the often complex nature of the rural areas; and the complexity calls for specific programs prepared and tailored to local conditions. Technical considerations also tend to favour placing development schemes in the framework of a certain region (World Bank, 1975, p.44). In addition, according to Cohen (1974), this strategy is attractive because it was obvious that the best possibilities of success lay in intensive efforts in limited areas of great potential.

This strategy is also called "An Integrated Package Program" (Cohen, 1974), "Area Development Schemes" (World Bank, 1975, p.44), and "Regional Rural Development Program" (Lele, 1974, p.10).

The particular advantage of this strategy is the opportunity to focus directly on needs of the rural poor through diversified crop and integrated farming systems. These projects can then be linked with training and social services, and with rural works programs. This strategy's regional rural development programs can encompass a great variety of objectives, organizational forms and possible responses (World Bank, 1975, pp.44-45).

The illustration of this strategy in operation can be drawn from the experience of Comilla projects in Bangladesh, and the Chilalo Agricultural Unit (CADU) project in Ethiopia.

### 3.2.2.1 Comilla projects in Bangladesh

Comilla projects in Bangladesh which consist of the series of pilot schemes designed by the Bangladesh Academy of Rural Development (BARD)<sup>3</sup> during the period 1958-1971, demonstrated a potential for substantially raising the income of small farmers in a limited but fairly large area within ten years (World Bank, 1975, p.45). The success of the Comilla projects has also been recognised by Raper (1970), Kulp (1970), Choldin (1972), Cohen (1974), Myers (1974), and the World Bank (1975).

The Comilla project is one of the most successful and influential rural development programs used in developing countries (Cohen, 1974). It has long been regarded as an outstanding, imaginative rural development program (Myers, 1974). The Comilla projects have been successful, they have produced changes in the agricultural technology of the area, in the political organization of villages, in the rural communications systems, in local level public administration, in farmers' attitudes, and in other social and economic aspects of the rural scene (Choldin, 1974).

Success has been reached after passing through three phases of rural development activities since 1960, i.e., rural works, program building, and intensive thana<sup>4</sup> development (Kulp, 1970, p.149).

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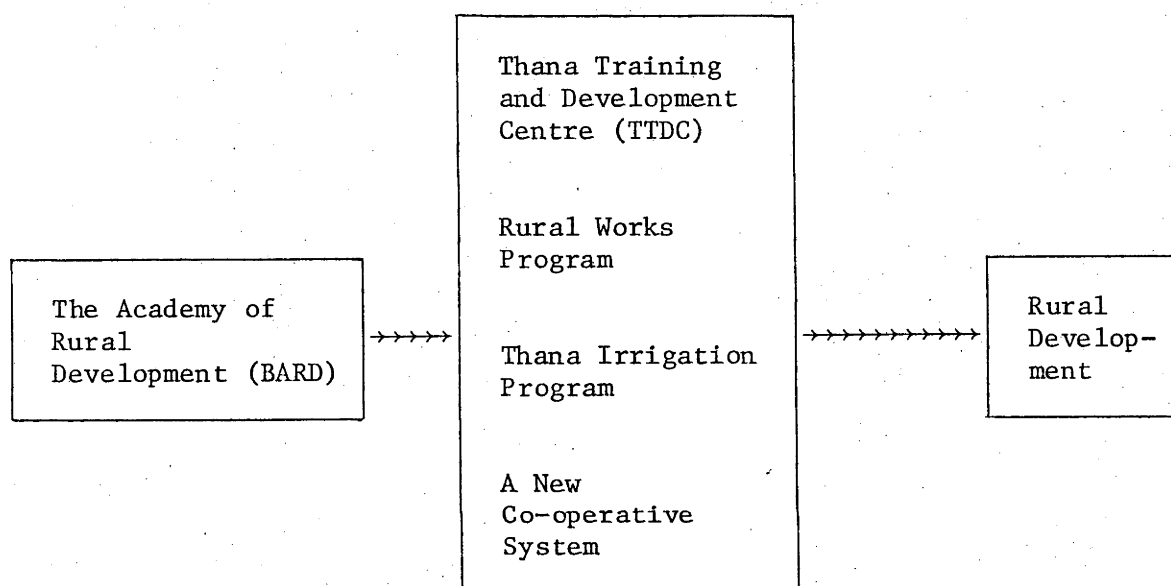
<sup>3</sup> Formerly it was called Pakistan Academy for Rural Development. Comilla is the town of Comilla district in Bangladesh where the Academy is located.

<sup>4</sup> Thana is a unit of police administration in Bangladesh, and roughly comparable to a county in the United States. It is a small unit of civil administration. Most government departments have representatives at this level.

Based on Akhtar Hameed Khan's article, "Tour of Twenty Thanas", in 1971 (see Bose, 1974), the strategy of the Comilla projects can be illustrated as in Figure 3.2:

FIGURE 3.2

THE STRATEGY OF RURAL DEVELOPMENT IN COMILLA  
PROJECTS IN BANGLADESH



The story of the Comilla projects began when in 1955 the First Five Year Plan of Pakistan formulated that two academies for rural development would be established, i.e., the Comilla Academy in East Pakistan (now Bangladesh) and the Peshawar Academy in West Pakistan. The academies were designed to radically improve the quality of training and administration of Village Agricultural and Industrial Development (VAID) and in the supporting nation building and administrative departments (Raper, 1970, p.318).



The Comilla academy or BARD in the beginning only trained government agencies and initiated research activities. The research activities are the essential elements in the Academy programs. The research program started with elementary surveys to study village organization and the attitudes, practices, and resources of villagers as they related to economic and other development programs (see Raper, 1970, Chapter 8, pp.210-228).

After the Academy was four years old, the strategy of rural development was improved as shown in Figure 3.2. In this improved strategy, institutional building and rural development activities were concentrated on the area of about 107 square miles of Comilla Kotwali Thana as a laboratory area. The activities were done without any radical change in the structure of government authority or land tenure in rural areas. It was based on four component programs, namely:

- (1) the concept of Thana Training and Development Centre (TTDC);
- (2) rural works program; (3) the Thana Irrigation Program; and
- (4) a new co-operative system (see Raper, 1970, p.14; and Bose, 1974).

The Academy made the assumption that progress in rural modernization would depend initially on the willingness of villagers to try something new. In the first stage it requires faith and trust in their own local leaders and in the Academy staff. At later stages knowledge and experience could take the place of faith. The attitudes and priorities of the village leaders were the first concern of the development strategists (Raper, 1970, pp.14-15).

The TTDC, based on the above assumption, not only trained government agencies but also the villagers. In order to reach large numbers of villagers quickly and economically, each village selected an "organiser" or intermediary between the village group and the Academy. The organisers came to the Academy for training every week and the

results of the training were communicated to the villagers in their weekly meetings. In addition "model farmers" were also elected for training by the primary co-operative association in a village.

The concept of the TTDC was also designed to co-ordinate development efforts in the laboratory area. It emphasised the need for co-ordination between the various central government agencies and the institutions and leaders of local government, and the Academy staff. This was the first time that all who were concerned with rural development in the laboratory area were brought together in one location, on the campus of the Academy (Bose, 1974).

Besides training activities, the TTDC was also involved in research and expansion activities. In extension activities a mixture of extension methods was used, with emphasis being on practical activities on a group basis, and the adoption of so-called Western methods. "Western" methods include such activities as field demonstrations, talks, and use of pamphlet materials. Other new methods in the extension programs involved the use of an organiser in the co-operatives and in the family planning program, and the use of a model farmer as the agricultural extension agent in the village after receiving training in the Academy (Raper, 1970, pp.41-42).

The rural works program is a program in developing physical infrastructure such as roads, drainage channels, embankments, and it provides some employment for the landless during the idle months in dry seasons. This program was carried out in the first phase of the Comilla projects (Kulp, 1970, p.149). The program is mostly supported by non-local finance. Under this program, over 4.6 million acres of farmland was served by canal excavation, an impressive record of road building and repair was achieved, and the construction of flood embankments was carried out (Bose, 1974; and World Bank, 1975, p.46).

The rural irrigation program was intended for the development of small scale irrigation facilities for the dry season by central government agencies. It also aimed to organise farmers in irrigation groups. Under this program, by 1972-73, 32,900 low lift pumps and tubewells had been set up to irrigate an estimated 1.3 million acres of farmland (Bose, 1974; and World Bank, 1975, p.46).

A new co-operative system was launched to organise small and medium farmers within the existing agrarian structure. The co-operative system is a comprehensive structure as shown in Figure 3.3.

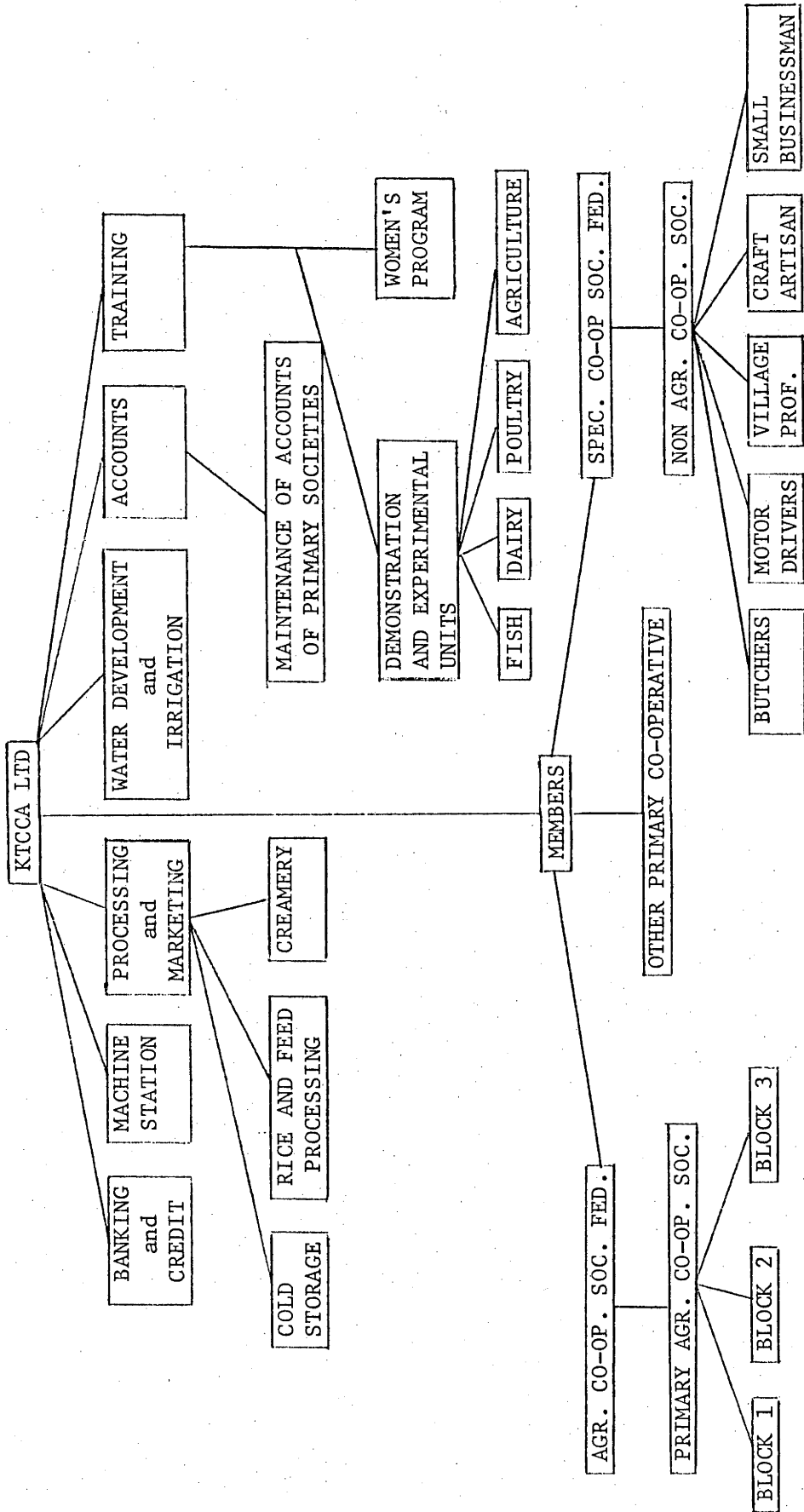
From Figure 3.3 we see that the co-operative system is multipurpose and comprehensive, particularly at the central level.

The main objective of the co-operative system is to safeguard the small and medium farmers from large farmers and moneylenders, to enable them to adopt the new agricultural technology. The basis of the co-operative movement is the village or primary co-operative associations which are federated on the thana level into KTCCA. The primary co-operative societies, besides electing a managing committee of six to twelve members also elect representatives to the KTCCA. In addition, they organise farmers in providing training and extension education, mobilise members saving through thrift deposits and share capital, channel credit under the supervision of the KTCCA to individual members, and arrange the distribution of supplies and services to members. In the initial period, in order to enable farmers to adopt the new technology, the program was subsidised heavily (Bose, 1974).

As shown in Figure 3.3, the KTCCA provides not only supervised credit but also extension support and processing and marketing. According to Kulp (1970, p.154), discipline in the co-operative societies is high.

FIGURE 3.3

STRUCTURAL AND FUNCTIONAL DIMENSIONS OF THE COMILLA CO-OPERATIVE SYSTEM



Source: Raper (1970, p.64).

A member can only be given credit by the co-operative if he always attends fortnightly meetings and saves regularly. The savings receive interest, and a farmer can borrow ten times the amount he has saved in the co-operative.

The Central Co-operative borrows from either the agricultural bank or from government sources, while the village society borrows from the association and the individual from the society. Requests for loans are based on production plans.

Although the Comilla projects are comprehensive and multi-purpose, health and sanitation programs have only occupied a very minor part. This is because they are very expensive and would take a very great portion of the projects' sources (Choldin, 1972).

The period of Pakistan Army occupation, and the ensuing civil war (March to December 1971), did not destroy the co-operative system in Comilla but imposed a period of inactivity, reducing rural co-operative activities to a subsistence minimum (Myers, 1974).

After liberation (since December 1971), the Academy lost the first Director of the Academy, Akhter Hameed Khan, a West Pakistani. He was one of the important factors in the success of the projects. Myers sees him as a person who had dominated the evolution of the whole program of the Comilla projects. Choldin stressed that there is no denying that Akhtar Hameed Khan was the centrally important figure within the Comilla projects.

The Academy had been thrust to the fore as the most important training institute for a national rural development program. The Bangladesh Government proposed to expand the Comilla system throughout Bangladesh (*ibid.*).

In terms of planning system, Kulp (1970, p.195) regarded the Comilla projects as having the highest ranking among Taiwan, Malaysia, Senegal and Bangladesh. Or in other words, some success that had been reached was partly caused by the good planning system.

The planning system of the Comilla projects was based on a situation in which: (1) objectives were stated concretely; (2) planning documents were compact; (3) the documentation identified the main issues; (4) there was broad participation; (5) there was easy evaluation; (6) input-output functional relationships were defined; (7) the system was complete; (8) plans were easily revisable; (9) progress was easily reportable; (10) the system was teachable; and (11) the system was enforceable (*ibid.*).

From 1955 to 1968, the grand total cost of the Comilla projects was about \$US4.3 million which consisted of \$US2.4 million from the Pakistan government and the rest (\$1.9 million) from the Ford Foundation (Raper, 1970, p.317). The projects consisted of agricultural and non-agricultural sectors, including family planning, rural education, rural electrification, communication and others which have been mentioned earlier.

According to Bose (1974):

. . . observers have argued that . . . the Comilla co-operative experiment has been fairly successful not only in the adoption but also in the equitable distribution of the benefits of the new agricultural technology, and that the spread of the Comilla-like diffusion programs can be expected to yield similar results in other parts of Bangladesh.

But Bose contended that the Comilla experience does not lend support to such optimism. His reasons are: (1) the limited success in technology diffusion have been achieved at a high cost; (2) since small farmers are under-represented in the Comilla co-operatives, the benefits will largely accrue to the relatively better-off farmers and not so much to the

poorest segment of the rural population; (3) the Comilla co-operatives are still heavily dependent on subsidy and outside assistance; (4) the skills, dedication and charisma of some of the leading organisers can neither be obtained free nor duplicated in other areas.

### 3.2.2.2 The Chilalo Agricultural Development Unit

In Ethiopia, a regional rural development program has been located in Chilalo Awraja or Arussi province, and in Walamo Awraja of Sidamo province. The projects are called CADU (Chilalo Agricultural Development Unit) and WADU (Wolamo Agricultural Development Unit). CADU was established in 1967 and WADU in 1970 (Tecle, 1974).

The establishment of those programs is a result of the realization of the Ethiopian government commitment to stimulate the process of rural change (Cohen, 1974).

According to Cohen (1974) and Lele (1974, p.119), Comilla project in Bangladesh was most influential on the CADU program design. The official basis for the choice of Chilalo Awraja was as follows:

(1) the existence of natural conditions suitable for intensive farming; (2) the availability of transport and marketing facilities; (3) the relatively favourable land tenure condition; (4) the desire for progress of the area inhabitants; and (5) the existence of a possibility to expand the experience gained into a larger area of Arussiland province.

The problem faced by Comilla in Bangladesh and Chilalo were credit, marketing, improving production, infrastructure development, co-operatives, local government improvement, local participation, training research, and long range vision. But there were certain factors present in Comilla but not in Chilalo, namely: a positive orientation towards the imperative of change by the national government; a fully co-operative set

of local government organizations; and most important, an absence of landlords (Cohen, 1974). The absence of these factors in Chilalo was to create extremely difficult roadblocks to the successful implementation of project designs and the achievement of project goals.

The goals of the CADU are: (1) to achieve economic and social development through the project area; (2) to enhance local participation in development; (3) to improve employment opportunities; (4) to ensure that attention is given to low income farmers; (5) to stress research, training and transferability; and (6) to launch agricultural development in an integrated manner in Ethiopia (see Cohen, 1974; and Tecle, 1974).

The CADU project, financed by Swedish International Development Agency (SIDA) in 1967, covers 400,000 people. The total cost of the CADU project between 1967 and 1975 is estimated at \$17.7 million (Lele, 1974, p.11).

If in the Comilla projects in Bangladesh, the activity of the program was started by the establishment of BARD in 1958, in the CADU project the activity was started by establishing trading centres in 1967 and 1968 (Cohen, 1974).

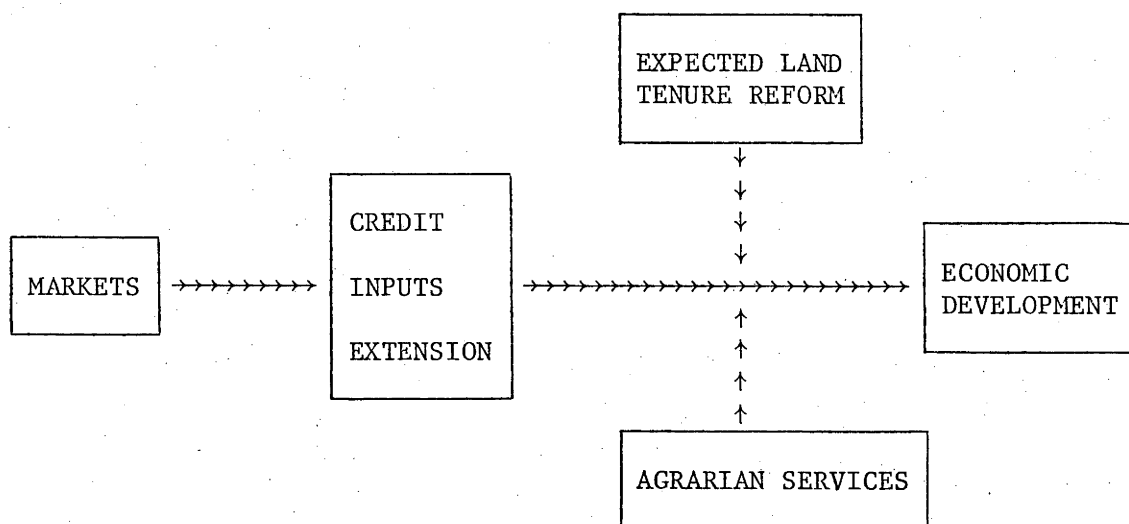
The strategy of the CADU project in economic development can be shown by Figure 3.4.

From Figure 3.4, we see that the first step of the CADU project implementation was the establishment of improved marketing facilities. This means that in the first stage of project implementation concentration was on bringing farmers into the market economy. This is because prior to that time, the marketing of farm produce had been controlled by petty traders, marketing middlemen, and grain merchants who bought at poor prices and under-weighting conditions that ran a cheating factor as much as 15 per cent against the seller (Cohen, 1974).



FIGURE 3.4

BASIC ECONOMIC DEVELOPMENTAL STRATEGY IN  
THE CADU PROJECT, ETHIOPIA



Source: Cohen (1974, Figure 2).

The second was to increase yield and total output through extension, the use of new inputs, and giving supervised credit. By adding credit to agrarian services, it was expected that economic development of the project area would be attained.

In Figure 3.4, land tenure reform is only expected. This is because at the beginning of the project land reform would not be immediately forthcoming. It is difficult to implement land reform for a country as backward and burdened with vested interest in the land as Ethiopia, but land reform is fundamental for any integrated rural development program in Ethiopia with its feudal tenure system (*ibid.*).

The CADU program also carries out substantial staff training, as well as developing agricultural technology, marketing co-operatives, feeder roads, and an improved water supply (Lele, 1974, p.11). In 1972-73, CADU's extension workers reached about 15,000 farmers of barley, wheat, and dairy farmers; and at least 34,000 farmers are expected to be reached in 1975-76. From 1966 to 1971, the area under intensification of wheat production expanded from 23,000 to 51,000 hectares and the yield of the wheat increased from 10 quintals to 21 quintals per hectare. These results were caused by improved marketing, credit, the use of improved seeds and fertiliser. The real income of farmers participating in the program has risen by 50 per cent per year. Research efforts have resulted in the development of high yielding wheat and other seed varieties, labour intensive implements, and high milking cross-bred cattle (Tecle, 1974).

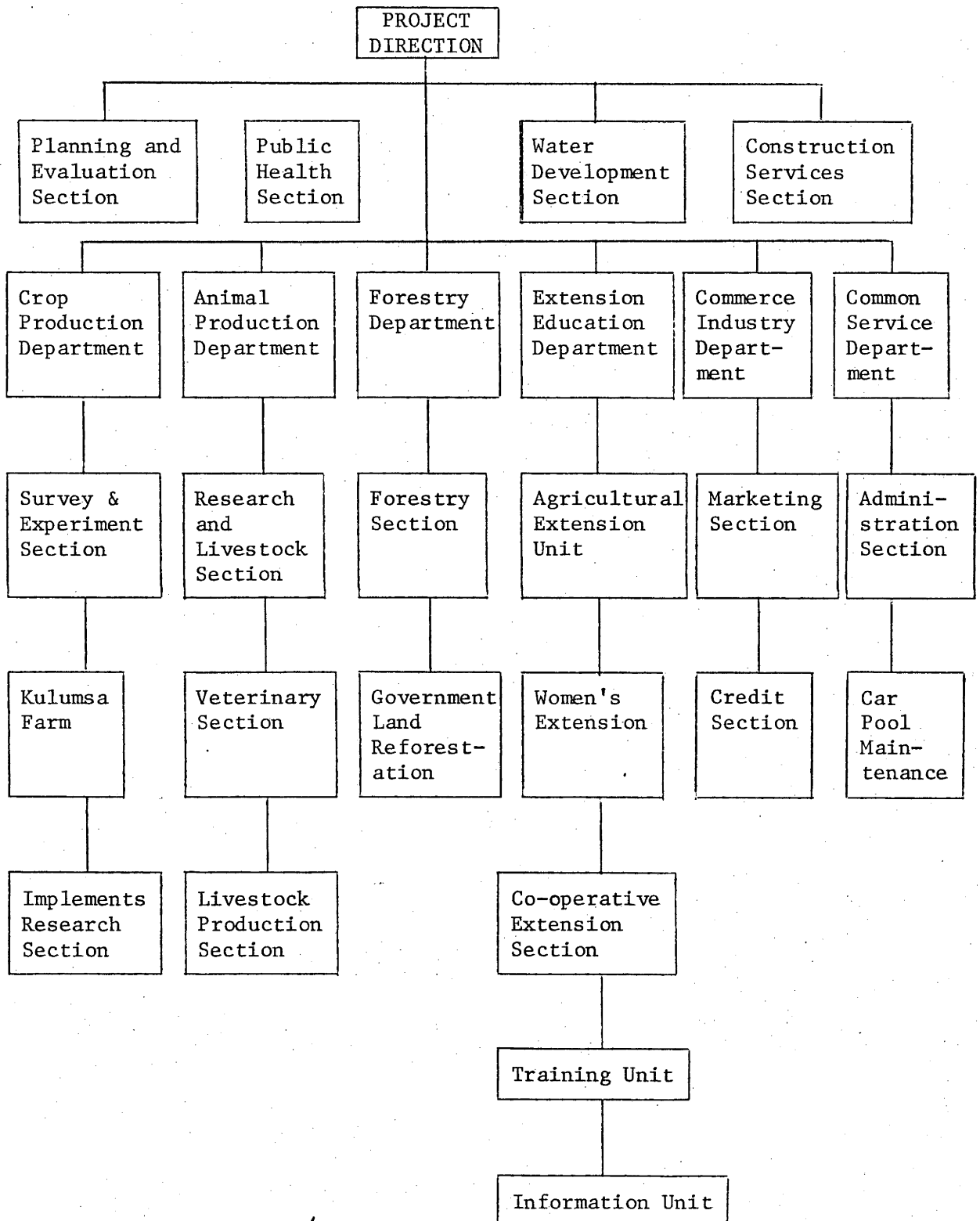
The organization of the CADU project in managing the integrated rural development program in the project area is shown in Figure 3.5.

From Figure 3.5 we see that the activity of the CADU projects is multi-purpose and comprehensive. It means that despite the name of the project, "Chilalo Agricultural Development Unit", its activity is not only concerned with agricultural activities, but also concerned with other activities such as public health, water development, construction, commerce/industry, and common services.

The planning and evaluation section is charged with maintaining a continual evaluation of the entire organization, ensuring the efficiency of its various units, and developing the methodology of development which this planning and evaluation feedback process should produce. The Commerce and Industry Department is concerned with the establishment of economic incentives by ensuring marketing outlets and fair prices.

FIGURE 3.5

ORGANIZATION CHART OF THE CHILALO AGRICULTURAL  
DEVELOPMENT UNIT, 1971



Source: Cohen (1974, Figure 1).

The water development section seeks to organise self-help schemes for building water supply systems and to create water supply facilities in accordance with a master plan (see Cohen, 1974).

The Extension and Education Department has three units and one section, i.e., the section of co-operative extension and the units of agricultural extension, women's extension, training and information. The co-operative extension unit is a basis for the establishment of co-operative societies which will be involved in the marketing of produce and the procurement of supplies and credit. The Training Unit takes as its major tasks the selection of groups to be given special training in various dimensions, including training of the CADU staff and staff from other projects. The information unit is designed to increase knowledge of development, to create special campaigns to promote various project activities, to disseminate project goals, to promote self-help schemes, and to promote adult literacy (Cohen, 1974).

Figure 3.5 shows that the responsibility for different projects is transferred to various departments and sections. Control of the project activities at the institutional level is under an executive director. He is responsible for the overall operation of the project. He and assistant executive directors are appointed by the Ministry of Agriculture in consultation with SIDA. The executive director may seek assistance outside Ethiopia on planning and evaluation of some project activities. The initial project director was a Swedish development expert. After the end of the first contract agreement, he was replaced by an Ethiopian (*ibid.*).

Despite the CADU being strongly influenced by the Comilla projects, there is still an important difference between the two. According to Akhter Hameed Khan (in Lele, 1974, p.119), the CADU was implemented

through a parallel administrative structure where responsibility for all the major development activities was not in the local administration. In contrast to this, in the Comilla, only local governmental institutions were responsible for implementing the project activities.

Looking at the overall results of the CADU, Cohen (1974) concluded that:

. . . change has come to Chilalo through the efforts of the project but not necessarily along lines envisioned by the project design. Unfortunately, the constraints of feudalism, an uncommitted national centre, lack of mutuality of interest between donor and donee governments, and a land tenure system which concentrates the principal source of agrarian wealth in the hands of provincial elite have limited the change so that growth in yields, infrastructure and rural amenities have principally benefited the large farmers and merchants, tradesmen, and other provincial elites of the town. Not that there has been no benefit to small-scale landowners and tenants . . . but the total amount of change has tended to profit primarily provincial elites.

### 3.3 Sector and Special Programs

Sectoral programs include all programs of specialised departments of a government which are not comprehensive or integrated programs. Programs for rural public works, education and training, health facilities, agricultural extension, adult literacy, family planning, home economics and nutrition, rural credit, forestry, village electrification, water supplies, promotion of rural industry, and provision of feeder roads, are examples of sectoral programs.

Special programs are concerned with all rural development programs which are not included in either comprehensive or sectoral programs. That is, they may be sub-sectoral by being crop specific or designed to overcome specific problems, for example, rural unemployment, village and Kabupaten programs in Indonesia, and Smallholder Tea Development Programs in Kenya are examples of special programs.

The sector and special programs are also called Functional and Sub-sectoral Programs (see, in detail, Lele, 1974, pp.14-16). The functional programs attempted to remove a single constraint that is considered to be critical for the success of rural development activities. In this case, investment may be directed to only the development of a national network of adaptive agricultural research, or training extension services, or the construction of feeder roads, or the provision of agricultural credit, or improving the agricultural marketing network. Functional programs are appealing because of their relatively clear and limited objectives. Specific sub-sector programs may be developed by providing a number of services related to their development such as the Kenya Livestock Development Project, Industrial Development Centre in Nigeria, and so on (*ibid.*).

The most important feature of sectoral and special programs is that they generally do not, by themselves, constitute a basis for self-sustaining increases in productivity and income. More correctly, they are complementary to or components of programs with this objective (World Bank, 1975, p.50).

Typically, specialised trained staff who work within independent departments are responsible for the sectoral programs. These programs are either national in scope or they include a widespread area. They also absorb a high proportion of state development budgets of developing countries which usually refers to Public Works Department projects (Chambers, 1974, p.17).

Opposed to comprehensive programs, there are three criticisms of sectoral programs, namely: (1) a failure to spend effectively the development funds voted for them; (2) the field staff of sectoral programs, particularly at the bottom of the hierarchy, are idle, incompetent and ineffective; and (3) that sectoral programs are often

unco-ordinated, resulting in duplication, gaps, poor timing of inputs which should be phased and complementary, and confusion for the people (*ibid.*, pp.17-18).

Nevertheless, in one sense, sectoral programs are somewhat easier to implement than integrated programs, since they involve only the development of a single major institutional structure. They also may be effective in stimulating other programs. For example, demand for fertiliser may be stimulated by profitable technologies and production for market may be promoted by feeder roads (Lele, 1974, p.14).

### 3.3.1 Sectoral programs illustrations

Two brief illustrations of sectoral programs will be taken from West Sumatra. These are the Agricultural Extension Centre (AEC) program, and the Community Health Centre (CHC) program.

The AEC program is under the Ministry of Agriculture. It has been initiated under Repelita I. The main objective is to co-ordinate all extension activities in the agricultural sector, including fisheries, animal husbandry, and forestry. Formerly, each of them was independent in implementing their routine activities in the field of extension. Under this program, all extension workers under the Ministry of Agriculture are co-ordinated through the AEC.

A unit area of the ABC is not based on the area of government administration, but on agricultural activities areas. Based on this determination, the province of West Sumatra needs 42 units of the AEC. However, by the end of the Repelita I (1974-75) the number of AEC in the province was only nine units. The results of this program, so far, have not been evaluated.

The CHC program is under the Ministry of Health and was also started under the Repelita I. Each unit of the Public Health Centre (PHC) supplies services in the field of curative, preventive, and environmental

sanitation. Formerly curative efforts were carried out by clinics and hospitals, and preventive efforts by the Centres for Mother and Child Welfare (BKIA). Environmental sanitation was looked after by Public Health Service staff in districts and sub-districts.

There are three kinds of PHC, namely: (1) Promoting Public Health Centres (PPHC); (2) Sub-district Public Health Centres (SPHC); and (3) Village Public Health Centres (VPHC).

In the PPHC there will be a doctor, a public health nurse, several midwives and nurses, an environmental health official and some assistants. In the SPHC, the personnel will include a public health nurse as chief, one or two midwives, and a nurse with several assistants. In the VPHC, the health supervisors and one or two assistants will be available.

At the beginning of Pelita I, in 1969, the number of public health centres in West Sumatra was only 17 units. At the end of Pelita I, in 1974, the number had risen to 40 units. Most of them were SPHC. Among them there were only 6 units which were allocated to cities or towns. The other 34 units were located in rural areas (UNAND, 1975, p.315). I am not aware of any evaluation of this scheme.

### 3.3.2 Special programs illustrations

Special programs of rural development are again best examined with illustrations of specific cases. Among the many possible alternative cases, discussion is concentrated on the Indonesian experience and international programs particularly relevant to West Sumatra. Thus, in the case of the production of smallholder export crops, a contrast will be drawn between the special program of the Indonesian government for the production of smallholder rubber through the use of the Project Management Unit (PMU), and the Kenya Tea Development Authority (KTDA).



The PMU program which was planned for Repelita II (1974-75 to 1978-79) was directed for smallholder commercial crops. But in the first instance, concentration will be given to smallholder rubber. The basic idea of the PMU program is the same as that of the KTDA. Thus the study of factors causing the success of the KTDA was useful for the PMU program.

The success and experience of the KTDA are particularly important in accordance with the objective of this study. It is not only because commercial crops in West Sumatra are mostly carried out by smallholders, but also because the strategy of the KTDA program may be suitable for West Sumatra where the location of the province is unfortunately relatively isolated from both the national and international marketing network.

#### 3.3.2.1 The KTDA program

In relation to the idea of special programs it is of interest that the smallholders' tea program was initially promoted by a statutory authority, outside the Ministry of Agriculture, called the Special Crops Development Authority (SCDA) which later became the KTDA. It is a national program including all the main tea producing areas of Kenya. Management and organization of the program are on a nation-wide basis (Etherington, 1973, p.11).

The objective of the program was to increase the production and export of tea by African smallholders (*ibid.*, and Lele, 1974, p.7). In explaining this objective, it should be noted that before the Swynnerton Plan was announced in 1954, there were legal prohibitions against Africans growing tea, despite the fact that according to a survey, there is a total of some 600,000 hectares of land suited to tea growing in Kenya (Etherington, 1971).

So far, the KTDA has prepared four plans in order to reach the objectives of the program. The first plan (1960-67) made a target to increase smallholder area from 600 hectares in 1959 to 4,250 hectares

in 1965. The second plan (1964-70) aimed to raise the total area to 10,100 hectares by 1969. These plans were completed ahead of time. The area of smallholder tea reached 5,100 hectares by 1965, and 14,700 hectares by 1969. According to Sullivan (1974), the third plan (1968-1973) called for a further increase of 14,000 hectares to be grown by some 26,000 tea growers and processed in 15 new factories. The fourth plan (1973-78) provided an additional increase of 18,000 hectares of smallholder tea, 24,000 more growers, and 22 new factories.

In this notable success, the KTDA has established a model for the development of smallholder commercial crops. Basically, the model is a principle or a strategy which stresses that the development of commercial crops will be better if the advantages of large scale estates and smallholder farming are exploited and then put them together in one organization and management.

In the case of the KTDA program, KTDA is the only authority in Kenya which is responsible for the development of smallholder tea. The producing of tea leaves is carried out by smallholder farmers and the KTDA provides them with most of the large scale advantages of tea estates in addition to extension services and provision of credit (Etherington, 1971).

The large scale advantages of tea estates relate to research, management, transport, processing, and marketing organization. These large scale activities reduce the average cost per unit of tea produced. On the other hand, the advantage of smallholder tea is the cost per unit of producing green leaf. That is, the cost of growing tea and harvesting it is lower than on the estates. This is so particularly because the capital outlay of the smallholder is very much lower since he already owns land which has been cleared for previous crops and because the rural

wage rates are considerably less than the union wages on the estates (*ibid.*). By combining the advantages of economies and diseconomies of scale in one authority, one management, and one organization, i.e., the KTDA in this case, it is expected that the cost per unit of export quality tea of the KTDA will be lower than the cost of the estates.

It is important to note that in the case of tea, the provision of large scale services to the smallholders is a necessary condition for the success of the venture. This is not only because the tea leaf which is produced by smallholders is not a finished product, but also because tea leaves have to be in a tea factory within six hours after plucking in order to avoid pre-fermentation and the consequent loss of quality of tea. It is also essential that the leaves are well aired, and are not bruised in the journey to the factory. In the case of Kenya, the KTDA is able to provide all the necessary large scale inputs either directly or, such as factories, indirectly through managing agents (*ibid.*).

In maintaining the smallholder tea, the KTDA is an autocratic organization: it was the only legal source of tea planting material and major source of credit; the smallholder tea farmers can sell their produce through it only. Or, in other words, besides being a monopolist it is also a monopsonist. In addition, the KTDA also provides the farmers with intensive extension and supervision of overall production operations. All major policy and financial decisions are made by the KTDA Board. Meanwhile, despite being an autocratic organization, the KTDA is also a democratic organization where growers are represented on its Board of Directors and in Local Tea Committees (*ibid.*; and Sullivan, 1974).

The management of the KTDA is sophisticated: individual records for each farmer such as the number of tea stumps bought each year, the price paid for them, the credit advanced, monthly production figures,

the amount paid to the farmers and their outstanding debt, are processed on central computer facilities (Etherington, 1973, p.9). Extension services are given intensively to the growers particularly in crop production techniques. During 1970-71, each farmer received on average six visits from the local extension office (see Sullivan, 1974).

Along the roads of tea growing areas there are Tea Buying Centres. The smallholders sell their produce at a Tea Buying Centre. There is a regular collection schedule arranged by the KTDA. Before sending to a tea factory for processing, the green leaf is weighed and a receipt issued to the farmer. The production of each farmer is paid for monthly with about a two-month lag between deliveries and payment. The final price of the production is determined by the auction prices of a given factory's finished product. Because the auction price of each factory is different, the price received by the farmers in different factory areas is not the same. During the second plan, variation in price was between 51 and 73 Kenya cents per kilo of green leaf delivered; this is about 5 to 7 Australian cents per kilo.

If we look into the result of the KTDA program, it will be evident that it has reached a notable success. The number of smallholder tea growers increased from 9,062 in 1960 to 66,500 in 1971. The production of tea green leaf in the period (1960-1971) increased from 462 tons to 31,183 tons. Also during the period, the return to farmers increased from \$66,000 to \$4.9 million. Return per hectare was approximately \$400. The export value of tea had increased from \$12.3 million in 1960 to \$35.6 million in 1970 (Sullivan, 1974). In addition, by 1969 the administration of the KTDA was completely in the hands of Kenyans (Etherington, 1973, p.10).

Another important result of the KTDA program is, in terms of social benefits and the employment benefits, as had been found by Etherington (1971). According to him, by 1976 Kenya's smallholders are expected to be producing 27,000 tons of made tea. For this, about 100,000 workers are required, of whom at least one-third will be hired. This is because smallholder tea growing is carried out using labour intensive techniques. If we add the additional direct employment opportunities associated with collection, transportation and processing of the leaf, the total number of employment opportunities of the program will be great indeed.

In addition, the indirect employment creation due to the regular injection of \$10 million a year in cash income into the rural areas is also likely to be considerable. According to Lele (1974, p.8), the KTDA program is known as one of the most successful and profitable rural development projects. The profitability of the program can be seen in the fact that the per capita average annual net cash income from tea production was about \$US41, compared with \$US7 earned by a subsistence farmer.

If we look into the reasons for the success of the KTDA, we find that a major reason was the careful manner in which the industry was nurtured. There was a whole decade between the initial serious interest by the Department of Agriculture in tea and the establishment of the SCDA in 1960 (Etherington, 1973, p.7).

The willingness of African smallholders to participate in a technically demanding crop is another factor of the success. In addition, according to Lele (1974, pp.168, 169) the success is also caused by substantial investment in manpower training of field level and administrative staff; and the introduction of a modest element of responsibility to the program participants in the provision of extension

services, in the delivery of credit, and in the marketing of inputs and output.

The KTDA has also emphasised technological research in order to increase smallholder returns and to decrease operation costs of the KTDA. For example, the vegetative propagation package reduced the constraints faced in expansion of planting.

It should be noted that to reach the success, the KTDA has spent a lot of money. According to Lele (1974, p.7) and Sullivan (1974) during its first eleven years of operation the capital expenditures of the KTDA totalled approximately \$15.9 million. This included the costs of planting materials, field development, inspection and collection of tea, training centres and farms, head office and other overhead capital investment. The expenditures were possible because the KTDA, besides being financed by the Kenya government, also received loans and credit from sources of foreign aid such as the Commonwealth Development Corporation, the Government of West Germany, and the International Development Association.

Based on the experience and success that have been reached by the KTDA program, one question may emerge from it, that is, how far is it relevant to other developing countries in their efforts to expand export crop production.

Two factors are critical: First, the ability of a country to recognise the real constraints faced by smallholder farmers attempting to grow perennial cash crops; second, the capability to remove the recognised constraints.

The kind and the level of constraints will vary from country to country so that despite the similarity of the basic idea and strategy of a program designed to combine comprehensive large scale services

with smallholder production, its implementation and the length of time required for success will be different. Thus, for the KTDA the legal constraints could be removed quickly but the technical constraints (production system and transport) took a number of years of experimentation.

If Indonesia decided to adopt a program to increase the area and production of clove trees in West Sumatra by using the KTDA program model, one major constraint would be "Penyakit Mati Bujang" or Sudden Death Disease. So far, the cause of the disease is not known. Therefore, the first aim of the program would have to be the control of the disease which could take many years to achieve.

#### 3.3.2.2 The Project Management Unit program

The Project Management Unit (PMU) program is another illustration of the special program. Basically, it is not so different from the KTDA program. If the KTDA concentrated on smallholder tea, the PMU program emphasised smallholder rubber. In the long run the PMU program will include all smallholder commercial crops.

The objective of the PMU program is to increase the production of smallholder rubber through increased yield and area of the smallholders. The yield will be increased by using high yielding varieties or clones of rubber. By using these varieties or clones, it is expected that the cost per unit of smallholder rubber will decrease, so that the smallholder rubber farmers will be able to continue in production when prices are at low levels.

This program is carried out by the Government of Indonesia, not only because smallholder rubber is regarded as a commodity with important social welfare considerations (it involves more than one million farm families), but also because it constitutes the larger part

of national rubber production (see Table 3.8) in which Indonesia is the third most important export country.

From Table 3.8 we see that the area and production of smallholders has been greater than that of rubber estates. This is particularly true of most production areas in Sumatra and Kalimantan as shown by Table 3.9. In Java, the area of estates is greater than smallholders.

However, according to Koestone and Gwyer (1975), if a large scale replanting program is not carried out, there will be a declining production from 670,000 tons in 1980 to 559,000 tons in 1990. On the other hand, with an annual replanting rate of 50,000 hectares from 1975 onwards, production would reach 792,000 tons by 1985 and 959,000 tons by 1990.

As with the KTDA, the PMU provides the smallholder with large scale management, organization, and inputs. The approach that is used by the PMU is called an integrated management approach. The target of the program can be seen in Table 3.10.

From Table 3.10, we see that the production of smallholder rubber until 1980 is the same between "with" and "without" replanting. This is because replanting, which is carried out between 1975 and 1980 is confined to areas already out of production in 1975 (trees over 30 years old). It is assumed that 4 per cent per year of the smallholder rubber areas will go out of production. The total area of smallholder rubber in 1973 was about 1.9 million hectares (see Table 3.11). Hence, about 75,000 hectares per year will be out of production. This is greater than the replanting program (50,000 ha/year). The consequence of the replanting program is that production in 1985 will be greater with the program than without.

The organization of the PMU program as a whole is complex, but it is shown simply in Figure 3.6.



TABLE 3.8

## AREA AND PRODUCTION OF RUBBER ON ESTATES AND SMALLHOLDINGS IN INDONESIA

| Year | E S T A T E S                  |                                       |                                | S M A L L H O L D I N G S             |                                |                                       | T O T A L                      |                                       |
|------|--------------------------------|---------------------------------------|--------------------------------|---------------------------------------|--------------------------------|---------------------------------------|--------------------------------|---------------------------------------|
|      | Area<br>( <sup>'</sup> 000 ha) | Production<br>( <sup>'</sup> 000 ton) | Area<br>( <sup>'</sup> 000 ha) | Production<br>( <sup>'</sup> 000 ton) | Area<br>( <sup>'</sup> 000 ha) | Production<br>( <sup>'</sup> 000 ton) | Area<br>( <sup>'</sup> 000 ha) | Production<br>( <sup>'</sup> 000 ton) |
| 1964 | 507.6                          | 225.2                                 | 1598.6                         | 480.5                                 | 2106.2                         | 705.7                                 |                                |                                       |
| 1965 | 507.0                          | 219.5                                 | 1608.7                         | 503.5                                 | 2115.7                         | 723.0                                 |                                |                                       |
| 1966 | 476.7                          | 208.8                                 | 1626.2                         | 527.9                                 | 2102.9                         | 736.7                                 |                                |                                       |
| 1967 | 455.3                          | 198.6                                 | 1617.0                         | 500.3                                 | 2072.3                         | 698.9                                 |                                |                                       |
| 1968 | 509.8                          | 207.5                                 | 1689.7                         | 531.2                                 | 2199.5                         | 738.7                                 |                                |                                       |
| 1969 | 485.5                          | 222.7                                 | 1770.7                         | 553.8                                 | 2256.2                         | 776.5                                 |                                |                                       |
| 1970 | 485.7                          | 238.2                                 | 1813.0                         | 571.0                                 | 2298.7                         | 809.2                                 |                                |                                       |
| 1971 | 475.3                          | 238.4                                 | 1852.9                         | 572.2                                 | 2328.2                         | 816.6                                 |                                |                                       |

Source: Statistical Pocketbook of Indonesia 1970 and 1971,  
Central Bureau of Statistics, Jakarta, 1972, pp.116-121.

TABLE 3.9  
AREA<sup>1</sup> AND PRODUCTION OF RUBBER IN INDONESIA BY PROVINCE, 1973

| Location                  | A R E A<br>( <sup>1</sup> 000 ha) |                    |         | P R O D U C T I O N              |                             |
|---------------------------|-----------------------------------|--------------------|---------|----------------------------------|-----------------------------|
|                           | Estates                           | Small-<br>holdings | Total   | Total<br>( <sup>1</sup> 000 ton) | per ha <sup>2</sup><br>(kg) |
| <u>Java</u>               |                                   |                    |         |                                  |                             |
| West Java <sup>3</sup>    | 100.2                             | 32.8               | 133.0   | 51.8                             | 389.5                       |
| Central Java <sup>4</sup> | 28.5                              | 3.9                | 32.4    | 18.9                             | 583.3                       |
| East Java                 | 38.9                              | 21.7               | 41.6    | 20.6                             | 495.2                       |
| <u>Sumatra</u>            |                                   |                    |         |                                  |                             |
| Aceh                      | 22.6                              | 25.6               | 48.2    | 14.2                             | 315.4                       |
| North Sumatra             | 230.1                             | 238.6              | 468.7   | 235.8                            | 503.1                       |
| West Sumatra              | 1.0                               | 46.9               | 47.9    | 29.6                             | 617.9                       |
| Riau                      | 6.2                               | 261.2              | 267.4   | 63.9                             | 239.0                       |
| Jambi                     | 0.2                               | 295.0              | 295.2   | 88.5                             | 299.8                       |
| Bengkulu                  | -                                 | 15.2               | 15.2    | 5.9                              | 388.2                       |
| South Sumatra             | 4.8                               | 494.4              | 499.2   | 163.0                            | 326.5                       |
| Lampung                   | 11.6                              | 15.2               | 26.8    | 13.2                             | 492.5                       |
| <u>Kalimantan</u>         |                                   |                    |         |                                  |                             |
| West Kalimantan           | 0.6                               | 287.4              | 288.0   | 92.2                             | 320.1                       |
| South Kalimantan          | 7.0                               | 65.8               | 72.8    | 34.5                             | 473.9                       |
| Central Kalimantan        | -                                 | 73.1               | 73.1    | 19.7                             | 269.5                       |
| East Kalimantan           | -                                 | 12.2               | 12.2    | 0.8                              | 65.6                        |
| <u>Sulawesi</u>           | 3.2                               | 0.6                | 3.8     | 1.9                              | 500.0                       |
| <u>Bali</u>               | 0.2                               | -                  | 0.2     | 0.1                              | 500.0                       |
| <u>West Irian</u>         | -                                 | 1.2                | 1.2     | 0.4                              | 333.3                       |
| INDONESIA                 | 455.1                             | 1,871.8            | 2,326.9 | 856.0                            | 367.9                       |

- Notes:
1. Cultivated, mature plus immature.
  2. Of total planted area (mature plus immature).
  3. Including Jakarta (Daerah Khusus Ibukota).
  4. Including Yogyakarta (Daerah Istimewa).

Source: Barlow (1975, Table 1, p.59).

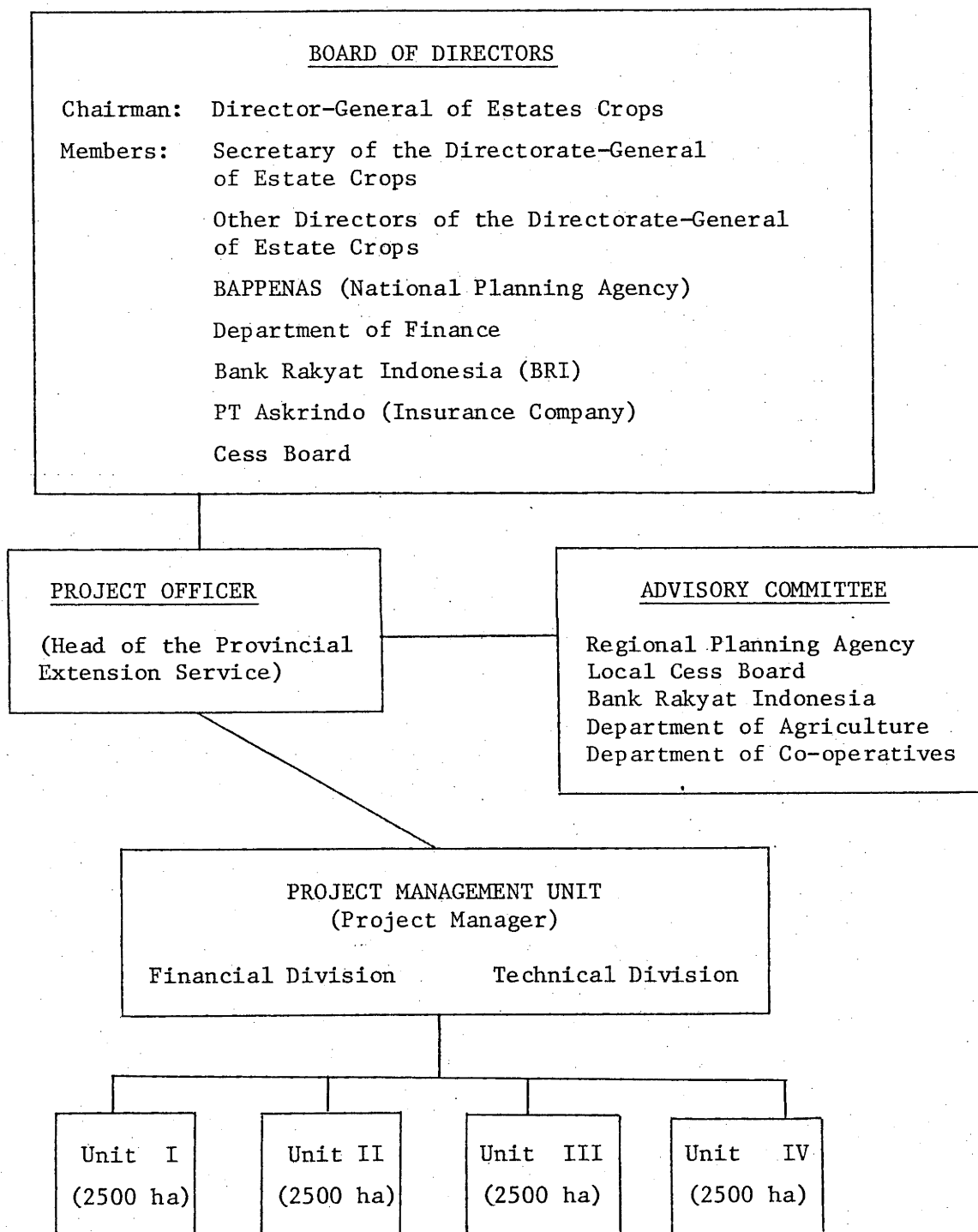
TABLE 3.10  
SMALLHOLDER RUBBER PRODUCTION ESTIMATES WITH AND WITHOUT REPLANTING PROGRAM IN INDONESIA  
1970-1990 ('000 TON)

| With/without | 1970 | 1975 | 1980 | 1985 | 1990 |
|--------------|------|------|------|------|------|
| With         | 571  | 637  | 670  | 792  | 959  |
| Without      | 571  | 637  | 670  | 632  | 559  |

Source: Koestone and Gwyer (1975, Table 1, p.2).

FIGURE 3.6

ORGANIZATION STRUCTURE FOR PROJECT MANAGEMENT UNITS  
(PMU PROGRAM)



Source: Koestone and Gwyer (1975).

From Figure 3.6 we see that in contrast to the KTDA, smallholder farmers are not represented on the Board of Directors. On the other hand, the smallholders are organised in a Farmers' Association. Gradually, this organization will be developed into a kind of production co-operative.

Figure 3.6 also shows that at the project level there are two components, viz., government employees who are united in a project management unit, and smallholder rubber participants who are divided into units which consist of 2500 hectares of smallholder rubber. The project management unit, led by a project manager, consists of a Financial Division and a Technical Division.

There are two kinds of projects under the PMU program, namely, Assisted Replanting Projects (ARP) and Group Coagulating Centres (GCC). Each ARP encompasses 10,000 hectares of smallholder rubber (four units) to be replanted or newly planted over five years. Each GCC unit comprises 2500 hectares, one-half of which is to be replanted over five years.

The PMU program has planned to establish 5 ARPs and 25 GCCs. The distribution of these can be seen in Table 3.11. The ARP and GCC projects are currently under preparation, not only in terms of preparing detailed plans of operation such as nursery and staff recruitment and training, but also in terms of motivating farmer participants. Four out of five ARPs and 18 out of 25 GCCs are under preparation; in other words, only one ARP and seven GCCs have been implemented.

In terms of financial backing, there are three different projects so far. First, the North Sumatra Smallholder Development Project (NSSDP) which is partly financed by the World Bank, provides something of a model of the ARP, for which feasibility studies are being prepared.

Second, the small-scale village unit replanting scheme at Dusun Pulau, managed by the Extension Service of South Sumatra (Dinan Perkebunan Sumatera Selatan), and third, a medium-scale scheme in West Sumatra which is sponsored by the government of West Germany.

The Dusun Pulau project is very different from the NSSDP project. The difference is not only in the size of the schemes but also in their approach, financing and management. The former shows a flexible attitude to development by Indonesian authorities at field level. This is good and is likely to be more appropriate than the latter.

Despite the fact that the PMU program is in the initial preparation for implementation stage, some problems have been encountered already such as: (1) the problem of supply of selected seed to meet the target of 50,000 hectares per year; (2) the problem of the supply and distribution of fertiliser (because the priority of fertiliser is for rice production); (3) the problem of the provision of good training for the staff of the PMUs who will guide the farmers in the project implementation (Koestone and Gwyer, 1975).

Given the above problems, and using the criteria of good planning systems as outlined in Kulp (1970, pp.95-98) we can say that the PMU program has not been well planned but has shown itself to be flexible. The problem of supply and distribution of fertiliser in the PMU program shows that there is a lack of inter-project co-ordination. In the case of the KTDA the targets were set by finding constraints, i.e., seedlings. Since their production on a massive scale took 2 or 3 years, it was possible to have detailed advanced planning.

If we look back into the structure of the PMU organization where farmer participants are not represented either on the Board of Directors or at the project level, this is, we find, a major contrast to the KTDA organization. A democratic organization for both programs may be of

TABLE 3.11

## SMALLHOLDER RUBBER AREAS AND THE PMU PROGRAM IN INDONESIA

| Province           | Area<br>('000 ha)<br>1973 | ARP | GCC |
|--------------------|---------------------------|-----|-----|
| Aceh               | 25.6                      | -   | 2   |
| North Sumatra      | 238.6                     | 1   | 2   |
| West Sumatra       | 46.9                      | -   | 1   |
| Riau               | 261.2                     | 1   | 3   |
| Jambi              | 295.0                     | 1   | 3   |
| South Sumatra      | 494.4                     | 1   | 4   |
| Bengkulu           | 15.2                      | -   | 1   |
| Lampung            | 15.2                      | -   | 1   |
| West Java          | 32.8                      | -   | 1   |
| West Kalimantan    | 287.4                     | 1   | 3   |
| Central Kalimantan | 73.1                      | -   | 1   |
| South Kalimantan   | 65.8                      | -   | 2   |
| East Kalimantan    | 12.2                      | -   | 1   |
| Other Provinces    | 8.4                       | -   | -   |
| INDONESIA          | 1,871.8                   | 5   | 25  |

Source: Barlow (1975); and Koestone and Gwyer (1975).

critical importance where one is dealing with an old crop and one is trying to persuade farmers to "destroy" existing assets (the current rubber trees) for uncertain future benefits versus the new crop for the KTDA.

The importance of farmer representation lies not only in getting information on problems that really face participants before and during the implementation, but also in making the participants really understand the program as a whole, and in convincing them that the program is directed for their benefit. The gap between farmers and the program will be avoided if farmers are represented in the organization.

The examples of the KTDA and the PMU were selected for their relevance to West Sumatra but such a cash crop orientation is not a necessary feature of the Special Rural Development Program as will be seen in the following discussions.

#### 3.3.2.3 Village and Kabupaten subsidy programs in Indonesia

The program of village subsidy was launched in the first year of Repelita I in 1969-70. Under this program, each village in Indonesia received Rp.100,000 per year from the central government as a subsidy for rural development activities. The main objective of the program is to stimulate development efforts in rural areas through a "gotong royong" (mutual co-operation) system. The subsidy can only be used for economic infrastructure such as village irrigation, roads, and village markets.

A recent survey conducted by the University of Gajah Mada (see Rivanto *et al.*, 1973, pp.4-5; 63-81) has concluded that in Central Java the implementation of the village subsidy program until the fourth year of Pelita I faced some difficulties. These difficulties were particularly caused by the following factors: (1) there are so many regulations in accordance with the implementation of the program which



usually contradict each other; (2) the role of village leaders in determining projects was ignored so that the determination of the projects mostly stemmed from the top; and (3) the subsidy received by villages was less than it should have been because it had been cut illegally at upper levels.

Meanwhile, in terms of participation of the "gotong royong", the subsidy had reached a notable success in that the share of the gotong royong on average during Repelita I was 64 per cent in Central Java (*ibid.*, p.74) and 61 per cent in West Sumatra (UNAND, 1975, p.504). The total number of projects that had been carried out in West Sumatra during the period was 6,674, consisting of: 2,056 projects on production infrastructure (especially irrigation works); 3,794 projects on communication infrastructure (mostly village roads); 617 projects on marketing facilities (i.e., village markets); and 207 projects on other economic and social infrastructure such as school buildings, fertiliser storage, etc. (*ibid.*).

In conclusion, the village subsidy program, in terms of money value, has been successful. Every rupiah of the subsidy has created a project with an average value of Rp.1.64 in Central Java and Rp.1.61 in West Sumatra. But the profitability of the projects is not known because there is no cost-benefit analysis of the projects.

The Kabupaten subsidy program is a special program for the relief of rural unemployment. It is based on Presidential Instruction (Inpres) Number 1, 1970, hence its name, the "Inpres Program". According to Wit (1973), the Inpres program has attained notable success. The success contrasts favourably with experience in the past 20 years in many other developing countries, with the notable exception of the successful program of Comilla projects in Bangladesh.

Under the Inpres program, each kabupaten and kotamadya (rural and urban autonomous areas) receives a subsidy every year from the central government with the aim of stimulating development efforts in the area of lower level government. The amount of the subsidy was Rp.50 per capita with a minimum of Rp.5 million per kabupaten/kotamadya in 1970-71. In 1971-72, 1972-73 and 1973-74, the amounts were increased to Rp.75, Rp.100, and Rp.150 per capita, with a minimum of Rp.7.5 million, Rp.10 million, and Rp.12 million per kabupaten/kotamadya (Wit, 1973; Leeuwen, 1975; and UNAND, 1975, p.489).

The main objective of the program is to fight present unemployment and not to exploit natural resources. Appropriate to the objective, the program is not undertaken by using the "gotong royong" system, but by using hired labour or wage employment.

It was decided that, for the time being, the program would, like the "gotong royong" scheme, concentrate on economic infrastructure, including both rehabilitation and new construction. The examples of the economic infrastructure worked on are roads, bridges, irrigation works, markets, reforestation, river ports, drainage, sewerage works, and flood control (Wit, 1973). Thus this program is in keeping with Nurkse's classic book, *Problems of Capital Formation in Underdeveloped Countries* (Nurkse, 1953). For more recent views on the subject see Zimmerman (1975, pp.411-419).

In West Sumatra, there were two systems carrying out projects of the program during the Pelita I. A project with a value of Rp.1 million or less could be undertaken by the local government (kabupaten/kotamadya), but a project with a value of more than Rp.1 million must be carried out through contractor(s). In practice, the local governments also carried out projects with a value of more than Rp.1 million so that during the period of 1970/71-1972/73, nearly 50 per cent of the value

of the total projects of the program had been carried out by the local governments (UNAND, 1975, p.492).

The results of the Inpres program in West Sumatra during the Repelita I can be seen in Table 3.12.

From Table 3.12, we can conclude that the Inpres program implementation in West Sumatra until 1973-74 had been beneficial enough. In Central Java, the implementation of the program during the period had also been successful. According to Rivante *et al.* (1973, p.4) the program in Central Java which consisted of the projects of road, bridges, irrigation works, and other economic infrastructure projects, had really been beneficial. The benefits apply not only for the duration of the projects but also for future periods. The benefits were great enough to suggest continuation of the program, not only to increase employment absorption, but particularly to increase the income of the people around the project areas.

Despite the fact that the primary objective of the program is to fight unemployment, so far there has been no study that shows quantitatively the effect of the program on rural unemployment or under-employment problems.

#### 3.3.2.4 Other types of special programs

Other types of special programs in Indonesia are the Voluntary Recruitment for Development (VRD) and the Student Rural Fieldwork Study (SRFS) program. Under these programs, trained or skilled manpower is sent to rural areas instead of capital.

The VRD program is a program under the Department of Manpower and Labour. Its implementation has been conducted by the BUTSI (the Indonesian Board of Voluntary Affairs). The program is directed to speed up the process of development in rural areas by sending skilled manpower volunteers to rural areas. The volunteers are university graduates who are unemployed persons. Before they work in rural areas

TABLE 3.12  
PROJECTS UNDER THE INPRES PROGRAM IN WEST SUMATRA:  
1970/71-1973/74

| Kind of project  | Unit | Total number |
|------------------|------|--------------|
| Asphalt road     | km   | 304.43       |
| Gravel road      | km   | 764.66       |
| Bridge           | m    | 1658.10      |
| Irrigation works | ha   | 8457         |
| Market           | unit | 20           |
| Sewerage works   | m    | 6302         |
| Sidewalk         | m    | 1398         |
| Flood control    | ha   | 325          |
| Bus terminal     | unit | 6            |
| Other projects   | unit | 284          |

Source: West Sumatra Governor's Office  
(in UNAND, 1975, p.496).

they are given a special training course which is carried out by the department. They also receive some financial support from the department. In rural areas they help village heads and the community in development activities, acting especially as vanguards of construction and development. There are two objectives of the program. First, to speed up development processes in rural areas through the volunteers. Second, to reduce unemployment pressures in urban areas.

The SRFS program is a program under the Department of High Education. The implementation of the program has been conducted by universities. A graduate student of a university has to work in a rural area at least for three months. The main objective of the program is to help people in rural areas in development activities through high education institutes, and to give students the opportunity to collect primary data for their theses.

Both programs have been implemented in West Sumatra since 1972. Up to the end of 1974, 53 students of the University of Andalas had participated in the SRFS program, and 97 university graduate volunteers had worked in West Sumatra under the VRD program (UNAND, 1975, p.356).

The most important result of the programs lies in changes in attitudes and value systems of the rural people. It means that by sending students or university graduates to rural areas where they live together with rural people for a certain period, the attitudes and value systems of the rural people gradually will change from being subsistence oriented to being development oriented, or, in other words, the gap between rural areas and the rest of the world will be bridged by students or university graduates.

On the other hand, students or university graduates will know more about rural life, including the problems that are usually faced by the rural people. This is very important for their leadership in the near future when they will be the leaders of various functions in various aspects of development.

## CHAPTER FOUR

### THE PROVINCE OF WEST SUMATRA

This chapter is concerned with the condition and situation of the province of West Sumatra, not only from the physical aspect, but also from economic and social points of view.

The main objective of this chapter is to find out the physical, economic and social constraints as they influence rural development activities in the province.

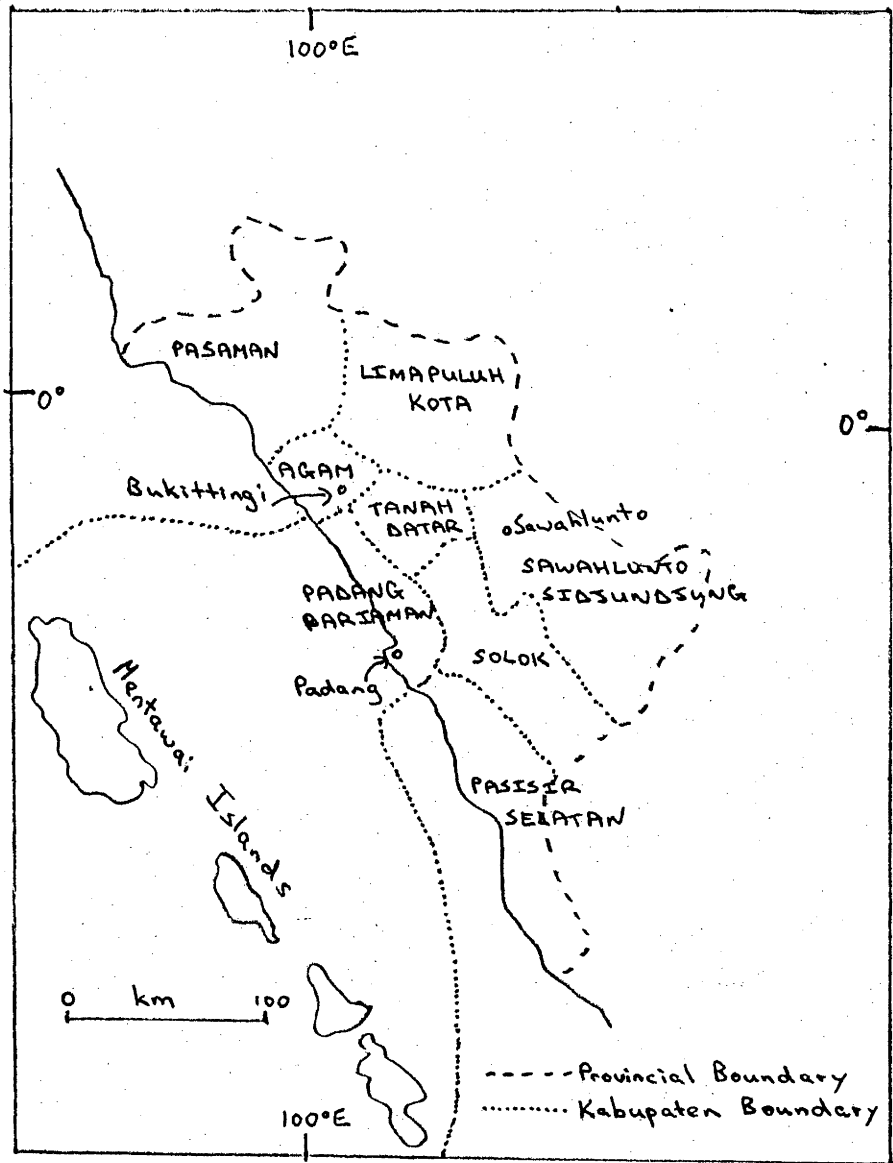
#### 4.1 General Description

The province of West Sumatra comprises the west central part of Sumatra and the islands of Mentawai off the west coast in the Indian Ocean (see Figure 4.1). It is naturally divided into three regions: (1) the coastal plain which consists of a narrow land strip 30-50 km broad, stretching along the Indian Ocean; (2) the "Bukit Barisan" (mountain chain) and Highlands which stretches from the north to the south through the whole province and which covers almost 65 per cent of the province; and (3) the South Eastern plain which borders on the province of Jambi (Kotter and Junghans, 1972, p.22).

In terms of administration, it consists of 8 "Kabupaten" or districts, 6 "Kotamadya" or municipalities, 76 "Kecamatan" or sub-districts, and 538 "Kenagarian" or villages.

The total area of the province is about 66,080 square kilometres which consist of: forest (63.8%), "sawah" or wet paddy fields (4.5%), dry land farming (3.8%), smallholder commercial crops (3.1%), estate crop areas (1.2%), "tanah gundul" or tall grass fields (4.7%), and others (18.9%) such as swamps, rivers, lakes, etc. (BAPPEMDA, 1973, p.17).

FIGURE 4.1  
MAP OF WEST SUMATRA





In other words, the area under cultivation is less than 15 per cent of the total area.

The climate of the province of West Sumatra is characterised by a rather even distribution of rainfall. During the months of June to August, precipitation is somewhat lower, but there is no typical dry season. For example, the total rainfall of Padang in the coastal plain area comes to a yearly average of with little variation. In the highlands, the climate is much cooler. The yearly average temperature for Bukittinggi and Alahan Panjang are 22.8°C and 21.3°C.

## 4.2 Human and Natural Resources

Under this heading, the discussion will be concentrated on human resources such as the quantity and quality of manpower. It also includes physical production factors such as quantity and quality of land and other natural resources.

### 4.2.1 Population

According to the 1971 population census, the population of West Sumatra was 2,793,196. The number of females (1,437,464) is greater than the number of males (1,355,732). Its population density was 42 persons per square kilometre. The total population was 2.34 per cent of the total population of Indonesia (CBS, 1972, p.24).

Based on the population censuses of 1961 and 1971, the annual growth rate of its population was about 1.9 per cent.<sup>1</sup> This is much lower than the national annual growth rate of 2.3 per cent (UNAND, 1975, p.326).

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<sup>1</sup> It was calculated by using the formula:  $P_u = P_o(1+r)^n$  where:  
 $P_u$  = population ultimate;  $P_o$  = original population;  $r$  = rate of growth population per year; and  $n$  = number of years.

This condition is caused by net emigration from West Sumatra each year. According to Kotter and Junghans (1972, p.23), based on their survey, about 0.4-0.5 per cent of the total population leave West Sumatra yearly. If this is true, the natural rate of growth of the population will be 2.3-2.4 per cent per year or close to the national annual growth rate.

At the time of the 1930 census, West Sumatra's population was 1.887 million (Hugo and Temle, 1975, Table 3.1) and about 1.793 million were Minangkabau people (Naim, 1972). The people of Minangkabau living outside West Sumatra at the time numbered 208,119 (*ibid.*). Thus, at the time of the 1930 census the total number of Minangkabau people was approximately 2.001 million persons. If the growth rates of the population per year over the periods 1930 to 1950; 1950 to 1960; and 1960 to 1971 were 1.6; 1.9; and 2.3 per cent, the total number of Minangkabau people at the time of the 1971 census would have been 4.247 million approximately. At the time of the 1971 census, West Sumatra's total population was only 2.8 million so that the total number of Minangkabau people living outside West Sumatra at that time was approximately  $4.247 - 0.95 (2.8) = 1.6$  million (assuming that 95 per cent of West Sumatra's population are Minangkabau people). In other words, about 38 per cent of the Minangkabau people were living outside West Sumatra at the time of the 1971 census.

It is generally considered that the matrilineal nature of Minangkabau society is one of the reasons that so many people of Minangkabau leave West Sumatra (Esmara, 1971; Hanafiah, 1974; and Hugo, 1975). But according to the results of a seminar on the history and culture of Minangkabau that was held in Batusangkar, West Sumatra, in 1970, there are six reasons why so many people of Minangkabau emigrate (see *Madjalah Kebudayaan Minangkabau* No.1, 1974, Jakarta, pp.61-63). First, the social paradigm of Minangkabau with its matriarchal social system which does not allow young men to stay at home; so that to assert the more usual masculine role they must make their own way outside

their home towns or villages. Second, influence of the religion of Islam, which led to many Minangkabau people being left in West Sumatra during 1901-1957 to spread the religion of Islam, including "Mubaligh" or Islam missionaries (Naim, 1972). Third, economic factors such as lack of employment availability. Fourth, the influence of Western culture. Fifth, educational factors such as the lack of educational facilities in West Sumatra, leading to a lot of young people going to Java to study and then not returning. Finally, the disruption in politics and security during the communist rebellion in West Sumatra in 1926 (see also Schrieke, 1960, pp.85-94), the PRRI rebellion in 1958, and the communist abortive coup in 1965.

The seminar added that there are both positive and negative effects of the outmigration. There is the negative effect caused by the brain drain and lack of manpower for West Sumatra. On the other hand, there is also the positive effect on the individuals concerned who were able to develop their human potential in terms of knowledge and skills. They had the chance of playing a more dynamic role in the nation. In addition, according to Hanafiah (1974), at least one milliard rupiahs have been sent by the Minangkabau outmigrants to their relatives in West Sumatra every year. This is another positive aspect of the outmigration.

The negative aspect includes a high dependency ratio<sup>2</sup> in West Sumatra's population structure. Based on the 1971 census, the dependency ratio of West Sumatra is 0.94 per cent as can be calculated from Table 4.1.

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<sup>2</sup> Dependency ratio is the ratio between dependent age population (0-14 and 65 or more) and productive age population (15-65).

TABLE 4.1  
WEST SUMATRA POPULATION AT THE 1971 CENSUS  
(in age brackets)

| Age          | Total number | Percentage |
|--------------|--------------|------------|
| 0 - 4        | 452,251      | 16.197     |
| 5 - 9        | 439,792      | 15.716     |
| 10 - 14      | 369,322      | 13.227     |
| 15 - 19      | 290,123      | 10.390     |
| 20 - 24      | 157,590      | 5.644      |
| 25 - 29      | 167,282      | 5.991      |
| 30 - 34      | 160,904      | 5.763      |
| 35 - 39      | 165,537      | 5.929      |
| 40 - 44      | 144,292      | 5.168      |
| 45 - 49      | 121,007      | 4.334      |
| 50 - 54      | 105,654      | 3.784      |
| 55 - 59o     | 55,518       | 1.988      |
| 60 - 64      | 69,742       | 2.498      |
| 65 - 69      | 33,249       | 1.191      |
| 70 - 74      | 35,705       | 1.297      |
| 75 and more  | 25,228       | 0.903      |
| West Sumatra | 2,793,196    | 100.000    |

Source: UNAND (1975, p.327).

Table 4.1 also shows that only 51.46 per cent of the population is in the productive age group. The other 48.54 per cent represents dependents. Thus, the dependency ratio for West Sumatra's population is -

$$\frac{48.54}{51.46} = 0.94.$$

This is caused not only by the outmigration of some productive age people, but also by the high crude birth rate (4%) and low crude death rate (1.4%) (Sjahrudin, 1974, pp.18-21).

Because the quality of the outmigration is relatively higher than the quality of the productive age people who live in West Sumatra, West Sumatra is suffering not only from lack of manpower but also of trained or educated manpower.

Another aspect of West Sumatra's population is its distribution, as can be seen in Table 4.2 and Figure 4.2.

From Table 4.2 and Figure 4.2 we see that there is an uneven distribution of population. About 65 per cent of the total population live in 35 per cent of the area of West Sumatra (Esmara, 1971).

The density of West Sumatra's population was only 66 per square kilometre in 1971, but because the population is concentrated in the central part of the province only, in that year the unemployment level was about 1 to 2 per cent of the total population, i.e., about 27,000 to 55,000 (see Sjahrudin, ed., 1972, p.77).

#### 4.2.2 Agricultural land

In terms of land:man ratio per capita, Kotter and Junghans (1972, p.24) correctly divided West Sumatra into two parts. The first is called the inner Kabupatens which consist of Kabupatens Agam, Tanah Datar, L. Kota, Padang Pariaman, and Pesisir Selatan. The second is called the outer Kabupatens which consist of Kabupatens Pasaman, Solok,

TABLE 4.2

WEST SUMATRA POPULATION DISTRIBUTION IN THE 1961 AND 1971  
CENSUS OF POPULATION

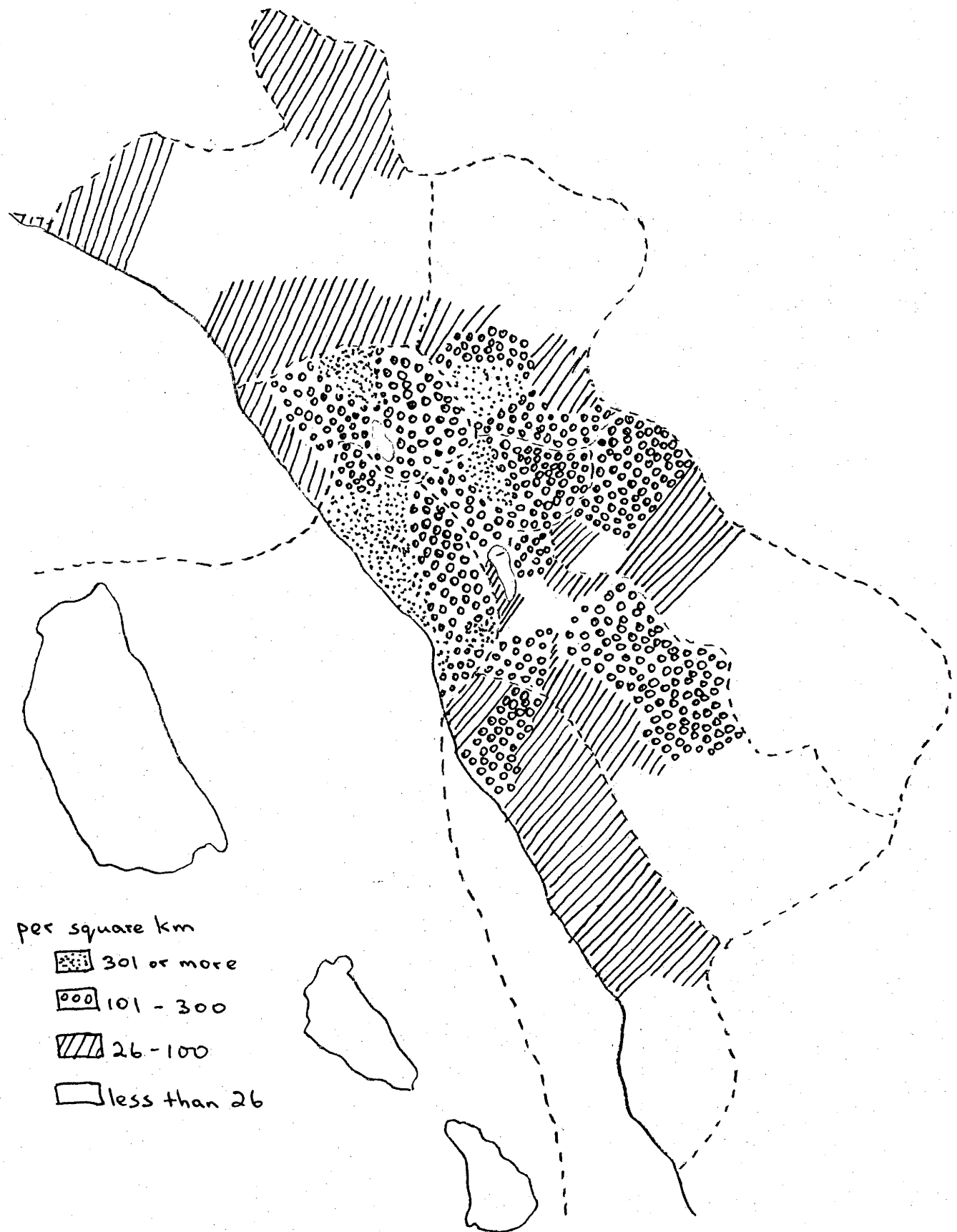
| Region                   | Population |           | Density<br>(per sq km) |      |
|--------------------------|------------|-----------|------------------------|------|
|                          | 1961       | 1971      | 1961                   | 1971 |
| <u>Kabupaten</u>         |            |           |                        |      |
| Agam                     | 304,453    | 345,588   | 134                    | 153  |
| Pasaman                  | 217,312    | 272,850   | 28                     | 35   |
| 50 Kota                  | 230,687    | 223,270   | 70                     | 65   |
| Solok                    | 271,234    | 294,730   | 38                     | 41   |
| Padang/Pariaman          | 442,649    | 550,790   | 54                     | 87   |
| Pesisir Selatan          | 221,449    | 254,234   | 39                     | 45   |
| Tanah Datar              | 246,463    | 290,997   | 181                    | 213  |
| Sawahlunto/<br>Sijunjung | 131,859    | 161,321   | 21                     | 25   |
| <u>Kotamadya</u>         |            |           |                        |      |
| Bukittinggi              | 55,456     | 63,356    | 2058                   | 2534 |
| Padang                   | 143,699    | 196,191   | 4453                   | 5945 |
| Sawahlunto               | 12,276     | 12,426    | 1961                   | 1985 |
| Padang Panjang           | 25,521     | 30,699    | 945                    | 1137 |
| Solok <sup>a</sup>       | -          | 24,769    | -                      | 576  |
| Payakumbuh <sup>a</sup>  | -          | 63,402    | -                      | 791  |
| West Sumatra             | 2,299,058  | 2,784,623 | 54                     | 66   |

a. Kotamadya Solok and Payakumbuh were established after the 1961 population census so that there were no figures for the 1961 census.

Source: Guntur Sudarsono (1972, Table I).

FIGURE 4.2

MAP OF POPULATION DENSITY OF THE PROVINCE OF WEST SUMATRA



and Sawahlunto Sijunjung. The situation of land:man ratio can be seen in Table 4.3.

TABLE 4.3  
LAND:MAN RATIO IN WEST SUMATRA IN 1971

| Region                    | Agricultural land<br>per capita<br>(ha) | Additional potential<br>agricultural land<br>per capita<br>(ha) |
|---------------------------|-----------------------------------------|-----------------------------------------------------------------|
| Inner<br>Kabupatens       | 0.21                                    | 0.05                                                            |
| Outer<br>Kabupatens       | 0.29                                    | 0.33                                                            |
| West Sumatra <sup>a</sup> | 0.23                                    | 0.13                                                            |

a. Excluding Mentawai Islands

Source: Kotter and Junghans (1972, Table I, p.26).

From Table 4.3 we see that agricultural land per capita in both regions, inner and outer kabupatens, is not so different. But the potential agricultural land per capita in outer kabupatens is much higher (0.33 ha) than in the inner kabupatens (0.05 ha). It means that the outer kabupatens still have more potential than the inner kabupatens in terms of agricultural resources.

#### 4.2.3 Forest

The forest of West Sumatra provides the most important natural resources for the province. The main function of the forest is soil and water conservation because the rainfall is high enough and most of its region is mountainous. Thus, despite the fact that 64 per cent



of West Sumatra area is forest, only 21 per cent of the forest can be exploited as production forest, i.e., about 1 million hectares.

Mentawai Islands, the coastal area and the eastern part of the province are the areas of potential forest production (UNAND, 1975, p.113).

So far, concessions for timber exploitation have been issued for West Pasaman and the Mentawai Islands. Still untouched are the huge forests in the eastern part of the province because of lack of transportation facilities. The situation will change after completion of the Sumatra Highway and its feeder roads, which will open huge forest areas in Sawahlunto Sijunjung (Kotter and Junghans, 1972).

Besides timber, rotan is another forest product that gains more and more importance. Exploitation was formerly restricted to the coastal areas only, especially along the rivers. Rotan was cut and transported by boat to harbours (*ibid.*, p.25).

#### 4.2.4 Mineral resources

One of the important mineral activities in West Sumatra is coal mining in Sawahlunto. However, the output has declined markedly since World War I. Formerly, about 800,000 tons per year of coal were purchased as fuel for steamships. Output is now reduced to about 100 tons per year and is mainly used by Padang Cement Factory (*ibid.*, p.25). The main problem faced by the coal mine is that the machinery and other capital equipment has been obsolete for some time. There is no new investment and the marketing of the produce is limited with the result that there have been substantial increases in unit costs of production. In 1973, coal mining suffered a loss of about Rp.196 million or \$0.47 million (UNAND, 1975, p.155).

Mineral exploitation was of much greater importance before the Second World War. Gold mines were operated at Limapuluh Kota and lead

mines at Solok. Both enterprises closed down in 1942 when Japanese occupied the province of West Sumatra.

A copper field was recently prospected near Solok but the deposits were too small for commercial exploitation. Rio Tinto Co. Ltd has also conducted an extensive mineral survey. The prospected areas included the whole central and southern part of West Sumatra. The results of the survey have not been published which may be an indication that the results were not satisfactory because the survey was completed in the middle of 1972 (Kotter and Junghans, 1972, p.25; and UNAND, 1975, p.158).

#### 4.2.5 Water resources for electricity

The utilization of water resources for hydro-electric power was surveyed by Lehmayr Consulting. The report shows that the fluctuation in flow of the rivers provides difficulties for continuous production of electricity. Meanwhile, the existing resources are adequate to produce enough electricity for the growing demand of the province. The first hydropower station, the Batang Agam project, has already been completed (*ibid.*).

#### 4.3 The Pattern of Social Organization

The problem of whether the existing pattern of social organization has a positive or negative influence on development activities, is often neglected in determining development policy. The pattern of social organization determines largely the land tenure system of the society. The land tenure system may be neutral, may stimulate or may retard the development of agriculture and the increase of land and labour productivity (Kotter and Junghans, 1972, p.38).

The objective of this section is to study the existing pattern of Minangkabau society and its land tenure system, in relation to the development process of West Sumatra.

The pattern of Minangkabau society is still basically matrilineal but in many ways has been influenced by the religion of Islam and Western culture. Gazalba (1974) states that the society of Minangkabau today is living in the synthesis of "adat" (tradition), religion of Islam, and Western culture. In other words, changes have occurred in the Minangkabau social system as the consequence of making contact with the rest of the world. The changes are described by Hamka (1963) as a revolution, but in fact it is not a revolution. It is only an evolution. The changes should not surprise one because the basic philosophy of the "adat Minangkabau" is based on laws of nature (Nasroen, 1971). Nature is always changing, so too does the "adat Minangkabau".

Illustration of the changes can be taken from the comparison between the traditional family system and the existing system of the Minangkabau family.

The traditional family of the Minangkabau does not consist of parents and children, but comprises a group of people in which mothers and their children live together with brothers and sisters of the mothers under the guidance of the mothers' mothers. The traditional family is called "kaum", meaning a group of people, and lives in a "Rumah Gadang" or a large traditional house. The chief of a kaum<sup>3</sup> is the eldest brother of the mothers. He is called "Mamak Kapalo Kaum".<sup>4</sup> He runs the farm, is responsible for the children, and represents the kaum. The brothers of the mothers are called "mamak". The mamak calls

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<sup>3</sup> The "kaum" is also called "saparuik" (meaning one womb, because members of the kaum stem from one mother), or "sapariuak" (meaning one cooking-pot).

<sup>4</sup> The chief of a "kaum" is also called "tunganai", "Kapalo Paruik", or "Tuo Rumah".

his sister's children "kamanakan". Thus, the traditional family consists of the "Mamak", "Kamanakan", and mother(s) of the "Kamanakan". The father of the children or "Bapak" is not a member of the "kaum" because his "suku" (clan) is different from the "suku" of his wife and children. The "Bapak" is the member of his mother's "kaum". Because the father of the "Kamankan" is not a member of the kaum, he comes to his wife and children only in the night<sup>5</sup> so that in the traditional family system the relationship between Mamak and Kamanakan is much closer than the relationship between the Kamankan and their father.

The modern family of the Minangkabau today consists of parents and their children, living in a "Rumah Biasa" or common house instead of the "Rumah Gadang". Despite this, the system of the family is still matrilineal, but in practice the relationship between fathers and their children is much closer than before, and the relationship between "Mamak" and "Kamanakan" has become more distant. The man of Minangkabau in the modern family system is much more responsible for his children rather than for his "kamanakan". Despite the fact that the house and the farm of the modern family may still be the property of his wife's kaum, he (the father) stays there not only in the night but also during the day time because he also runs the farm. On the other hand, the Mamak of his children only come once in a while because they are also engaged in nurturing their families.

Kotter and Junghans (1972, p.40) in their recent survey found that the "Rumah Gadang" has practically disappeared and the normal family

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<sup>5</sup> This is because in the day time the father is a "mamak" of his "kaum" and runs the farm of his "kaum" and other functions as "mamak". In addition, he is much more responsible for his "kamanakan" rather than for his children.

today consists of husband and wife and 3-4 children and sometimes one of the grandparents. The trend of changes in the family system was observed by Joustra (see De Jong, 1954, p.115) in 1920. The closer bond between father and child (especially son) was found by him as the manifestation of various situations.

Changes have not only occurred in the family system but also in the pattern of the Minangkabau inheritance. In the traditional pattern, all properties are inherited on the matrilinear line. It means that the properties of a Minangkabau's man have to be inherited by his "kamanakan", not by his children (see Batuah and Madjoindo, pp.22-24). But today, being in a transitional period, only the "harta pusaka" (inherited property) has to be inherited on the matrilinear line. On the other hand, the "harta pencaharian" (earnings) should be inherited on the line of "Hukum Faraidh" (Islamic law), or on the patrilinear line. Details of the inheritance problems can be seen in Naim (ed. 1968).

Another illustration of change can be found in the land tenure system. According to the adat, all land in the Minangkabau's area is the "ulayat" (communal right) of the Minangkabau society. It is called "tanah ulayat" or communal land. The land is classified into three categories, namely: "ulayat kaum" (family land), "ulayat suku" (clan land), and "ulayat nagari" (village land).

Most of the family land is cultivated land such as sawah land, agricultural dry land, fishpond, residential site, the yard around a dwelling, graveyard, and so on. On the other hand, the clan and the village land are mostly uncultivated lands such as village forests, tall grass land, swamp areas, rivers, lakes, and other uncultivated land.

According to the adat, all the "tanah ulayat" is not permitted to be traded by the community, but on the other hand, the community (of the land) is permitted to utilise the hereditary land on the matrilinear line. The family land has been cultivated hereditarily by the "kaum" so that the land can be seen (in practice) as privately-owned land, but transferring the right of the land to other families is strictly forbidden (see, in detail, Burhan and Salim, ed., 1972).

The traditional land tenure system has also faced an evolution as a consequence of the entering of the money economy into the social organization, and as a result of the changes in the family system and the inheritance pattern.

According to Schrieke (1960, p.108), in the memorandum of the assistant resident of Payakumbuh on February 13, 1907, it had been stated that family land and village land too was sold even in cases not permitted by the adat. Kotter and Junghans (1972, p.40) also pointed out that the whole process of social change has led to an increasing mobility of land. Today land utilization titles can be sold and bought (*ibid.*). But according to Idrus Hakimi (in Burhan and Salim, *op. cit.* pp. 52-53) selling or buying of family land is only permitted by the adat if it is carried out among the community of the Minangkabau. Selling or buying of family land to the community outside Minangkabau is still strictly forbidden. In addition, according to Damciwar (in Burhan and Salim, *op. cit.*, p.28), data from the Department of Transmigration showed that about 397,810 hectares of the "ulayat suku" and "ulayat nagari" has been transferred to the government of West Sumatra in order to be utilised by transmigrants who mostly come from Java. Also land for the campus of the Agricultural College in Payakumbuh and for the campus of the College of Education in Batusangkar stems from the "ulayat nagari".

The conclusion that can be drawn from the above discussion is that the "adat Minangkabau" theoretically<sup>6</sup> and in practice is not static, but is dynamic and flexible. So the common view<sup>7</sup> that the rigidity of the social system of the Minangkabau is a major obstacle for development in West Sumatra is not only untrue but also unreasonable. According to Kotter and Junghans (1972, p.42), the limiting factors of the development process in West Sumatra are not the social systems of the community but deficient infrastructure and lack of capital. The preliminary report of Kahn<sup>8</sup> (1972) also rejected the theory that adat or religion *per se* in Minangkabau prevents economic development of the region.

#### 4.4 Economic Structure

The economic structure of West Sumatra is mainly dependent, directly or indirectly, upon agricultural production. This situation can be seen in the composition of West Sumatra regional income in Table 4.4.

Table 4.4 shows that in 1969, 46.6 per cent of the GRDP originated from the agricultural sector directly. And despite 25.7 per cent of the GRDP coming from the trade sector, it should be noted that more than one-third of trade activity was in agricultural commodities. Nearly 50 per cent of the value of the manufacturing sector came from agricultural industries.

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<sup>6</sup> See for example, *The Basic Philosophy of the Adat Minangkabau* by Nasroen (1971).

<sup>7</sup> This view can be seen, among others, in Burhan and Salim (1972, p.9).

<sup>8</sup> His research is in the "Economic Change and Social System in Sungai Puar" (in Kabupaten Agam., author).

TABLE 4.4  
GROSS REGIONAL DOMESTIC PRODUCT (GRDP) AT CONSTANT 1969 PRICES, WEST SUMATRA, 1966-69  
(Rp million)

| Item                          | 1966   | 1967   | 1968   | 1969   | 1969<br>(%) | Change %<br>1966-69 |
|-------------------------------|--------|--------|--------|--------|-------------|---------------------|
| Agriculture <sup>a</sup>      | 24,845 | 23,583 | 25,268 | 28,138 | 46.6        | 13.3                |
| Food crops <sup>a</sup>       | 15,243 | 14,376 | 15,841 | 16,364 | 27.1        | 7.3                 |
| Comm. crops <sup>a</sup>      | 6,796  | 6,223  | 6,165  | 8,249  | 13.7        | 21.4                |
| Estate crops                  | 36     | 26     | 29     | 32     | 0.1         | -11.1               |
| Animal husbandry <sup>a</sup> | 1,403  | 1,864  | 2,091  | 2,290  | 3.8         | 63.2                |
| Forestry <sup>b</sup>         | 123    | 90     | 136    | 142    | 0.2         | 15.4                |
| Fisheries <sup>b</sup>        | 1,245  | 1,006  | 1,007  | 1,061  | 1.7         | -14.8               |
| Trade                         | 13,129 | 11,612 | 11,994 | 15,553 | 25.7        | 18.5                |
| Rents                         | 5,635  | 5,740  | 5,845  | 5,954  | 9.9         | 5.7                 |
| Public Admin. and Defence     | 1,509  | 1,856  | 1,796  | 4,010  | 6.7         | 65.7                |
| Manufacturing                 | 2,297  | 3,834  | 4,020  | 3,829  | 6.3         | 66.7                |
| Transport and communication   | 1,442  | 1,552  | 1,950  | 1,896  | 3.1         | 31.5                |
| Banking, finance              | 427    | 421    | 461    | 500    | 0.8         | 17.0                |
| Mining                        | 272    | 173    | 179    | 190    | 0.3         | -30.0               |
| Services                      | 187    | 112    | 60     | 189    | 0.3         | 1.0                 |
| Construction                  | 35     | 48     | 67     | 98     | 0.2         | 180.0               |
| Electricity and water         | 23     | 19     | 20     | 23     | 0.1         | -2.0                |
| GRDP of West Sumatra          | 49,802 | 48,953 | 51,661 | 60,381 | 100.0       | 21.2                |

Source: Esmara (1971, Table 2).

a. Smallholder farms only.

b. Mostly smallholders.



Table 4.4 also shows that most of the agricultural production is produced by smallholder farmers, estate production forming less than one per cent of the total. Thus, the economic structure of West Sumatra is highly dependent upon the rural sector. And the rural development of the province is also largely influenced by its agricultural development.

Before we look into the structure of agriculture of the province in detail, it should be recalled that the degree of development varies greatly among the regions of the province. Three district areas can be identified: The first area is generally called "Daerah Maju" or "Advanced Area". This area comprises the inner kabupatens except Kabupaten Pesisir Selatan and the Mentawai Islands. In other words, the advanced area is the central part of the province which consists of kabupatens Agam, Limapuluh Kota, Tanah Datar, and kabupaten Padang-Pariaman except the Mentawai Islands.

Secondly, there is the area of "Daerah Harapan" or "The Area of Hope". This area includes the outer kabupatens plus the kabupaten of Pesisir Selatan. Despite it being a less advanced area, it has development potential. It consists of kabupatens Pasaman, Solok, Sawahlunto Sijunjung, and kabupaten Pesisir Selatan.

Finally, there is "Daerah Khusus Kepulauan Mentawai" or "the Special Area of Mentawai Islands". It is "special" because it is the most backward area in the province. Its people are still living in a primitive era. In order to develop the special area, the provincial government established a separate organization that was called "Badan Otorita Kepulauan Mentawai" or Mentawai Islands Development Authority.

#### 4.4.1 Agricultural structure

It has been mentioned that the agricultural production structure of the province is dominated by smallholder farms.

The smallholder farms are characterised by rice cultivation either in the form of irrigated "sawah" or upland paddy. This is because rice is the staple food for the people. Other enterprises such as commercial crops, animal husbandry, fisheries and forestry, are considered to be subsidiary activities, despite the fact that the income from these additional activities may be higher than the income from rice cultivation.

One problem that is faced by the smallholders is the fact that the farm units are too small and the land of some farms is not a compact area but scattered in several locations.

At the time of the 1963 agricultural census, the average size of the smallholdings was only 0.9 ha/farm ("sawah" and dry land) or 0.3 ha/farm ("sawah" only). If we compare this with other provinces in Indonesia, the average size (0.9 ha/farm), at that time, was the lowest among provinces outside Java, was lower than the national average (1.1 ha/farm), but was a little higher than the Java-Madura average (0.7 ha/farm). Hence, in terms of farm size, the smallholder farmers of West Sumatra are the poorest among farmers outside Java.

A recent survey (Asnawi, 1973) in two kabupatens of the province (Padang Pariaman and Limapuluh Kota) shows that 65.8 per cent of 750 smallholder farmer respondents say that the size of their farms ("sawah" plus dry land) is less than one hectare, 24.3 per cent say it is between one and two hectares, and only 9.23 per cent of them say that they have more than 2 hectares.

In addition, about 70 per cent of the smallholder farmland in West Sumatra was fully owned, 24.7 per cent was partly owned, and 3 per cent

was fully not owned (e.g., rented, share cropped, pawned, freely rented from village, state or others). These figures are close to the national average figures.

Small farm size, not only influences production and income of the farmers, but also implies that land is more binding than labour. Since the farming systems have not changed, and if there are no additional jobs outside farming, the farmers will suffer under-employment or disguised unemployment. Therefore, creating new employment opportunities for farmers should be considered. The above survey finds that only 34 per cent or one-third of the respondents are full-time farmers (who have farms of more than one hectare in particular), and the remaining two-thirds or 66 per cent are part-time farmers. Additional jobs are: labourer (42%), local trader (35%), "tukang" or artisan (19%), handcrafts (4%) and other jobs.

The types of farm might be as follows: (1) Sawah-vegetable farm type, particularly in the areas around Bukittinggi, Padang Panjang, and Alahan Panjang; (2) Sawah-spices farm type which can be found in many parts of West Sumatra both in inner and outer kabupatens; (3) Sawah/upland paddy-rubber farm type which is mostly located in the outer kabupatens, particularly in kabupatens Pasaman, Sawahlunto Sijunjung and Pesisir Selatan; (4) Sawah-tobacco farm type, found particularly in the kabupaten L. Kota; (5) Sawah/swamp paddy-coconut trees farm type, found along the west coast of the province, particularly in kabupaten Padang Pariaman, some parts of kabupaten Agam, Limapuluh Kota, and Pesisir Selatan; and, finally a "catch-all" category, (6) Rice/food crops-commercial crops type of farm which caters for the wide variety of additional crop combinations found in many parts of West Sumatra.

Animal husbandry is mostly carried out by smallholder farmers and is scattered through many parts of the province. It consists of cattle, buffalo, horses, goats, pigs, chickens and ducks. The average number of stock per farm of each sort is very small, that is, between 1.7 head/farm (cattle) and 4.6 head/farm (chickens) (in the 1963 agricultural census). The market for animal husbandry production is not only for the province, but also for the provinces of Riau and Jambi.

Fisheries comprise sea fish and fresh water fish. The former is concentrated in the coastal towns of Padang, Pariaman and Painan. The latter is particularly carried out in the central kabupatens in fishponds, lakes and rivers. The total area of fishponds is 616 hectares (or 1.8 per cent of the total area of national fishponds) with 28,080 fishpond farms or 0.02 ha/farm (in the 1963 census) on average.

Fruit production which mainly consists of mangoes, papaya, durian, bananas and some other kinds, mostly stems from home gardens or land around villages. The production is mostly not sufficient, so the province has to import various fruits from other provinces such as from North Sumatra province.

In terms of farm incomes, the above farm categories can be ranked as follows: (1) Sawah-vegetables; (2) Sawah-spices; (3) Sawah-tobacco; (4) Sawah/upland paddy-rubber. The other two types cannot be ranked due to lack of available data.

The terms "inner" and "outer" kabupatens are highly descriptive: an inner kabupaten correctly implies a situation where the population density is relatively high and where land and capital become the factors limiting the increase in production. But because the condition of the infrastructure and marketing facilities in the inner area is better than in the outer kabupatens, the average income of the farmer in the inner area is higher than it is in the outer kabupatens. On the other side,

the term outer kabupatens implies a situation where labour and capital, infrastructure and marketing facilities are the limiting factors. The lack of infrastructure and marketing facilities holds these areas back.

The area and production of each crop of smallholder agriculture can be seen in detail in Appendix B.

Turning now to the very small estate sector, there are about 54,000 hectares of land which formerly (before the Second World War) included 30 estates or plantations. At the present time, about 24,700 hectares of the land have been given to 12 new cultivators which consist of government, domestic private, and joint venture enterprises. But because of some difficulties such as capital shortage, lack of technical know-how, mismanagement, and so on, more than 90 per cent of the land has not been cultivated. Most of the new cultivators are only active in exploiting old remaining tree stands without making efforts to rehabilitate the estates. Only the estates of "Pinang Awan" (quinine estate), "Pecconina" (citronella and green tea), and "Merapi estate" (quinine and cinnamon) have carried out some rehabilitation. In addition, in many parts of those abandoned estates, farmers have used some of the land, illegally, as smallholder farms. The question now is whether the abandoned estates will be given to new estates or be allowed to be used by smallholders. This problem will be discussed later in Chapter Five.

#### 4.4.2 Industrial production

The industrial production of West Sumatra can be classified into the production for agricultural industries and for non-agricultural industries.

In its relationship with rural development activities, the discussion will be concentrated on the former rather than on the latter.

A recent survey (Kotter and Junghans, 1972, p.59) notes that there are four kinds of agricultural industry in the province, namely: rubber (6 factories), copra (6 factories), cigarettes (2 factories), and essential oils (5 factories).

The most important is the rubber industry. This is not only because rubber is one of the main export revenue resources for the province, it also has the most employees among the agricultural processing industries, i.e., 1,008 employees (in 1972). The total employees of other agricultural processing industries include 502 employees in copra, 150 employees in cigarettes, and 90 employees in essential oils. All rubber factories have changed to crumb rubber production and all of them are located in Padang. Thus the location of these does not correspond with the latex production areas, so there is a gap between producers and processors of rubber. The capacity of the factories is higher than the offer of the raw material. Some of the raw material has to be imported from other provinces such as from Bengkulu (the southern part of Sumatra).

Similar to the rubber industry, the capacity of the copra industry is also higher than the raw materials available. This is not only caused by the shortage of coconut production but also because the use of coconut for coconut oil industries has increased substantially. The market situation for copra is relatively good, as well as the situation for coconut oil production.

The essential oils industry is a promising business. But, not different from the industries of rubber and copra, it also faces difficulties in raw material supply. Farmers do not increase the

production of the raw materials because prices are not attractive.

It is evident from the above situation that production of raw materials for those industries (rubber, coconut and essential oil crops) in the province should be increased to fulfil the capacity of the industries. The extent and method of increasing production are the major questions of rural development policy and strategy of the province, since the production of raw materials is carried out on smallholder farms. The "PMU" project that has been discussed in Chapter Three, sub-section 3.3.2, represents one of the ways the government tries to increase the production of rubber. Other strategies of rural development for the province as a whole will be analysed in Chapter Five.

Let us now look into the non-agricultural industries. As shown in sub-section 4.2.4, the natural resources of the province are lower than they are in neighbouring provinces, so the development of non-agricultural industries is still limited. The most important of the non-agricultural industries is Padang Cement Factory. This is not only because its total annual sales are very high, that is, Rp.3 billion, or six times the annual provincial development budget (in 1972), but also because it employs about 1,500 people (Esmara, 1974; Kotter and Junghans, 1972). Other important industries are textiles and corrugated tin. The former has difficulties in obtaining raw materials despite the fact that it employs more than 700 people. The latter, although it is an expanding business, does not improve the employment situation considerably. It only employs 40 people.

In relation to rural development, there are some specific areas in the province which provide small industries or handcrafts, namely:

(1) the village of Sungai Puar near Bukittinggi which produces blacksmith products (such as hoes, sickles, knives, brass work products, and others;

(2) the villages of Kubang (in Kabupaten Limapuluh Kota) and Silungkang (in Kabupaten Sawahlunto Sijunjung) which produce traditional clothes specific to Minangkabau; (3) the village of Kota Gedang near Bukittinggi, well known for its silver handcrafts and traditional dresses; (4) the village of Pandai Sikat near the town of Padang Panjang, well known for its carved products and traditional dresses; and (5) several places scattered around the province producing various handcrafts.

The blacksmith industry in Sungai Puar had been studied by Kahn (1972). The results of the study show that the most important home industry in the village today is the ironworking or blacksmith industry. One of the main difficulties faced by the industry is the market for raw materials and for finished goods. Besides the market in both types of goods being relatively unreliable, a general lack of capital in the industry also prevents long-range planning which might help to even out the cycle of the market. There are also several social problems faced by the industry such as the pattern of "merantau" (outmigration) which results in at least 50 per cent of those people born in the village living outside the village. The industry is of great importance to agriculture because it produces agricultural equipment such as hoes and sickles. Various attempts have been made to up-grade the industry, but because of the above difficulties, added to difficulties in management and organization, the problems have not been solved.

Other cottage industries, as mentioned above, also face the problem of markets both for raw materials and the finished products. Meanwhile, because the government has planned to give priority to North Sumatra as well as to West Sumatra in the development of tourism outside Bali and Java, the industries will be promising businesses in the future. These industries also have the problem of lack of capital.



The problems faced by the home industries should be considered in the formulation of rural development planning strategies in the province. More discussion of these problems will be continued in Chapter Five.

#### 4.4.3 Market structure

Because the economy of the province is highly dependent upon the agricultural sector, discussion will be concentrated on the market structure of agriculture.

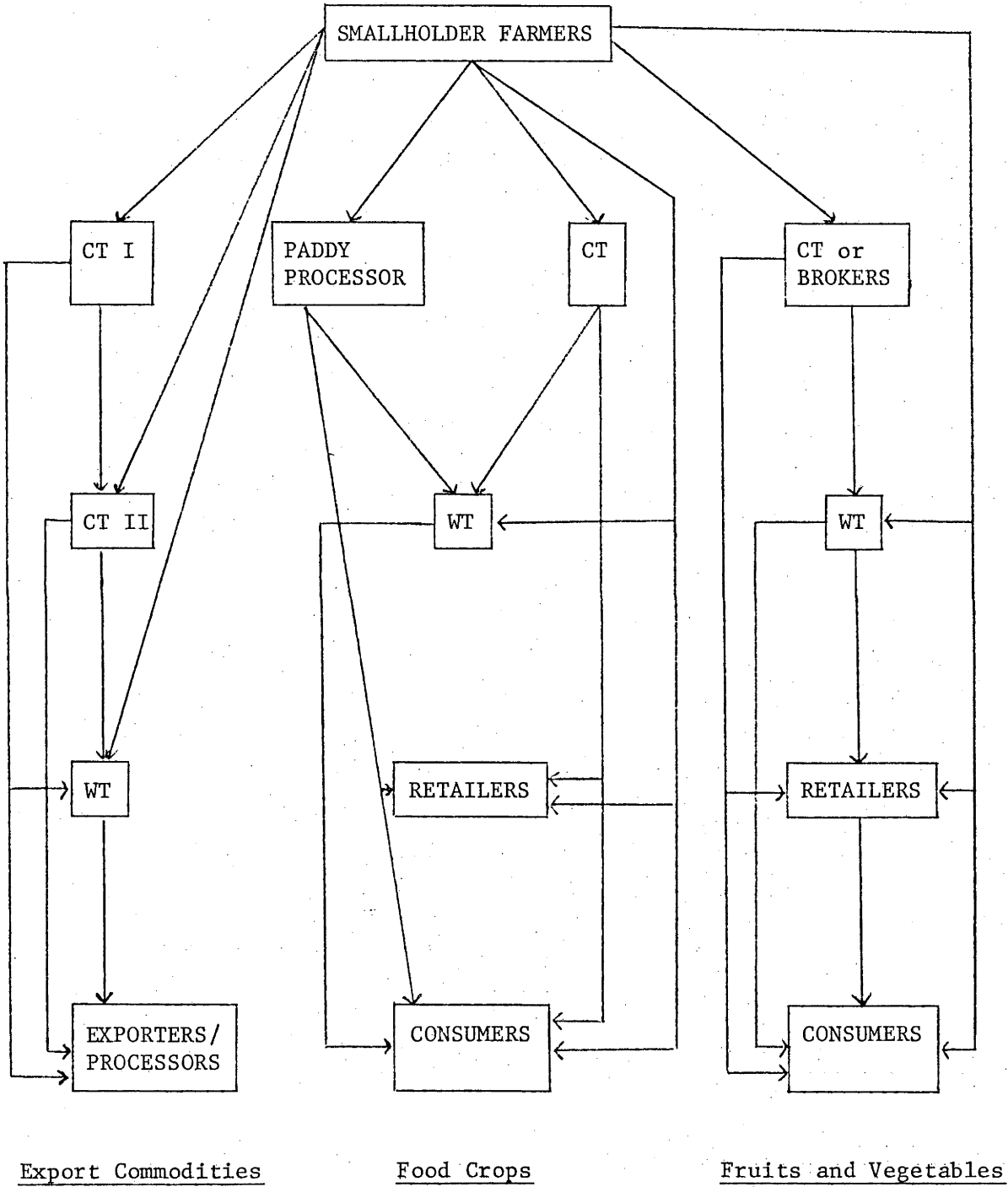
The agricultural market structure is characterised by the imperfect market. Some specific markets such as those for rubber, spices and other export agricultural commodities have a tendency towards oligopsony. In several rural areas where the conditions of communication and transportation are very bad, the market for the products might be monopsonistic.

The oligopsonistic structure is particularly caused by capital shortages faced by collecting traders who operate at the village and "Kecamatan" (sub-district) levels. Credit for the collecting traders is only available from exporters. It is highly unlikely that collecting traders can obtain credit from banks. This is due to the fact that banks require collateral of a form that the collecting traders are mostly unable to fulfil. Hence, in practice the collecting traders are tied to, and become the agents of, the exporters (Kotter and Junghans, 1972, p.63).

The agricultural market of the province can be differentiated, in general, in three ways, namely, markets for: (1) export commodities, (2) food crops (excluding vegetables), and (3) the market for vegetables and fruits. According to Esmara (1970, p.180) the percentages of agricultural production that is traded are within the following categories: Food crops between 20 per cent (rice) and 90 per cent (maize) of production; export commodities between 90 per cent (coffee) and 100 per cent (rubber); and fruit and vegetables between 50 per cent (fruits) and 90 per cent (potatoes).

FIGURE 4.3

THE MARKETING CHANNELS OF AGRICULTURAL PRODUCTS OF WEST SUMATRA



The marketing channels of the three types of agricultural market can be summarised as shown in Figure 4.3.

Figure 4.3 shows that the longest channel in agricultural produce marketing is from farmers to consumers through collecting traders (middlemen, brokers, or agents), wholesale traders and retailers (for fruits and vegetables). The marketing channels of food crops are similar to the marketing channels of fruits and vegetables with the exception of the case in which farmers sell an unprocessed commodity (paddy for example), where the function of middlemen will be replaced by processors. The marketing channels of export commodities are from farmers to exporters/processors through collecting traders (or agents) at village and sub-district levels, and through wholesale traders in towns.

A recent study (Ahrens, 1972) shows that the mark-ups of agricultural produce marketing in the province are determined by various factors such as the type of commodity, relative price of the commodity, length of marketing channels, conditions of communication and transportation, quality (voluminous or not, easily or not damaged in transport, and so on) of commodities, and other factors. The mark-ups (farmer price/retailer or exporter buying price minus one) of export commodities are between 7 per cent (for cloves) and 43.3 per cent (for rubber). They are between 15 per cent (for potatoes) and 30 per cent (for cabbage) for vegetables. The mark-ups in rice marketing are between 7 per cent (in kabupaten Agam) and 17 per cent (for kabupaten Pasaman).

The problems faced in marketing agricultural produce are as follows: (1) the lack of capital is the biggest problem faced by the agricultural traders; (2) poor road communication in some regions has caused higher transportation costs; (3) grading of agricultural produce is estimated on a purely visual and largely verbal basis rather than on the metric system, particularly in local markets, and the material classification

frequently varies quite widely from buyer to buyer, which influences the pricing system; (4) there is a high demand in the Singapore market for fruits and vegetables, but so far West Sumatra has not been able to enter the market due to various problems which have yet to be solved, and (5) because farmers have not been organised in marketing activities and are therefore in a very weak bargaining position, especially for export commodities where prices are largely determined by the quality of the products, improvement in the quality and organization of exporters is needed.

However, the potential market for the agricultural produce of the province is relatively good both within the region and outside the province.

The improvement of marketing institutions at all levels is needed in order to make their functions more efficient and effective. The establishment of marketing co-operatives should be considered particularly for protecting farmers in the marketing of their products.

#### 4.5 The Infrastructure

In regard to rural development planning strategies, the infrastructure which will be discussed here includes transportation, irrigation, education, public health services, and communication.

##### 4.5.1 Transport systems

The transport system in the province consists of road networks, railways, shipping and air transport.

According to the official statistical data there are 4,904 km (kilometres) of roads which comprise National Roads (632 km), Provincial Roads (1,015 km) and Kabupaten Roads (3,257 km). In 1966, over three-quarters of the roads were in a heavily damaged condition (Esmara, 1974), p.2). But after the completion of Repelita I, the condition of the roads,

particularly the national and provincial roads, have much improved and are now in relatively good condition, but there is still room for further improvement. The majority of the kabupaten roads are still in bad condition since during Pelita I only one-third of them were rehabilitated under the Kabupaten Program. The problem is that the budget of the provincial and kabupaten government is very limited on one hand, but on the other hand, they are responsible for the longest roads. The condition of roads in rural areas is much worse than it is in urban areas. A recent study (PMD, 1973) classified half of the total villages of the province as having poor infrastructure,<sup>9</sup> about 5 per cent had more than adequate, while the remaining villages were considered to have barely adequate conditions.

The condition of the railways system in the province today is very poor because its rolling stock is so very old that its function as a transport system at the moment can be ignored. Its function is particularly to transport coal from mines in Sawahlunto to Padang for the cement factory and to Teluk Bayur harbour for export. Since coal mining still has various production difficulties (see sub-section 4.2.4) and as the market for coal is limited, rehabilitation of the railways system is highly unlikely.

Shipping transport consists of river traffic, coastal shipping and ocean shipping.

River traffic still plays a particularly important transport role in some regions of the province such as in the southern part of

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<sup>9</sup> Despite the infrastructure including irrigation, economic and social infrastructure, heavy weighting is given to road conditions by the study.

kabupaten Sawahlunto-Sijunjung, the coastal strip of kabupaten Pasaman, and the North Eastern part of kabupaten Limapuluh Kota.

The main function of coastal shipping is to act as a tool of transport along the West coast of the province and for the Mentawai Islands.

Teluk Bayur harbour, about 10 km from Padang, is the only harbour in the province for ocean shipping. In line with the increase in development activities in Indonesia, including in the province, cargo handling through the port rose from 178,776 tons in 1960 to 502,188 tons in 1973 (Esmara, 1971; and UNAND, 1975, p.197). In addition, a new dockyard is under construction near Teluk Bayur to repair and to build ships under 200 dwt.

The only airport in the province now is Tabing Airport near Padang. Formerly there were two other airports, i.e., Gadut Airport near Bukittinggi and Piobang Airport near Payakumbuh. These two airports were established by the Japanese for military purposes in World War II. These two airports have now disappeared and the area has reverted to agricultural use. In keeping with general expansion of air services in Indonesia, the Tabing Airport has also been improved. Since 1974 the runway was extended to 1800 metres in order to permit DC-9 jets to land. A direct service from Padang to Singapore and to Kuala Lumpur via Medan and Penang was begun in 1970 by Garuda Indonesian Airways and Merpati Nusantara Lines.

#### 4.5.2 Irrigation

Related to rural development, the main function of irrigation is to provide controlled watering to agricultural land in order to increase its productivity. By introducing the BIMAS program, the function of irrigation systems becomes more important.

Before Repelita I, the condition of irrigation systems in the province, due to lack of maintenance, was relatively poor and only 16 per cent of the total area of "sawah" could be irrigated by technical or semi-technical irrigation. At the end of Repelita I (1973-74) about 26 per cent of the total area of "sawah" (the total area is about 190,000 hectares) had been irrigated by technical or semi-technical irrigation. The remaining 74 per cent was irrigated by "pengairan rakyat" (simple and non-technical irrigation) or was rainfed. Meanwhile, rice production of the province has been in surplus (see sub-section 3.1.1).

#### 4.5.3 Communication

The most important communication tool in relation to rural development activities in the province so far is radio broadcasting. There are two radio broadcasting stations in the province, in Padang and Bukittinggi. These stations broadcast regularly a special program for rural areas which is called "Siaran Pedesaan" (rural broadcasting). Through this program various problems of rural development have been discussed. And in rural areas "Kelompok Pendengar" (listening groups) have been organised. After listening to the program, the group discuss the problems that had been heard. The program and the establishment of listening groups are promoted by "Dinas Pertanian" or the Agricultural Extension Services. As far as we know, the effectiveness of the program in promoting rural development has not been studied but it is significant that the program is broadcast in Minangkabau language so that it is more easily understood by the rural people.

#### 4.5.4 Education

The literacy rate of the Minangkabau people might be the highest in Indonesia. But this does not mean that there is no illiteracy problem in West Sumatra. A recent study (Fritz, 1972, p.55) shows that the number of

illiterates among the eleven and twelve year olds is around 4 per cent in urban areas and about 7 per cent in rural areas. The illiteracy rate of the over-twelve year olds is about 16 per cent. Another survey (Asnawi, 1973, p.8) shows that about 18 per cent of 750 farmer respondents are illiterate. The rate of illiteracy in rural areas is higher than in urban areas. This is particularly caused by school facilities being much better in urban areas than in rural areas both quantitatively and qualitatively.

The education situation in the province, in general, is relatively good. About 95 to 97 per cent of all children of school age attend primary schools. At least 20 per cent of the adolescents for a time attend Secondary schools. And about 10 per cent of the adolescents complete high school. Between 2 and 3 per cent of the adolescents in the corresponding age group attend a university institution (Fritz, 1972, p.63).

Besides the general schools, there are several vocational schools such as high schools which include study of agriculture, economics, trades, teaching, home industry, religious teaching, arts, music, nursing, chemical analysis, assistant apothecary, and so on. These are mostly located in towns and cities.

At university level, there are three most important institutions, namely, the "Universitas Andalas (UNAND), the Institute for the Training of School Teachers (IKIP), and the Institute of Islamic Studies (IAIN). The total numbers of students of each institute are approximately 3,500 students of the UNAND, 2,500 students of the IKIP, and 1,500 students of the IAIN.

There are two Agricultural High Schools (SPMA) especially designed for agricultural education. One is in Padang and another is in Payakumbuh.



The University of Andalas has Faculties of Agriculture and Animal Husbandry. But unfortunately, there is not any Agricultural Training College in the province, or any like the Bangladesh Academy of Rural Development which is able to cater for adult men and women who might possess little formal education.

Although, in general, the education situation is relatively good, not many of the graduates seek jobs in rural areas. Most of them seek white collar jobs so that the rural areas are still short of trained or educated manpower. The PMD classified nearly two-thirds of the villages of the province as having a "poor"<sup>10</sup> education level; and only about 8 per cent of the villages as having "relatively sufficient"<sup>11</sup> education. In addition, because white collar jobs are limited in the province, many educated people outmigrated to other parts of Indonesia, especially to towns or cities.

#### 4.5.5 Public health services

The public health service facilities in the province are at a lower level than the national average. For example, in 1971, there were 1,970 inhabitants per hospital bed, while the national average was only 1,445 inhabitants per bed (CBS, 1972).

The distribution of health service facilities is highly unequal. In Padang there is one doctor for every 3,000 inhabitants, but in some regions such as in the western part of Kabupaten Pasaman, 2 medical men are responsible for 160,000 inhabitants.

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<sup>10</sup> "Poor", in this context, means that less than 30 per cent of the village population graduated at least from primary schools.

<sup>11</sup> "Relatively sufficient" means that more than 60 per cent of the population has graduated from primary schools.

#### 4.6 Institutions and Organizations

According to the PMD (1973) survey, 81 per cent of the villages have been noted as progressive in rural institutions or organizations. Its evaluation is only based upon the number of institutions so the evaluation might be an underestimate if the assessment is made on the basis of both quantity and quality. It seems likely that the quality of many rural "institutions" is still low because their establishment was hasty and ill-prepared. For example, during the period of January-August 1973, 60 BUUD/KUD had been established in the province. A study (RERI, 1974) shows that 57 of them are under poor management or bad quality management.

As we have mentioned (sub-section 2.4.2), the rural institutions are important, especially to give each essential or accelerator in rural development its driving force. Hence, the aim should not be the mere establishment of the institutions so that they can be counted, but to establish them with care and suitable preparation in order to make them effective instruments for rural change.

In this section, discussions are concentrated only on rural government organizations and credit institutions in the province. There are two reasons for this. First, the success or the failure of rural institutions in their missions largely depends, directly or indirectly, on the condition of the rural government. Secondly, it seems likely that capital is one of the most important factors in rural production activities.

##### 4.6.1 Village government organizations

A village, referred to as an administrative unit, is defined as the smallest area which has a right to settle its internal affairs (Indonesia, 1969, Vol.I, p.102).

Because rural development is the basis for development and growth of a sound national economy, the Indonesian government has planned to make the structure of the village government more effective and to synchronise the rural institutions (*ibid.*, p.112).

In line with the national plan, the structure of village government in West Sumatra was renewed through the Governor Decisions No.015/GSB-1968 (BAPPEMDA, 1973, p.367), Nos.155, 156 and 157 in 1974 (Naim, 1976).

Under the new structure, the village government consists of three elements, namely: the "Wali Nagari" or Village Head, the "Dewan Perwakilan Nagari (DPRN)" or Village Parliament, and the "Kerapatan Nagari" or Village Meeting as a Judicative Body of the village.

The Wali Nagari is also the chairman of the two bodies (DPRN and KN). He is assisted by a Secretary of Village and several "Kepala Jorong" (Head of Sub-village). The Wali Nagari and members of the DPRN are elected directly through a village general election. The Secretary and members of the KN are appointed by the Governor via candidates which are proposed by the Wali Nagari. The Kepala Jorong is appointed by the Wali Nagari.

The Wali Nagari has double functions under the new structure.<sup>12</sup> Inside the village, he is the representative of the higher government levels. He is the highest leader in the village. Outside the village, he is the representative of the village community. As the leader of the community, he has to face all problems of all aspects of village life and help to solve them.

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<sup>12</sup> Before the new structure, the Wali Nagari was appointed by the Governor through candidates that were proposed by unelected DPRN. The Wali Nagari was not the chairman of the DPRN.

The Wali Nagari as well as members of the DPRN and the KN, and the Wali Jorong, are not paid by the government either in terms of salary or honorarium.<sup>13</sup> These conditions have brought about frustration among the Wali Nagaris. Money alone may not be the cause of the frustration, but the inadequate two-way flow of information may also be involved. The Wali Nagari tends to be told what to do and is rarely consulted in the process of government decision making.

It is a matter of fact that the success or the failure of the government at the village level is not only dependent upon the structure of the village government, but particularly upon the men who sit in the structure. Or like a car, even a new one, will not run well, if it is not driven well.

Since the men in the structure are not involved in the rural development planning process, rural development programs implementation may not attain satisfactory results because the programs do not belong to the rural community. The men in the structure in implementing such programs have often little sense of responsibility but act because of compulsion or fear as described by Mubyarto (1974). The decreasing trend of Bimas credit repayment in West Sumatra, discussed in Chapter Three (sub-section 3.1.1) is perhaps due to the lack of a sense of responsibility within the local government and the Bimas participants.

Moreover, the attitude of the government, which does not pay the Wali Nagari and other village officials, is unfair and unjust. This will provide a potential cause of corruption, as stressed by Naim (1976).

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<sup>13</sup> There is no such "Tanah Bengkok" (land for village head) in West Sumatra so that the Wali Nagari is not paid either by the village officially.

Since the government believes that rural development is the basis for development and growth of a sound national economy, to let the situation continue endlessly can disturb the implementation of the government programs at the village level.

The solution of both problems is relatively simple and would remove a major cause of frustration and resentment among the village leadership. How to remove the major cause of the frustration will be discussed in Chapter five (sub-section 5.3.2).

#### 4.6.2 Credit institutions

A survey (Asnawi, 1973, p.37) shows that 69 per cent of the 750 farmer respondents in two Kabupatens of West Sumatra said that they need credit. This does not mean that the others have enough capital. Basically, they also need credit, but they do not seek credit because they are afraid of not being able to repay the loan, or because they do not have credit security, or because of other reasons. Only 4 per cent of them said that they have enough capital.

The amount of credit that was needed per farmer in 1972 by the respondents who said they needed credit was, on average, as follows: 24.8 per cent of them needed between Rp.1,000 and Rp.5,000; about 34.9 per cent between Rp.6,000 and Rp.10,000; about 20.4 per cent between Rp.11,000 and Rp.25,000; about 14.3 per cent between Rp.26,000 and Rp.50,000; and the remaining 5.6 per cent more than Rp.50,000 (*ibid.*, p.55).

The credit is mostly used for productive purposes such as for financing agricultural inputs (fertiliser, pesticides, seeds, etc.), rice processing units (hullers), handcrafts, and for the capital of trade. Meanwhile, about 29 per cent of them also used credit partly for consumption (*ibid.*, p.38).

The variation of the amount of credit needed is much dependent upon the utilization of the credit, the size of farm, and the condition of the farmer.

The sources of the credit were the banks (for the Bimas participants in particular), BUUD and other co-operatives, money lenders or middlemen, and immediate relatives or friends. About 42 per cent of the respondents borrowed money or kind from relatives or friends, 46.2 per cent from the banks, 9.6 per cent from money lenders, and only 2.2 per cent from the BUUD or co-operatives (*ibid.* p.41). The rate of interest for the bank was 1 per cent for Bimas and 4 per cent per month for other purposes. The interest rate for the BUUD/co-operatives were between 2 and 4 per cent per month and for money lenders between 4 and 8 per cent per month. Credit from relatives or friends is mostly without interest (*ibid.*, p.42).

Even though credit from relatives or friends is given without interest and security, the amount of the credit is relatively small. On the other hand, credit from the BUUD/co-operatives is difficult to get because it needs security, written agreement, interest and other procedures which are unfamiliar and time-consuming. But the amount that can be borrowed from a Bank is relatively higher than from relatives. In addition, so far, banks operate in rural areas for Bimas purposes only so that credit for non-Bimas has not been readily available.

The BUUD/co-operatives have a problem of shortage of money. Hence, their ability to give loans to farmers and other rural people is very limited. This is related to the preference of the people to save their money in terms of gold ornaments rather than in banks or credit institutions. Thus, in West Sumatra, potential savings with financial institutions are perhaps much greater than actual savings. Consequently,

credit institutions have difficulties in accumulating savings from the people. This situation may be caused by inflation or instability in prices. Perhaps the situation will be changed if price stability is reached. Potentially, gold ornaments could form an important collateral security for loans.

## CHAPTER FIVE

### DISCUSSION AND ANALYSIS

It has been mentioned that the task of this study is to find relevant strategies of rural development planning for the province of West Sumatra, given the goals and constraints of rural development.

The goals of Indonesia's development, including its rural development goals, mentioned in Chapter One (1.3) are clearly in line with the theory of development goals, discussed in Chapter Two (2.3).

It should be obvious from Chapter Four that, in general, the three elements of rural development (elements of agricultural development which consist of essentials and accelerators, rural institutions, and infrastructure) are still constraints for rural development activities in the province. The type and degree of the constraints differ from one area to another. Some of the detailed constraints of rural development for each village of the province can be drawn from the PMD's survey results, mentioned in Chapter Three (sub-section 3.2.1.4).

It should be apparent from previous chapters that rural development is an extremely complex process. The purpose is not simply to meet an existing set of physical goals but to create a dynamic self-sustaining system. If the government is going to continue to plan, it is essential that the plan helps rather than hinders the development process.

"Planning" means the process of preparing a set of decisions for action in the future, as defined in Chapter Two (section 2.1). "Strategy" is defined as a mixture of programs and policies that are intended to alter the direction as well as the rate of change of the development process. In rural development context, planning is the process of



deciding what the government is going to do with respect to policies and actions affecting the rural sector within a given period.

According to Mosher (1966, p.169), in making decisions, a government must face up to the question of what is needed at the moment to move the rural sector forward, and what preparations need to be made now in order to meet needs that can be foreseen in the near future. It must also take into account the amount and nature of its resources of money and manpower that can be applied to meeting the needs of rural development. These resources are never adequate to do all that might be done, so choices have to be made on the basis of relative priorities of different policies and programs.

In order to find the relevant strategies for rural development planning in West Sumatra, the discussion and analysis will concentrate on the following aspects, namely: (1) Model for achieving goals; (2) approaches that should be considered; (3) planning systems, and (4) relative priorities.

### 5.1 Model for Achieving Goals

One of the most important goals of rural development in Indonesia is "the achievement of a strong basis for self-sustaining growth and development of the rural community", as mentioned in Chapter One (section 1.3).

According to Waterson (1975) there are six elements which represent a general model for viable development in rural areas. The six elements, which will be discussed later, rely most strongly on the experience of many developing countries. The six elements are: (1) labour intensive agriculture; (2) minor development works; (3) light industry; (4) self-help as a foundation; (5) organization for rural development; and (6) development centres.

### 5.1.1 Labour intensive agriculture

When labour is relatively abundant and often underemployed or unemployed, and capital is relatively much scarcer than labour, labour intensive techniques must be employed in agriculture if poor farmers and workers are to benefit most. In Ethiopia, for example, the CADU project (sub-section 3.2.2.2) rejected the use of tractors and concentrated on improved animal-drawn farm implements that local artisans made and repaired. This is important because a modern agriculture is not always characterised by the use of tractors or highly mechanised techniques. Japan had a modern agriculture before tractors began to be used to any appreciable extent (Mosher, 1971, p.xiv). In addition, a study in Taiwan showed that yields obtained on tractor and bullock farms that were reasonably comparable except for the type of draft power, do not provide evidence of any significant yield differential (Johnston and Kilby, 1975, p.422). Similarly, the use of smallholders to expand tea production in Kenya, discussed in Chapter Three (sub-section 3.3.2.1), is more labour intensive than the alternative of plantations.

For West Sumatra, this element should be considered as a strategy for rural development planning especially in the "inner kabupatens" where labour is relatively abundant and capital is relatively scarce. The opening of new areas for agriculture and the rehabilitation of the abandoned estates, mentioned in Chapter Four (section 4.4) should be carried out by the "nucleus estate" model, mentioned in Chapter Three (sub-section 3.3.2).

### 5.1.2 Minor development works

Because labour intensive agriculture is unlikely to provide year-round full employment in rural areas with surplus labour, "employment

generating" minor development works with high labour content should be carried out with underemployed and seasonally unemployed rural labour.

Indonesia has included this element since Repelita I through the "Kabupaten Program", discussed in Chapter Three (sub-section 3.3.2.4). But there is the question of whether some of the labour absorption in the program is really additional work for the village people or work done instead of their regular work. This has not been made clear in the reports of the program results, so it should be considered worthy of study.

### 5.1.3 Light industries

Small-scale, labour-using, light industries with low capital requirements should be established in rural areas to supplement opportunities in agriculture. What is needed in this case is the establishment of specific kinds of farm-related industry in rural areas.

China and Taiwan, as discussed in Chapter Three (sub-section 3.2.1) have shown that the light industry in rural areas should be mainly of two kinds: (1) the processing of agricultural commodities produced in the area concerned; and (2) the fabrication of inputs for agriculture.

Based on this element, the cottage industries in Sungai Puar (sub-section 4.4.2) and other light industries that have been present should be helped by the government to solve their problems. The establishment of agricultural processing light industries should be considered especially in rural areas of the inner kabupatens. Large-scale industry which will compete with light industry in rural areas should be avoided.

Again, the location of the tea processing factories in the rural areas in Kenya, and the Taiwanese attempts to move packing and processing closer to the farmer, are particularly attractive features of the KTDA and Taiwanese agricultural development.

#### 5.1.4 Self-help as foundation

In order to make development self-sustaining, those communities which benefit from rural development have to assume responsibility for increasing a reasonable proportion of the resources. Otherwise, the total quantity of resources available for rural development in most poor countries is likely to fall short of what is needed. One way of doing this is to challenge local authorities and organizations to provide some funds through taxation or other appropriately devised incentives, to those jurisdictions which gather what is considered to be an adequate amount of funds (Waterson, 1975).

An interesting method for quantifying the elements in a self-help formula was devised for Indonesia. The central government makes a development grant to each province based on the following elements: (1) a per capita element, to take account of the varying sizes of population in the provinces; (2) a "growth potential" element, to foster the exploitation of natural resources; (3) a backward areas element, to help the development of transport, communication and infrastructure of the poor areas; and (4) an incentive factor, which is added to or subtracted from the total of (1) through (3) depending on the increase or decrease in the local authorities' public saving rates (*ibid.*).

In Repelita II, the government of Indonesia has continued the development grant and added new elements such as "Provincial Aid Program", which partly will be used for rural development, and the "Rural Credit Program", the procedure of which will be made as simple as possible. It will be based only on the prospect of increasing production capability. This program is to help farmers and rural people with credit facilities.

However, small farmer savings programs have been rather limited. Only in Taiwan and Korea have they been large enough to supply important amounts of rural capital (*ibid.*).

In West Sumatra small farmer savings have also been limited, but perhaps potential savings might be relatively available (sub-section 4.6.2). So then the problem is how to make the potential savings actual. The experience of the Comilla projects in Bangladesh should be taken into consideration. The Comilla projects, discussed in Chapter Three (sub-section 3.2.2.1), decided that a member of a co-operative can only be given credit by the co-operative if he always attends the fortnightly meetings and gives savings regularly.

#### 5.1.5 Organization for rural development

The preparation and implementation of a program of self-sustaining rural development is necessarily a long-term task which requires much planning and farmers' support. This means that it must be a product evolved by the country concerned, as well as its farmers; and by the same token it cannot be the product of short-term missions of outside international or national lending agencies. These agencies can do much to support rural development by financing components of useful programs, but it would be unreasonable to expect them to provide the continuing, long-term effort which viability requires. Only the country concerned can do that (*ibid.*).

Experience in countries like China, Taiwan, and Malaysia, discussed in Chapter Three (section 3.2), makes it clear that where rural development has been adopted as national policy, it is normal for government structures and procedures to be adjusted accordingly. The establishment of "communes" in China, the JCRR in Taiwan, and the Ministry for Rural Development in Malaysia are examples of this element.

In West Sumatra, so far, the adjustment of government structure was started by the establishment of what is called "Sektor K", or Special Sector for Rural Development. The sector is designed as a co-ordinating body of department agencies in implementing rural development programs. But it seems likely that this body has not been sufficiently effective since the planning procedure has not been changed or improved. This problem will be analysed more deeply later.

#### 5.1.6 Development centres

The last but not least element is the creation of development centres. As we have mentioned, rural development must be seen as part of regional and national development. The function of development centres is to bridge the wide gap between rural villages and the metropolis which is characteristic of developing countries. To accomplish this, requires the creation of a hierarchy of development centres, that is, a wide dispersion of small rural market centres, connected with a smaller number of small towns supplying a wider range of services, with these connected in turn to larger towns or small cities, and so on, up to the very large city. Most developing countries are deficient in these intermediate centres, even though their large cities may be growing rapidly (*ibid.*).

The MPP strategy (section 3.1) and sectoral programs (sub-section 3.3.1) do not include creating development centres. But the comprehensive either nationally or area integrated programs (section 3.2) have included the creating of development centres. For example, China has completed each commune with a market centre; the CADU project in Ethiopia started the project with the establishment of improved marketing facilities. The village subsidy program in Indonesia (sub-section 3.3.2.3) has given priority to the establishment of village markets as economic infrastructure.

In West Sumatra the government recognises the need to bridge the wide gap between rural areas and cities. Besides using partly the Village Subsidy program for the development of village markets, Repelita II of the province planned to develop a number of places to be small towns (BAPPEMDA, 1973, p.45).

The above analysis shows that on the surface the model of self-sustaining rural development, as described by Waterson (1975), has been used, directly or indirectly, in West Sumatra. The next step is how to make the six elements complete so that they may be used more effectively and efficiently in the present conditions of the province.

One possible way of doing this is by preparing relevant strategies of rural development planning in the province. In the first instance, planning approaches and planning systems of rural development might be crucial points.

## 5.2 Planning Approaches

In Chapter Three, several approaches of rural development have been discussed. It seems likely that the integrated approach is the most important approach for the future rural development of developing countries. Several countries have achieved notable success in their rural development by using the integrated approach.

Recent publications (e.g., Weitz, 1971; Anker, 1973; Kotter, 1974; Lele, 1974; and Waterson, 1975) stressed the importance of the integrated approach in rural development planning. One of the reasons why the integrated approach is very important is not only because rural development is to be seen as a geographical concept (Anker, 1973), but also because the problems of rural development cannot be tackled in isolation (Kotter, 1974). Another reason is that the sectoral approach is often unco-ordinated in plan formulation and implementation.

Despite the fact that the integrated approach is quite reasonable on the one hand, it is no easy task to implement. In this case, Chambers (1974, pp.15-16) summarised experiences of using the integrated approach. According to him, organizationally, programs and projects under the integrated approach had three characteristics in common. First, management has been centralised and technocratic, and success has been sensitive to the managerial skill of men such as Akhtar Hamed Khan in Comilla projects, discussed in Chapter Three. Second, where successful, the organization has been largely independent of local field administration and protected from outside interference. This is a very important point that should be developed. Third, in their genesis to date, there has been a strongly expatriate input in management and often in capital. In addition, the implementation of the approach in developing countries mostly involves foreign aid in the forms of finance and highly skilled supervisors.

In West Sumatra such area integrated planning was proposed by a German Technical Co-operation for the western part of the Kabupaten Pasaman (IDR, 1974). It seems likely that for West Sumatra the implementation of an integrated approach needs time for the preparation of several requirements to reach success. In other words, it can be seen as long-term planning. This study does not suggest, to begin with, the integrated approach for the whole area of the province. The implementation of the area integrated approach which will be launched in West Pasaman should be studied carefully before implementing the whole area of the province.

This study will be concerned only with the analysis of strategies with the present approaches that are being used. This means that it will be concerned with how to make the present approaches more effective and efficient in order to reach success as soon as possible by using the model of self-sustaining rural development.



### 5.3 Planning System

Whatever approaches will be used in rural development planning, the basic system is the same. Planning as a system has to be linked with other systems (see Figure 2.1), i.e., policy system, overall government control system and real processing system, as mentioned in Chapter Two (section 2.1).

#### 5.3.1 The importance of feedback

One important thing that is often neglected in planning formulation in West Sumatra is the feed-back from the real process system. This means that decision making operations in planning systems often are not based on the former real outputs in the real process system. Consequently, decisions that are made in planning systems have not been effective and efficient, as illustrated by the BUUD program discussed in Chapter Three (sub-section 3.1.1.1).

It should be evident from the program that the implementation of it was extended too quickly to cover all Bimas areas. Following a decision made on the policy system in 1972, implementation began with the establishment of five units of the BUUD in West Sumatra. One year later, 1973, without monitoring the real output of the five units, another 55 units were established. Consequently, most of them have not yet functioned effectively and faced various difficulties and problems. We recall that a recent survey (RERI, 1974, p.8) showed that 30 per cent of them did not have any activity at all. Only 5 per cent of them had relatively good management while, in all, 72 per cent had bad or inactive management. This experience should be taken into consideration by the government and the planning system. The implementation of such a program should be started with pilot projects. The feedback from them

should then be considered seriously before expanding implementation. The target of such a program should be based not only in terms of quantity but also quality.

Feedback can be only found if the implementation of such a program is continually evaluated or reported in a regular manner. Therefore, evaluating development projects and creating an effective and efficient reporting system are important elements in a planning system.

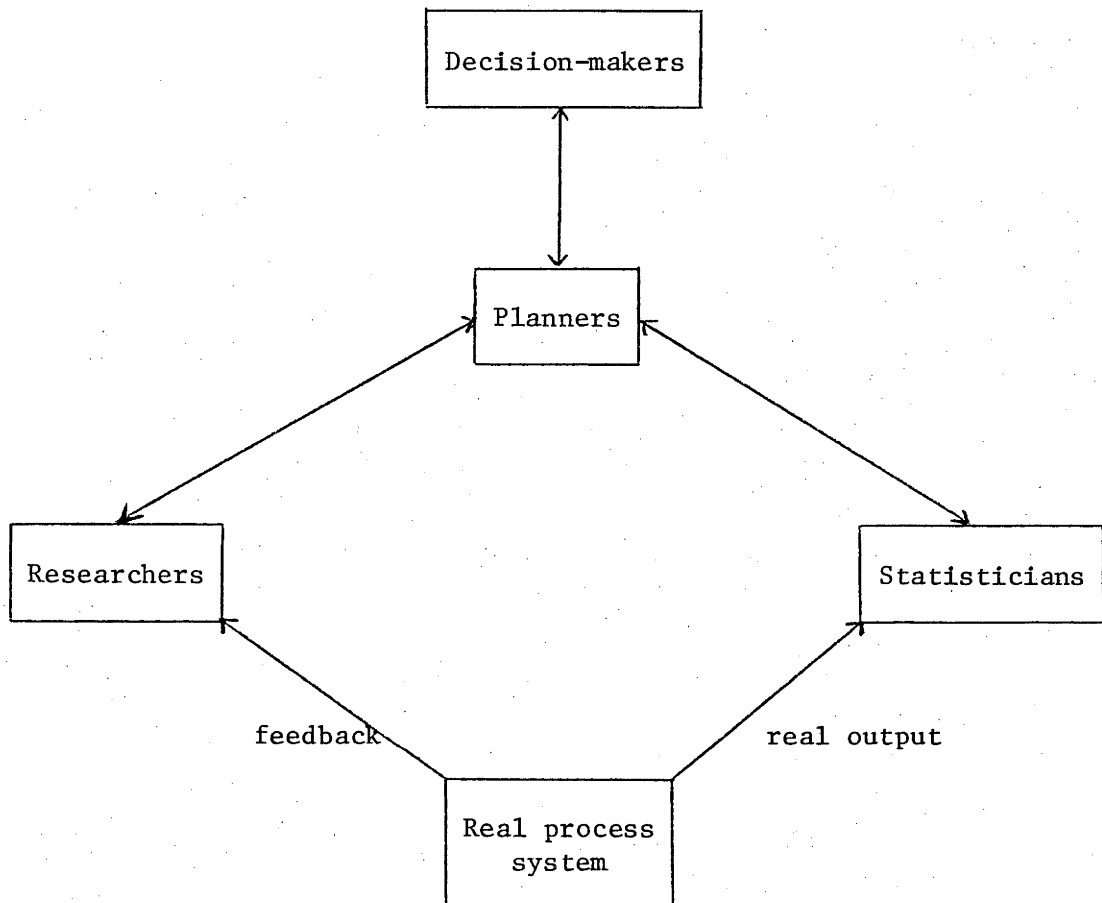
The reports of a development project should provide information on both factors of success and causes of failure. This information is needed by statisticians, planners, and decision makers for preparing future planning. Furthermore, researchers need information from these three bodies for carrying out in-depth evaluation of development projects. The information flows in a planning system can be seen in Figure 5.1.

Figure 5.1 shows that decision makers give information to planners about what has to be planned. The information flows to researchers and statisticians and will be used for designing research activities and to determine what data have to be collected.

For West Sumatra the function of the planners is done by the BAPPEMDA (West Sumatra Regional Development Planning Agency), the decision maker is the government of the province, the researchers can be functioned by the universities and other research institutes, and the statisticians are functioned by all government statistical offices in the province.

In fact, very often research results are not analysed by planners so that the feedback from the real process system is often neglected by planners in plan formulation. Therefore, the plan is often suffering from the so-called elements of "planning pathology", discussed in Chapter Two (sub-section 2.6.3).

FIGURE 5.1  
INFORMATION FLOWS IN A PLANNING SYSTEM



It is often said that data are lacking so that research is very important to find relevant data. But since results of researches are not analysed and used to modify future plans, clearly it is largely a waste of time, effort and money.

### 5.3.2 Planning procedure

Another important element in a planning system is the planning procedure. In this case, there are two basic alternatives, namely: planning from the top down, or from bottom up. Another alternative is a procedure that provides a feasible way to merge geographic, agency, and national considerations (Mosher, 1971, p.95).

Rural development planning procedure in Indonesia up to the present moment is probably still based on the procedure from the top down. Therefore, programs have often not attained results because they usually do not belong to the rural community. The rural community in implementing the program has often little sense of responsibility but acts because of compulsion or fear (Mubyarto, 1974). Planning from the top ignores the gap between what the rural people want and what the government thinks they want.

Planning from below is not easy. What the rural people want might be not in line with national priorities. In addition, planning from below is faced with the problem of obtaining adequately trained personnel who are scarce at the rural level and are often unwilling to work in these areas.

Thus, either planning from the top down or from the bottom up can increase the gap between the government and the rural people. To bridge this gap, the rural development planning procedure should be considered by the government as a "two-way" traffic procedure. This means that what the rural people want must be taken into consideration by the government in making decisions for rural development activities.

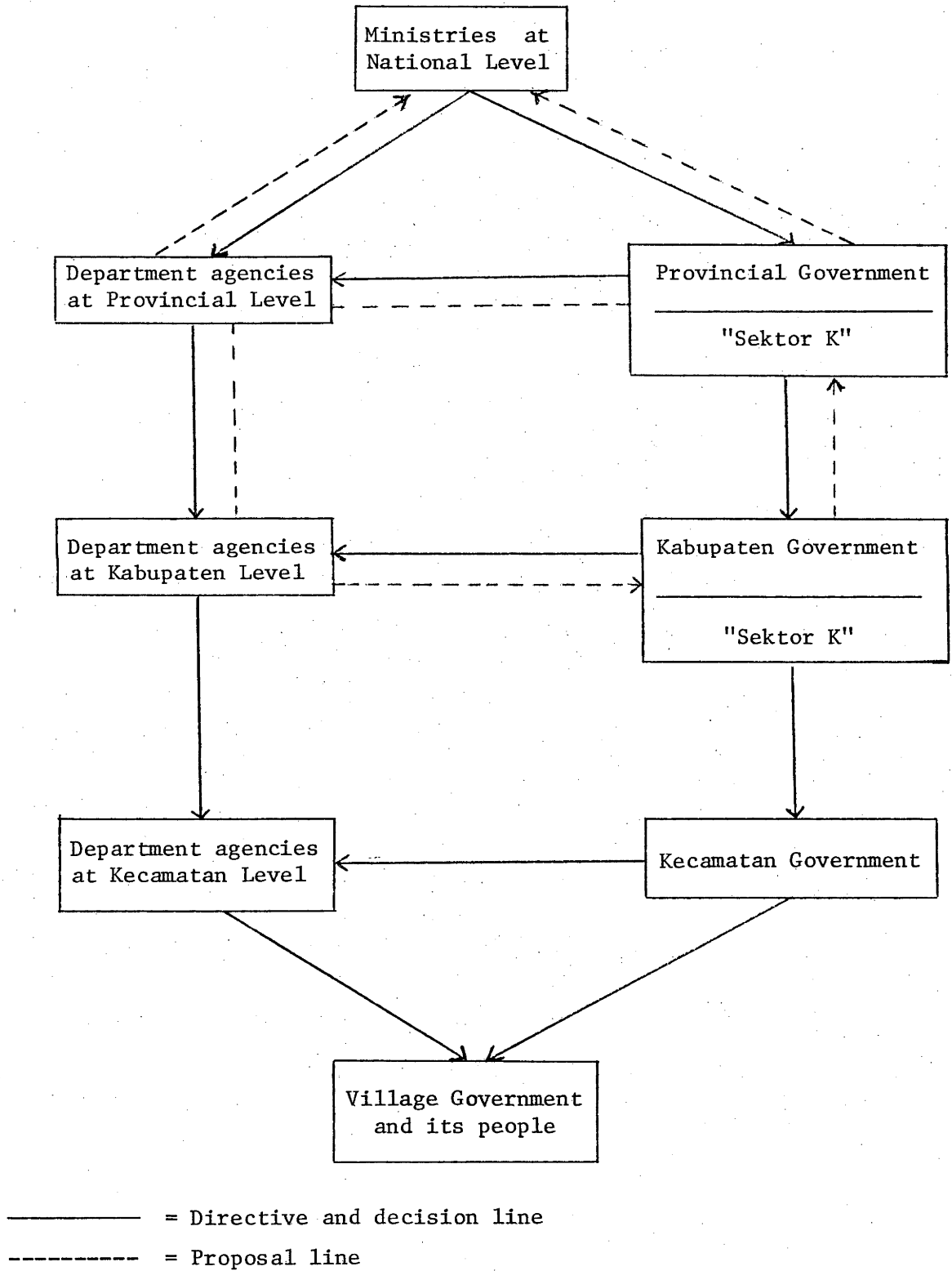
The two-way traffic procedure was launched in Malaysia in the 1950s through the simple but effective "Redbook" system, discussed in Chapter Three (sub-section 3.2.1.3).

The procedure shows that proposals come from village people while consideration and decisions are made by the State Rural Development Committee.

The present rural development planning procedure in West Sumatra can be summarised as in Figure 5.2.

FIGURE 5.2

RURAL DEVELOPMENT PLANNING PROCEDURE  
IN WEST SUMATRA PROVINCE AT THE MOMENT



Rural development projects in West Sumatra may stem from programs that are made and decided at Kabupaten (District), province, and national levels. Besides that, there are also development projects which are created and financed or carried out by village people themselves in "gotong royong" manner, such as the establishment of school buildings, village head office buildings, mosques, village roads repairs, the improvement of water channels, and so on.

Each department agency at Kabupaten level, which is involved in rural development activities, carries out project planning in which the implementation of the projects will be financed by the Kabupaten Development Budget. Project proposals that are made will be discussed in "Sektor K" of the Kabupaten. Members of "Sektor K" consist only of the representatives of the departmental agencies. The results of the discussions will be considered by the Bupati (District head) in his decision-making. After the Bupati makes his decision, the implementation of the project will be carried out by the proper departmental agency at the village level, together with the village head and his people. The departmental agencies at Kabupaten level also prepare what is called "DUP" (Daftar Usulan Proyek or a list of project proposals) to implement what has been planned in "Repelita Daerah" (the Repelita of West Sumatra). The DUPs pass to the provincial government through departmental agencies at provincial level and/or via the Bupati. The DUP from Kabupaten level, along with the DUP which is prepared at provincial level (by departmental agencies at provincial level), will be discussed in "Sektor K" of the province in order to co-ordinate the project proposals before decisions are made by the provincial government. The final decision of all project proposals for Repelita Daerah will be made by the Governor of the province.

Each departmental agency involved in rural development activities at provincial level besides preparing programs and project proposals for Repelita Daerah, also makes the DUP for Repelita National which will be located in the province. The DUP, before being sent to the national government through Ministries and/or via the Governor, will be discussed firstly at the provincial "Sektor K". Consideration and decisions relating to the DUP will be carried out by the proper Ministries at the national level.

Since programs and project planning are made by each departmental agency, the effectiveness and the efficiency of the "Sektor K" as a co-ordinating body will not have been sufficient. The "Sektor K" will be efficient and effective if programs and project planning of rural development are formulated by a team instead of by each departmental agency. That means that the "Sektor K" should function as a development planning committee which formulates programs and plans projects of the rural sector. The implementation of these would be carried out by the proper departmental agencies.

It should be obvious from the above discussion that people at the village level, including the Wali Nagari and other village officials have not been involved in the rural development planning process. Figure 5.2 shows clearly that the dotted lines (proposals lines) have never come from the village level. All of the government rural development programs and projects are formulated by departmental agencies without asking the Wali Nagari what the village people want. The departmental agencies assume that what they want is also what the village people want. Often what they think people want is not in line with what people really want so plan formulation and implementation

might often be not pragmatic, and might also bring frustration to the Wali Nagaris, as discussed in Chapter Four (sub-section 4.6.1).

It was correctly summarised by the "Seminar on Development" in Kuala Lumpur in 1972 that -

. . . all efforts must be made to ensure maximum acceptance and response from the people for development. Therefore, in plan formulation there must be participation by all concerned, namely Government and the recipients of development (Malaysia, 1973, p.xix).

Plan formulation requires an identification of the felt needs of the people, and often times such felt needs are predetermined by the planners which has led to the failure of some development projects due to the lack of genuine participation from the people. The identification of the felt needs requires a feed-back from the grass root levels. The line of communication for this feed-back can be channelled through the existing socio-cultural institutions, i.e., the village meeting place such as coffee shops and religious centres. It is necessary that research be undertaken in the identification and analysis of the felt needs so that plan formulation and implementation may be pragmatic. This will require research to be carried out at the micro level (*ibid.*, p.xx).

In addition, research results and other feed-back through reports should be analysed by planners in formulating plans as we have also mentioned earlier.

The weakness of the present planning procedure was realised by the government of West Sumatra where Repelita II of the province has planned to use regional approaches in development planning procedures. This means that plan formulation will be started at village level, afterwards at Kabupaten level, and lastly at provincial level. Repelita II pointed out that the application of the regional approach needs time due to the lack of trained manpower for planning activities at all levels of the government (BAPPEMDA, 1973, p.48).

The advantages of regional approaches are, among others, as follows:



1. The best location of each program or project in the region can be found so that optimum benefit can be achieved.
2. Programs or projects can be spread out evenly among regions. This does not mean that such a project will be spread out evenly among regions. It means that there will be a balance of development among regions.
3. The participation of local people will increase because they have been involved in the planning process so that the plan belongs to them, too.

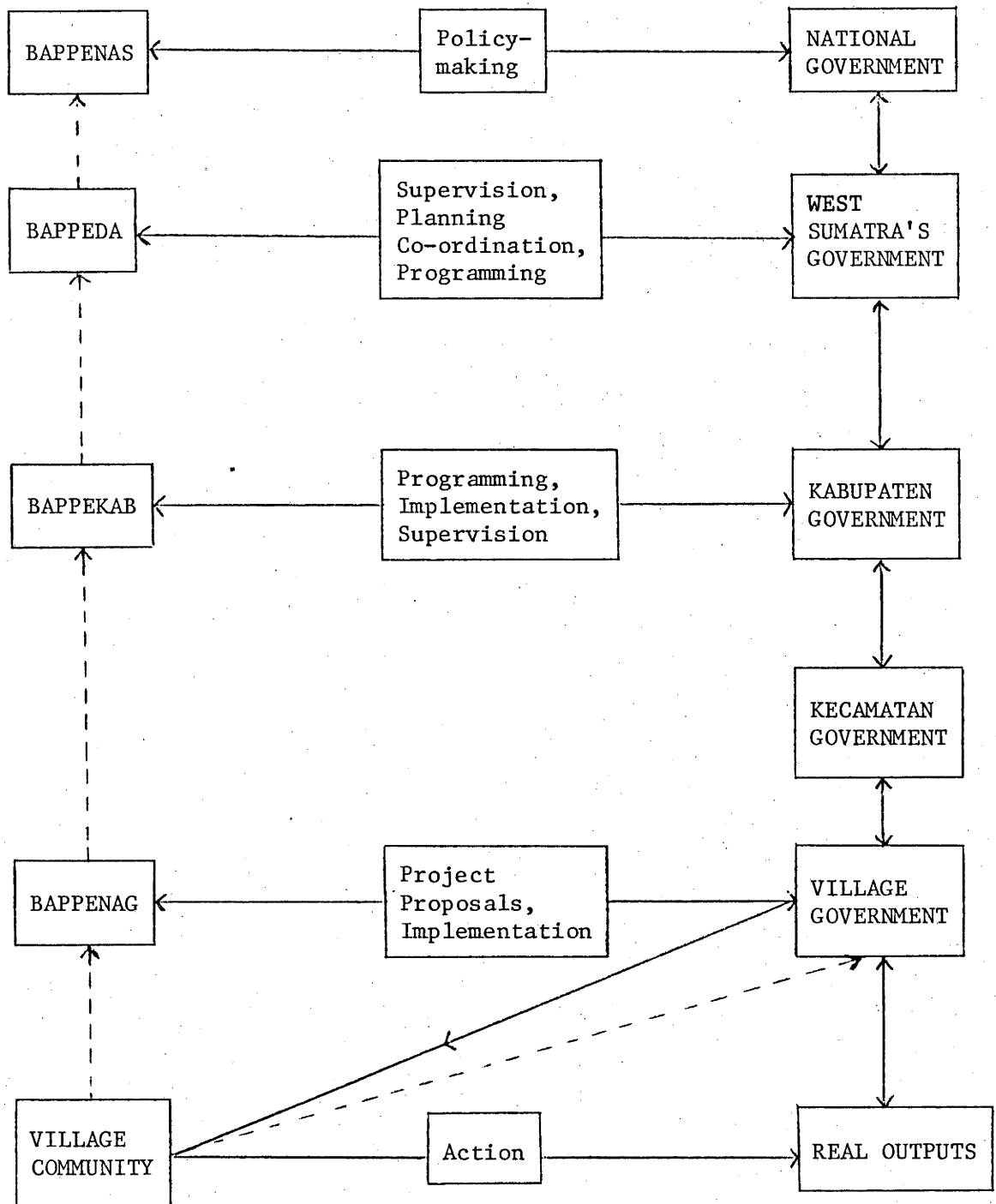
The process of planning formulation, using the regional approach in rural development planning, in the province of West Sumatra can be summarised as shown in Figure 5.3.

The process of rural development planning formulation and implementation set out in Figure 5.3 can be explained as follows:

1. Village government and Village Development Planning Committee (BAPPENAG) collect all requests from the village community ("rakyat banyak"). Requests which are appropriate to the village plan and which will be financed by the village budget in "gotong royong" manner will be decided on by the village government with consideration from the BAPPENAG. Other outstanding requests will pass to the Kabupaten Development Planning Committee (BAPPEKAB) for consideration.
2. The BAPPEKAB collects and considers all proposals by Government department agencies. These proposals will be integrated with village requests. Proposals will be integrated with village requests. Proposals which are relevant to Kabupaten programs and which will be financed by the Kabupaten budget will be taken into consideration by the Kabupaten Government in its decisions. Other proposals that

FIGURE 5.3

# RURAL DEVELOPMENT PLANNING PROCEDURE FOR THE PROVINCE OF WEST SUMATRA



have been considered by the BAPPEKAB will pass to the West Sumatra Development Planning Committee (BAPPEDA).

3. All proposals from the BAPPEKAB, together with proposals from departmental agencies at provincial level will be used by the BAPPEDA in formulating the Repelita Daerah (the Repelita of West Sumatra Province). The BAPPEDA also makes proposals for National Repelita so that proposals from the BAPPEKAB and provincial departmental agencies which are relevant to National Repelita will be included. These proposals will be sent to the National Development Planning Agency (BAPPENAS) for consideration in formulating the National Repelita.
4. All proposals that are rejected should be returned to the applicants with regret, and giving reasons. Applicants should be regretfully informed about the rejection of their proposals and the reasons for rejection should be given.
5. The implementation of programs or projects that have been decided on by the government at all levels will come into action at village level. This action will produce outputs. The implementation of the rural development programs or projects should be reported from bottom, up. In this case, an effective and efficient reporting system should be considered. The reporting system that has been used in Malaysia can be taken into consideration in seeking a reporting system model for West Sumatra.
6. Programs or project proposals and report on the implementation of programs or projects come from below. Guidance, directives, policy, decisions and corrections stem from the top. Thus this procedure can be said to be a two-way traffic planning system.

At the present moment, the BAPPEKAB and BAPPENAG have not been established in West Sumatra. For the moment, these functions can be carried out by the "Sektor K" of Kabupatens and the "DPRN/KN" at the village level. Thus the operational of this rural development procedure can be started as a pilot project in the planning procedure. It means certain Kabupatens and certain villages of the Kabupatens in the province of West Sumatra can be selected as a pilot project in the application of the regional rural development planning approach.

In deciding whether a proposal will be either accepted or rejected, the decision-makers should take into consideration not only the consistency, feasibility and practicability of the proposal, but also the links of the proposals with the goals of rural development. This is very important because often decision-makers neglect rural development goals in making decisions. For example, decisions are often based on production increase but neglect consideration of income distribution.

The application of the structure in Figure 5.3 is not an easy task. At first, it will face a number of problems, and such planning committees may not work smoothly. The main problem is the lack of trained manpower to formulate such plans, and to manage and to administer the planning committees.

Meanwhile, this does not mean that such planning committees will start to work after the trained manpower has become fully available. "It is better to do what can be done with the resources available" (Penny, 1967). In most villages there are some men who could give clear assessment of what should be proposed to the government. At least the BAPPENAG can be used by farmer representatives as a forum for discussing present real needs and grievances. After some experience, it should be possible for it to make a real contribution to development planning.

Thus, at first, the most important function of the BAPPENAG is to collect aspirations and proposals from village people as resources for the government in formulating a development plan. There is no doubt that some of the proposals might not be in line with government policies and priorities, but, by doing this, rural people will have played an active part in planning and executing development programs. This seems an ideal place to go on to say that the resulting two-way flow may restore the dignity and effectiveness of the village leader.

The role of District Planning Committees or the BAPPEKAB, in the first step is also not to formulate such development plans. This is also due to the fact that trained manpower for planning jobs at district levels is very limited. Thus, at first, their function is instead to assess proposals from the BAPPENAG and to analyse development opportunities that may exist but remain unused in the district. The analysis should be able to show what these opportunities are and where they are. They can be analysed from the survey results of the PMD that have already been mentioned and other survey results that have been done in the district. The analysis of the development potential of each district can be used by the provincial committee in designing development programs and projects.

By doing this, it is evident that, at first, development plan formulation will be carried out by the BAPPEDA only, with the exception of BAPPEKAB and BAPPENAG which have been chosen as pilot projects. Other development planning committees will function as the collectors of information and feedback on felt needs which are needed for future development planning.

In time, after trained manpower for development planning is sufficient for each level, it should be possible for the BAPPENAG and

BAPPEKAB to function as real development planners. Thus, initially, planning decentralization cannot be fully implemented since premature decentralization will suffer from lack of preparation. Trained manpower for planning can be provided through a special training course like that provided by the "Institute of National Development Planning" in Jakarta (see Swasono and Glassburner, 1975). The objective of the institute is to supply appropriate trained manpower for the BAPPENAS and the BAPPEDA. The regional Training Course should be considered for supplying trained manpower needed by the BAPPEKAB and the BAPPENAG.

### 5.3.3 Targets in the planning system

Chapter Two (sub-section 2.6.1) has mentioned that there are two types of planning, namely, allocative planning and institutional framework planning. The implications of these types brings us to the problem of setting targets in agricultural development planning.

Allocative planning usually concentrates heavily on physical and public investment targets. For example, the planning techniques of Repelita II of West Sumatra are based on this. First, a target to increase the income of the people at an average annual rate of growth of 6 per cent was made. To achieve this growth rate, an estimate of each sector growth rate was made. A set of physical targets, including production targets for each agricultural commodity was estimated. Targets for a number of agricultural inputs were also made. Capital investment for each sector by the government and financial resources for investment were also estimated for each year of the Repelita II period (Esmara, 1973). The targets are usually set to give a quantitative picture of the commodity tasks to be achieved, and as the basis for selection of specific measures and policies to be adopted to enable the targets to be reached (Ojala, 1973).

On the other hand, the institutional framework planning techniques do not concentrate on the allocation of physical resources, but on the way they are organised. Mellor (1971) and Johnston and Kilby (1975) defined allocative planning as being traditional planning techniques. According to Johnston and Kilby (1975, p.129),-

. . . any strategy for agricultural development will embrace some combination of (a) programs of institution building related to such activities as agricultural research and rural education and farmer training, (b) programs of investment in infrastructure, including irrigation and drainage facilities and rural roads, (c) programs to improve product marketing and the distribution of inputs, and (d) policies related to prices, taxation, and land tenure.

Therefore, targets in agricultural development planning should be related to these strategy elements.

The reason why agricultural production targets are not appropriate is that agricultural output is notoriously subject to biological variations and unpredictable factors such as weather, plant diseases, etc. In this situation, Mosher (1966, p.171) stressed that only part of agricultural development can be planned. Governmental activities and policies can be planned, but agricultural production cannot be, except in an indirect fashion and therefore incompletely.

It should be evident from the experience of a number of countries discussed in Chapter Three that some successes in increasing agricultural production were not because of production planning, but were particularly a result of using relevant strategies. The relevant strategies for each country are not the same. They depend upon the condition and situation of each country, i.e., the condition of the economy, sociology, politics and culture of the country. The stage of development also determines the relevant strategies.

The Taiwanese experience shows that the success has been achieved in agricultural production through farmer associations. The strategy

that has been used is the establishing of high quality farmer associations in order to enable rapid adoption of new technology by large numbers of small farmers. Malaysia's strategy started with the launching of a new planning procedure and an effective reporting system. Indonesia has created a new method of extension through the Bimas program which has succeeded in increasing rice production. Ethiopia's strategy in the CADU project involves giving major attention, in the first step, to the establishment of improved marketing facilities. The Comilla projects of Bangladesh have achieved some success in agricultural production through the establishment of the Bangladesh Academy of Rural Development where the first activities are research and the training of government agencies and after which follow other activities (see sub-section 3.2.2.1), i.e., Thana Training and Development Centre, Rural Works Program, Thana Irrigation Program, and a new co-operative system.

Returning to the West Sumatra planning techniques, Repelita II of the province shows clearly that major emphasis is given to production targets and other physical and public investment targets. Policies to achieve the targets that were formulated are too general and co-ordination among departmental agencies is still lacking.

Each departmental agency of the Agricultural Ministry has planned to carry out Bimas programs in order to reach the production targets. Thus there will be a number of Bimas programs in West Sumatra during Repelita II, namely, Bimas of rice, coconut, chicken, fish, and other crops. But how to organise these Bimas programs has not yet been formulated. In order to avoid so many Bimas organizations, consideration should be given to changing Bimas programs from a crop basis to an agricultural region basis. Thus, there will be only one Bimas



organization covering a number of crops for which increased production has been planned. By doing this, the cost of the program which will be financed by the government can be reduced. This reduction can be used for other purposes of development programs.

Another important question that should be taken into consideration in West Sumatra development planning is the problem of farmers' production incentives. What kinds of incentives, if any, should be given to farmers in order to reach increases in the production of certain commodities as planned by the government? Without effective incentive policies, the implementation of programs like Bimas will face some difficulties. Farmers will not get involved in the program if there is no incentive for them. Incentives can be manipulated through subsidies, taxation, price policies, etc.

The conclusion that can be drawn from the above discussion is that major attention should be given to the institutional framework planning system rather than simply the allocative planning system. Both of them require attention and it is a great mistake for the institutional system to be ignored as it is at present.

#### 5.4 Relative Priorities in Planning

As we have mentioned in many parts of this dissertation, rural development is an extremely complex matter. Public resources of money and manpower are never adequate to do all that might be done to meet the needs of rural development. Therefore, rural development planning strategies for West Sumatra should develop priorities for what should be done in planning formulation according to the resources available. Priorities are established in order to use public resources effectively and efficiently in achieving rural development goals.

The government of West Sumatra has decided that, at first, priority will be given to the development of infrastructure and the agricultural sector, together with the industrial sector which supports agriculture.

The first question is where should agricultural development be started? In general, there are three basic approaches to this question, namely: (1) the approach of the "technocrats" who give priority to growth through an increase in production by the more progressive elements; (2) the approach of the "reformers" who place the emphasis on creating an appropriate social climate which will enable the masses of rural workers to benefit from improved techniques; and (3) the approach of the "realists" who include both approaches in a compromise or "good mixture". For West Sumatra, the third approach is likely to be more relevant because the social structure of the province discussed in Chapter Four (section 4.3) is unique. Despite the fact that theoretically and in practice "Adat Minangkabau" is not static, it needs special attention from planners and decision-makers to make it more dynamic and flexible. The means of making society more dynamic and flexible should be regarded as a relatively high priority in rural development planning. How to reduce the negative effects of the social system should be given special attention. One possible way of doing this is by approaching the informal leaders who are very influential in the society. By providing effective communication between the government and the informal leaders (the Adat and religious leaders) the participation of the community in development activities will increase and the process of social changes will be faster.

The second question relates to crops priority determination. As we know, agricultural production includes many kinds of crops. Which crops should be selected to be developed is another problem in agricultural development planning strategy formulation. In this case,

priority should be given to crops with higher comparative advantage. This is because the main goal of agricultural development is to increase the income of the farmers. Therefore research into crop production profitability is the basis for determining crop priority. So far, selection has not been based on comparative advantage but based on estimated demand for final consumption, intermediate goods, and exports. This can be understood because it is not an easy task to estimate comparative advantages of crops. In Chapter Four (sub-section 4.4.1) it has been pointed out that the highest farm incomes come from Sawah-vegetables followed by Sawah-spices. This was the situation in 1971. This situation cannot always be used as a basis because it could have changed according to the changes in prices of both inputs and outputs of crops. An increase in production will affect the price of the crop unless the demand for it is still greater than the supply. The comparative advantage among crops also depends on the price policies of the government, the quality and the marketing system of the various crops. Therefore, to increase the incomes of farmers is not always made possible by increasing production. Increasing the quality of their products, the improvement of their marketing systems, and the provision of price incentives, are also involved. In conclusion, the selection of crops that will be given priority to be developed should be based on comparative advantage for farmers in order to make planning, implementation and goals in line with each other.

The third question is the problem of area priority determination. The comparative advantages of such crops will depend on the location of the crops. It means that the comparative advantage of a particular crop may differ from area to area. Thus, area priority determination is also important in planning formulation. The selection of regions to be given priority to be developed should be based on the development

opportunities of the regions. "There will be no development without development opportunities". Development opportunities are, using the definition of Penny (1967), "opportunities for increasing real income that may be received and used by whoever makes resource-use decisions". The identification of development opportunities of regions within the province is the basis of selection. Only regions with high development opportunities should be considered for high priority to be developed.

The fourth question is about public organisation and administration priorities. The Indian Planning Commission believes "the pace of development will depend largely upon the quality of public administration" (Krishnaswamy, 1975, p.18). Experience of some countries in agricultural development discussed in Chapter Three, has shown clearly that some of the successes have been greatly due to the quality of public administration.

For West Sumatra, Esmara (1974) suggested that at the provincial, district and municipality offices there must be a team of university graduates to increase the quality of public administration. A Bupati (District head) should be helped by at least one social and political scientist, one economist, one lawyer, and one public finance specialist. At Kecamatan level (sub-district), the Camat (sub-district head) must be a graduate of the APDN (Academy of Public Administration).

The implication of this idea is that the staff of the offices should be supplemented with university graduates who affect the government budget. In addition, administration at village level has not been discussed, although the public administration at village level is not less important than it is at the higher levels.

The improvement of the public administration quality is not always achieved by adding to the present staff. It can be also helped by

giving training to the present staffs. Priority should be given to public administration at lower levels because staff there are directly involved in the implementation of development plans, and the quality of the staff is relatively much lower than it is at the higher levels.

Because lack of trained manpower is one of the greatest bottlenecks to development in the province, the establishment of an academy for development training like the Bangladesh Rural Development Academy should be considered by the government, at least for long term planning.

The problem of the "Wali Nagari" discussed in Chapter four (sub-section 4.6.1) should be taken into consideration seriously in order to increase the quality of public administration at village level, and to increase local participation in development activities.

Mosher (1966, p.172) argues that planning should be done on an agricultural region basis. This is particularly true in situations like that in West Sumatra where there are such distinct differences between areas (Chapter Four).

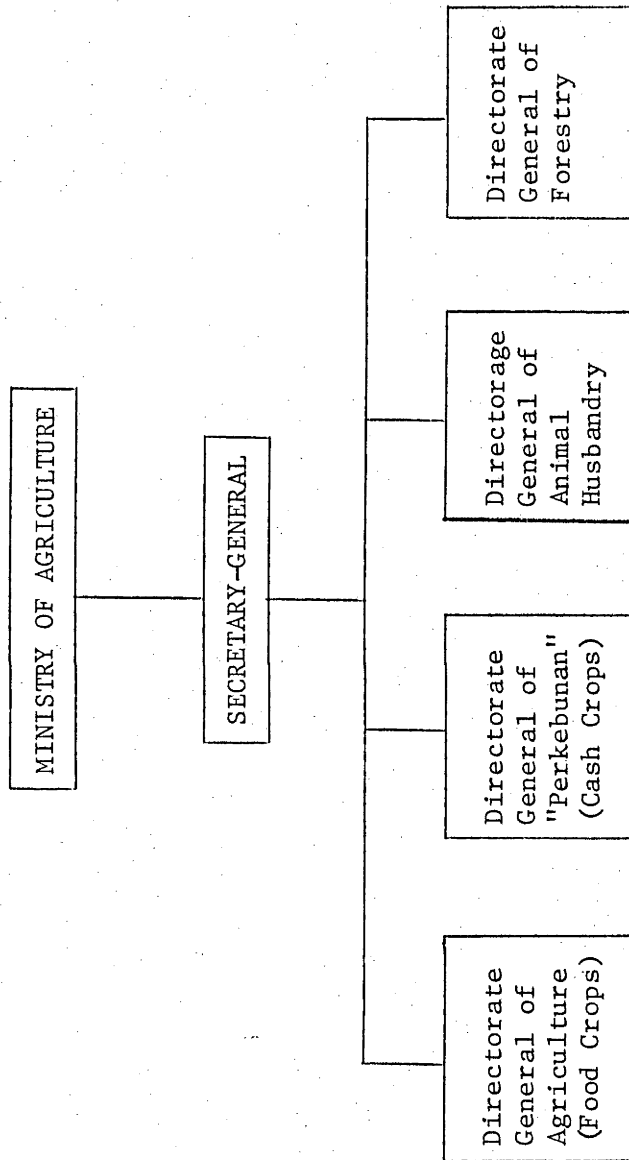
So far, agricultural planning in West Sumatra has not yet been done by agricultural region but instead either by administrative region or across regions by crop. Planning on a crop specific basis is not synonymous with planning by agricultural region because the type of farming in West Sumatra, as shown in Chapter Four (sub-section 4.4.1) consists of a combination of crops.

Planning by crop in West Sumatra is parallel with the structure of the Agricultural Ministry organization where divisions are based on crops as shown in Figure 5.4.

At provincial level there are several agencies under the Ministry which are also based on crop types, namely: "Dinas Pertanian" (for food crops), "Dinas Perkebunan Rakyat" (for cash crops of smallholders),

FIGURE 5.4

PARTIAL ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF AGRICULTURE IN INDONESIA



"Direktorat Perkebunan" (for estate crops), "Dinas Kehutanan" (for forestry), "Dinas Peternakan" (for animal husbandry), and "Dinas Perikanan" (for fisheries).

Agricultural planning in West Sumatra is carried out by cash "Dinas" so that agricultural planning is on a crop type basis appropriate to the function of each Dinas. This situation is shown clearly in Repelita II of the province.

If agricultural planning will be based on agricultural regions, the structure of the Agricultural Ministry organization should be changed. But because the change of the structure will be determined at the national level, the change of the structure in West Sumatra must be delayed until there are changes at the national level.

Meanwhile, because the provincial development plan agency has been established, i.e., the BAPPEMDA agricultural planning based on agricultural regions, theoretically can be done by the BAPPEMDA. But on the other hand, in practice, this is difficult to realise. The problem is in budgeting. Each Dinas has a special budget for its development activities. By doing the planning on an agricultural regions basis, the implementation of such a program (e.g., the Bimas program for a certain agricultural region) has to be done by one organization, one management, and one financial administration. This, especially in financial aspects, is very difficult to do since the budget for agricultural development is still based on crop development rather than on agricultural region development.

In conclusion, it is difficult to carry out agricultural development planning on an agricultural region basis since the organizational structure of the Ministry of Agriculture has not been changed.

## CHAPTER SIX

## CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

Rural development as defined in Chapter Two (section 2.1) is not only important but also a decisive factor in the development of the province of West Sumatra. This is due to the fact that 86 per cent of the population live in rural areas and that the economy of the province mainly depends, directly or indirectly, upon smallholder agriculture, as mentioned in Chapter Four (section 4.4). In addition, the possibility of the development of non-agricultural industries is limited due to the fact that natural resources for those industries are relatively lacking (section 4.2).

Rural development is an extremely complex process. Its elements are not only great in number, but are also complicated. Three major basic elements are listed in Chapter Two (section 2.4), namely: the agriculture; rural institutions or organizations; and rural infrastructure elements.

The main function of rural development planning is to help the development process. Without planning, the process of development may be slow or misdirected. The success or the failure of rural development planning, in its implementation to achieve goals of development, depends greatly upon policies, strategies, and approaches used in planning formulation (section 2.2).

Three major types of rural development strategy have been identified in Chapter Three, namely: (1) the Minimum Package Program; (2) the Integrated Rural Development Program which can be either



(a) Nationally Integrated Programs or (b) Area Development and Settlement Schemes; and (3) Sector and Special Programs.

Several developing countries have been relatively successful in some aspects of rural development by using different development strategies and different planning techniques, discussed in Chapter Three and Chapter Five. These countries comprise both those with a capitalistic economic system (e.g., Taiwan, Bangladesh, and Ethiopia), and also countries with a communist or socialistic economic system (e.g., China). Therefore, the success or the failure of such rural development activities does not necessarily depend upon the ideology of a country, but depends upon the relevancy of strategies that are used in rural development activities, according to the political, social, economic, and cultural situation of a country.

A number of publications (e.g., Kulp, 1970; Abt, 1971; Anker, 1973; Lele, 1974; Kotter, 1974; and Waterson, 1975) have come to the conclusion that the integrated rural development strategy is very important for the success of rural development in developing countries whatever their ideologies are. This is not only because rural development is to be seen as a geographical concept (Anker, 1973) but is also due to the fact that the problems of rural development cannot be tackled in isolation (Kotter, 1974).

Although the integrated rural development planning strategy is quite reasonable, it is no easy task to implement it successfully as we have analysed in Chapter Five (section 5.2). It needs various elements such as relevant expert staff to formulate plans, managerial skill, leadership, organization, administration, and so forth to carry out the integrated strategy. The success of the integrated strategy is also affected by the stage or phase of development of a country.

Taiwan has been successful with integrated rural development after reaching stage IIIB of rural development, as defined in Chapter Two (sub-section 2.5.1). In this stage, the process of rural development "takes off" and acquires a self-sustaining momentum.

For the province of West Sumatra, the integrated rural development strategy can be seen as a long-term planning objective. The conditions of the province at the moment do not favour an integrated rural development strategy because the availability of relevant trained manpower, managerial skill, leadership, organization and administration, and so forth, is still lacking. Meanwhile, the area integrated development and settlement scheme which will be launched in the West Pasaman district of the province (West Pasaman Development Planning) is very useful as a pilot project before integrated rural development covers all areas of the province. Therefore, the implementation of this program should be studied carefully for the sake of future integrated rural development planning in the province.

The relevant strategies of rural development planning for the province of West Sumatra at the moment include (a) the improvement of the present strategies which consist of the Minimum Package Program and the Sector and Special Rural Development Programs, as discussed in Chapter Three (sub-sections 3.1.1; 3.3.1; and 3.3.2), and (b) preparation for integrated rural development, especially preparation for achieving self-sustaining momentum in rural development.

In order to achieve a strong basis for self-sustaining growth and development of the rural community, Waterson's model, discussed in Chapter Five (section 5.1) might be relevant for West Sumatra. This is because the model has already been used, directly and indirectly in the province. The problem is how to make the six elements of the model complete so that they may work more effectively and efficiently

in the present conditions of the province. The six elements of the Waterson's model are as follows: (1) labour intensive agriculture; (2) labour using minor development works; (3) agriculturally oriented light industries with low capital requirements; (4) an atmosphere of self-reliance; (5) organization for rural development; and (6) development centres, as discussed and defined in Chapter Five (section 5.1).

It should be evident that rural development is a complex matter. On the other hand, the government resources of money and manpower are never adequate to do all that might be done in rural development activities. Therefore, priorities have to be set in order to use scarce public resources effectively and efficiently in achieving rural development goals. The government of West Sumatra province has correctly decided to give priority to the development of infrastructure, the agricultural sector, and the industrial sector which supports agriculture, as pointed out in Chapter One (section 1.3). The problem is how to approach agricultural development.

As we have mentioned in Chapter Five (section 5.4), there are three basic strategies with regard to agricultural development priorities, namely: (1) priority is given to economic growth through an increase in production by using more progressive elements; (2) the emphasis is given to social development by creating an appropriate social climate for development; and (3) the emphasis is given to both strategies in a good mixture. For West Sumatra, the third approach is likely to be more relevant according to condition, situation and potential of the province, as discussed in Chapter Four.

## 6.2 Recommendations

In order to make the present strategies of rural development planning in West Sumatra more effective and efficient, some recommendations are made below. Recommendations include preparations needed for the integrated rural development strategy of the province.

They are based on the experiences of some developing countries discussed in Chapters Three and Five, and the conditions and situation of the province discussed in Chapter Four and the basic concept of rural development mentioned in Chapter Two.

#### 6.2.1 Planning system

In order to make West Sumatra's rural development planning more effective, the present planning system should be improved. The improvement should include the following points:

1. Planning should include critical assessment of feed-back from the results (positive and/or negative) of what is already being done. Therefore, planning does not only cover new activities, but also aims to improve the quality of activities already underway. The feed-back can only be achieved if the implementation of programs is continuously reported or evaluated in a regular manner. Consequently, an effective and efficient reporting system should be developed. In this case, Malaysia's reporting system mentioned in Chapter Three (sub-section 3.2.1) might be useful. In addition, the results of research which has already been done in the province should be analysed by planners before making plans for new research activities.
2. Planning procedure should be improved from the "top-down" procedure to the "two-way traffic" procedure, as discussed in Chapter Five (sub-section 5.3.2). This is not only to give opportunity to rural people to play an active part in the planning process, but also to increase their participation

in development activities. By doing this, rural people will feel that such plans, programs, or projects that are formulated by the planners are also theirs and they will have a sense of responsibility towards the success of the plans. With this procedure, what rural people want will be really known by the planners.

3. So far, agricultural planning in West Sumatra concentrates heavily on production targets. These are less important due to the fact that agricultural production is notoriously subject to biological variations and unpredictable factors such as weather, plant diseases, etc., as mentioned in Chapter Five (sub-section 5.3.3). Therefore, concentration should be given more to policy formulations for achieving an increase in production of such agricultural commodities. For example, what kinds of incentives should be given to farmers in order to attain increased production? What kinds of institutions are needed for creating technological changes? How should scarce government resources be allocated in order to use them more effectively and efficiently? What kinds of research should be carried out for these purposes? Which areas are to receive first attention in launching such programs? How can co-ordination among the departmental agencies be increased? What kind of training should be given to extension workers in rural areas?
4. Changing the Bimas Program from a crop basis to an agricultural area basis, as discussed in Chapter Five (sub-section 5.3.3) should be considered. Because transportation is one of the essential elements for agricultural development, as mentioned in Chapter Two (sub-section (2.4.1)),

selection of the Bimas areas should also be based on the condition of transportation. For example, the areas with all-weather roads can be selected as the Bimas area as in Ethiopia, as mentioned in Chapter Three (sub-section 3.1.2). By doing this, there will be only one Bimas organization in West Sumatra instead of many organizations as at the present time. In addition, the cost of the program will be lower and co-ordination among departmental agencies of the Agricultural Ministry will be increased, and the number of extension workers needed for the program will be relatively fewer than before.

The selection of areas for the Bimas Program in these areas should be based on development opportunities of the areas. It means only areas with high development opportunities should be chosen as the Bimas areas. And only crops with high comparative advantages should be promoted in the Bimas program. This is in order to increase real income of the farmers, which is the most important goal of rural development.

5. In planning for opening new agricultural land and rehabilitating abandoned estates, as discussed in Chapter Four (sub-section 4.4.1), the strategy and policy of the government should consider use of a "nucleus estate" model like the KTDA program discussed in Chapter Three (sub-section 3.3.2.1), the "PMU program" (sub-section 3.3.2.2), and the "West Pasaman Development Plan" (IDR, 1974). It means that crop production will be carried out by smallholder farming, but the processing, marketing and overall management of them will be

carried out by estates. The basic principle of the model is to bring large scale estates and smallholder farming together advantageously under one organization and management. The large scale advantages of estates relate to research, management, transport, processing, and marketing organization. On the other hand, the advantage of smallholder farming is that the cost per unit of producing a crop is lower in smallholder farming than in estates, as discussed in Chapter Three (sub-section 3.3.2.1) and by Yotopoulos and Nugent (1976, p.103). Another advantage is that local transmigration from the "inner kabupatens" to the "outer kabupatens" can be launched by using the "nucleus estate" model. In addition, the problem of illegal occupation of the abandoned estates by some farmers in several areas can be solved properly.

#### 6.2.2 Preparation for an integrated development strategy

As we have mentioned, an integrated development strategy for West Sumatra can be seen as a long-term plan. It needs preparation of several aspects of development activities. Preparation should be carried out as follows:

1. A good system of planning as defined in Chapter Two (sub-section 2.6.4) can only be achieved in West Sumatra by preparing a sufficient number of trained workers for formulating good integrated planning. Because trained manpower is lacking not only for planning formulation but also for other development activities, the establishment of a "Rural Development Academy" similar to that in Bangladesh, discussed in Chapter Three (sub-section 3.2.2.1)

should be considered by the government, at least as a medium-term plan. It is not an academic institution. The main function of the academy is to give training in various aspects of rural development not only to the public servants but also to rural people. While the academy is under preparation, up-grading courses for the Wali Nagaris and village informal leaders should be continued to speed up social processes in the rural areas for supporting the rural development process. By doing this, the gap between the government and rural people can be bridged.

2. The success or the failure of such rural development implementation is highly dependent upon the degree of local participation (rural people, village government, village informal leaders, and other local institutions and organizations). In this context, it is recommended that the government should create favourable conditions in rural areas for increasing the participation and responsibility of the local people in development activities.
3. The pace of rural development will also depend largely upon the quality of public administration. Thus, preparation for integrated rural development should recognise this problem. An effective and efficient administration for integrated rural development should be created. The present organization for rural development should be evaluated in order to find a relevant organization for integrated rural development in the province.



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## APPENDIX A

## PLANNING SYSTEMS

Planning as a system can be imagined as a network of decision-making operations. The structure of such a planning system can be simplified as follows:

### A.1 Types of Planning

There are two types of planning, namely, allocative planning and institutional planning. Allocative planning deals with the direct government allocation of capital, manpower, and land resources to specific economic sectors and lines of production. Institutional framework planning is concerned with the establishment of "rules of the game", inducements and prevention, regulatory measures and similar institutional arrangements, guiding and circumscribing people's actions (Schickele, 1969, p.36).

### A.2 Planning Dimensions

Two dimensions are especially useful for both types of planning, i.e., organizational dimension and time dimension.

The organizational dimension of planning can be divided into three levels: national level (macro planning); the level of individual farm (micro planning); and the intermediate level which consists of sectoral, regional, and local planning.

Time dimension in planning means that the planning process needs to be divided into time phases. Roughly, time dimension can be divided into three broad time phases, viz., data preparation; programming; and structuring.

In the data preparation phase, raw data and policies are analysed in order to make them useful for decision making. The structuring phase means the determination of the coefficients used in the programming phase. The programming phase is the allocation of limited resources to achieve optimum results (Kulp, 1970, pp.82-86).

### A.3 Sub-systems of Planning

Both dimensions of the planning system must have sub-systems. Basically, there are three sub-systems of the planning system, namely: logical system; administrative system; and documentation system.

Logical system means that each operation of the planning process must be logical. Or in other words, decision making in a planning system must be based on logical considerations. A reasonable decision is one which is based on the entire planning environment. If a part of the planning environment is changed, the decision making must be suited to the change. Therefore, decision making in a planning system is flexible according to the flexibility of the planning environment. The planning environment is all the systems which influence the planning system, i.e., the overall government control system, policy system, and the real process system (for details, see Figure 2.1 in Chapter Two).

The administrative system means that any planning system must have an administrative sub-system. The organizational structure of the planning process varies widely from one country to another. But basically, there are four structural elements, namely: authorities; local leadership, staff; and project managers. The staff can be distinguished into project staff and planning staff.

Documentation system means that in any planning system the planning process must be documented. The documentation links operations, brings in data, and carries out decisions. If the documentation system is

inefficient, it may not be able to exercise the prescribed steps on all relevant alternatives before the deadline (*ibid.*).

#### PLANNING PATHOLOGY

According to Kulp (*ibid.*, pp.91-95), planning pathology includes: unconnected sector and project planning; incomplete projects, undefined targets; unrelated inputs and outputs; lack of inter-project co-ordination; no consideration of alternatives; the budget game; premature detail; premature decentralization; and instant obsolescence.

Unconnected sector and project planning means that the determination of sector goals and allocation of resources is carried out before planning projects. The pace of development will be determined not only by overall resource constraints but also by inter-project constraints.

Incomplete projects mean that project managers base their projects on year to year planning rather than multi-year planning. Efforts this year bring pay-off several years hence. The relations between inputs and outputs cannot be identified except on a multi-year basis.

Undefined target means that the goal of development projects is defined very briefly and broadly and the target is not quantified. Targets of projects must be quantified.

Unrelated inputs and outputs means that targets as outputs are not systematically related to inputs. For example, if a quantified target is not based on the availability of its inputs, the target may not be reached.

Lack of inter-project co-ordination usually happens because different programs have been the responsibility of different agencies.

No consideration of alternatives means that there are no alternative institutional options. It means that the institutions are fixed so that there are no other alternatives.

The budget game means the game between the implementing agencies and the planning and budgetary agencies. If the budgeters only concentrate on finding errors in the financial calculations rather than relating inputs to outputs, planning will not succeed.

Premature detail means that the planning and budgeting agencies try to win the budget game by demanding exhaustive details from agencies, details on personnel and equipment in multi-year documents.

Premature decentralization means that planning from the bottom up is adopted prematurely so that it suffers from lack of preparation.

Instant obsolescence means the breakdown of the formal system rather than the repetition of the original procedure when a plan has been rendered obsolete by further experience and investigation. The effect is that the project proceeds with an unrealistic plan or operates informally. These are the most common types of plan pathology.

In addition, Chambers (1974, p.29) stressed that there was a misallocation of administrative and planning resources with too much attention paid to plan formulation and budgeting and too little to programming and implementation.

#### CRITERIA OF GOOD PLANNING

Kulp (*ibid.*, pp.95-98) gives the criteria of a good planning system as follows: concreteness; consideration of alternatives, compactness; issues identified; broad participation; easy evaluation; input-output functional relationship; completeness, revisability; reportability; teachability; and enforceability. Another important criterion that should be added to these is political stability.

Concreteness means that a plan must be a quantification of a government's program and policies.

Consideration of alternatives means that a planning system must have second choice options as possible alternative strategies and programming alternatives should also be explicit.

Compactness means that the documentation required by a system is its guarantee of on-time submission, evaluation and revision.

Issues identified mean that the planning procedures and formats should focus attention on the big decisions.

Broad participation means that a plan should be drafted to the maximum extent possible by the operators who will take responsibility for its implementation.

Easy evaluation means that the format and presentation should speed the work of the authorities.

Input-output functional relationship means that each project should have a clear functional relationship between its inputs and its outputs.

Completeness means that the planning system should cover all rural development activities and all decisions necessary to get action under way.

Revisability means that provision should be made for mid-period adjustments.

Reportability means that plans are meaningless unless related to reports of progress.

Teachability means that the system should provide for educating drafters in the techniques of project planning.

Enforceability means that the system should provide incentives and rewards for high quality on-time planning and penalties for low quality late submissions.

Political stability means stability in the government system. Without government stability, good planning cannot be achieved. Unstable government causes instability in policies and strategies so that a planning system would be disturbed when government policy is one of the inputs of the planning system.

## APPENDIX B

TABLE B.1

PRODUCTION OF WEST SUMATRA'S FOOD CROPS, 1966-1973  
(in thousand tons)

| Food crops   | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|--------------|------|------|------|------|------|------|------|------|
| Paddy        | 708  | 678  | 738  | 798  | 814  | 845  | 853  | 918  |
| Maize        | 7    | 6    | 6    | 6    | 6    | 5    | 6    | 7    |
| Cassava      | 130  | 98   | 64   | 87   | 83   | 88   | 97   | 96   |
| Sweet potato | 28   | 37   | 29   | 27   | 26   | 33   | 29   | 29   |
| Legumes      | 7    | 6    | 7    | 6    | 6    | 8    | 8    | 9    |
| Potatoes     | 4    | 4    | 6    | 5    | 8    | 9    | 8    | 6    |
| Vegetables   | 8    | 12   | 20   | 15   | 27   | 31   | 27   | 29   |
| Fruits       | 23   | 45   | 30   | 16   | 15   | 17   | 16   | 22   |

Source: UNAND (1975, p.83).



TABLE B.2

PRODUCTION OF WEST SUMATRA'S SMALLHOLDER CASH CROPS, 1966-1973  
(in thousand tons)

| Cash crops | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|------------|------|------|------|------|------|------|------|------|
| Rubber     | 16   | 18   | 18   | 18   | 25   | 18   | 21   | 20   |
| Coconut    | 26   | 25   | 25   | 27   | 27   | 25   | 33   | 34   |
| Cloves     | 3    | 2    | 2    | 2    | 3    | 3    | 3    | 4    |
| Coffee     | 3    | 3    | 3    | 3    | 2    | 4    | 3    | 5    |
| Cinnamon   | 3    | 3    | 3    | 2    | 2    | 2    | 2    | 3    |
| Gambir     | 3    | 1    | 2    | 2    | 2    | 3    | 2    | 2    |
| Nutmeg     | .4   | .4   | .4   | .4   | .4   | .4   | .3   | .3   |
| Tobacco    | .4   | .3   | .3   | .1   | .1   | .1   | .2   | .4   |
| Sugar cane | 10   | 9    | 9    | 9    | 8    | 9    | 10   | 10   |

Source: UNAND (1975, p.99).

TABLE B.3  
AREAS OF WEST SUMATRA'S SMALLHOLDER CASH CROPS, 1966-1973  
(in thousand hectares)

| Cash crops | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|------------|------|------|------|------|------|------|------|------|
| Rubber     | 43   | 43   | 42   | 43   | 43   | 43   | 40   | 47   |
| Coconut    | 47   | 47   | 42   | 49   | 50   | 50   | 51   | 53   |
| Cloves     | 15   | 14   | 14   | 14   | 9    | 8    | 10   | 11   |
| Coffee     | 10   | 9    | 9    | 9    | 9    | 9    | 9    | 9    |
| Cinnamon   | 18   | 8    | 19   | 8    | 7    | 7    | 8    | 9    |
| Gambir     | 8    | 8    | 8    | 8    | 8    | 8    | 6    | 6    |
| Nutmeg     | .3   | .4   | .6   | .3   | .4   | .4   | .6   | .9   |
| Tobacco    | .5   | .6   | .4   | .2   | .2   | .1   | .6   | .9   |
| Sugar cane | 7    | 6    | 6    | 7    | 7    | 7    | 7    | 8    |

Source: UNAND (1975, p.99).

TABLE B.4

ESTATE AGRICULTURE IN WEST SUMATRA, 1971-72  
(in hectares)

| Estate         | Concession area | Crops                                                    | Cultivators                         |
|----------------|-----------------|----------------------------------------------------------|-------------------------------------|
| Ophir          | 13,568          | <sup>*</sup><br>(10)<br>(100)<br>Spices<br>Smallholders' | Army/private company<br>cultivation |
| Liki           | 2,484           | (750)<br>Rubber                                          | PNP VIII                            |
| Pinang Awan    | 2,384           | (208)<br>(82)<br>Quinine<br>Cassia vera                  | Army private company                |
| Peconina       | 1,343           | (8)<br>(10)<br>Citronella<br>Green tea                   | Japanese-Indian                     |
| Huberta        | 1,048           | (18)<br>Quinine                                          |                                     |
| Sei. Aur       | 973             | (51)<br>Rubber                                           | Local government                    |
| Padang Mardani | 930             | (5)<br>(35)<br>(5)<br>Cloves<br>Cassava<br>Bananas       | Private company                     |
| Anai Delta     | 545             | (5)<br>Rubber                                            | Police                              |
| Tandikat L     | 469             | (550)<br>Rubber                                          | Army                                |
| Tandikat B     | 353             |                                                          |                                     |
| Halaban I      | 300             | (115)<br>Tea                                             | Co-operative                        |
| Marapi         | 286             | (180)<br>(1)<br>Cassia vera<br>Quinine                   | Private company                     |
| Total          | 24,683          | (2,133)                                                  |                                     |

Source: Kotter and Junghans (ed.), (1973, p.58, Table VII).

\* The figures in brackets are the cultivation areas of the crops (in hectares).