AGRICULTURAL LAND USE ALTERNATIVES IN REGIONAL PLANNING: A CASE STUDY OF WEST PASAMAN AREA DEVELOPMENT PLANNING WEST SUMATRA - INDONESIA

by

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We accept this thesis as conforming to the required standard

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April, 1982

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This thesis investigates the problems involved in determining the appropriate use of agricultural land in its relation to regional planning. For the purpose of this investigation, the West Pasaman Development Plan has been chosen as a case study. The Development Plan for West Pasaman was drawn up by the Institute for Development Research--IDR, a consulting firm from West Germany, in 1975. The study team proposed five crucial projects to be developed within a ten year period (1975-1985). Two of these five projects, i.e., a new main road and an oil palm smallholder scheme were given priority.

The priority for the oil palm smallholder project was based upon conventional economic criteria. Two important aspects were ignored. First, the physical characteristics of the site, including water resources, were not assessed, and secondly the needs of the existing population were not considered.

In this thesis, three factors, the physical characteristics of the site, the social aspects of the population and economic feasibility were chosen as the criteria to determine the appropriate use of the agricultural land. The area of investigation is made up of two parts. The first part of 13,000 hectares is government land which, at present, is under-utilized. The second part, consisting of 11,000 hectares, is private and communal land run by smallholders. The study team's report failed to account for the existing land use of this 11,000 hectares and therefore it is on this area of land that the investigation has concentrated.
It is found that the land being studied is physically suitable for rice cultivation. Oil palm cultivation does not appeal to the farmers in the study area because they are unwilling to move into new cultivation practices as they feel safer growing rice and other crops with which they are familiar. It seems an irrigation project is the most desirable government project for the study area. This would appear to confirm Indonesian national goals, which emphasize self-sufficiency in food production.

If the available water resources of the study area (the Batang Tongar River) could be fully utilized, it is found by using economic data on returns per hectare per year, that double cropping rice with new high yielding varieties would yield a higher return to the farmers than oil palm. Thus, it is concluded that wet rice agriculture (double cropping) would be a more effective use of the 11,000 hectare area than oil palm.

The thesis emphasizes that the physical characteristics of the site and the social aspects must be considered in determining the appropriate use of agricultural land in addition to the economic criteria. The thesis concludes with the discussion of the methodological limitations of the study and makes a plea for regional planners to utilize some of the new ideas of "development from below" and integrated regional development.
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During the last three decades, the economic theory of developed
capitalist states—the theory which suggests saving and investment as
essential components in a healthy "development cycle"—has been the
most widely accepted paradigm for development. The theory assumes that
investment will automatically take place provided savings and investment
opportunities are both available.

Historically, the theory which is usually called the modern theory
of economic development has successfully been applied to the industrial
countries. As a result of this success, most of the leaders of develop­
ing countries, including Indonesia (particularly after 1966), have
highly praised this development theory as the panacea for their economic
problems.

In their attempts to apply this development paradigm, a large
amount of capital investment is needed. In the third world countries,
the most promising source of capital investment, in addition, to private
foreign investment and international aid, is from the export of agri­
cultural products. In pursuing this target, many farmers have shifted
their labor and land away from food production to the growing of cash­
crops. As a result, most of the developing countries are now faced with
the problem of food shortages.

There is a general view that the production of export commodities
such as oil palm or rubber is more profitable than growing rice or other
food crops. This implies that economic analysis is the only criterion used to determine profitability. This thesis adds two other criteria as a means of determining the appropriate use of the agricultural land.

1. The physical characteristics of the site should be properly analyzed for maximum utilization.

2. The social environment should be properly understood so that the total social costs and benefits of changes in economic activity can be rationally appraised.

It is argued that only an evaluation of the total picture will produce rational decision-making.
I would like, first of all, to express my sincere thanks and appreciation for the valuable contributions of Professor Brahm Wiesman and Dr. Terence McGee. My appreciation is also addressed to the Canadian International Development Agency (CIDA) for its assistance. I would also like to thank my beautiful and deserving wife, Juliana, and sons, Burhan, Tonny, Ford and Jimmy, and daughter, Mercy, for their patience, fidelity, understanding and encouragement.
CHAPTER I

INTRODUCTION

1. Background Information

Indonesia is today struggling to produce greater equity and social justice in development, alongside its earlier national goals of ensuring national unity while spurring economic growth. In the first five year development plan (Repelita I), initiated in April 1969, emphasis was put on promoting national unity and economic rehabilitation, because these were the important priorities immediately following the change of power. Towards the end of Repelita I a measure of unity had been achieved and the economy partly rehabilitated.

With the achievement of this political and economic stability, a new range of issues emerged in Indonesia. These issues related largely to matters of equity--of sharing the benefits of economic progress--and they produced a new concern for regional planning and development because of the problems arising from the wide disparities in social and economic conditions that existed in the various parts of the country. There was also the realization that sectoral planning alone may increase rather than decrease these problems. For this reason the second five year development plan (Repelita II) included a new emphasis on regional planning, meaning some combination of the following: planning at the center for a hierarchy of planning regions and for the provinces; integration of national and sectoral plans at the regional level, taking into account
regional goals; spatial aspects of sectoral planning; and devolution of planning responsibility to the various levels of local government.

In 1974, the principal objectives of Indonesian regional development were formulated in a series of directives by the People's Assembly. They were to achieve a balance between regional and sectoral development; to reduce inequalities in the rate of development between provinces; to help the provincial governments solve large-scale provincial problems; to improve the planning, development and taxing capacities of the provinces. These directives have been translated by the National Development Planning Agency (Bappenas) into four development goals: 1) To equalize development between regions and to prevent large differences in levels of development; 2) To reap the highest possible benefits from the potential of the different regions, both from the national development point of view and from that of the region. This goal includes transmigration; 3) To develop mutually profitable economic connections between provinces in the context of a unified national economy. The creation of regional groups of provinces with respect to urban manufacturing growth centers is an associated objective; 4) To develop "backward" regions, "critical" regions, and "border" regions.

Succinctly, it can be said that regional development planning in Indonesia has the dual objectives: a) to improve efficiency in resource allocation through integrating sectoral projects and programs in each region and; b) to reduce interregional disparities in development. During the last decade, the government of Indonesia has conducted
several regional planning studies. The "felt need" for these studies was strong among Indonesian exponents of regional planning and among foreign donors seeking a framework for their grant and loan programs, as well as among international consultants advising the donors. Towards the end of 1981, almost all provinces in Indonesia, except the province of West Irian, have been studied.

Due to the lack of funds and of experienced planning staff, the government of Indonesia through the Regional Development Division of the National Development Planning Board (BAPPENAS) in consultation with an implementing agency, in most cases the Department of Public Works, and more recently the Department of Home Affairs, requested foreign assistance. There are, in general, two explicit objectives for all of the studies stated in the terms of reference (TOR). The first objective is to provide a systematic compilation of information required for development planning in the concerned region. The second is to recommend general development strategies for the subject regions. In addition to the two explicit objectives mentioned above, the studies have also had several implicit objectives. One of these objectives has been the transfer of knowledge from experts to their Indonesian counterparts through "on the job training". A second implicit objective of the studies has been the strengthening of regional development planning institutions and process.
2. Problem Statement

Seen from the nature of the objectives stated above, the results of regional development studies can only be viewed as broad planning recommendations. They need to be elaborated before they are implemented. Stemming from the West Sumatra Regional Planning Study (WSRPS) conducted in 1971, the West Pasaman Study was considered as an example of an "integrated area development plan" and is expected to serve as a model for area-wide planning in Indonesia.

With five German experts (IDR—Institute for Development Research, West Germany) and eight Indonesian counterparts, the Development Plan for West Pasaman was drawn up in 1975 and it was submitted to the Chairman of Steering Committee on April 7, 1975. From the outset, the team was concerned that the plan be implemented. Accordingly, the team did not analyze each and every sector of the economy and the diverse land use needs of the region. They aimed rather at a "short-cut" approach concerned with the implementation of some major proposals. Their efforts were concentrated on the sectors they felt most urgently required development in West Pasaman which they called "strategic sectors". However, definition of "needs" is subject to value judgements of the team as opposed to what might be perceived as "basic needs" by society.

The underlying idea of the short-cut approach is that a regional development plan is of value only if as many of its proposals are
realized within as short a time as possible. Clearly this does not consider closely which socioeconomic groups might benefit most from its realization. Moreover, in identifying meaningful projects the team believed that, besides being in accordance with the policy makers' objectives\(^1\) the project proposals must find the approval of prospective investors, be they private or public, domestic, foreign or multinational\(^2\). This practice creates the problem of project selection being disproportionately skewed in favor of maximizing the profits of the prospective entrepreneurs as opposed to satisfying the visible needs of the people of the region.

Having analyzed the existing conditions in the study area, the team concluded that the lack of an efficient transportation network was the main cause of West Pasaman's underdevelopment. At the end, team formulated the following objectives for West Pasaman: 1) improving external and internal accessibility of West Pasaman; 2) reducing emigration from the area; 3) increasing the per capita income of the farmers; 4) creating additional employment within the agricultural sector; 5) diversifying the labor market by creating new jobs outside the agricultural sector (WPDP, 1975 p. 165).

\(^1\) The team emphasized the policy-maker's objectives as those of the central government (p. 161).

\(^2\) SIPEF, a foreign company which is operating in North Sumatra primarily in oil palm production was devised as a potential investor for oil palm production in Ophir. There was no effort made to identify local or domestic entrepreneurs to participate in West Pasaman development.
Based upon the above goals, the team suggested the crucial projects for West Pasaman between 1975-1985 include the following:

1) The establishment of a new main road from Simpang Empat to Mangapoh (see map 1).

2) An oil palm smallholder project.

3) Feeder road programs (1975-1985).

4) Making operational the central place concept by the improvement of small towns.


Of these crucial projects, the first two were strongly recommended and in order to speed up the process of their implementation, a separate feasibility study for the road project was commissioned and executed alongside the team's other activities, while the feasibility study for the oil palm project was conducted by the WPDP team.

Whether or not the lack of an efficient transport network is the main cause of West Pasaman's shortcomings, it can be taken for granted that a new road parallel to the coast is needed, connecting Simpang Empat, Manggopoh, and Padang (see map 1). It should satisfy the role of transportation in
MAP 1

ACCESS ROAD TO WEST PASAMAN

BOUNDARIES
- Province
- Rehabilitation
- Planning Area

CAPITAL
- Province
- Rehabilitation, Natural
- Recreational

TRAFFIC LINES
- Asphalt Road
- Other All Weather Road
- Dry Weather Road
- Proposed Alignment I
- Proposed Alignment II
- Railway

Scale
0 5 10 20 30 km
Transportation has special significance because of the pervasive role of mobility in facilitating other objectives. Transport is a necessary ingredient of nearly every aspect of economic and social development, it plays a key role in getting land into production, in marketing agricultural commodities, and in making forest and mineral wealth accessible. It is a significant factor in the development of industry, in the expansion of trade, in the conduct of health and education programs, and in the exchange of ideas. (Owen, 1964 p. 1).

As stated previously, the team intended to concentrate its efforts on those sectors which were urgently needed for development in West Pasaman. However, the urgency of development was seemingly directed at the interests of people outside the region, even outside Indonesia. Before delineating project proposals the team had already identified the recipient groups which were interested in, and affected by, the planning for West Pasaman, as follows:

Pasaman : Bupati's (Regent) Office
          Kabupaten (District) Authorities
          Kecamatan (Sub-District) Authorities

Bukittinggi : Agricultural Development Project
              (ADP) German Technical Cooperation

Padang : BAPPEDA (Regional Development Planning Board)
         Provincial Sectoral Departments
Jakarta : BAPPENAS (National Development Planning Board)
IBRD Mission and Advisors
UNICEF/FAO/ADB

Germany : BMZ (Ministry for Economic Cooperations)
BFE, KFW, DSE, GTZ (Organizations administering Technical and Capital Aid Projects)
Parliament
(WPDP, 1975a, p. 10)

The extent to which the two crucial projects mentioned above can meet the basic needs of the people in West Pasaman is questionable. As far as the oil palm project is concerned, components of economic analysis, i.e. Benefit Cost Ratio (BCR), Net Present Value (NPV), and Internal Rate of Return (IRR) were the only criteria used to justify it. Social aspects were not considered in the feasibility study. The team stated that the oil palm project would reduce regional income disparities (WPDP, 1975b, p. 4), but it seems they were only concerned with gross regional income disparities, and did not take into account the possible impact of the project on income distribution or the potential use of water resources to mitigate food shortage problems in the study area and in Indonesia. Addressing these questions is the focus of this research.
3. The Objectives of the Study

In view of the problems stated above, this research attempts to investigate the implications of using the designated land for oil palm production and to search for its most appropriate use for other agricultural products. The gross area needed for the oil palm project as proposed by the WPDP team amounted to 24,000 ha, of which 20,000 ha would be devoted to a smallholder system, and the remaining 4,000 ha would be used by the Nucleus Estates, which functions as a processing unit and for marketing the finished product.

Of these 24,000 ha more than half (13,000 ha) belongs to the government and is known as the former Ophir Oil Palm Estate which was established in 1930. However it was abandoned after the Second World War. Thus the oil palm project proposed by the WPDP team is a rehabilitation of this former project. The remainder belongs to individuals and communes (tanah ulayat). As there is no clear information about who would be the cultivators of the government land and where they would come from, field investigations for this research concentrated on the non-government land. This land is located in the northern part of Kecamatan Pasaman which consists of Kenagarian Air Gadang, Lingkung Aur, Aur Kuning, and Kapar. This study covers the appropriateness of land in this area for agricultural, in general, and wetland paddy and oil palm production in particular. Three factors, the physical

3) The WPDP (West Pasaman Development Planning) team had proposed that oil palm be cultivated on roughly 11,000 hectares of this area, according to a small holder, a principle similar to the re-establishment of the Ophir Estate, situated in the southern part of Kecamatan Pasaman (see map 2).
RENCANA PEMBANGUNAN
PASAMAN BARAT
WEST PASAMAN
DEVELOPMENT PLANNING

Legend
- Ibukota kabupaten: Capital of Kabupaten
- Ibukota kecamatan: Capital of Kecamatan
- Ibu kota kecamatan: Kecamatan headquarter
- Tampan Lantara: Other place
- Batas propinsi: Provincial border
- Batas kabupaten: Kabupaten border
- Batas kecamatan: Kecamatan border
- Batas kecamatan: Nagari border

Study area: (± 11,000 ha)
Ophir area.

MAP 2
characteristics of the site, the social environment, and economic feasibility were chosen as the criteria to determine land use appropriateness. Briefly, the objectives of the research are defined as follows:

1. To review the contemporary theories of development and their relevance to the proposed oil palm project.

2. To evaluate the basic needs, primarily food production, of the indigenous people of Kecamatan Pasaman.

3. To examine the possible use of the land designated for oil palm for food production, mainly for wet rice cultivation.

4. To evaluate the appropriate use of the land under study.

5. To draw policy conclusion for the area development planning process in Indonesia.

4) Kecamatan Pasaman has been taken as a boundary of this study. The main reason for this is that the land in question is located there.
4. The Significance of the Study

Indonesia is fifth amongst the countries of the World in population, exceeded only by China, India, the U.S.S.R. and the United States. It has a good climate for farming and also has a surplus of land suitable for food production. However, the people and government are continuously faced with the food problem, as can be seen in Table 1.

The Table suggests that the basic food supply is still a critical problem in Indonesia's economic development. Many attempts have been directed to overcome this problem, such as the use of High Yielding Varieties (HYVs), the use of fertilizer, pest and disease control, the improvement of irrigation networks, and the expansion of cultivated areas, especially in the Outer Islands. The Department of Agriculture has given high priority to rice, the main foodstuff of the Indonesian people, in REPELITA I and REPELITA II, and its production has expanded rapidly. However, its increased production is not keeping up with the demand of the growing population and increased per capita consumption as average real income rose at about 5 per cent per year during Repélica II. Cereal deficits have continued to grow, as shown in Table 1, and malnutrition has remained a major fact of life in Indonesia (Mears, 1978).

5) Outer Islands denote the Indonesian territory excluding Java and Madura. Extensification is no longer possible in Java due to unavailability of land.

<table>
<thead>
<tr>
<th>Year</th>
<th>Milled Rice</th>
<th>Soybeans</th>
<th>Wheat and Flour</th>
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<tr>
<td>1968</td>
<td>628</td>
<td>0.2</td>
<td>367</td>
</tr>
<tr>
<td>1969</td>
<td>604</td>
<td>1.2</td>
<td>294</td>
</tr>
<tr>
<td>1970</td>
<td>956</td>
<td>-</td>
<td>444</td>
</tr>
<tr>
<td>1971</td>
<td>490</td>
<td>0.3</td>
<td>155</td>
</tr>
<tr>
<td>1972</td>
<td>735</td>
<td>0.2</td>
<td>151</td>
</tr>
<tr>
<td>1973</td>
<td>1,660</td>
<td>0.1</td>
<td>690</td>
</tr>
<tr>
<td>1974</td>
<td>1,074</td>
<td>0.15</td>
<td>675</td>
</tr>
<tr>
<td>1975</td>
<td>672</td>
<td>17.8</td>
<td>717</td>
</tr>
<tr>
<td>1976</td>
<td>1,281</td>
<td>171.7</td>
<td>967</td>
</tr>
<tr>
<td>1977</td>
<td>1,950</td>
<td>89.1</td>
<td>763</td>
</tr>
<tr>
<td>1978 (est.)</td>
<td>1.850</td>
<td>120.0</td>
<td>1,080</td>
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As a result, hopes for self-sufficiency previously concentrated on rice are now expressed in terms of food self-sufficiency. More attention has been given to palawija (secondary food) crops, such as maize, cassava, soybean, and groundnuts which were neglected during the past decade in the preoccupation with rice.

Recently, there was increasing awareness and public acknowledgement, officially and unofficially, that to keep food production growing ahead of population would be one of Indonesia's critical problems for at least two decades. One direction in which policy thinking is once again turning is to expand food production on the Outer Islands.

West Pasaman, as the focus of this research, with its considerable potential for agricultural production is a part of the Outer Islands located in Sumatra. Many of its rivers can be used for irrigation. If its potential food production land uses are displaced, this could exacerbate the existing endemic food shortages of the region and the nation at large. Secondly, in view of the low per capita income of the mass of the population, imported food will continue to remain beyond the reach of the majority of the people in this region and the country. Further, over-reliance on the importation of food would create a greater gulf in the balance of payment deficits of the country—a problem that is already posing a serious challenge to governments and planners in Indonesia.
5. Methodology

This study evaluates the most appropriate use of the non-governmental land designated for oil palm production. The physical characteristics of the site, the social environment, and economic feasibility were chosen as the criteria for that purpose. This research is the result of the study of the relevant literature, discussions, interviews, and field observation. Three levels of government, the central government (Jakarta), the provincial government (Padang), and the local government (Lubuk Sikaping) were consulted.

In Jakarta, intensive discussions were held with the officials of: Bappenas (the National Development Planning Agency), the Directorate General of Water Resources Development (the Directorate of Irrigation, the Directorate of Planning and Programming), the Directorate General of Food Crop Production, the Bureau of Planning and the Directorate General of Estate Crops of the Ministry of Agriculture, and the Directorate General of Agraria (the Directorate of Land Use) of the Ministry of Home Affairs.

At the provincial level (Padang) there were discussions with several sectoral agencies such as: the Public Works Service (Irrigation Division), the Agricultural Extension Service, the Smallholder Plantation Service, and the Bappeda (the Provincial Development Planning Board). The German representatives to ADP (Area Development Program) West Pasaman were also contacted.
In Lubuk Sikaping, the local government officials were visited and the development of West Pasaman was discussed. In West Pasaman an intensive discussion was conducted with the field manager of PTP VI, a state-owned company which runs the Nucleus Estate in the former Ophir Estate. The discussion was continued in Pabatu\(^7\) (North Sumatra), where complete data and information about the Ophir Oil palm project is available.

All data and information about the physical characteristics of the site and economic factors which are needed for the evaluation of the use of land being studied were collected from the agencies mentioned above. Data and information concerning the social environment was collected from the farmers living in the study area. Sixty farmers (fifteen farmers from each Kenagarian—village unit) and four Walinagaris—village heads (one walinagari from each Kenagarian) were interviewed.

The purpose of interviewing the farmers was to determine their opinion about the oil palm project in Ophir and its extension to the study area as well as to find out what kind of project or program the government should develop in the study area in order to increase the farmers' income. The main purpose of interviewing the walinagaris was to collect data and information on land tenure. In addition, the walinagaris were asked their opinion, as farmers, about the oil

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\(^7\) Pabatu is the main office of PTP VI. When I was in West Pasaman in the summer, 1980, I was told that PTP VI is going to run the Nucleus Estate in the Ophir area. In summer 1981, when I was in that area, the PTP VI just started its activities in Ophir to run the Nucleus Estate.
palm project and any other project or program which could directly
increase the farmers' income in the study area.

The questionnaire used for these interviews can be seen in
Appendices 1 and 2, and the results are presented in Chapter V.
CHAPTER II

THE THEORY OF DEVELOPMENT: A LITERATURE REVIEW

1. Introduction

Until recently, the economic theory of developed capitalist states, which is usually called the modern theory of economic development, has been the most widely accepted paradigm for development (Adelman, 1975). The theory suggests saving and investment are essential components of a healthy "development cycle". Thus a major feature of development economics is centered on the generation of savings, the availability of investment opportunities and their productivity. It is assumed that investment will automatically take place provided savings and investment opportunities are both available. Saving will create a surplus for capital investment which will create more output, which means GNP per capita will increase. Once again, an increase in income per capita will generate savings. The principal originators of this theory are Harrod and Domar who adopted Keynesian economics (Hirschman, 1958 p. 30).
2. Balanced Growth Theory

Historically, the modern theory of development has successfully been applied in the industrial countries. Based on this success, most of the leaders of developing countries, including Indonesia, particularly after the New Order regime became powerful, in 1966, have highly acclaimed this development theory as a panacea for their economic problems.

During the 1950s many economic theorists centered their analysis on the application of modern economic theory in the developing countries. They found that the theory did not work as well as it did in the developed countries. The economic structure of underdeveloped countries, which is primarily agricultural (Lewis, 1955 p. 218; Lewis, 1954 pp 448-449), demonstration effect (Nurkse, 1955 p. 68), imperfect maintenance of law and order and political stability (Bauer and Yamey, 1957) have been the main factors associated with the failure of this theory in the developing nations. For example, in addition to the problem of capital formation in underdeveloped countries, the demonstration effect has a negative effect, as stated by Nurkse:

The modern communications and the spread of knowledge are so rapid and effective that the inhabitants of poor countries know all about the high standard of consumption enjoyed by most people in rich countries such as the U.S., and that there is a strong desire and temptation to enjoy as much of this attractive way of living as incomes permit. It follows that a high income and consumption level in an advanced country can do harm in that it tends to reduce the domestic means of
capital formation in the underdeveloped countries; it puts extra pressure on countries with a relatively low income to spend a high proportion of it. (Nurkse, 1953 p. 68).

There has been controversy about this theory. The first school of thought, which is known as the balanced growth advocates, proposed that investment should be diversified over a broad range of industries. It was argued that each industry would then generate a demand for the goods of the other industries sufficient to keep all of them viable. In other words, when investment is increased the people who are thus employed spend part of their incomes on buying consumer goods, and this encourages producers of consumer goods to produce more. This in turn gives more employment, and so the spiral continues upward (Lewis, 1955).

Briefly, the main argument of the balanced growth theorists is that investment projects that might be individually unprofitable would, when taken together, be profitable (Rosenstein-Rodan, 1943; Nurkse, 1953). Several criticisms have been made of the balanced growth concepts (Fleming, 1955; Singer, 1949; Myrdal, 1957; Hirschman, 1958).
3. Unbalanced Growth Theory

In 1958 Hirschman argued that the big push implied by the theory of balanced growth fails and he developed the theory of "unbalanced growth". He insisted that development is a gradual process, and it is unrealistic to think in terms of super-imposing a large modern sector on a traditional economy. Hirschman's unbalanced growth theory was inspired by Perroux's concept of "growth poles". He strongly suggests that, in order to ensure the continuance of productive investment, the initial activity chosen should be one that maximizes backward and forward linkages (p. 117). He believes that development might tend to polarize around certain initial growth centers. However, the result of this development will eventually trickle down to other areas. Thus, development strategy should be concentrated on relatively few sectors rather than on widely dispersed projects. Hirschman's argument is centered on how growth can be communicated from one region or one country to another. His basic argument is as follows:

...we may take it for granted that economic progress does not appear everywhere at the same time and that once it has appeared powerful forces make for a spatial concentration of economic growth around the initial starting points. Why substantial gains may be reaped from overcoming the "friction of space" through agglomeration has been analyzed in detail by the economic theory of location. In addition to the locational advantages offered by existing settlements others come from nearness to a growing center where an industrial atmosphere has come into being with its special receptivity to innovations and enterprise.

Whatever the reason, there can be little doubt that an economy, to lift itself to higher income levels, must and will first develop within itself one or several regional centers of economic strength. This need for the emergence of "growing points" or "growth poles" in the course of the development
process means that international and interregional inequality of growth is an inevitable concomitant and condition of growth itself.

Thus, in the geographical sense, growth is necessarily unbalanced. However, while the regional setting reveals unbalanced growth at its most obvious; it perhaps does not show it at its best. In analyzing the process of unbalanced growth, we could always show that an advance at one point sets up pressures, tensions, and compulsions toward growth at subsequent points. But if all of these points fall within the same privileged growth space, the forces that make for transmission of growth from one country, one region or one group of persons to another will be singularly weak. (Hirschman, 1958 p. 183-184).

According to Hirschman, the advantage of "unbalanced growth" over "balanced growth" which stresses that every activity expands in step with every other, is that the former leaves considerable scope for induced investment decisions and therefore economizes on a scarce resource, namely, genuine decision making (Hirschman, 1958 p. 62-63).

In postulating his unbalanced growth theory, Hirschman spoke of "trickling down" and "polarization" effects, the terms he uses to explain the relationship of a growth point and its hinterland. The most important trickling down effects are generated by purchases and investment made in the hinterland by the growth points. In addition, the growth point may absorb some of the disguised unemployment of the hinterland, which means the marginal productivity of labor and per capita consumption levels of the hinterland will increase. But polarization effects may also take place. Competition from the more developed area may depress relatively inefficient manufacturing and export activities in the less developed area, and the former may produce a "brain drain" from the latter, rather than create opportunities for their disguised unemployed.
Working independently in a different part of the world, Myrdal (1957) had already postulated the same thought as Hirschman. Myrdal stresses that "in the normal case circular causation is a more adequate hypothesis than stable equilibrium for the theoretical analysis of a spatial process" (p. 20-21). His main theme was that economic development would continue through a process of circular and cumulative causation. He found that whatever the reason for the initial expansion of a growth center, thereafter cumulatively expanding economies would fortify its growth at the expense of other less developed areas. Geographically, growth would be transmitted through "spread" and "backwash" effects, which correspond closely to Hirschman's trickling down and polarization effects.

Myrdal points out that development usually starts in certain regions of a nation because of their locational advantage or because of some historical accident. Once one region has achieved a development advantage over the rest of the nation, certain forces will immediately begin to operate. Myrdal amplified the effect of the force by writing:

It is easy to see how expansion in one locality has 'backwash effects' in other localities. More specifically the movement of labor, capital, goods and services do not by themselves counteract the natural tendency to regional equality.

By themselves, migration, capital movements and trade are rather the media through which the cumulative process evolves--upwards in the lucky regions and downwards in the unlucky ones. In general, if they have positive results for the former, their effects on the latter are negative.

Against the backwash effects there are, however, also certain centrifugal "spread effects" of the expansionary momentum from the centres of economic expansion to other regions. It is natural that the whole region around a nodal centre of
expansion should gain from the increasing outlets of agricultural products and be stimulated to technical advance all along the line.

There is also another line of centrifugal spread effects to localities further away, where favourable conditions exist for producing raw materials for the growing industries in the centres. (Myrdal, 1957 p. 27-31).

In concluding his argument Myrdal postulates that the higher level of economic development that a country has already attained, the stronger the spread effects will usually be (p. 34). It seems this is confirmed empirically by Williamson (1965) when he writes:

...experience suggests that increasing regional inequality is generated during the early development stages, while mature growth has produced regional convergence or a reduction in differentials. (p. 199).

Despite the fact that Myrdal (1957) and Hirschman (1958) have similar concepts of analysis in their works, there are considerable differences in emphasis. Hirschman was more optimistic about the long-run future of the less-developed countries and also related his theory explicitly to less-developed areas within countries. While Myrdal was more cautious about the consequences of induced growth, the cumulative advantages experienced in growth points would cause backwash effects to prevail in most other places. Hirschman seemed to take for granted that strong forces eventually will create a turning point once polarization effects have proceeded for some time.
4. Viability of Modern Economic Theory in Developing Countries

Myrdal's and Hirschman's idea of unbalanced growth has dominated development strategies for the past three decades. The underlying idea of this development strategy, also called growth pole strategy, has been that it would be inefficient and ineffective to spread developmental investment thinly throughout the national territory. Instead, it is better to select key urban areas for concentrated investment programs that would benefit from economies of scale and external economies of agglomeration.

Experiences of many developing countries have proved that this growth pole strategy has been reasonably effective in raising GNP, but it has failed to reach the lives of ordinary people in terms of jobs, income distribution, and the basic alleviation of critical poverty (Grant, 1973; Adelman, 1975; Adelman and Morris 1973; Arief, 1977). And towards the end of the 1960's Dudley Seers raised some fundamental questions concerning the meaning of development which are addressed to poverty, unemployment and inequality.

The questions to ask about a country's development are therefore: What has been happening to poverty? What has been happening to unemployment? What has been happening to inequality? If all three of these have declined from high levels, then beyond doubt this has been a period of development for the country concerned. If one or two of these central problems have been growing worse, especially if all three have, it would be strange to call the result "development", even if per capita income doubled. (Seers, 1969 p. 3).
The pattern of development in Mexico is a typical example of Seers' questions. While this country has experienced an increased per capita income, unemployment, inequality and the poverty level of the mass of the population has remained unchanged or even increased. Empirical evidence for this failure has been shown by Grant:

The experience of most developing countries over the past decade indicates that a rising GNP growth rate alone is no guarantee against worsening poverty. Mexico, for example, has been very successful by traditional standards; its GNP has risen by 6 or 7 per cent annually for the past 15 years. Yet, at the same time, unemployment in Mexico has been increasing, and the income disparity between the rich and the poor has clearly been widening. This is not only because of Mexico's very rapid population growth... It is also because government policies have bypassed the small, labor-intensive producers throughout Mexico and encouraged production primarily through large farms and urban-based factories... Half of Mexico's industrial production has been located in its capital city... the jobs, housing, education, and health facilities provided by government have generally favored higher income groups. In the early 1950's the total income of the top fifth of Mexican population was 10 times that of the lowest fifth; by 1969, it was 16 times as great. (Grant, 1973 p. 7).

In line with Grant's findings, Arief (1977) observed that rapid growth in GNP per capita does not automatically result in a higher standard of living for the majority of people in Indonesia. He indicated that the development of the modern sector was financed at the expense of the traditional agricultural sector. Arief further writes:

... the implementation of the GNP growth oriented model tends to sacrifice the traditional sector...

The industrialization strategy in Indonesia which is import-dependent import substitution for the purpose of catering to the domestic market can be considered as a strategy which sacrifices the agricultural sector since it does not depend on domestic agriculture for raw materials.
Indonesian economic policies and practices which were biased toward the modern and urban sectors were accompanied also by a pattern on behaviour of the ruling elite and the members of the bureaucracy which is destructive to the attainment of popular welfare as it created distortions in the economic process. (Arief, 1977 p. 21-59).

In addition to the example given above, Adelman (1975) notes that not only is there no automatic trickle down of development benefits; on the contrary, the development process leads typically to a trickle-up in favor of the middle classes and the rich. Robert McNamara also realized that this industrialization strategy does not work properly in the third world. He recognized that the World Bank itself had paid very little attention to subsistence agriculture in its 25 years of operation (McNamara, 1973).

The invalidity of basic assumptions of growth centre theory is not only found in the developing countries, but also in the developed countries. Moseley's empirical studies (Moseley, 1973) about the growth-transmission impacts of growth centres in East Anglia and Brittany have led him to conclude that if the objective of regional policy is to benefit small towns and rural areas, then it would be advisable to invest directly in these places.

Pred's study on inter-urban transmission of growth in advanced economies suggests that the disappointing record of growth centre and growth pole policies in advanced economies is in some measure attributable to mistaken assumptions concerning inter-urban growth transmission. At the end Pred concluded that:
... it must be acknowledged that no regional planning policy is likely to be either goal consistent or as successful as anticipated unless its formulation is preceded by studies establishing the peculiar underlying structure of growth transmission interdependencies within the concerned regional and national system of cities... regional planners cannot continue to operate under the premise that income and employment opportunities will automatically expand rapidly in a growth centre and its surrounding region merely as a consequence of the implementation of explicit locational decisions, such as the growth centre assignment of a new manufacturing facility or government office. Instead, ... it is necessary that, where possible, there be some minimal coordination of the explicit and implicit locational decision-making of both private corporations and government organizations. (Pred, 1976 p. 169).
5. Alternative Development Strategies

Having realized that the trickle down approach did not work properly in developing countries, it has recently become fashionable to deplore the use of the modern theory of economic development, which is based on an urban-industrial orientation. Friedmann's work on 'A Spatial Framework for Rural Development in Poor Nations' stressed that "rural development in poor countries requires a major reordering of national priorities in the use of investment funds and the adoption of a spatial framework for the formulation and execution of the appropriate policies and program" (Friedmann, 1974 p.4). By "reordering national priorities" he means that a process of economic growth should be "directed towards increasing prosperity and equality among the population; economic development should be directed towards self-generation which builds on existing knowledge and seeks to transform traditional structures from within; the strategy of urban-industrial growth should be changed to another strategy in which improvement in agricultural production is seen as a necessary precondition for further development in the urban-industrial sector" (Friedmann, 1974 p. 5). He suggested that "rural development must be viewed as a continuing process and it is futile to think of it as ever reaching a Rostovian "take-off" stage" (Friedmann, 1974 p. 30).

The rural development approach, as a means for promoting the economic well-being of poor rural people, is not a new approach in the third world countries. For example, British administrators during the 1920's and 1930's tried to establish certain organizations and institutions in several villages in Pakistan as a means to overcome the villages'

Despite the fact that there have been many scholars concentrating on rural development (Friedmann, 1974; Lele, 1975; Haque, et. al 1977; Friedmann and Douglass, 1975), only Friedmann's and Douglass' (1975) study suggest an alternative strategy to replace the industrialization strategy in the developing countries. In 1975, at a United Nations Conference in Nagoya, Japan, Friedmann and Douglass proposed "agropolitan development" as a promising strategy for developing countries. They argued that the trickle down strategy was untenable and proposed that a strategy of accelerated rural development should be oriented to basic human needs, a more equal distribution of economic benefits, the direct involvement of local people in the process of development, and growth based on the activation of rural people, agriculture and resources.

The "agropolitan development" strategy was based on their findings in assessing the results of the strategy of accelerated industrialization in six Asian countries, namely, India, Indonesia, West Malaysia, the Philippines, Republic of Korea and Thailand. The following are their major findings: 1) urban growth in every country was greater than the growth of total population, reflecting large scale rural-urban migration; 2) "modern" development is highly concentrated in only a few urban centres; 3) the urban economy was by no means ready to provide full, productive employment to everyone; 4) income inequality is increasing; 5) the traditional strategy has resulted in a substantial neglect of domestic food production and the emphasis on exports has led farmers to allocate...
their labor and land away from food to the production of cash crops (Friedmann and Douglass, 1975 pp. 7-20).

The main idea of the agropolitan development strategy was to integrate rural with urban development through the establishment of the so called "agropolitan district". An agropolitan district supplies services, off-farm jobs, and is self governing. Normally it would have an average population density of at least 200 persons per square kilometer, contain a core town of 10 to 25 thousand inhabitants with a commuting radius of 5-10 kilometers (or approximately one hour's travel time by bicycle) and have a total population of 50 to 150 thousand (Friedmann and Douglass, 1975 p. 43). The functions of the district would be financed by retaining local savings, substituting volunteer work for taxes, transferring capital from the primate city to rural areas, and changing the internal terms of trade in favor of agriculture. Friedmann and Douglass suggested that the agropolitan district is the appropriate unit for devising a policy of spatial development through decentralized planning and decision making (Friedmann and Douglass, 1975 p. 53).

As a tool, at least, to slow down urbanization, agropolitan development can be viewed as a promising alternative to replace the industrialization strategy. However, to what extent this strategy can fit into the developing countries' situations, in which authoritarian regimes are so endemic, is questionable. It would require far reaching institutional and political reform to adopt this strategy. Would the authoritarian regime allow self government at local level? Would the rich elite voluntarily give up both political power and wealth
to permit the realization of these goals? The applicability of this promising alternative development strategy depends, to some extent, on the answer to these questions.

The search for an alternative to the conventional development strategy has continued. One year after Friedmann's and Douglass' agropolitan development strategy had been formally presented in Nagoya, the International Labour Office (ILO) advocated the "basic needs" approach to development in the third world countries. This approach had been emerging from the ILO's World Employment Program launched in 1969. It was based on the recognition that instead of allocating investment funds to projects that yielded the highest return irrespective of employment and income distribution implications, the choice should be those projects which created the largest number of productive jobs. Several years later, however, ILO recognizes that this employment-oriented strategy, by itself, will not suffice, and that there is a need to intimately connect employment issues to poverty and inequality (ILO, 1976). Based on this recognition, the ILO at the 1976 World Employment Conference formally developed a new basic needs strategy as an approach to development in the third world nations.

Conceptually, basic needs have two elements. The first includes certain minimum requirements of a family for private consumption: adequate food, shelter and clothing are obviously included, as would be certain household equipment and furniture. The second includes essential services provided by and for the community at large, such as safe drinking
water, sanitation, public transport and health and educational facilities (ILO, 1976 p. 32).

Redistribution and growth are both required to achieve the satisfaction of basic needs. The strategy focuses on the supply and the demand side; there must be adequate goods and services offered to poor people and, at the same time, there must be adequate purchasing power by the poor to buy these goods and services. In short, the basic needs strategy aims at increasing the access of the world's poor to vital goods and services in order to improve their well being.

When the strategy originated, it was criticized on the grounds that the basic needs approach is a welfare approach and is inimical to growth. Indeed, it is not easy to secure agreement on what the basic needs strategy would imply in terms of specific economic policies. For example, there is no clear relationship between the satisfaction of basic needs and economic development (e.g. per capita income). Ensuring consistency between production plans and effective demand is another obstacle to implementing this strategy. Changes in political, economic and administrative structures would be required to make this strategy operate. Lee (1981) concludes that the basic needs approach does not offer a simple short cut for solving the problem of mass poverty. He states:

Apart from the rather obvious point that a redistribution of wealth and income will be resisted by strongly entrenched interests, it is also important to realize that seemingly innocuous prescriptions such as 'greater decentralization' and 'greater local self-reliance' conceal potential conflicts of interest. The old pattern of development based on 'top down' centralized planning has created vested interests which would resist a shift towards greater devolution of power to regional
and local units.

To leaders of the third world preoccupied with modernization and the extension of national power, 'basic needs' is unlikely to prove attractive as a rallying call to inspire national mobilization (p. 121).
6. Concluding Remarks

The balanced and unbalanced growth theories became controversial issues in the 1950's. The balanced growth theorists argued that investment should be diversified over a broad range of industries. On the other hand, the unbalanced growth theorists argued that it would be inefficient and ineffective to spread developmental investments thinly throughout the national territory; they argued that it is better to select key urban areas for concentrated investment programs that would benefit from economies of scale and external economies of agglomeration.

During the last three decades, most governments have applied the "unbalanced growth" theory to their development efforts. This policy has been reasonably effective in raising GNP. However, it has become increasingly evident, particularly from the experience of the developing countries, that rapid growth in GNP does not automatically reduce poverty and inequality or provide sufficient productive employment. Empirical findings of most scholars tend to say that the unbalanced growth paradigm, based on the growth centers' notion (urban industrial strategy) is not able to solve the problem of poverty, income distribution, and unemployment in developing nations. They imply that the principle of polarization is wrong. Richardson and Richardson (1975), however, based on their experiences in Latin America, argued that:

The disenchantment with growth center policies in many countries is not evidence that the principle of polarization is wrong. On the contrary, it reflects the over-optimum and short-run time horizon of regional policy-makers, the
failure of sustained political will, the use of deficient investment criteria, bad locational choices and lack of imagination in devising appropriate policy instrument (p. 169).

The argument along the line of development theories discussed above can be simplified. The pro-group are the advocates of a centralization strategy. They argue that major investment must continue to be centralized in metropolitan areas and that attempts to decentralize urban development would be at the cost of future economic growth. The con-group are the advocates of decentralized investment and dispersed development, though they believe that expansion of GNP should be the major goal of national policy and view economic criteria as the primary standard of strategy design, they argue that developmental investments should be decentralized and dispersed to the lower end of the spatial hierarchy, in small towns, villages, and rural hinterlands (Rondinelli and Ruddle, 1978 pp. 46-48).

Rodwin (1963) has actually tried to graft the views of these two extreme advocates by proposing a strategy of "concentrated-decentralization" for lagging areas. However, what Rodwin suggested was consistent with the notion that induced urban growth centers should be the basis for regional development policy. Therefore, it is viewed as a growth center strategy.

Having realized the negative effect of the growth center strategy, development theorists have tried to search for alternatives. Friedman and Douglass (1975) proposed an "agropolitan development" strategy and the ILO (1976) proposed a "basic needs" approach. Theoretically,
agropolitan development and basic needs strategies can be viewed as promising strategies. However, without restructuring political, economic and institutional frameworks of the non-socialist developing countries, it is hard to see the applicability of these development strategies in these countries.
CHAPTER III

THE THIRD FIVE YEAR PLAN (REPELITA III), 1979/80-1983/84 AND REGIONAL DEVELOPMENT PLANNING IN INDONESIA

In chapter II, the theory of development has been discussed and reviewed. In this chapter, Repelita III (1979/80-1983/84) and regional development planning in Indonesia is briefly reviewed in an attempt to see how the theories discussed above relate to the idea and implementation of regional development planning in Indonesia.

Today, Indonesia is implementing its third five year plan. This Repelita III is a continuation and enhancement of the previous plans, particularly Repelita II. Like the other two Repelitas, this Repelita III is an indicative plan containing objectives, targets, policies, programs and projects. The main difference is that Repelita III has been directed towards equity and justice. For Repelita I and II, priority had been given to a high rate of economic growth followed by equity (especially for Repelita II). For Repelita III, equity has been put as the first objective of development followed by efficiency and stability as the second and third objectives. These objectives have been clearly stated in the Main Outlines of State Policies (Garis-Garis Besar Haluan Negara-GHBN) known as the Trilogy of Development (Ketetapan MPR No. IV tahun 1978).

Briefly, the following are the objectives of Repelita III:
1. Equitable distribution of development and its results towards achieving social justice for the people.

2. A high rate of economic development growth.

3. Healthy and dynamic national stability.

The first objective, equity, addresses the dispersal of development benefits to all strata of the population and to all geographic areas. The second objective, efficiency, is related to a satisfactory rate of growth to increase society's resource base and output on an absolute and a per capita basis. The third objective, stabilization, is concerned with stable prices, full employment, and stable socio-political conditions.

Emphasising the importance of equity, the president has elaborated this objective into "Eight-Avenues of Equity" (Delapan Jalur Pemerataan) as follows:

1. The dispersal of an adequate supply of basic needs, particularly of food, clothing and shelter.

2. The dispersal of education and health facilities.

3. The dispersal of increasing income.

4. The dispersal of employment opportunities.
5. The dispersal of opportunities to enter business activities.

6. The dispersal of opportunities to participate in development activity, particularly for young people and women.

7. The dispersal of opportunities to have justice.

8. The dispersal of regional development programs.

As has been stated in chapter I, equity became an emerging issue at the end of Repelita I, although it was not explicitly mentioned in Repelita II, it has always been the aim of the government to improve the conditions of the less developed sectors or groups, and regions through specific programs, projects and policies.

Government efforts to solve the problem of equity, which have developed since Repelita II and continue in Repelita III, consist of: development grants and specified development grants. Development grants consist of provincial development grant, district or municipal development grant, village grants and provincial development program (PDP). The specified development grants are: the primary school development grant, health center development grant and transmigration development. The difference between those two kinds of grants is that the latter is very narrowly specified and they are sectoral grants. How each of these development grants contributes to reducing regional inequality, income disparities and unemployment is briefly presented below.
a) **Provincial Development Grant**

Before Repelita II the provincial financial system was based on ADO (Allokasi Devisa Otomatis)—an Automatic Foreign Exchange Allocation. This system automatically allocated to each region 10% of its export earnings. It was found that the ADO system generated more imbalance as the more developed regions were in a position to export more and benefited more than the poor and backward regions. Since Repelita II, the ADO system has been changed to "a minimum grant" for the least developed region. The provincial development grant is a kind of unspecified grant. However, it cannot be used for routine expenditures. It is expected that, through this system, the provision of more development funds to the less developed areas than to the more developed ones will gradually minimize regional disparities. The establishment of the Provincial Development Planning Board (Bappeda) at the beginning of Repelita II (presidential decree No. 15, dated March 18, 1974) is a corollary of this system. In addition, in order to integrate regional plans with the national plan, the so-called "regional consultation", to coordinate regional plans, and "national consultation" were established.

b) **District or Municipal Development Grant**

This program began with Repelita I. The main purpose of this development grant is to mitigate unemployment. The use of the grant is directed to: 1) labor intensive activities; 2) small
projects which are technically easy to handle by district or municipal agencies; and 3) projects which directly benefit the people and the development of the region.

Since the basis of the allocation of these funds is population, on the assumption that the more people, the bigger the problem of employment, there has been much criticism directed towards it. As most of the population live in Java (approximately 64%), it is thought that this problem, though it can reduce unemployment to some extent, may further create regional disparities.

c) Village Development Grant

The main purpose of this grant is to induce development in the villages through the "gotong royong" (mutual help) system. The difference between this grant and the first two grants mentioned above is that the funds under this system may not be used for wage employment because labor is the contribution of the people as a counterpart of the grant. This grant is allocated equally to almost all villages, disregarding their size, population, and level of development. It has been shown that the grant is very useful in encouraging people to participate in providing for their own immediate needs. In addition, the grant is viewed by the villagers as a token of gratitude of the national government to them.
d) Provincial Area Development Program (PDP)

This program was designed by the government of Indonesia, with USAID assistance. This program seeks to: 1) improve the capabilities of local government to undertake rural development activities which will increase the productive capacity of the rural poor; 2) improve the capabilities of key central government agencies to support local government activities which will increase the income of the rural poor; and 3) most importantly, increase the income of the rural poor within the project areas. This program is viewed as experimental and process-oriented, in that it attempts an introspective and evolutionary approach to improving local project management. So far, the budget for this program is derived mainly from foreign assistance loans and grants.

The basic assumptions of this program are: 1) it is generally more effective to concentrate on a few priority problems than to disperse one's efforts in all directions; 2) there is more likelihood of visible impact and more effective administration by maintaining a geographical focus within targetted provinces; 3) outputs must be process-oriented; 4) there is a need for flexible implementation.

Based on the assumptions mentioned above, the basic approach to the design of individual PDP's has been to: 1) identify the socioeconomic-administrative conditions within participating provinces; 2) select a typical geographical region composed of a limited number of contiguous districts within the provinces;
3) study in more depth the socioeconomic-administrative conditions within the area, concentrating on the constraints to raising the incomes of the rural poor; 4) review systematically all local government programs, activities, functions which are, or could be targeted, on assisting the rural poor to improve their economic situation; 5) identify a limited number of interrelated intervention points where outside assistance could result in significant local government project management improvements and in the program goals being achieved; 6) describe and analyze these local programs, activities, functions in sufficient detail to determine the types and magnitude of assistance which would result in the sought after program improvements; and 7) design a broad and necessarily preliminary implementation plan for each of the provincial "thrusts" identified for improvement (USAID, 1978).

It is hoped that the Provincial Area Development Program will consist of numerous multi-sectoral small projects which will have a direct effect on the income of the poor people. The nature of the program requires a bottom up approach or "development from below" (Stöhr, 1981).

e) Primary School and Health Center Development Grants

These two kinds of development grants and transmigration are classified as a specified development grant system. The main purpose of this grant system is to speed up the sectoral development in the regions, and to obtain a better spatial distribution of facilities in the regions. The primary school and health center grant system is in line with the basic needs approach.

f) Transmigration

Since the early 1900's transmigration has continued as an important program with dual goals of relieving the population burden in Java and Bali while simultaneously developing the other regions of the country. In recent years the transmigration policy has officially been directed at regional development goals with the depopulation of Java being de-emphasized in official policy statements. During Repelita III, half a million families of Java's population will be moved to the Outer Islands.

From the view point of the development grants discussed above, it is clear that there have been numerous programs which have been launched since Repelita I and Repelita II. In Repelita III these efforts are being continued. These efforts reflect national policies explicitly and implicitly directed toward regional development. These policies are intended to achieve better equity, particularly from the spatial point of view, but not less important, also from the personal or group point
of view. It has been realized by the government that development cannot be handled by the national government alone. Full participation of all levels of government and of the masses of the people is needed to achieve the objective of development.

Despite the fact that national government has paid more and more attention to the lower levels of government, the authority for development is still strongly held by the central government. Conceptually, during the last seven years, there has been a change in planning organization as a logical consequence of presidential decree in 1974 concerning the institution of Provincial Development Planning Board (BAPPEDA). Under this decree it has been stated that BAPPEDA is responsible for the coordination and integration of all planning activities at the provincial level. This implies that there has been a devolution of planning tasks from the center to the lower level of planning. However, this devolution seems to be only in an abstract sense. For example, the experience has shown that BAPPEDA has not been strong enough to coordinate and integrate regional or provincial plans. This unsuccessful attempt is not merely because of the BAPPEDA's incapability, but mostly because of the organizational structure itself. The head of the provincial department and the central government's representative for that department in the province concerned are one and the same person. As a central government's employee he is apt to hear central's instructions rather than provincial's.

Another example is the financial relationships between the central and the lower level of governments. The central government certainly intends to give the provinces, districts or municipalities a larger
slice of the national revenue. This is evidenced by central government's contribution to the development in Sulawesi for the period of 1973/74 to 1978/79 as follows:

**TABLE 2: CENTRAL GOVERNMENT CONTRIBUTION TO DEVELOPMENT BUDGET (1973/74 to 1978/79)**

(Percentage)

<table>
<thead>
<tr>
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<td>85.7</td>
<td>88.4</td>
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<td>82.9</td>
<td>86.5</td>
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<tr>
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<td>-</td>
<td>86.9</td>
<td>88.5</td>
<td>86.9</td>
<td>84.1</td>
<td>88.8</td>
</tr>
<tr>
<td>North Sulawesi</td>
<td>67.7</td>
<td>77.5</td>
<td>66.4</td>
<td>84.3</td>
<td>83.1</td>
<td>87.2</td>
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<tr>
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<td>80.9</td>
<td>81.0</td>
<td>85.0</td>
<td>85.2</td>
<td>88.3</td>
</tr>
</tbody>
</table>

Source: Cummings, H. (1980 p.11)

However, the use of this central government budget is by and large determined by the BAPPENAS and central-sectoral departments rather than through the delegation of financial authority to the provinces.

At the central level (Jakarta), although central government departments have their planning units, the overall responsibility for planning is entrusted to the National Development Planning Board (BAPPENAS). This board is not only a planning organization, it also has budgetary functions
i.e. the allocation of development expenditures\textsuperscript{8}). So far, almost all projects and programs financed by the central development budget are determined by the national government in Jakarta. It seems that the central government still has a fear of allowing the devolution of power and responsibility to go too far, getting out of hand and destroying the unity of Indonesia which has been so carefully nurtured over the years since the old order was deposed.

Briefly, based on the discussion given above, although there has been devolution of planning tasks to BAPPEDA or the provincial level, it can be concluded that the nature of regional development planning in Indonesia is still following primarily the "development from above" or "top-down" approach. One can, however, argue that by considering the presence of planning institutions at provincial and district levels, regional development planning in Indonesia also includes a "bottom-up" element.

\textsuperscript{8}) The Chairman of the National Development Planning Board (BAPPENAS) is also Minister of State for Economy, Finance and Industry (EKUIN), a supra-coordinating department of state, and a Chairman of the Committee for Economic Stabilization.
CHAPTER IV

WEST PASAMAN AND ITS CRUCIAL PROJECTS

It has been stated in Chapter I that the WPDP team proposed five crucial projects for the ten year period (1975-1985). The first two crucial projects, i.e. the road and oil palm projects were strongly recommended. How do these two projects fit into the socio-economic conditions of the study area and what are the likely impacts of these projects on the society? Have the people of West Pasaman already met their basic food needs? Searching out the answer to these questions is the main purpose of this chapter.

1. Socio-cultural Conditions of West Pasaman

Most of the socio-economic conditions of the study area presented here are taken from the "Development Plan for West Pasaman/Sumatra" WPDP (1975a). West Pasaman is part of the Kabupaten (district) Pasaman in the northern corner of the province of West Sumatra. It comprises the Kecamatan (sub-district), Talamau, Pasaman, Lembah Melintang and Sungai Beremas with a population of 200,494 inhabitants in 1980 of Manangkabau, Tapanuli, and Javanese origin (census Penduduk Pasaman, 1980). The presence of these three ethnic groups in West Pasaman distinguishes it from East Pasaman in which the last two groups are negligible.

Of the three ethnic groups residing in West Pasaman, the Minangkabau group was the first to occupy and use the area. As the first settlers,
they possessed the right to "tanah ulayat" (communal land). The Batak Mandahiling group is viewed as immigrants from the surrounding areas, i.e. the area to the north of West Pasaman known as Tapanuli. The existence of Javanese in West Pasaman was started under the Dutch government by bringing in indentured labourers (buruh kontrak) for the newly developed oil palm estate in Ophir in 1930. Since 1953 the Indonesian government has been encouraging a transmigration project in West Pasaman, adding Javanese transmigrants to existing settlements and introducing new settlement schemes. Unlike the first Javanese in West Pasaman, who came as indentured labourers, the Javanese transmigrants were resettled in the tanah ulayat (communal lands) while the former occupied the government lands, i.e. the Ophir oil palm concession.

West Pasaman happens to contain the major constituents which make up the pattern of Indonesian culture as a whole. Here the three principal cultures meet, namely, the matrilinial (the Minangkabau group), the patrilinial (the Batak Mandahiling) and the bilateral (the Javanese group). The differences in the area of origin and culture have resulted in ethnic groups maintaining their own characteristics. As a result, they cannot be easily assimilated.

In addition to cultural differences between the three ethnic groups, a different interpretation of the same religions (Islam) has lessened the possibility of assimilation between the Javanese and the Minangkabau groups. Land tenure problems have also made this situation become more
complicated especially for the Javanese settlers who cultivate tanah ulayat (communal land).

Although the ninik mamak (informal leaders) voluntarily released their tanah ulayat to be used by the Javanese transmigrants, they expected and even stipulated, that the Javanese settlers should be completely incorporated into the adat\(^9\) community, i.e. adat Minangkabau. This condition is really difficult to fulfil since adat Minangkabau, as a system of identification, is strengthened by its relation to the Islamic religion. It is true that the Javanese resettlers are Moslem, however, for the Javanese in West Pasaman, religion does not play a central role in their lives and does not constitute a matter of life and death as for the Minangkabau and Batak Mandahiling who live in West Pasaman.

The differences in the religion interpretation is evidenced by the Catholic missionaries' activities in the transmigrant settlements (WPDP, 1975a pp. 91-92). Those activities were not met with hostility from the Javanese settlers as they were by the Minangkabau and the Batak Mandahiling groups. For the Minangkabau society, penetration of any other religion is considered as being perilous for its own socio-cultural life. The readiness of ninik mamak (informal leaders) to bestow their communal land on the Javanese transmigrants was based on the expectation that the Javanese settlers would be observant of their

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9) Adat is a part of culture which is particularly concerned with the arrangement of the traits of a tribe. It can take either a written or unwritten form, but it is mostly unwritten.
(Minangkabau) socio-cultural life. This implies that any Javanese settlers who would like to convert his religion must also release the communal land allotted to him. Thus, for the Javanese who cultivate communal land there is no freedom to choose to convert their religion.

Keeping these facts in mind, one might expect that this social contradiction would be more obvious if the two ethnic groups (Minangkabau and Javanese) participated in the project which is located on the government land like the Ophir area, as adat Minangkabau is no longer a precondition for Javanese resettlers, while the indigenous people do not wish the presence of their adat intruders.

The two ethnic groups, Minangkabau and Batak Mandahiling, are known as "perantau", or the people who like to migrate. Despite the fact that both ethnic groups possess the same desire to migrate, there is a significant difference in their motivation. A lack of good land for farming in Tapanuli, the origin area of the Batak Mandahiling, can be viewed as a main reason for this ethnic group to migrate. The main reason for Minangkabau people to migrate can, to some extent, be attributed to their matrilineal system. Like many other matrilineal

10) Deforestation of "cagar alam" (wildlife forest) in Panti by land squatters is the evidence of this. In summer 1980, I was told by Bupati (regent) of Pasaman that these land squatters are people from Tapanuli. I happened to meet some of these squatters before I reached West Pasaman, all of them stated that they were not squatters because they gave some money to the local official of "Dinas Kehutanan" (forestry service). They also stated that they would like to farm, but they did not have access to the land.
societies it is likely that a "decisive role" in a Minangkabau household is held by the wife. Nairn (1976) pointed out that this "decisive role" has an influence on the divorce rates and polygamous affairs as well as on the migration rate.

Reducing emigration from the area of West Pasaman is one of the development objectives specified by the WPDP team (see Chapter I). This implies that the establishment of the road project and oil palm project will prevent people from migrating. For the ethnic groups like Minangkabau and Batak Mandahiling, it might be wrong to assume that two crucial projects will be able to keep them in West Pasaman. On the contrary, the road project will probably speed up the rural-urban migration process as it provides good accessibility to urban areas like Padang. It could be possible that the road project will siphon off the natural resources as well as human resources (entrepreneurs) of the study area ("backwash" or "polarization" effect) (Myrdal, 1957; Hirschman, 1958). Another possibility is that the oil palm project will precipitate the exodus of the rural poor. For example, if the oil palm project is implemented, there will be a possibility that it will widen income disparities of the residents. The residents who do not participate in the project will be less prosperous than project participants. As a result the former will probably try to seek other job opportunities in urban areas, e.g. Padang; the road project will enable them to do so. Once they decide to move to an urban area, there will be a very small possibility of their going back to West Pasaman

11) If the road project was already in operation, the rural people of West Pasaman can reach Padang within 3 hours or so, at present it takes at least 10 hours.
as they will be ashamed of being called "coward" (pengecut). This is particularly true of the Minangkabau and Batak groups.

Administratively, the nagari (village) is the lowest level of the government system in Indonesia. The presence of the village council of representatives (Dewan Perwakilaa Rakyat Nagari or DPRN) and the traditional village council (Kerapatan Nagari) makes the mechanism of village administration in the study area (and the rest of West Sumatra) differ from the rest of Indonesia (see Figure 1). The DPRN was to consist of representatives from the various social groups in the community. The traditional village council, composed of ninik mamak (informal leaders), alim ulama (religious dignitaries) and cerdik pandai (pundits) functions as an advisory committee to the wali nagari (village head).

The wali nagari is a sort of mayor who is nominated and elected by the voting inhabitants of the village for a term of five years. He is the official head of the village community, and as such, vested with the government's authority. Thus, special rights and duties of the village head are sanctioned by the government, which provides him with partial compensation for the time and labor expended to perform his work.

The ninik mamak which is bound up with alim ulama and cerdik pandai to form kerapatan nagari, plays a decisive role in village administration. Without the consent of these traditional village functionaries, hardly any enterprise can be carried out. Since, as adat experts, they are still responsible for many spheres of daily village
FIGURE 1.

BAGAN MEKANISME PEMERINTAHAN NAGARI
MECHANISM of NAGARI ADMINISTRATION

Kerapatan Nagari
- Ninik Mamak
- Alim Ulama
- Cerdik Pandai

Wali Nagari
Sekretaris Nagari

D P R N
(Legislative)

Kepala Jorong

Cerdik Pandai

Ninik Mamak
Kepala Kaum
Kepala Waris

Anak Kemenakan
Rakyat

Alim Ulama

Coordination
Koordinasi

Informal Connection
Perhubungan Informal

Command
Komando

Election
Pemilihan
life and due to their unchallenged high social standing, they can be considered as the backbone of Minangkabau village society. Recently, the wali nagari who stumbled over the opposition of the adat functionaries, had to quit his office before his five year term elapsed (WPDP, 1975a). It is not an easy task to govern a village with such a traditionally powerful group behind the scenes.

With regard to the nagari administration in West Pasaman, more serious problems might arise where transmigration schemes have moved into the living space of traditional groups. Reflecting the deeply rooted cultural differences between the Javanese and the Minangkabau, the resettlers' communities are incorporated in the Minangkabau social system only in the administrative sense, and even this incorporation is very incomplete.
2. Economic Patterns

Agriculture is the most important sector of West Pasaman's economy. It accounts for an estimated 66% of the regional product and about 80% of the population draw the majority of their income from this sector. Rice cultivation, in terms of the acreage cultivated, is the dominant agricultural sector in West Pasaman. Wet rice cultivation correlates very closely with the distribution of the population. The larger agglomerations of Minangkabau and Bakak Mandahiling groups are reflected by relatively large areas of sawah; either normal sawah (as in the case of Talu, Cubadak) or more extensively used swamp rice fields (south of Ujung Gading). All the other sawah areas coincide with the large transmigration schemes (Desa Baru, Kinai, Kota Baru) thus indicating the higher intensity of agriculture in these settlements. Irrespective of market access, Javanese smallholders still focus on wet rice cultivation which serves as both the main food and cash crop.

Besides rice cultivation, perennial crops, such as rubber, cloves and other spices, coconut and coffee are cultivated. Rubber is grown in Paraman Ampalu, Silapang, Parit and Simpang Dingin, while cloves and other spices are concentrated in the core area around Simpang Empat and along the road to Ujung Gading and in the Batak Mandahiling areas near Paraman Ampalu.

Dry land cultivation of annual crops occur in two systems of different intensity, permanent (tegalan) or shifting cultivation (ladang berpindah-pindah). Most of the permanent dry land cultivation of the annual crops
is concentrated in the core area around Simpang Empat. Shifting cultivation is still widely practised in West Pasaman. Roughly, 43% of the West Pasaman area covered by secondary vegetation can be considered as a latent reserve for this most extensive form of agriculture. It is estimated that 4% of the total area under secondary vegetation (or roughly 8,000 ha) are agriculturally used each year. The average rotation periods of shifting cultivation is about 7 to 8 years (WPDP, 1975a).

Agricultural land use data for West Pasaman in 1974 shows that rice is the main crop cultivated (10,863 ha) followed by rubber (6,537 ha), cloves (2,185 ha), coconut (2,077 ha), coffee (1,384 ha) cassia vera or cinnamon (665 ha) (WPDP, 1975a). Agriculture in West Pasaman today is exclusively run by smallholders. The daily working time rarely exceeds six hours with an average of two persons per family spending most of their time on farm work.

The marketing of agricultural produces in West Pasaman takes place in village markets and through dealers and agents. In the market (pasar) daily goods are traded by the farmers' wives. The variations in volume and price of agricultural products are related to the harvest times. The dealers have a strong influence on agricultural product prices. Scattered supply and seasonal fluctuations are two reasons which make the position of dealers in relation to the smallholders so strong. A marketing system by a chain of middlemen operates in West Pasaman. Most detrimental for the smallholder is the frequent combination of marketing and credits (system ijon). Credits are mostly given during seasons of shortage either in kind--calculated at the high prices then valid--or
in cash which does not buy very much at that time. When these credits are repaid by the smallholder after harvest, a much lower price prevails. Thus, the interest can reach as much as a hundred percent annually.

The main reason for the condition of the marketing system is not the lack of the farmers' response to market incentives, but lies in the institutional set up. Various observations (WPDP, 1975a) reveal that the producer's reactions to price fluctuations are very quick. For example, the sharp decline in rubber prices observed during 1974/75 resulted in an almost complete production stop. The minimum price for rubber is calculated by the smallholders at a level which ensures the purchase of a minimum quantity of rice. If prices fall below this point they change their activities towards food crop production such as dry rice, maize, cassava and sweet potatoes on quickly opened up dry land (ladang).

Forestry and fishing are also economic activities in West Pasaman. Almost one half of the area is covered by primary forest and about 25% of West Sumatra's coast line (excluding the Mentawai Islands) belongs to West Pasaman. About two-thirds of the existing primary forests are administered by the forestry service (Dinas Kehutanan) as government forests. A small quantity of wood for local use in construction and furniture making and for fire wood is cut all over the area, providing an additional income for local farmers and fisherman.

Roughly 10% of West Pasaman's population depend wholly, or partially, on fishing. From WPDP field surveys, it was gathered that nearly all fishermen in West Pasaman are engaged in agriculture during the non-fishing
season. Furthermore, old people, women and children, who do not participate in fishing find part time occupations apart from agriculture, in the production of straw for cigarettes (from nipa palm leaves), in trade, boat building and other handicrafts.

Simple processing for the production of food stuffs, building materials, furniture and other everyday utensils can be found throughout the region. This household industry is done by very small enterprises using the simplest of equipment and producing predominantly for the local market. Very often the processing units are run by part time farmers and forestry laborers. In view of the organization of these activities, it is hardly justified to speak of a clearly discernible secondary sector of the economy.

On the whole, processing, both of agricultural and forestry products are home-market industries, following a very local and slowly expanding demand. Processing plants working for export are few in number and employees. Rubber sheets are the only ones to be exclusively exported, while only small quantities of other products such as coffee, cassava chips (kerupuk) and spices are sold outside the region. Among the wood manufacturing enterprises, boat building in Air Bangis and Sasak is notable for its export-orientation. It caters not only to the demand of local fishermen, but also for ships up to 100 DWT ordered by clients from Padang.

Earnings of the entrepreneurs in the study area are small, not above the farmers' average, and risk is minimal since the non-agricultural activities are often only a source of additional income for the families. Household industry in West Pasaman does not seem to require special skills or a large amount of capital.
3. Basic Food Needs of the West Pasamanian

Indonesia is well known as an agrarian country. Nevertheless, it has not been self-sufficient in food. During the period of 1921-1940 an average of 460 thousand tons of rice had to be imported annually and these figures, after independence, were even greater, rising to 763 thousand tons in 1956, and accounting for 13% of the total cost of imports (Hadiwidjaja, 1970 p. 19). By 1977 this figure had risen to 1,950 thousand tons of rice, 89.1 thousand tons of soybeans and 763 thousand tons of wheat and flour (Dick, 1979 p. 35).

In 1960, with its Eight-Year Overall Development Plan, the government of Indonesia paid special attention to the food problem. It was expected that the country would be self-supporting in rice by 1962. However, this target was not reached and during the period of 1961-1964 more than one million tons of rice were imported annually.

Since Repelita I (1969/70-1973/74) food production, particularly rice, has received very high priority. However, rice imports and other basic food imports, such as soybeans and wheat and flour continue to grow (Dick, 1979). Repelita III states that self-sufficiency in food is one of its objectives. The increase in rice production is to be accomplished both by intensification of farming practices and expansion of cultivated areas. Availability of irrigation networks is critical for these efforts, particularly intensification.

The expansion of cultivated areas for rice cultivation in Java
through intensification has almost reached its peak. Hence, the promising areas for food production are in the Outer Islands.

In line with the principle of the equitable distribution of development and social justice, as the first objective of Repelita III, the government of the province of West Sumatra has decided on the basic human needs approach to meet the objective of development in that province. Based on the result of the study conducted by the Directorate of Land Use (Direktorat Tata Guna Tanah, 1976), using nine essential commodities (sembilan bahan pokok) as a means of determining the poverty line, the provincial government has identified the lagging areas which are called "kecamatan miskin". In the meantime, West Sumatra has been divided into five Development Regions (A, B, C, D and E). Development Region A, with its center Lubuksikaping, comprises all Kabupaten Pasaman. It is divided into Development Sub-Region I and II. West Pasaman belongs to Development Sub-Region I and three out of its four Kecamatan (sub district), namely Kecamatan Sungai Beremas, Kecamatan Talamau and Kecamatan Lembah Melintang are classified as "Kecamatan miskin" (Repelita III, Sumatera Barat, p. 175). Thus, Kecamatan Pasaman as the focus of this study, according to this classification is economically above those three kecamatans.

The average calorie consumption in West Sumatra of 2,161 calories is above the minimum requirement of 1,900 calories. However, it is estimated that 42% of the provincial population are below the minimum requirements and most of them live in Development Region A. It is also estimated that the people in Development Region A are the smallest consumers of protein, far below 40 grams per capita per day (Repelita III,
By using 1979 statistical data for population and rice production (see Tables 2 and 3), it is found that the average rice production per capita of West Pasaman is about 127.9 kg. This figure is far below the average rice consumption figure used by the Directorate of Land Use, 140 kg of rice per capita per year (Direktorat Tata Guna Tanah, 1976 p. 12). If the calculation is based on the kecamatan level (non-aggregated figure), the rice production figures per capita are as follows: 103.7 kg for Kecamatan Pasaman, 103.4 kg for Kecamatan Lembah Melintang and 187.7 kg and 134.2 kg for Kecamatan Talamau and Kecamatan Sungai Beremas respectively.

It is true that the people of West Pasaman grow other agricultural foods, such as maize, cassava and sweet potatoes, however, it is not used as a main diet in the study area and is sold as a source of cash income. It is for that reason that those three food crops have been excluded from this calculation.

It is quite clear that, even assuming that there is no rice production flow out of West Pasaman, the basic food needs of the people in West Pasaman have not yet been met. If there are no additional cultivated areas for rice production, this shortage will automatically become larger in the years to come. If the local government does not want to be faced with a more serious problem about this food shortage, the suitable land for food production should be reserved.
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<th>Kecamatan Talamau</th>
<th>Total Population</th>
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<td>Kenagarian Talu</td>
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<td>- &quot; - Kajai</td>
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<tr>
<td>- &quot; - Cubadak</td>
<td>11,297</td>
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<td>- &quot; - Simpang Tonang</td>
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<table>
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<td>- &quot; - Sungai Aur</td>
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<td>- &quot; - Rabi Jonggor</td>
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<td>- &quot; - Muara Kiawai</td>
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<th>Kecamatan Sungai Beremas</th>
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<td>Kenagarian Air Bangis</td>
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<td>- &quot; - Parit</td>
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<td>- &quot; - Batahan</td>
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<tr>
<td>- &quot; - Desa Baru</td>
<td>3,841</td>
</tr>
</tbody>
</table>

| TOTAL (WEST PASAMAN)      | 184,463          |

Source: Pasaman Dalam Angka, 1979 (pp. 152-155)
### TABLE 4: AREA HARVESTED, YIELD RATE AND TOTAL PRODUCTION IN RICE PADDIES IN WEST PASAMAN (1979)

<table>
<thead>
<tr>
<th>Kecamatan</th>
<th>Area Harvested (ha)</th>
<th>Yield Rate (ton/ha)</th>
<th>Total Production (ton)</th>
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<tr>
<td></td>
<td>wetland upland</td>
<td>wetland upland</td>
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<tr>
<td>Talamau</td>
<td>4,137</td>
<td>272</td>
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<td>Pasaman</td>
<td>3,602</td>
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<td>Lembah Melintang</td>
<td>3,211</td>
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<td>Sungai Beremas</td>
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<td>1,796</td>
<td>5,638</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>13,080</strong></td>
<td><strong>2,852</strong></td>
<td><strong>39,535</strong></td>
</tr>
</tbody>
</table>

1) dry unhusked rice

Source: Calculated from "Pasaman Dalam Angka, 1979" (p. 205)
4. Crucial Projects

As stated previously, for a ten year period (1975-1985) the WPDP team proposed five crucial projects as a means for achieving the development objectives for West Pasaman. The economic goals of these crucial projects are:

1. To increase regional income.

2. To increase employment.

3. To improve the balance of payments.

4. To improve family income.

5. To reduce regional income disparities.

(WPDP, 1975b p.4)

Since this study is primarily related to the second crucial project, i.e. an oil palm smallholder project, the last three crucial projects will not be discussed here. A new main road project (Simpang Empat - Manggopoh) will briefly be discussed because it is likely to be a precondition for the oil palm undertaking.

4.1 The Main Road Project

This main road project consists of two sections: Section A,
Simpang Empat - Manggopoh, 72 km and Section B, Manggopoh - Lubuk Alung, 69 km. The former is a completely new construction and the latter is an improvement in order to achieve the same standard as the preceding section (see Map 1). The WPDP team concluded that the lack of an efficient transport network is the main cause of West Pasaman's backwardness. The lack of an efficient transport network is attributed to the very poor condition of the road and its alignment, especially from Talu to Panti, where it meets the trans Sumatra highway. According to the WPDP team, it seems the improvement of the Talu - Panti section is very difficult due to landslide and curve problems. The underlying idea of proposing a new road from Simpang Empat to Maggopoh was based on this technical problem. Without arguing whether it is sufficient for the establishment of a new road, undoubtedly the oil palm project had a greater influence on the proposal. For example, if the agricultural products of West Pasaman were destined for the people in West Sumatra and its surrounding provinces, the road alignment would probably be different (see Map 3). In other words, technical problems would probably not be viewed as the main obstacle. Therefore the road and oil palm projects are mutually supportive; without an oil palm project, there would be no new road proposal (probably the Talu - Panti section improvement would be more desirable). Or, without the establishment of a new road there would be no oil palm project as stated in WPDP's Operational Programmes:

The starting point of the whole project depends largely on the decision to build the road connection from Manggopoh to Simpang Empat. As soon as a definite, positive decision is taken to go ahead with this road, the Nucleus Estate will begin with clearing the land, while the factory will be built in year 2 and 3 in order to be ready for the first harvest in year 4. (WPDP, 1975a p. 1/12).
RENCANA PEMBANGUNAN
PASAMAN BARAT
WEST PASAMAN
DEVELOPMENT PLANNING

Legend

- Capital of Kabupaten
- Capital of Kecamatan
- Regency headquarters
- Other place
- Provincial border
- Regency border
- Border of the Planning Region

Scale 1: 500,000

MAP 3
Another concern with respect to this road project is the road standard. It is proposed to be class IIc of Bina Marga's road classification (Directorate General of Highway Construction). As this standard is quite high, it means that the cost per kilometer is also high, and the WPDP team was therefore forced to enlarge the size of the oil palm project into the private, clan and communal lands, an additional 11,000 ha, in order to justify the road project. This was done without further investigation of the physical characteristics and the social environment of the extended area.

As stated earlier, the consent of the traditional nagari functionaries (kerapatan nagari) is absolutely necessary for the implementation of the project to be carried out in their area. When designing the oil palm project, particularly the extended area on non-government land, there was no contact with either the Walinagaris, as formal leaders, or Kerapatan Nagari, as informal leaders. It seems the team neglected this, though it says,

> When the project is extended onto village or clan land agreements with the formal and informal leaders must be reached. An absolute precondition is that the contracts between farmers on this land and the PM are countersigned by the Walinagari. His signature should then be regarded as a guarantee of long term land tenure. (WPDP, 1975a p. 1/13)

In order to put this problem into the context of this study, the proposed oil palm project will first be summarized as follows.
4.2 THE OIL PALM PROJECT

The WPDP team viewed the oil palm smallholder project as the central focus for West Pasaman's economic development. The major objectives of this project are: (1) to introduce smallholder oil palm production to West Pasaman; (2) to increase family income, (3) to create employment opportunities and (4) to earn foreign exchange.

The project area is located in the Kecamatan (subdistrict) Pasaman. The gross area necessary for the project amounts to 24,000 ha, of which 20,000 ha is to be devoted to a smallholder system with the remaining 4,000 ha to be used by the Nucleus Estate.

The Nucleus Estate is to be established on government land, the former Ophir Estate entrusted to the military. The WPDP proposal specifies that "the Nucleus Estate will be run by SIPEF, a commercial plantation company already operating in North Sumatra" (WPDP, 1975b p. 1/8). One of the basic functions of the Nucleus Estate is to provide the surrounding smallholders with a variety of services. These will include: information, advice and recommendations about oil palm production, techniques, the provision of planting material, the processing of their oil palm fruit production by a processing unit to be built and

12) Most of the information presented in this section is taken from the "Operational Program for West Pasaman/Sumatra", a volume produced by the WPDP team in 1975. A detailed feasibility study of the oil palm project was presented in that volume.
managed by the Nucleus Estate, and the external marketing and export of the finished product.

The WPDP proposal allots each smallholder 5 ha, 4 ha of which is to be devoted to oil palm cultivation. The remaining hectare is to be used by the smallholder to meet his family's food needs. In the initial year (year 0), the farmer is to be given credit subsidies to carry him through the first eight months. During the non productive four year immature phase of the oil palm, the smallholder is to make his living primarily from the production of food crops. As far as oil palm production is concerned, the smallholder's role appears to be essentially mechanical, producing the oil palm fruit for the Nucleus Estate according to its instructions through the Project Management.

The WPDP proposal does not provide for a direct relationship between the Nucleus Estate and the Smallholders. Instead, the WPDP plan provides for a Project Management (PM) body to facilitate the day-to-day activities of the smallholder area and to co-ordinate arrangements between the Smallholders and the Nucleus Estate. The proposal does not specify whether the PM's personnel would be public officials or provincial government representatives.

The main task of the PM is to organize, co-ordinate, supervise, and implement all Smallholder activities. This function includes: (1) the co-ordination and control of Smallholder operations; (2) the
provision of planting material and seeds for intercrops; (3) the marketing of the oil palm fruit, including weight and quality control; (4) the provision of credit facilities; (5) the provision of fruit transportation from the smallholders' plots to the factory (processing unit); (6) the construction of farm roads (within the project area) and (7) the development of extension services and nurseries. In addition, there is the need for (1) land negotiations with the village authorities; (2) land surveys; (3) land clearing and (4) planting.

The Project Management body is to provide the only link between the Smallholders and the Nucleus Estate and to represent the Smallholder interests in dealings with the Nucleus Estate. Thus, all information and material from the Nucleus Estate is disseminated by the PM to the Smallholders. And, all oil palm fruit is marketed and transported by the PM, under contract, as the only buyer of the farmer's production and as the sole supplier to the Nucleus Estate factory.

![Figure 2: Organizational Structure of the Oil Palm Project](image)
Even before the project gets off the paper, however, there are some glaring limitations both in the proposal's formulation and in the actual project.

The team seems to have forgotten its impartial role as planner, with the responsibility and function to provide the decision-makers with information on, and evaluation of, the project's feasibility and desirability. Instead, the team appears to function, based on facts, figures and formulations which are not presented to be weighed as alternatives, but to be accepted as the sole direction the programme is to follow. Thus, it states that SIPEF will run the Nucleus Estate without regard to other possible operators or organizational alternatives.

The proposal tends to concentrate on the technical aspects at the expense of social and economic factors that should be considered. The feasibility study restricts much of its examination of the Smallholders to an explanation of cultivation techniques. For example, little concern seems to be expressed for the way the Smallholders will deal with the restrictive agricultural and economic control by which decision making and initiative will be in hands of the PM and the Nucleus Estate.

As a procurement body between the Smallholders and the Nucleus Estate the PM will get a commission of 15% of the farmers' gross yield after a deduction of 15% for the Nucleus Estate, based on the world market price. This implies that the Smallholders will only get 72.25% of their gross yield. And the economic activities of the Smallholders depend on the world market price. In addition, the Smallholder is also a dependent of the PM as well
as of the Nucleus Estate. Moreover, the WPDP team did not mention the reason why the PM should get 15% of the farmers' gross yield (after the deduction of 15% for the Nucleus Estate) as its commission. Ideally, the PM, which deals with, or takes care of, both the Nucleus Estate and the Smallholders, should get a commission from the Nucleus Estate.

A deduction of 15% of the farmers' gross yield for the Nucleus Estate is reserved to cover the export taxes of 10% and CESS levy\textsuperscript{13}) of Rp 2.6 per kg which is to be borne by the Nucleus Estate. Again, this deduction is not clearly stated. The Smallholders will sell their fruit to the PM as the only buyer and the sole oil palm fruit supplier to the Nucleus Estate, but, they Smallholders have to be charged for export taxes. This apparent unfairness is not explained.

At the end of the feasibility study, the WPDP team concludes that:

By using a 12% interest rate and the price per kg of US $44 f.o.b. for palm oil, the overall project has an Internal Rate of Return (IRR of 19.4% and a Benefit Cost Ratio (BCR) of 2.35.

Since the IRR is above the Indonesian bank rate of 12%, and the BCR is greater than 1, the project is feasible.

The projected farm incomes were estimated to exceed Rp 160,000 per

\textsuperscript{13}) Cess levy is a special contribution paid by the grower. This fund is addressed for research purposes.
month, which is roughly 16 times the average 1974 farm income in West Pasaman.

However, even the most casual evaluation of these results leads to certain criticism of their economic analysis. The figures for the IRR and BCR, mentioned above, totally depend on the assumptions made by the team. If the assumptions were changed, different figures would be obtained for the IRR and BCR. The figure of a projected farm income, 16 times as great as the traditional farm income, is also deceptive as the team compared farm incomes from farms of quite a different size. The income from a 5 ha farm would, of course, be higher than the income from a 1.18 ha farm. Moreover, the team was not able to show what impact the oil palm project would have on the region. For example, the team concluded that:

Given the local consumption and savings pattern, savings are often spent on jewelry, an increase in the gold trade is to be expected. (WPDP, 1975b p. 1/48).

This conclusion would imply that savings would not be available for development financing because they would be converted instead to jewelry. Thus, there would be no additional capital formation expected from the project. This would mean that the oil palm project would have no impact on regional growth.

14) 1.18 ha is the average farm size in the study area based on interviews with farmers and walinagari conducted during the summer of 1981.
CHAPTER V

THE RESULTS OF THE STUDY

1. Introduction

In Chapter IV we have seen that West Pasaman is still far from self-supporting in rice. The figures on a kecamatan basis show that only Kecamatan Talamau is able to meet its food needs in terms of rice production per capita (187.7 kg). Kecamatan Pasaman is the second lowest (103.7 kg) after Kecamatan Lembah Melingtang (103.4 kg).

By extending the Ophir oil palm estate project as proposed by the WPDP team to the northern part of Kecamatan Pasaman, i.e. Kenagarian Kapar, Aur Kuning, Lingkung Aur and Air Gadang, in which a part of the present rice production comes from, the basic food supply of Kecamatan Pasaman, as well as West Pasaman as a whole, would be placed in an even more severe position. Almost one thousand hectares of the land proposed for oil palm is cultivated with paddy.

Whether the area under study should be devoted to oil palm cultivation or to other agricultural food production and tree crops which the farmers have been familiar with, is the main concern of this chapter. As stated earlier, three factors, i.e. the physical characteristics of the land, the social environment and economic aspects were chosen as the criteria for that purpose.
2. Physical Characteristics

The discussion of physical characteristics in this section covers land and water resources, and addresses the possible use of the non-government land for food production and other non-oil palm tree crops\textsuperscript{15}. The boundary of the land in question can be seen on Map 2 (approximately 11,000 ha).

Andosols formed on young andesitic tuff are predominant in the area, and accounts for 64.8% (6,934 ha). Latosolic soils derived from igneous rocks prevail over the rolling hills of the western part and occupy 23.7% (2,530 ha) of the area. About 2.6% is occupied by Low Humic-Glei and about 1.5% by Humic-Glei. Andosols and latosolic soils in the area are both well to moderately drained, strongly acidic in reaction, and low in phosphorus for cultivated crops (Sinotech, 1979). Andosols generally have a moderate to high content of organic matter and are high in exchange capacity and water-holding capacity, but latosolic soils tend to be permeable and low in nitrogen content. Generally, andosols and latosolic soils are suitable for rice crop cultivation. However, for the latter additional nitrogen fertilizer is necessary.

\textsuperscript{15} Since the feasibility study for using the area for oil palm production had been conducted in 1975, it can be taken for granted that it is physically suitable for that purpose.
The results of Sinotech's (1979) study, based on land classification criteria for irrigation purposes, shows that over four-fifths of the land in the area may be considered as arable-irrigable. Thus the area has a moderately high potential for food, and in particular, rice production.

Land use of the study area is dominated by brushwood and shrubbery followed by alang-alang (imperata cylindrica), upland shifting cultivation and tree crops, and paddy land.

<table>
<thead>
<tr>
<th>Land-use type</th>
<th>Acreage (ha)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paddy land</td>
<td>988.75</td>
<td>9.25</td>
</tr>
<tr>
<td>Upland for shifting-farming and tree crops</td>
<td>2,564.94</td>
<td>23.99</td>
</tr>
<tr>
<td>Brushwood and Shrubbery</td>
<td>3,553.94</td>
<td>33.25</td>
</tr>
<tr>
<td>Alang-alang</td>
<td>2,841.25</td>
<td>26.58</td>
</tr>
<tr>
<td>Ponded/swampy lands</td>
<td>376.26</td>
<td>3.52</td>
</tr>
<tr>
<td>Settlements</td>
<td>265.00</td>
<td>3.41</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>10,690.14</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Source: Sinotech (1979) p. III.2

Of the land used for paddy cultivation, only about 545 ha are well
drained and the rest (443.75 ha) is mostly water-logged during the wet season. Hence it is only used for one crop of rice in the dry season. It is estimated that more than one thousand hectares of upland are cultivated with coconut, rubber, cloves, coffee and fruit trees, and less than 400 hectares are used for secondary crops (palawija) by the shifting cultivation method. A considerable amount of alang-alang lands in the study area is the result of shifting cultivation.

Many rivers in West Pasaman can probably be used for irrigation in order to increase food production. One of them is Batang Tongar river which flows along the eastern border of the study area (see Map 4).

In 1954, 293 families of Suriname repatriates were resettled in Tongar, the one village in the study area within Kenagarian Air Gadang. They were promised wetland rice cultivation (sawah) through the construction of the Batang Tongar irrigation project. Unfortunately, there is still no realization of this promise. Because of the disappointment, most of these people moved to other places like Padang, Pekanbaru, Medan and even to Jakarta and only 60 families now live in the village. The leader of the group has stated that none of them would have left Suriname had they known that Batang Tongar would not proceed (Interview, July 1981).

To be self-sufficient in food production as one of the objectives of Repelita III, the development of irrigation is essential. The Sinotech's (1979) study reveals that a total of 4,079 ha of brush and
grassy lands in the study area can be reclaimed into paddy lands and
6,664 ha or about 62% of the study area can be planted with rice twice
a year, if the Batang Tongar project was built.

By growing rice twice a year, it is estimated that one family should
be able to make a reasonably good living on one hectare (see calculation
under Economic Aspects). Therefore, the Batang Tongar project can
accommodate 6,664 families. In addition to the 3,500 existing farm families
in the study area (see Table 6), the project can facilitate 3,164 farm
families of local or national transmigrants.

The Sinotech study also pointed out that there is some possibility
of extending the identified acreage in order to more fully utilize the
water resource of Batang Tongar. It suggested that further investigation
of the area to the west on the left bank of Batang Pasaman (see Map 4)
was desirable.

After the completion of the Batang Tongar project, the supply of water
will no longer be a constraint to rice production. Through land develop­
ment, rice variety and cultural improvement, better fertilization, pest
and disease control, and water management it is expected that for the land
being studied, the output of paddy rice will be 47,034 tons a year
(Sinotech, 1979 p. xvi).

Thus, from the view point of optimum use of the land and water
resources, and in order to increase rice production to meet the food needs
### TABLE 6: KENAGARIAN, DESA AND POPULATION OF 16 DESAS AFFECTED BY THE PROPOSED BATANG TONGAR PROJECT

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. AUR KUNING</strong></td>
<td></td>
</tr>
<tr>
<td>1. Padang Tujuh</td>
<td>1,965</td>
</tr>
<tr>
<td>2. Sukamenanti</td>
<td>2,127</td>
</tr>
<tr>
<td>3. Lembah Binuang</td>
<td>696</td>
</tr>
<tr>
<td><strong>II. LINGKUNG AUR</strong></td>
<td></td>
</tr>
<tr>
<td>1. Koto Dalam</td>
<td>1,304</td>
</tr>
<tr>
<td>2. Koto Sibiluan</td>
<td>962</td>
</tr>
<tr>
<td>3. Sibadagung</td>
<td>1,134</td>
</tr>
<tr>
<td>4. Koto Tinggi</td>
<td>845</td>
</tr>
<tr>
<td>5. Batang Biu</td>
<td>998</td>
</tr>
<tr>
<td>6. Bandarjo</td>
<td>1,054</td>
</tr>
<tr>
<td>7. Rimbo Candung</td>
<td>632</td>
</tr>
<tr>
<td><strong>III. AIR GADANG</strong></td>
<td></td>
</tr>
<tr>
<td>1. Batang Lingkin</td>
<td>1,352</td>
</tr>
<tr>
<td>2. Tongar</td>
<td>583</td>
</tr>
<tr>
<td>3. Batang Umpai</td>
<td>947</td>
</tr>
<tr>
<td>4. Durian Hutan</td>
<td>657</td>
</tr>
<tr>
<td>5. Pasir Bintungan</td>
<td>1,602</td>
</tr>
<tr>
<td><strong>IV. KAPAR</strong></td>
<td></td>
</tr>
<tr>
<td>1. Kapar Utara</td>
<td>661</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>17,519</strong></td>
</tr>
</tbody>
</table>

Source: 1) Sinotech (1979)

2) Sensus Penduduk Kabupaten Pasaman (1980)

16) It is assumed that the average family size in the study area is 5.
of the people in the study area, as well as West Pasaman, there are strong arguments in favour of the implementation of the Batang Tongar project.
3. Socio-Cultural Environment

By looking at the major objectives of the oil palm project (under IV 4.2), it is apparent that the WPDP team attempted to modernize the traditional economy of West Pasaman by linking it to international markets through oil palm production. This is in line with the principle of conventional development theory, that is, to give the subsistence sector a big push into the modern world and into the international market economy (Lappe, et. al, 1977).

In analyzing the existing conditions of West Pasaman in order to find the potential bottlenecks for further development, the WPDP team concentrated its efforts on the identification of the lagging sector and concluded that "the lack of an efficient road network turned out to be the main cause of many of West Pasaman's shortcomings" (WPDP, 1975a p. 24). As a result, they strongly recommended the construction of a new road from Simpang Empat to Manggopoh. In choosing the other crucial projects (see Page 6), the team did not take into account the social aspects which might inhibit the implementation of its project proposal.

There are many circumstances where socio-cultural conditions can inhibit development efforts. Sometimes certain peasant groups resist change and are conservative in their attitudes towards economic development. For example, Foster (1967) found strong evidence that in Tzintsuntzan's a village in northern Mexico, peasants espoused a conservatism and lacked interest in exploiting new social and economic opportunities. According to Foster, the reason they do not take advantage of available
opportunities is that they believed individual improvement can only be at the cost of others. The use of available opportunities according to Foster's interpretation, would be perceived as leading to increasing socio-economic inequalities and to internal conflict.

While the Tzintzuntzan's peasants do not take advantage of new social and economic opportunities because they perceive that one's gain is always at the expense of someone else, the Indonesian farms in general, and Javanese peasant farmers, in particular, tend to dismiss these opportunities because "they place extremely high discounts to risk and uncertainty, particularly the latter" (Penny, 1966). The Indonesian peasants, as subsistence-minded farmers, according to Penny, believe that the returns they would get from the use of new technology, from growing of new crops, and other kinds of investment are much lower than they would in fact get if they did not adopt such innovations. This type of peasant farmer, with a narrow risk base, values security highly. Gains and losses are not equally weighted. This is necessarily so because the possibility of a small loss—which means someone must go hungry—is more important than the equal possibility of a larger gain.

The first objective of the oil palm project is to introduce an innovative smallholder oil palm production in West Pasaman. Again, the team overlooked the fact that innovation is a process which takes time. Many agricultural innovations have social, economic and cultural consequences that make them less desirable than the practice that they substitute. The farmers' decisions are usually made in terms of what has been done in previous generations. Economic necessity and social pressures can be
viewed as basic considerations in the farmers' decision to adopt an innovation.

Will the farmers of West Pasaman automatically accept this oil palm project? It is true that oil palm was grown in West Pasaman during the colonial period. However, none of the farmers in West Pasaman were involved in its cultivation. Therefore, it is not reasonable to assume that these farmers will easily accept oil palm as a replacement of their existing crops which have been inherited by their ancestors. On the contrary, as has been shown by the results of field observation, there is no indication that the farmers in the study area will adjust themselves to this innovation.

The Indonesian farmer's perception of innovation was observed by Penny (1966 p. 27). He pointed out that although income could be increased merely by a change in the pattern of resource use, or by a small transfer of labor from crop production to repair work on the irrigation system, or by spending a little money on fertilizer, the farmers tend to ignore these opportunities. Penny further says that in most of Indonesia, farmers do not attempt to maximize their incomes, nor do they respond strongly to economic incentives. For example, the growing of papaya and other fruit in the Depok area for the Jakarta market is much more profitable than growing food crops for sale, but only a few farmers take advantage of this opportunity.

For traditional society, the process of innovation can, for a certain period of time, be prevented by its deeply-rooted social value system.
For example, the Javanese village economy, a wet rice economy, according to Geertz (1963), provides a place for surplus labor though it is known that the productivity of the additional workers is less than the claims they will make on the total product. Geertz calls this uneconomical decision the ethic of "shared poverty". Some Javanese farmers know that the use of the sickle for harvesting is more profitable than the cutting knife (ani-ani). However, they do not use the sickle because of the social pressure against this new system, as it reduces work opportunities. More recently, however, the change in the traditional harvest arrangement from "bawon" or open harvest system (the field is open to all, who traditionally work with ani-ani), to "tebasan" or contract harvesting (under this system, the more efficient sickle is used rather than the ani-ani) has gained in popularity. This process of change is purposely designed by farmers and landlords as "tactics to limit the number of harvesters crowding their fields in search of a wage" (White, 1979 p. 99). As a result, the social and institutional arrangement at the village level that provided mechanisms for sharing of employment and earning opportunities are beginning to break down, for example, the share of the harvest laborers is reduced.

There is an assumption that technological innovation will lead to changes in the economy and social organization. It was probably the expectation of the WPDP team that the smallholder oil palm innovation would automatically lead to a better economy and society. For example, Salisbury (1962) observed that displacing of stone axes by steel ones among a New Guinea Highland people substantially reduced the time spent on subsistence production and led to an expansion of ceremonial and political activities.
It did not, however, produce much change in the economy and social organization.

In order to obtain the people's perception of the smallholder oil palm innovation in West Pasaman, interviews were conducted during the summer of 1981. Sixty farmers were interviewed to determine their opinion as to what project or program would be socially desirable. Each farmer answered the same questionnaire consisting of fourteen questions (see Appendix 1). Of these fourteen questions, only eleven were tabulated because Question No. 2 (Q02) was only answered by one person, Question No. 4 (Q04) resulted in a totally negative response and Question No. 5 (Q05) was not valid.

In response to Q01, only 1.7% of the farmers were of the opinion that the re-establishment of the Ophir Estate was a good idea and 98.3% have no opinion (see Table 7).
TABLE 7: FARMERS’ OPINION OF THE OPHIR OIL PALM PROJECT

<table>
<thead>
<tr>
<th>Kenagarian</th>
<th>Good Idea</th>
<th>Don't Know</th>
<th>Bad idea</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>1. Air Gadang</td>
<td>1</td>
<td>6.7</td>
<td>14</td>
</tr>
<tr>
<td>2. Lingkung Aur</td>
<td>0</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>3. Aur Kunung</td>
<td>0</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>4. Kapar</td>
<td>0</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>TOTAL/AVERAGE</td>
<td>1</td>
<td>1.7</td>
<td>59</td>
</tr>
</tbody>
</table>

Almost all of the respondents (96.7%) had seen oil palm trees. The 3.3% who had never seen them were from Air Gadang (see Table 8).
TABLE 8: FARMERS WHO HAVE SEEN OIL PALM TREES

<table>
<thead>
<tr>
<th>Kenagarian</th>
<th>Number and Percentage of Respondent</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Have Seen</td>
<td>Have Never Seen</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>1. Air Gadang</td>
<td>13</td>
<td>86.7</td>
<td>2</td>
</tr>
<tr>
<td>2. Lingkung Aur</td>
<td>15</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>3. Aur Kuning</td>
<td>15</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>4. Kapur</td>
<td>15</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>58</td>
<td>96.7</td>
<td>2</td>
</tr>
</tbody>
</table>

In response to Question No. 6 all of the respondents (100%) were of the opinion that they did not want to grow oil palms on their farms for commercial purposes (see Table 9).
TABLE 9: FARMERS WHO WANT TO GROW OIL PALM ON THEIR FARMS

<table>
<thead>
<tr>
<th>Kenagarian</th>
<th>Want to Grow</th>
<th>Don't Want to Grow</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>1. Air Gadang</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2. Lingkung Aur</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3. Aur Kuning</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4. Kapar</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

It was found that none of the respondents would like to join the Ophir Oil Palm Project (see Table 10). Their main reasons for not wanting to join it are shown in Table 11. All respondents stated that they first needed evidence of some economic advantage and that they don't want to be dictated to by the Nucleus Estate. They felt that it was safer to grow rice and other crops that they are familiar with rather than oil palm. Surprisingly, 70% of the respondents based their decision on the pleasure time factors. They are of the opinion that oil palm cultivation is too time consuming. More than half (61.7%) do not want to leave their villages. The farmers in the study area (Minangkabau people), who have been well known as "perantau" (outmigrants), would feel ashamed to migrate such a short distance from their village to the Ophir site. Unfamiliarity with oil palm cultivation is the least important reason for their not wanting to join the oil palm project (51.6%).
TABLE 10: FARMERS' RESPONSE TO THE OPHIR OIL PALM PROJECT

<table>
<thead>
<tr>
<th>Kenagarian</th>
<th>Like to Join</th>
<th></th>
<th>Don't Like to Join</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>1. Air Gadang</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>100.0</td>
</tr>
<tr>
<td>2. Lingkung Aur</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>100.0</td>
</tr>
<tr>
<td>3. Aur Kuning</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>100.0</td>
</tr>
<tr>
<td>4. Kapar</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>100.0</td>
</tr>
<tr>
<td>TOTAL/AVER.</td>
<td>0</td>
<td>0</td>
<td>60</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The respondents' opposition to oil palm cultivation was confirmed in their response to question no. 9. None of them agreed to devote their land to oil palm production should the Ophir Palm Project be extended to their areas (see Table 12). Nor did a rubber plantation project interest the farmers. More than twenty percent were interested in the possibility of a coconut project. However, the first preference of all the respondents was for the creation of an irrigation project in their areas (see Table 13).

If the irrigation project was built 96.7% of the respondents said they would convert their upland to rice growing while 3.3% said "don't know" (see Table 14). The main reason for the latter was that their coconut trees are still young.
<table>
<thead>
<tr>
<th></th>
<th>0%</th>
<th>10%</th>
<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
<th>60%</th>
<th>70%</th>
<th>80%</th>
<th>90%</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Familiar With Oil Palm Cultivation</td>
<td>43.3</td>
<td>33.3</td>
<td>26.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Need Evidence</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don't Want To Be Dictated To By The Nucleus Estate</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safer To Grow Rice And Other Crops Which Have Been Familiar With</td>
<td>15.0</td>
<td>15.0</td>
<td>15.0</td>
<td>15.0</td>
<td>15.0</td>
<td>15.0</td>
<td>15.0</td>
<td>15.0</td>
<td>15.0</td>
<td>15.0</td>
<td></td>
</tr>
<tr>
<td>Need Time For Pleasure</td>
<td>53.3</td>
<td>66.7</td>
<td>46.7</td>
<td>80.0</td>
<td>60.0</td>
<td>9.0</td>
<td>10.0</td>
<td>12.0</td>
<td>10.0</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>Don't Want To Move A Short Distance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 1.1: REASONS FOR THE FARMERS NOT WANTING TO JOIN THE OPHIR OIL PALM PROJECT**
### TABLE 12: REACTION OF FARMERS TO DEVOTING THEIR LAND TO OIL PALM CULTIVATION

<table>
<thead>
<tr>
<th>Kenagarian</th>
<th>Agree</th>
<th>No Idea</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>1. Air Gadang</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2. Lingkung Aur</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3. Aur Kuning</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4. Kapar</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL/AVER.</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### TABLE 13: FARMERS' PREFERENCE TOWARDS POTENTIAL PROJECTS IN THEIR AREA

<table>
<thead>
<tr>
<th>Kenagarian</th>
<th>Irrig.</th>
<th>Rubber</th>
<th>Coconut</th>
<th>Coffee</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>1. Air Gadang</td>
<td>15</td>
<td>100.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>2. Lingkung Aur</td>
<td>15</td>
<td>100.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>3. Aur Kuning</td>
<td>15</td>
<td>100.0</td>
<td>1</td>
<td>6.7</td>
</tr>
<tr>
<td>4. Kapar</td>
<td>15</td>
<td>100.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>TOTAL/AVER.</td>
<td>60</td>
<td>100.0</td>
<td>1</td>
<td>1.7</td>
</tr>
</tbody>
</table>
TABLE 14: FARMERS' WILLINGNESS TO CONVERT THEIR LAND TO RICE GROWING

<table>
<thead>
<tr>
<th>Kenagarian</th>
<th>Will Convert</th>
<th>Don't Know</th>
<th>Not Convert</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>1. Air Gadang</td>
<td>15</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>2. Lingkung Aur</td>
<td>15</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>3. Aur Kuning</td>
<td>15</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>4. Kapar</td>
<td>13</td>
<td>86.7</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL/AVER.</td>
<td>58</td>
<td>96.7</td>
<td>2</td>
</tr>
</tbody>
</table>

The respondents' preference for an irrigation project was confirmed by their response to Question No. 12. All of them stated that they would release any of their land needed for irrigation canals (see Table 15) and would not ask for compensation.

TABLE 15: FARMERS' RESPONSE TOWARDS RELEASING LAND FOR A POTENTIAL IRRIGATION PROJECT

<table>
<thead>
<tr>
<th>Kenagarian</th>
<th>Release the Land</th>
<th>Ask Compensation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>1. Air Gadang</td>
<td>15</td>
<td>100.0</td>
</tr>
<tr>
<td>2. Lingkung Aur</td>
<td>15</td>
<td>100.0</td>
</tr>
<tr>
<td>3. Aur Kuning</td>
<td>15</td>
<td>100.0</td>
</tr>
<tr>
<td>4. Kapar</td>
<td>15</td>
<td>100.0</td>
</tr>
<tr>
<td>TOTAL/AVER.</td>
<td>60</td>
<td>100.0</td>
</tr>
</tbody>
</table>
TABLE 16: THE AREA OF LAND CULTIVATED IN PADDY FOR SURVEY GROUP

<table>
<thead>
<tr>
<th></th>
<th>Wetland</th>
<th></th>
<th>Rainfed</th>
<th></th>
<th>Upland</th>
<th></th>
<th>Total</th>
<th>Aver. Per HH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Size (ha)</td>
<td>Aver. (ha/HH)</td>
<td>Size (ha)</td>
<td>Aver. (ha/HH)</td>
<td>Size (ha)</td>
<td>Aver. (ha/HH)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Air Gadang</td>
<td>0</td>
<td>8.50</td>
<td>0.57</td>
<td>4.25</td>
<td>0.28</td>
<td>12.75</td>
<td>0.85</td>
</tr>
<tr>
<td>2.</td>
<td>Lingkung Aur</td>
<td>4.30</td>
<td>3.20</td>
<td>0.21</td>
<td>1.80</td>
<td>0.12</td>
<td>9.30</td>
<td>0.62</td>
</tr>
<tr>
<td>3.</td>
<td>Aur Kuning</td>
<td>6.00</td>
<td>2.40</td>
<td>0.16</td>
<td>0.50</td>
<td>0.03</td>
<td>8.90</td>
<td>0.59</td>
</tr>
<tr>
<td>4.</td>
<td>Kapar</td>
<td>7.40</td>
<td>5.30</td>
<td>0.35</td>
<td>0</td>
<td>0.00</td>
<td>12.70</td>
<td>0.85</td>
</tr>
<tr>
<td>TOTAL</td>
<td>17.7</td>
<td>0.30</td>
<td>19.40</td>
<td>0.32</td>
<td>6.55</td>
<td>0.11</td>
<td>43.65</td>
<td>0.73</td>
</tr>
</tbody>
</table>
TABLE 17:  THE ACREAGE OF LAND CULTIVATED WITH TREE CROPS, PALAWIJA AND OTHERS FOR SURVEY GROUP

<table>
<thead>
<tr>
<th>Kenagarian</th>
<th>Rubber</th>
<th>Coconut</th>
<th>Coffee</th>
<th>Clove</th>
<th>Palaweja &amp; Others</th>
<th>TOTAL</th>
<th>aver. per HH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>size</td>
<td>aver.</td>
<td>size</td>
<td>aver.</td>
<td>size</td>
<td>aver.</td>
<td>size</td>
</tr>
<tr>
<td></td>
<td>(ha)</td>
<td>(ha/HH)</td>
<td>(ha)</td>
<td>(ha/HH)</td>
<td>(ha)</td>
<td>(ha/HH)</td>
<td>(ha)</td>
</tr>
<tr>
<td>1. Air Gadang</td>
<td>1.75</td>
<td>0.12</td>
<td>1.20</td>
<td>0.08</td>
<td>1.20</td>
<td>0.08</td>
<td>0.00</td>
</tr>
<tr>
<td>2. Lingkung Aur</td>
<td>0.90</td>
<td>0.06</td>
<td>2.75</td>
<td>0.18</td>
<td>1.80</td>
<td>0.12</td>
<td>0.50</td>
</tr>
<tr>
<td>3. Aur Kuning</td>
<td>2.80</td>
<td>0.19</td>
<td>1.95</td>
<td>0.13</td>
<td>2.60</td>
<td>0.17</td>
<td>0.85</td>
</tr>
<tr>
<td>4. Kapar</td>
<td>0.00</td>
<td>0.00</td>
<td>3.30</td>
<td>0.22</td>
<td>0.90</td>
<td>0.06</td>
<td>0.00</td>
</tr>
<tr>
<td>TOTAL/AVER.</td>
<td>5.45</td>
<td>0.09</td>
<td>9.20</td>
<td>0.15</td>
<td>6.50</td>
<td>0.11</td>
<td>1.35</td>
</tr>
</tbody>
</table>
With regard to the size of land holdings, it was found that, on average, each respondent has 1.18 hectares, of which 0.73 hectares is cultivated with paddy (0.30 ha wetland paddy, 0.32 rainfed paddy and 0.11 ha upland paddy) and 0.45 hectare with tree crops and secondary crops (see Tables 16 and 17).

It seems draft animals are quite important for farming in the study area. In response to Question No. 14 one farmer will, with a draft animal on average, be able to farm 2.27 hectares wetland paddy, whereas without a draft animal a farmer will only be able to farm 1.55 hectares (Table 18).

**TABLE 18: FARMERS' ABILITY TO CULTIVATE WETLAND PADDY (HA)**

<table>
<thead>
<tr>
<th>Kenagarian</th>
<th>With Draft Animal</th>
<th>Without Draft Animal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Average</td>
</tr>
<tr>
<td>1. Air Gadang</td>
<td>35</td>
<td>2.33</td>
</tr>
<tr>
<td>2. Lingkung Aur</td>
<td>33</td>
<td>2.20</td>
</tr>
<tr>
<td>3. Aur Kuning</td>
<td>36</td>
<td>2.40</td>
</tr>
<tr>
<td>4. Kapar</td>
<td>32</td>
<td>2.13</td>
</tr>
<tr>
<td>TOTAL/AVER.</td>
<td>136</td>
<td>2.27</td>
</tr>
</tbody>
</table>
Four Walinagaris in the study area were interviewed. Nine out of twelve questions were designed to determine the general characteristics of land ownership in the study area. The other three questions dealt with the Walinagaris' opinions about the oil palm project and other potential projects which might increase the farmers' incomes in the study area. The responses of the four Walinagaris to all questions, except Question No. 1, are similar.

In the study area 61.25% of the land is communal land (tanah ulayat) and 38.75% is private land (tanah milik) (see Table 19). In order to obtain some communal land for agricultural purposes, the ninik mamak's approval is required. It can be either oral or written and there is no obligation in terms of money or in kind to the ninik mamak or the community. However, the law obliges him to take care of that land (UUPA\(^{17}\), 1960 article 15). The maximum amount of communal land which can be allotted to a family of the society is about two hectares. If the grantee does not cultivate this land for a three year period, he will lose his right to the use of the land and it will become available for someone who is willing to cultivate it.

It seems there is an opportunity for an immigrant to reside in, or cultivate, communal land. However, he has to obey the local adat law of the kenagarian and to be adopted as the ninik mamak's nephew. If he

\(^{17}\) UUPA stands for Undang-Undang Pokok Agraria. Statute number five of the year 1960 concerning Basic Regulations on Agrarian Principle.
does not obey the local adat law, he will be expelled and the land will be returned to the ninik mamak. In theory, any immigrant ethnic group has potential access to the communal land. However, since the local adat law cannot be separated from the residents' religion, each walinagari expects the immigrants to be moslem.

Communal land can be converted to private land with the ninik mamak's approval. This type of conversion can only occur during a mass land distribution, in which each family obtains a land certificate. This converted land can be transferred or sold to other persons.

TABLE 19: THE PROPORTION OF COMMUNAL AND PRIVATE LAND IN THE STUDY AREA

<table>
<thead>
<tr>
<th>Kenagarian</th>
<th>Communal Land (Percent)</th>
<th>Private Land (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Air Gadang</td>
<td>85.00</td>
<td>15.00</td>
</tr>
<tr>
<td>2. Lingkung Aur</td>
<td>45.00</td>
<td>55.00</td>
</tr>
<tr>
<td>3. Aur Kuning</td>
<td>55.00</td>
<td>45.00</td>
</tr>
<tr>
<td>4. Kapar</td>
<td>60.00</td>
<td>40.00</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>61.25</td>
<td>38.00</td>
</tr>
</tbody>
</table>
Without giving an explanation, all walinagaris stated that the Ophir Palm Project was a good project. However, when asked whether the walinagaris would join the project should it be extended to their kenagarians, all walinagaris had no idea. In addition, the four walinagaris concur with the sixty interviewed farmers, that an irrigation project was the preferred project that should be implemented by the government in order to increase the farmers' income. All walinagaris would be willing to release communal land and their private land without compensation, if needed for irrigation networks. They would also welcome local or national transmigration and would not require compensation for lost land provided the newcomers obeyed, or at least respected, their local adat law.
4. ECONOMIC ASPECTS

Thus far, the investigation of the physical characteristics and the social aspects of the study area reveals that: physically the land being studied is most suitable for food, mainly rice production, and socially, rice cultivation is both desirable and urgently needed. To determine the best use of the land, the results of a traditional economic assessment will be employed.

The popular economic view has been that developing countries should do everything possible to improve their balance of trade. Thus, it has been assumed that it was in the nation's interests and in the farmers' interests to produce as great a quantity of export commodities as possible, even if it means sacrificing the production of staple food crops. However, "we have to erase from our minds the automatic connection between a poor country's rising export income and improvement in the welfare of the majority of the people" (Lappe, et. al, 1977 p. 199). It may well be that the production of export commodities at the expense of the production of basic foodstuffs simply serves short term political or special interest objectives, rather than assisting the welfare of the nation and of the individual.

In Indonesia's case, it is worthwhile considering the cost-benefits of producing rubber, as an export commodity, rather than the food crop, rice. Penny and Gittinger (1970) noted that, in December 1966, the world price ratio between rice and rubber was about 1:3.3 per kilogram. That should mean (input operation costs being assumed, for our purposes to
be identical), that world-wide, it would be over three times as profitable to produce a kilogram of rubber than a kilogram of rice. Thus, whenever possible, rubber should be grown and the rubber farmer would make more than sufficient profits, by selling his rubber, to buy three times as much rice as he could have produced himself.

In Indonesia, however, the 1966 price ratio between rice and rubber was, in fact, quite different from the general world picture. The price ratio was only 1:1.2 per kilogram. This is even more striking when it is discovered that the rumpiah price of rice was 25% below the world price (Penny and Gittinger, 1970). Thus, without the government subsidization of Rp 25 for every kilogram of imported rice, the domestic prices of rice and rubber would have been about the same, notwithstanding the fact that rubber was being encouraged as a cash crop and that the insufficient production of domestic rice incurred the cost of subsidy payments.

Thus, if the world price of rice was Rp 100, and the Indonesian government subsidizes it by Rp 25 for every kilogram imported, the Indonesian subsidized price would be 25% below the world price, or only Rp 75. Under these circumstances the farmer would be able to buy rice at less than the cost to produce it profitably, and the government would be forced to spend some of its funds for the purchase of an imported product which could have been produced domestically, while the farmer is encouraged to grow an export commodity such as rubber.

Perhaps this would be satisfactory if the rubber farmer could expect the world prices, or 3 times the price of rice, for his rubber. This would
make the production of rubber a sound and justifiable economic undertaking. However, the peasant farmer actually received a domestic price of only Rp 90 per kilogram of rubber. That is 10% lower than the unsubsidized world price of rice. Thus, if Indonesia's rice price were allowed to reach the world price of 100 Rp, the farmer would find it more profitable to grow rice than rubber and the government would not have to use its limited funds on an artificial subsidy designed to encourage the farmer to produce an unnecessary and unprofitable cash crop. This is an example of government assistance for a theoretically profitable program that leads to unnecessary interference and an unfortunate marketplace.

For the purpose of using an economic assessment as the third criteria in this study, the economic advantage of rice as opposed to oil palm production will be compared in the area under study. In order to make possible this comparison, it has first of all, to be assumed that oil palm production is physically suitable and socially desirable for the study area. And because of the limitation of available data and information for both commodities, some necessary assumptions and limitations have to be made:

1. The basic figures used for oil palm analysis are taken from "Indonesia NES - Project Ophir 1980, Final Preparation Report, Frankfurt 1980" (mimeo).

2. IPEDA - Iuran Pembangunan Daerah (Regional Development levy) tax of 5% of the net value of production, is included in the oil palm analysis. In rice analysis, however this tax is not
included. The main reason for this is that the IPEDA tax on rice growers is not continually collected and is relatively small.

3. The duration for oil palm cultivation is 19 years. It does not necessarily reflect the life-span of the oil palm project, but this is done because the available data in (1) is only projected for this time.

4. The first harvest of oil palm is in the fourth year. However, the net income per hectare is derived from the average income over 19 years of cultivation, starting with the first year.

5. A rice farmer's credit or loan for new land preparation (pencentak sawah baru) is calculated as an input cost. The amount of this credit is Rp 221,101\(^{18}\) per hectare. For the purpose of this comparison, however, the land preparation credit is equally divided into 19 years. Thus, the input cost per ha per year is Rp 11,637 (Rp 221,101: 19).

6. It is assumed that as water will no longer be a constraining factor, there will be two rice crops per year, as has been practised by many farmers in Indonesia. Thus, the input cost for one hectare of rice cultivation from the land preparation credit is one half of Rp 11,637 or Rp 5,818.5.

18) Source: this writer's interview with Walinagari, July 1981
7. Another input cost for rice cultivation is Bimas (Mass Guidance) program loan, which consists of: seeds, fertilizers, pesticide and a living allowance (see Table 22).

8. By using these production inputs (7), the rice yield per harvest is estimated at 4 tons of unhusked rice per ha. It is assumed that the per hectare rice yield is constant for each harvest.

9. The conversion rate of paddy (unhusked) rice to market (hulled) rice is 60%. For example, 100 kg of unhusked rice results in 60 kg of hulled rice. (Note: hulled rice is usually sold in Indonesia).

10. The rice price is based on the average price of hulled rice in Simpang Empat, the centre of Development Sub-Region I (Pasaman Dalam Augka, 1979). This price, Rp 186 per kg, is based on 1978 figures (see Table 23).

11. So far, water users are free from water tax, especially in the Outer Islands. Thus, the irrigation project cost is not included in this comparison.

By taking all of these assumptions into account in preparing the income and expenditure analysis of the two communities, the following conclusions can be drawn:
TABLE 20: INCOME-EXPENDITURE ANALYSIS OF PER HA OIL PALM PRODUCTION WITH IPEDA TAX ('000 Rp)

<table>
<thead>
<tr>
<th>Year</th>
<th>Gross Value of Production</th>
<th>Cost of Production 19)</th>
<th>Net Value of Production</th>
<th>Net Value of Production after IPEDA tax 20)</th>
<th>Debt Repayment</th>
<th>Net Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>109.25</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>255.55</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>377.15</td>
</tr>
<tr>
<td>321</td>
<td>115</td>
<td>0</td>
<td>115</td>
<td>109.25</td>
<td>-</td>
<td>109.25</td>
</tr>
<tr>
<td>4</td>
<td>364</td>
<td>95</td>
<td>269</td>
<td>255.55</td>
<td>-</td>
<td>255.55</td>
</tr>
<tr>
<td>5</td>
<td>612</td>
<td>95</td>
<td>517</td>
<td>491.15</td>
<td>114.0</td>
<td>605.15</td>
</tr>
<tr>
<td>6</td>
<td>722</td>
<td>95</td>
<td>627</td>
<td>595.65</td>
<td>105.0</td>
<td>490.65</td>
</tr>
<tr>
<td>7</td>
<td>882</td>
<td>95</td>
<td>787</td>
<td>747.65</td>
<td>98.5</td>
<td>649.15</td>
</tr>
<tr>
<td>8</td>
<td>924</td>
<td>95</td>
<td>829</td>
<td>787.55</td>
<td>92.0</td>
<td>705.55</td>
</tr>
<tr>
<td>9</td>
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<td>787.55</td>
<td>86.0</td>
<td>701.55</td>
</tr>
<tr>
<td>10</td>
<td>924</td>
<td>95</td>
<td>829</td>
<td>787.55</td>
<td>80.5</td>
<td>707.05</td>
</tr>
<tr>
<td>11</td>
<td>924</td>
<td>95</td>
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<td>75.0</td>
<td>712.55</td>
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<tr>
<td>12</td>
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<td>747.65</td>
<td>70.0</td>
<td>677.65</td>
</tr>
<tr>
<td>13</td>
<td>882</td>
<td>95</td>
<td>787</td>
<td>747.65</td>
<td>65.5</td>
<td>682.15</td>
</tr>
<tr>
<td>14</td>
<td>882</td>
<td>95</td>
<td>787</td>
<td>747.65</td>
<td>65.5</td>
<td>682.15</td>
</tr>
<tr>
<td>15</td>
<td>882</td>
<td>95</td>
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<td>747.65</td>
<td>65.5</td>
<td>682.15</td>
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<tr>
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<td>682.15</td>
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<tr>
<td>17</td>
<td>882</td>
<td>95</td>
<td>787</td>
<td>747.65</td>
<td>65.5</td>
<td>682.15</td>
</tr>
<tr>
<td>18</td>
<td>840</td>
<td>95</td>
<td>745</td>
<td>707.75</td>
<td>46.5</td>
<td>661.25</td>
</tr>
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<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9,448.10</td>
</tr>
</tbody>
</table>

Source: Calculated from "Indonesia NES - Project Ophir 1980, Final Preparation Report, Frankfurt 1980" (mimeo).

19) Consists of: fertilizer, pesticide, cover crops, fruit transportation cost and other costs during the first three years, such as oil palm planting material.

20) IPEDA tax = 5% net value of production.

21) The year of oil palm production.
<table>
<thead>
<tr>
<th>Year</th>
<th>Gross Value of Production</th>
<th>Cost of Production</th>
<th>Net Value of Production</th>
<th>Debt Repayment</th>
<th>Net Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>115</td>
<td>0</td>
<td>115</td>
<td>-</td>
<td>115.0</td>
</tr>
<tr>
<td>4</td>
<td>364</td>
<td>95</td>
<td>269</td>
<td>-</td>
<td>269.0</td>
</tr>
<tr>
<td>5</td>
<td>612</td>
<td>95</td>
<td>517</td>
<td>114.0</td>
<td>403.0</td>
</tr>
<tr>
<td>6</td>
<td>722</td>
<td>95</td>
<td>627</td>
<td>105.0</td>
<td>522.0</td>
</tr>
<tr>
<td>7</td>
<td>882</td>
<td>95</td>
<td>787</td>
<td>98.5</td>
<td>688.5</td>
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<tr>
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<td>924</td>
<td>95</td>
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<td>737.0</td>
</tr>
<tr>
<td>9</td>
<td>924</td>
<td>95</td>
<td>829</td>
<td>86.0</td>
<td>743.0</td>
</tr>
<tr>
<td>10</td>
<td>924</td>
<td>95</td>
<td>829</td>
<td>80.5</td>
<td>748.5</td>
</tr>
<tr>
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<td>924</td>
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<td>75.0</td>
<td>754.0</td>
</tr>
<tr>
<td>12</td>
<td>882</td>
<td>95</td>
<td>787</td>
<td>70.0</td>
<td>717.0</td>
</tr>
<tr>
<td>13</td>
<td>882</td>
<td>95</td>
<td>787</td>
<td>65.5</td>
<td>721.5</td>
</tr>
<tr>
<td>14</td>
<td>882</td>
<td>95</td>
<td>787</td>
<td>65.5</td>
<td>721.5</td>
</tr>
<tr>
<td>15</td>
<td>882</td>
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<td>787</td>
<td>65.5</td>
<td>721.5</td>
</tr>
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<td>882</td>
<td>95</td>
<td>787</td>
<td>65.5</td>
<td>721.5</td>
</tr>
<tr>
<td>17</td>
<td>882</td>
<td>95</td>
<td>787</td>
<td>65.5</td>
<td>721.5</td>
</tr>
<tr>
<td>18</td>
<td>840</td>
<td>95</td>
<td>745</td>
<td>46.5</td>
<td>698.5</td>
</tr>
</tbody>
</table>

| TOTAL |                           |                    |                         |                | 10,003.0   |

Source: Calculated from "Indonesia NES - Project Ophir 1980, Final Preparation Report, Frankfurt 1980" (mimeo).
TABLE 22: BIMAS PROGRAM LOAN PER HECTARE

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Amount of Loan (Rp/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeds</td>
<td>25 kg</td>
<td>3,750</td>
</tr>
<tr>
<td>Urea</td>
<td>150 kg</td>
<td>10,500</td>
</tr>
<tr>
<td>TSP</td>
<td>100 kg</td>
<td>7,010</td>
</tr>
<tr>
<td>Pesticide</td>
<td>2 lt</td>
<td>2,460</td>
</tr>
<tr>
<td>Rodenticide</td>
<td>0.1 kg</td>
<td>230</td>
</tr>
<tr>
<td>Spraying Cost</td>
<td>cash</td>
<td>2,000</td>
</tr>
<tr>
<td>Living Allowance</td>
<td>cash</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>35,940</strong></td>
</tr>
</tbody>
</table>

Source: BRI - Bank Rakyat Indonesia (Indonesia's Agricultural Bank Office, Simpang Empat.


<table>
<thead>
<tr>
<th>PLACE</th>
<th>YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1977</td>
</tr>
<tr>
<td>1. Bonjol</td>
<td>137.50</td>
</tr>
<tr>
<td>2. Rao</td>
<td>133.30</td>
</tr>
<tr>
<td>3. Simpang Empat</td>
<td>131.60</td>
</tr>
</tbody>
</table>

Source: For the year 1977, 1978 and 1979 the average price is calculated from "Pasaman Dalam Angka, 1979".

<sup>22</sup> For the year 1980, the estimated price is calculated by adding a price increase of 10% (the price increase from 1978 to 1979 was 35%, 13% and 25% for Bonjal, Rao and Simpang Empat respectively).
TABLE 24: INCOME-EXPENDITURE ANALYSIS OF PER HA WETLAND RICE PRODUCTION

23) Calculation is based on two harvests per year.

<table>
<thead>
<tr>
<th>Expenditure</th>
<th>Income</th>
<th>Net Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Bimas loan 71,880 (2 x Rp 35,940 for two harvests)</td>
<td>a. Total rice production for two harvests = 8 tons (2 x 4 tons for each harvest) Conversion rate = 60% Total hulled rice = 4.8 tons.</td>
<td></td>
</tr>
<tr>
<td>b. Loan for new land preparation (pencetakan sawah) Rp 11,637 (2 x Rp 5,818.5)</td>
<td>b. Total income = Rp 892,800 (4,800 x Rp 186)</td>
<td></td>
</tr>
<tr>
<td>Total input = Rp 83,517</td>
<td>Total output = Rp 892,800</td>
<td>Rp 809,283</td>
</tr>
</tbody>
</table>
1. The annual net income per hectare from growing oil palm (with the IPEDA tax) is Rp 497,268\(^{24}\) (equal to US $795.63).

2. The annual net income per hectare from growing rice (with two harvests a year) is Rp 809,283 (equal to US $1,294.85).

3. By assuming that only one rice crop is grown each year, the net income would be Rp 404,641.5, 19%\(^{25}\) lower than the net income of growing oil palm with the IPEDA tax, or 23% lower than oil palm grown without the IPEDA tax.

4. Without the IPEDA tax the net income from growing oil palm per hectare is Rp 526,473.6\(^{26}\) (equal to US $842.36). This is 130% of the net income for single-crop rice, but 35% lower than the net income for double-crop rice production.

5. However, by assuming that rice is double-cropped (as is usual in Indonesia if the water provision is not a constraint), the net income from rice growing is 163% that of oil palm growing

\(^{24}\) Rp \frac{9,448,100}{19} = Rp 497,268; US $1 = Rp 625

\(^{25}\) One rice crop a year \cdot \frac{Rp 404,641.5}{Rp 497,268} = 0.81. Thus, the net income of one rice crop is 19% lower than oil palm with the IPEDA tax. The same applies to calculate other percentage figures.

\(^{26}\) Rp \frac{10,003,000}{19} = Rp 526,473.6
with the IPEDA tax or 154% that of oil palm production without the IPEDA tax.

6. Thus with or without IPEDA tax, growing oil palm is not more profitable than growing rice. On the contrary, growing rice is more profitable than growing oil palm.
CHAPTER VI

DISCUSSION AND CONCLUSION

1. Introduction

The development objectives for West Pasaman and the necessary means to achieve them have been briefly explained in Chapter I. In Chapter II, the contemporary development theories have been discussed and reviewed. How these theories relate to the idea and implementation of regional development planning in Indonesia is the main concern of Chapter III. A general description of West Pasaman's socio-economic patterns, the basic idea of proposing the crucial projects, i.e. the road and oil palm projects, and the analysis of basic food needs of the West Pasamanians have been presented in Chapter IV. Chapter V covered an analysis of the physical characteristics of the site, the socio-economic environment, and an economic assessment of palm oil and wetland rice production.

The necessary discussion of the problems identified in these five chapters, in an attempt to draw a conclusion, is the main concern of this chapter.
2. Discussion

The "short-cut approach" used by the WPDP team is based on the principle stated in Chapter I, in which a regional development plan is not an end in itself; it is of value only if as many of its proposals are realized as soon as possible. The team argued that the prospective input into West Pasaman and the lack of information by those agencies and potential investors who might invest in the region, must firstly be identified. And in identifying the project proposals the team believe that, besides being in accordance with the policy makers' objectives, the project proposals must find the approval of the prospective investors, be they private or public, domestic, foreign or multinational. In its attempts to identify a project proposal for West Pasaman which would meet these criteria, the team took the following steps:

1. A systematic search for available development funds (e.g. Public Works development for the feeder road programmes; UNICEF for the health programme and the nutritional sector, ADP for agricultural development);

2. Adaption of planning proposals and ongoing development activities/projects (e.g. ADP's tractor unit stationed at Sukamenanti, Kecamatan Pasaman);

3. Talks with prospective investors in order to find out their preconditions for project implementation (e.g. SIPEF, a company showing keen interest in running the Nucleus Estate for the smallholders' oil palm project);

4. Checking these preconditions against the objective of the official planning bodies and the felt needs of the population;

5. Working out operational programmes for these projects and programmes which have proved consistent with the aim of evaluating their (regional) development effects and finding out about the investment risks involved.

It seems that the first two steps are appropriate. It is obvious that the first step is necessary to avoid overlapping budgets. And the second step is meant to harmonize the ongoing projects with the new project proposals. In fact, however, once the team had worked out the third step, the team's value judgements and bias should have been tacitly incorporated into the decision making process. For example, without regard to other possible operators, the WPDP team had selected SIPEF to run the Nucleus Estate in the Ophir area. This would be satisfactory if SIPEF was the only company which was able to run such an estate. However, there are some state-owned companies (PTP - Perusahaan Terbatas Perkebunan) which are capable of running the Nucleus Estate.

Therefore, it is necessary to ask the following question. What was the main reason for the WPDP team to choose SIPEF as an implementor of the Nucleus Estate in Ophir? The most promising answer to this question is that it was because the WPDP team had good relations with the SIPEF Company, at least with its General Manager, who is also a Consul of the Federal Republic of Germany in Medan (North Sumatra). Thus, it is quite clear that if SIPEF had been accepted as an implementor of the Nucleus Estate in Ophir area, the team's value judgement and bias would have been incorporated into the decision making process. SIPEF has however lost the opportunity as the PTP VI was chosen to run such an estate.

The practice of step three obviously showed that economic analysis was the only criteria used by the team in its efforts to delineate the project proposal. Other factors (physical and social) tended to be minimized; while alternative possibilities were not pursued.
As has been mentioned in Chapter IV, the high standard of the proposed road project necessitates the enlargement of the area for oil palm cultivation; thus the road project and oil palm project are mutually supportive. In this chapter the effectiveness of the short-cut approach on the implementation process of the two crucial projects, i.e., the road and oil palm projects will be discussed. This chapter will also discuss the relationship between the proposed oil palm project and the contemporary development theories. The purpose of these discussions is to provide support for the overall conclusion of this thesis.

2.1 Short-Cut Approach and the Crucial Projects

As stated earlier, the most urgently required investment for West Pasaman was assumed to be a major road. The economic feasibility study for the road project was conducted in 1975. In 1976, DIWI (Dr. Ing Walter International), an engineering consulting firm from West Germany, conducted a technical (engineering) feasibility study for the same road and submitted its report to the government of Indonesia and to the government of the Federal Republic of Germany in September 1977.

Surprisingly, in July 1978 DIWI came back to West Pasaman to do additional field work and submitted a further report in April 1979. The additional field work concentrated on the study of the Pasaman river crossing at Air Gadang (see Map 5). At present a cable-controlled pontoon-type ferry is used to carry all vehicles across the river. The WPDP team had not recommended the construction of a bridge in this place on the grounds that it would be too costly. However, DIWI's final report
concluded that the construction of a bridge at Air Gadang would be more economical than the continued use of the ferry (DIWI, 1979).

In fact, the construction of a bridge at Air Gadang was included in the project's contract for Section A (Simpang Empat - Manggopoh). This decision to construct the bridge at Air Gadang has had a significant influence on the region's overall planning strategy. The result has been a shift from a single-polar strategy to a bi-polar strategy. The WPDP's report which had rejected the bridge, had proposed a single-polar strategy:

...Simpang Empat is to become the functional—and in a later stage also the administrative—center of West Pasaman. It is the only place on the top level of the hierarchy of central places. Above all, this is due to its strategic location at the area's main crossroads. Besides, Simpang Empat is situated in the most intensively used part of West Pasaman which in the future will see the most rapid increase of agricultural production. (WPDP, 1975a p. 183).

In March 1979, however, the German Appraisal Mission (headed by the previous team leader of WPDP in 1975) came to West Pasaman to evaluate the progress of German Technical Cooperation in the area. In its report of May 1979, the team proposed a "bipolar integrated development" by putting two centres in West Pasaman with the same rank, i.e., Simpang Empat and Ujung Gadang (see Map 6). It is stated in the Appraisal Mission's report that:

Each of the two centres--Simpang Empat and Ujung Gadang--stands on the top of a three level hierarchy of central places or service centres. The southern sub-unit around Simpang Empat includes three sub-centres (Talu, Kinali, Sasak) and one sub-sub.
Crossing Point at Air Gadang
centre (Cubadak). In the north-western part around Ujung Gading two sub-centres (Paraman Ampalu and Air Bangis) and one sub-centre (Desa Baru) have been identified. (Appraisal Mission Report, 1979 p. 10).

The WPDP team's decision not to recommend the bridge at Air Gadang was, to a great extent, influenced by its short-cut approach. Two possible reasons underlie this decision. The first is that the team was unable to find potential investors who would invest their money in the northern part of the study area (settlement scheme for Air Runding area as the fifth crucial project, see Page 6). The second possible reason is that the development of resources around Simpang Empat to the south, mainly oil palm, was sufficient to justify the construction of the road: Simpang Empat - Manggopoh - Lubuk Alung. It is true that planning is a recurring process; it is not an end in itself, as stated in WPDP's report. However, it is difficult to understand why the strategy should change without any change in planning issues.

With regard to the oil palm project, the team began by identifying SIPEF, a foreign company operating in North Sumatra primarily on oil palm cultivation, as a potential investor for an oil palm Nucleus Estate in Ophir. This company had already completed a feasibility study for oil palm development on 4,000 ha of the former Ophir Estate in 1975 and an agreement between SIPEF and the Military (represented by the Military Command of KODAM III/17 Augustus to whom the former Ophir Estate is entrusted) had been reached and sanctioned on July 25, 1975. In addition, the Foreign Investment Application Form A had been submitted to the Investment Coordinating Board (Badan Koordinati Penanaman Modal - BKPM)
RENCANA PEMBANGUNAN
PASAMAN BARAT
WEST PASAMAN
DEVELOPMENT PLANNING

Legend:
- Capital of Kabupaten
- Capital of Kecamatan
- Capital of Sub-kecamatan
- Capital of Sub-sub-kecamatan
- Provincial border
- Kecamatan border
- Sub-kecamatan border
- Sub-sub-kecamatan border
- Border of the Planning Region
- To Manggepoh

Scale 1: 500,000

MAP 6
through the Director General of Plantations, Department of Agriculture, Jakarta. However, the PTP VI, a state-owned plantation company which had had experience in oil palm production, was chosen to run the Nucleus Estate in Ophir.

The expulsion of SIPEF from West Pasaman is, to some extent, related to the planning approach used by the WPDP team and can be explained by the questions raised by the unnatural advantages SIPEF gained by this approach. Based on the team's short cut approach, the team was in favor of determining and catering to the potential investor's preconditions. The team committed itself to SIPEF's precondition, i.e. the construction of a new road from Simpang Empat to Mangappoh (69 km) and an improvement of the existing road from Manggapoh to Lubuk Alung (72 km). It is unclear why the team did not do the same thing for the domestic company, PTP VI, or other state-owned plantation companies as it did for SIPEF. Another question is whether SIPEF had permission to conduct its feasibility study for the Nucleus Estate from any level of government (central, provincial or local) or just from the WPDP? The WPDP team, as a planning team, did not have the right to grant such a request. It seems that the team's short-cut approach blurred the division of responsibilities between planners and decision makers.

It is the responsibility of the planner to convince potential investors through preparing sound proposals, which are not opposed to policy makers' objectives and which are socially acceptable to the concerned society, rather than to restrict policy formulation to limits set by an investor's
interests or preconditions. This is particularly crucial in the public sector because the restrictions placed on project selection by private interest preconditions inevitably lead to the subordination of the interests of the majority of the rural population and restrict the opportunity to examine all possible proposals or their merits.

2.2 Oil Palm Project and Regional Development Theory

As has been widely discussed in Chapter II, the contemporary regional development theories can generally be grouped into: balanced growth versus unbalanced growth theories; urban-based industrial strategy versus rural development strategy; and development from above versus development from below. Although different writers give different connotations to the strategy of development, the proposed strategies are more or less similar in aim and direction. For example, Lele (1975) defined rural development,

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. (p. 20).

Dantwala (1977) argues that,

if the idea is to stimulate self-sustaining growth in the rural area, the project must have a growth ramification effect on local, natural and man power resources. (p. 4).
and Stohr and Taylor (1981) write,

Development 'from below' considers development to be based primarily on maximum mobilization of each area's natural, human, and institutional resources with the primary objective being the satisfaction of the basic needs of the inhabitants of that area. (p. 3).

The main purpose of this section is to discuss the oil palm project of West Pasaman in its relation to the contemporary regional development theories.

Little attempt is made in the oil palm project proposal to determine the overall effects of such a project. The project does not create either forward linkages or backward linkages. The project was planned to reduce income disparities between different Kabupatens (districts) in West Sumatra. However, achievement of this objective will create a very sensitive income imbalance between the oil palm smallholders and the other farmers of the region. The projected farm income of the oil palm smallholder will be roughly 16\(^{27}\) times the existing average farm income. By allotting 5 ha of land to each project participant (while the rest of the society still lacks arable land), the project will benefit only a small group of people. This contradicts the idea of development from below.

In proposing this oil palm project, the main consideration has been

27) The existing (1974) annual gross farm income was about Rp 124,384 or equal to US $299.72 (US $1 = Rp 415).
based on the central government's development objectives as stated in the WPDP's report (p. 5). The oil palm project will be acceptable to the central government as long as the project can appear to meet these objectives. From the provincial and local (Kabupaten) governments' viewpoint, it is believed that the more investment that is made in their areas, the more prospects and the happier they will be. They are particularly interested in benefiting from investments made by the central government. If the development budget for these two projects (the road and oil palm) had to be found from within the provincial and local governments' budgets, it would be quite possible that these governments would forsake these two projects as not being priorities.

Since the oil palm project does not create either backward or forward linkages, it could be possible that the improvement of the transportation network from the study area to Padang will speed up the process of draining West Pasaman resources; a typical example of "development from above".

As stated previously, before delineating project proposals the team had already identified the recipient groups which were interested in, and affected by, the planning for West Pasaman. Germany with its BMZ (Ministry for Economic Corporations) and other organizations administering Technical and Capital Aid Projects, and Parliament (see page 9) was identified as a recipient group for the West Pasaman development plan. This implies that the interests of these organizations had been taken into the WPDP's consideration in delineating the oil palm project; a typical example of "development from above".
Bearing this information in mind, though the oil palm project in Ophir is located in a rural area, it can be said that this project does not follow the principle of "development from below". On the contrary, it typifies an example of "development from above".
3. Conclusion

A brief evaluation of the basic food needs of the indigenous people of West Pasaman as a whole, as well as of Kecamatan Pasaman itself, reveals that adequate production of rice, which is the basic food, is still the main problem to be solved in that area. The average rice production per capita of West Pasaman is 127.9 kg, about 8.6% below Indonesia's average rice consumption. For Kecamatan Pasaman itself, this gap is even wider; the average rice production per capita of Kecamatan Pasaman (the area where the land being studied is located) is 103.4 kg, about 25.9% below the Indonesian consumption figure.

Viewed in terms of the main objectives of Repelita III (see p. 40) and from the rice production-consumption imbalance in West Pasaman, rice production should be the most urgent project to be developed in the study area.

The analysis of physical characteristics shows that the land being studied is suitable for rice cultivation. If the available water resources of the study area were brought into use (Batang Tongar river), about 4,079 ha of brush and grassland could be reclaimed into paddy lands and 6,664 ha or about 62% of the study area could be planted with rice twice a year. This means that 3,164 additional families could be accommodated in the study area. If the land being studied was used for the oil palm project, not only would there be no additional families which could be
settled there; on the contrary, at least one-third of the existing families would be replaced.  

The results of the social aspects analysis reveals that the average size of land for one family in the study area is about 1.18 ha and the maximum amount of communal land which can be allotted to a family is only 2 ha based on Walinagaris' questionnaires. Therefore, it seems that the WPDP's proposal, with one family cultivating 4 ha of oil palm with 1 ha for food crops and a housing lot, has ignored the realities of the relationship of the agricultural population to the arable land.

Oil palm cultivation does not appeal to the farmers in the study area because such a drastic change is not within their ability to imagine. Before the farmers would be able to lose their fear of such a change they would have to have very real evidence of the success and advantages of such a project. This is in line with the farmers' way of thinking as expressed in their proverb: "Mengambil Tuah Kepada Yang Menang, Mengambil Contoh Kepada Yang Sudah". This means that the farmers would join a project or program only after they have seen the positive results of such a project or program.

The farmers feel safer growing rice and other crops with which they are familiar. This is expressed in their preference for government projects

28) With an oil palm project the land being studied can facilitate only about 2,138 families (the size of the land is 10,690; each family will acquire 5 ha).
which would be less disruptive and more likely to improve the existing agricultural system. It seems an irrigation project is the most desired government project for the study area.

Considering the points mentioned above, it can be concluded that the land under study is socially inappropriate for oil palm growing. It is socially more appropriate for an extension of the existing agricultural system. Government efforts should be directed to improving the existing system, rather than attempting to create a new system that is socially unsuitable.

A proper analysis of the economic aspect shows that growing oil palm is not more profitable than growing rice. It is true that oil palm is more profitable than rice per hectare if the latter is grown only once a year. By assuming that only one rice crop is grown each year, the net income of growing oil palm is 123.0%, with IPEDA tax, and 130%, without IPEDA tax, of that for rice growing. However, by assuming double cropped rice as usually practised by farmers in Indonesia, if the water provision is not a constraint, the net income of rice growing is 163.0%, with IPEDA tax, and 154.0%, without IPEDA tax, of that for oil palm growing.

The results of this study show that the most promising use of the land and water resources of the area under study would be rice production rather than oil palm production. Certainly, if one is to meet the food needs of the people in the study area in particular, and in West Pasaman in general, and to provide a better living and accommodate more farmers in the study area, it is deemed necessary to consider the alternate use
of the land under study for rice production.

In conclusion some attention must be given to the methodological limitations of the study. Ideally, it would have been desirable to include a discussion of the prospective benefits deriving from oil palm cultivation for the overall Indonesian economy. It is possible to argue that the export earnings accruing from oil palm cultivation might be utilized for the purchase of "off shore" technical inputs which could benefit other aspects of the economy. But, in view of the fact that the plan, as it was originally proposed, was designed to maximize foreign investment and earning opportunities it appeared unlikely that these types of benefits would be sufficient to produce the results outlined in the previous sentence. As a consequence this aspect was not considered in any detail. Similarly, the question of the minimum size necessary for the effective operation of the oil palm project was not investigated as available evidence suggests that the 13,000 hectares of government-owned land would be sufficient for a viable operation. Clearly, in any evaluative study of this nature, it is difficult to provide comprehensive data on all aspects. In fact, the thesis attempts a much broader evaluation than the earlier planning proposal.

In relating the thesis conclusions to the earlier chapter on development theory, three important conclusions emerge. First, "planning from above", which involves heavy capital investment at the cost of the social needs of an existing regional population, poses real problems for regional development. Secondly, large projects such as this need to be related to a much wider range of information which would allow a more comprehensive
and integrated regional plan to be developed. Finally, planners must be made more aware of the importance of the site, and the social and economic needs of the existing population in evaluating data and presenting proposals.

In the ten years since the proposals were first made, the important changes in the "development paradigm" have meant that the planning authorities of developing countries have become increasingly aware of the need for integrated regional development and "planning from below". In a sense, this study is an evaluation of a planning approach which is now largely outmoded. As such, it is a contribution to the growing body of studies which support the new development paradigm.
APPENDIX 1

FARMERS' QUESTIONNAIRE

Questionnaire No. : 
Date of Interview : 
1. Interviewee Code Number\(^1\) : 
   Address : 

2. Interviewer Name : 

Q01. Recently, the government has decided that the former Ophir Oil Palm Estate will be reopened for oil palm cultivation. It is designed for a Nucleus Estate and Smallholder System (NES) which means that the Nucleus Estate provides a processing unit in order to facilitate the surrounding farmers to process their oil palm fruits. What is your opinion about the government decision?

   a. It is a good idea.
   b. Don't know.
   c. It is a bad idea.

   (If the answer is "Don't know", skip Q02)\(^2\)

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1) In order to get more accurate responses, the name of the farmer was asked. Instead, a code number was used. For example, AG\(_1\) is the first interviewee in Kanagarian Air Gadang.

2) Words in parenthesis are not to be told to the interviewee, they are intended merely for the interviewer's guidance.
Q02. Would you please give me the reason(s) why it is a good idea or why it is a bad idea?

Q03. Have you ever seen an oil palm tree?
   a. Yes.
   b. No.
   (If the answer is "No", skip Q04).

Q04. Have you ever grown the oil palm or worked on an oil palm plantation?
   a. Yes.
   b. No.
   (If the answer is "No", skip Q05).

Q05. Where did you grow the oil palm or work on an oil palm plantation?

Q06. Do you want to try to grow the oil palm on your farm for commercial purposes?
   a. Yes.
   b. No.
Q07. If you were given the opportunity to participate in the Ophir Oil Palm Project, would you join that project?

a. Yes.
b. No.

(If the answer is "Yes", skip Q08).

Q08. Why don't you want to join that project?

a. 
b. 
c. 
d. 
e. 
f. 
g. 
h. 

Q09. In making the plan for West Pasaman Development, the WPDP (German experts) team recommended that this area be cultivated with oil palm. If such a recommendation were implemented, all the land, except the wetland you cultivate would be devoted to oil palm growing. Would you agree to devote your land to oil palm cultivation?

a. Totally agree.
b. Have no idea.
c. Totally disagree.

(If the answer is "Totally agree", skip Q10).
Q10. It is the government's intention to increase the farmers' incomes in this kenagarian. If so, what kind of project or program do you think that the government should develop here to increase the farmers' incomes?

a.  

b.  

c.  

d.  

e.  

f.  

Q11. If an irrigation project were developed in this area and all the land you cultivate became irrigable, would you be willing to devote or convert your land to wetland rice growing?

a. I will.  

b. I don't know.  

c. I will not.  

Q12. If an irrigation project were constructed here and a part of your land had to be passed by or used for any kind of canals (main, secondary or tertiary canals), would you release it or would you ask for compensation?

a. I will release it without asking for compensation.  

b. I will ask for compensation.
Q13. Would you please tell me the acreage of land you cultivate for:

a. paddy  
   1. wetland paddy ............ ha
   2. rainfed paddy ............ ha
   3. upland paddy ............ ha

b. tree crops  
   1. rubber ............ ha
   2. coconut ............ ha
   3. coffee ............ ha
   4. clove ............ ha
   5. ............ ha

c. palawija (secondary crops) and others ............ ha

Q14. If you were able to have access to more land (wetland) as a result of an irrigation project without using hired farm laborers, how many hectares would you be able to cultivate?

a. with draft animal ............ ha
b. without draft animal ............ ha

THANK YOU VERY MUCH FOR YOUR INFORMATION!
APPENDIX 2

WALINAGARIS' QUESTIONNAIRE

Questionnaire No. :
Date of Interview :

1. Interviewee Name :
Address :

2. Interviewer Name :

Q01. Would you please tell me the proportion of tanah ulayat (communal land) to tanah milik (private land) in this kenagarian?

Q02. Is there any special procedure to obtain a piece of communal land to be cultivated by a member of the society in this kenagarian?

Q03. What is the maximum amount of communal land that can be allotted to one family and how long can such land be cultivated?

Q04. Is there any obligation (such as tribute) of the cultivator to the ninik mamak or the community? If there is, how much, on a per hectare basis is it?

Q05. Is there any possibility of converting communal land into private land (tanah milik)? If there is, what kind of procedure would the cultivator follow?
Q06. Is there any opportunity for an outsider or immigrant who is not a resident of this kenagarian, to reside in and cultivate the communal land? (If the answer is "No", skip Q07).

Q07. Is any special distinction made between immigrants trying to gain access to communal land (based on their ethnic grouping such as Minangkabau, Batak or Javanese)? If there is, would you explain please?

Q08. Recently, the government has decided to re-establish the former Ophir estate. It has been designed for the Nucleus Estate and Smallholder System (NES) which means that the company who runs the Nucleus Estate and the Smallholders who run the oil palm cultivation will work side by side. What is your opinion about this government decision?

Q09. If such a project were extended in this kenagarian, would you and other residents willingly join that project?

Q10. As a walinagari what kind of project or program do you think that the government should develop here in order to increase the farmers' incomes? (If the answer is not related to an irrigation project, skip Q11).
Q11. If an irrigation project were established here and a part of the communal land were required for the different irrigation canals (main, secondary or tertiary canals), would you release that land for that purpose and would you ask compensation for it?

Q12. If the irrigation project were constructed here and all your communal lands became irrigable and at the same time your residents were not capable of cultivating all the irrigable land, would you welcome local or national transmigration without asking compensation for the land?
BIBLIOGRAPHY


Dr. Ing Walter International (DIWI). Consulting Engineers. 1977.
Feasibility Study for West Pasaman Connecting Road - Sumatra
(3 volumes). Federal Republic of Germany.

Dr. Ing Walter International (DIWI). Consulting Engineers. 1979.
Additive Fieldworks for West Pasaman Connecting Road - Sumatra
(3 volumes). Federal Republic of Germany.


of Organization and Implementation. School of Architecture and
Urban Planning, University of California, Los Angeles.

A New Strategy for Regional Planning in Asia. Schoole of Architecture
and Urban Planning, University of California, Los Angeles.

Change in Indonesia. Berkeley and Los Angeles: University of
California Press.


in Indonesia" in H.W. Beers (ed.) Indonesia, Resources and their
Technological Development, pp. 19-27. Lexington: The University
Press of Kentucky.

of Rural Development", Development Dialogue No. 2.


