

PAHANG TENGGARA REGIONAL MASTERPLANNING STUDY

Economics of Development in Pahang Tenggara

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1.0 INTRODUCTION

The economic analysis of the study constituted the medium through which the work of all of the individual disciplines was brought together. In as much as the Economic Planning Unit was the responsible Department within the Government for administering the study, "economics" became the language with which the study conveyed much of its information to the client.

To therefore define this supporting report as representing the economic analysis would be misleading since much of the work is an integral part of other supporting reports. This volume therefore endeavours to avoid repeating analysis which is presented elsewhere, but at the same time to provide an in-depth description of the various studies which resulted in the masterplan. The masterplan itself is not described in detail other than for its financial details.

In order to outline the contents of this volume it is useful to re-examine the Scope of Work of the Agreement as it relates to the Socio-Economic Aspects of the Development Programme.

1.1 SOCIO-ECONOMIC ASPECTS OF THE DEVELOPMENT PROGRAMME

The purposes of the socio-economic studies in this project are to:

- (a) identify high priority projects for budgetary allocation purposes during the Second Malaysia Plan;
- (b) make broad recommendations for the development of the study regions in terms which are consistent with national, social and economic goals; and
- (c) prepare a phased programme for the development of the regions covering the period up to 1990, and to evaluate the impact of such a development on the national economy.

The optimum pattern of land use for the region and the regional masterplan will be drawn up so as to maximise the net present value of the benefits to the Malaysian economy, subject to policy constraints set by both Federal and State Governments.

The study and resulting recommendations will be responsive to the need for assessment of possible changes in economic variables. Sensitivity analysis will be used throughout this study, and the results will be presented in such a way as to:

- (a) indicate the effects of changes in the main assumptions about future values of economic variables (e.g., costs of clearing or developing land, prices of inputs or outputs, yields of various crops) and in socio-economic assumptions (e.g., about productivity and versatility of labour, the effects of various forms of organisation and the rate of inflow of private capital into ancillary activities, etc.) on the recommended pattern of development;
- (b) suggest the vulnerability of various development strategies to possible variations in prices, costs, etc. At the same time the presentation will aim to indicate the nature of the information to be collected and analysed after the start of the implementation of the project, which is likely to be important in suggesting revisions to the design and pattern of development through time. The long development periods for some of the potential projects (e.g., rubber and oil palm planting) limit the possibility of making rapid changes in the regional plans, despite the accepted need for programme flexibility. Sensitivity analysis is therefore particularly relevant to this study for revealing the likely benefits to be achieved from, for example, building in "stage by stage construction" in particular schemes.

The cost benefit studies will enable the Government to assess the overall contributions of the programme to the national product including the major ancillary developments associated with it, its costs, and allow comparisons of alternative strategies for development both within the region and in a national context. Each project will be evaluated and compared on the basis of its Net Present Value and Internal Rate of Return. The range of interest rates used to calculate Net Present Value will be decided after consultation with the Economic Planning Unit in Kuala Lumpur, and other Government departments and agencies. In all cases, in the economic analysis, transfer payments will be ignored and an attempt will be made to assess the real opportunity costs of resources used in particular projects. Only changes in relative prices will be taken into account and all projects will be compared on the basis of the same 20-year period, using where necessary terminal asset values to reflect different project lives.

An important and closely related part of this study is the investigation of alternative forms of organisation, including the possibility of various mixtures of public and private development. This will entail study of existing organisations and inquiry into possible new forms, taking into account the physical resources and economic potential of the area and the characteristics of the people who are likely to become agricultural settlers or who move into the area for other purposes. The recommended plan of implementation will be framed to help to create, within certain constraints, an environment favourable to the future development of employment-and income-creating activities. Recommendations may also be made for different forms of organisation to be tested in the early stages of implementation.

The socio-economic factors which will be considered in the study are discussed hereunder. Some of the information required for the analysis of these factors has already been mentioned under several specialist headings earlier in this description of the scope of work. Repetition here is for the sake of presenting a comprehensive picture of the all-important socio-economic aspects of the study. Close liaison between the specialist and economic members of the Consultants' team in obtaining and processing the information will clearly be essential.

1.2 STUDY APPROACH

In the course of the work on the economics of development of Pahang Tenggara, somewhat more effort has been made to fit the analysis and recommendations into the context of development of the Malaysian economy as a whole than has been the case with earlier regional studies. There are three major reasons for this shift in emphasis. First, as experience with regional planning projects has accumulated, the Malaysian Government itself has moved from a "land settlement schemes" approach, in the narrower sense, to a greater concern for regional development, and in particular for the reduction of regional disparities, as part of a national policy of economic and social development. Second, the scope of the Pahang Tenggara Study, both in terms of numbers of acres to be brought into use and the numbers of people to be settled in the region, is such that the impact on the national economy is too great to not be a major element of the analysis. Third, there are several points in the *Scope of Work* of the Agreement which require that plans for the region are related to developments of other regions and of the national economy as a whole. Thus, the study is required:

- to consider existing governmental proposals for development of transportation when

studying transport requirements of the region:

- to consider the pattern of distribution of urban centres, which requires analysis of the position of new cities in the region within the national urban hierarchy;
- to relate recommendations for institutional infrastructure to the existing structures at the national, state, and local levels; and so on.

Accordingly, the analysis begins with the present national economy, the economy of the State of Pahang and the present status of Pahang Tenggara. These features are presented in Sections 2, 3 and 4 of this volume. The objectives for the development of the region are derived by projecting the national economy for the end of the planning period and designing an optimum role for Pahang Tenggara at that time. This assessment is presented in Section 5 of this volume.

The focus of this report is centred on the examination of alternative strategies of development and the consequences of various ways of synthesising the individual programmes. Section 6.0 is devoted to discussions of this aspect of the Study since the masterplan itself is a product of this exercise and the flexibility of the plan stems from those options or alternative strategies which can still be retained for certain periods during the implementation.

The financial aspects of the masterplan itself are presented in Section 7.0 with the statistical detail necessary for the application of components to the individual agencies responsible for the implementation. As a reference guide Appendix A is attached as a record of potential sources of finance which could be used in the finding of development, depending on the budget planning and allocation policies of the Government.

In as much as industrial activity is such an important element in the masterplan, but one which cannot be the subject of any large scale projects during the detailed part of the development programme (i.e., the first five years), Appendix B is attached to show to what degree manufacturing is likely to play a part in the initial phase of the masterplan.

2.0 THE MALAYSIAN ECONOMY TODAY

The Malaysian economy is unique. It is the second most prosperous country in Asia, after Japan.¹ Up-dating the Rosenstein-Rodan estimates (which refine the United Nations data in various ways to make international comparisons more significant) to 1970, we would arrive at a figure of per capita income in excess of US\$400, as compared to the official figure of about US\$360.² This estimate would make Malaysia more advanced economically than any African countries except Libya and Gabon; richer than all Latin American countries except Venezuela, Argentina, Uruguay, Chile and possibly Cuba; better off than Turkey, and about equal to Yugoslavia. Per capita income is 30% above that of the Philippines, two and a half times that of Thailand or Ceylon, over four times that of Indonesia. This estimate would also put Malaysia today about where Japan was in the mid 1950s. Yet this relative prosperity has been achieved with very little "industrialization" in the ordinary sense of the word; manufacturing accounts for less than 9% of total employment.³ There is a large—perhaps excessively large—services sector. Over one third of the labour force is engaged in this sector. Services of various kinds account for more than half the gross national product. Yet it is not the services sector that is primarily responsible for Malaysia's relatively high degree of development among Asian countries. A large proportion of the services are traditional and productivity in traditional services is close to the national average for all occupations.

2.1 MALAYSIA'S PROSPERITY

The key to Malaysia's relative prosperity lies in the extraordinary structure of her agriculture. Whereas in most other Asian countries one finds 50% to 80% of the labour force in peasant agriculture, growing food-stuffs for direct consumption and for sale in local markets, in Malaysia less than one fifth of the labour force is so engaged. Almost half the labour force is in agriculture, it is true; but over three fifths of these

are engaged in production for export, either as smallholders or as estate workers. Whereas in Indonesia, for example, only 7.0% of the labour force was drawn into the modern sector at the time of independence, in Malaysia the figure was closer to 50%. In this respect the structure of the Malaysian economy is approaching the border line between advanced and less developed countries. Exports are more than half of GNP and nearly half the labour force is producing for export, or engaged in export-related enterprises.

Yet the strength of Malaysia's economy is also its weakness. An export-oriented, commercialised agricultural sector does not have the resilience of present food-producing societies. It cannot so easily absorb a growing population, and disguised unemployment tends to be converted into open unemployment. Thus, the large and growing volume of unemployment in Malaysia presents more serious social and political problems than in peasant societies. Moreover, none of the traditional exports can safely be considered a "strong" export for an indefinite future. Natural rubber is holding its own against synthetics through continuous improvement of technique; but it can hardly be regarded as a safe "leading sector" to assure by itself the future growth of the entire Malaysian economy. It can be seen below that current prospects for rubber and oil palm seem promising; but they can absorb only a decreasing fraction of the growing labour force, and both technological and marketing aspects of their futures are full of uncertainties. Tin also faces an uncertain future. There has been only limited structural change in Malaysia since World War II; yet structural change will surely be necessary if Malaysia is to continue raising per capita income by 3 to 3.5% per year.

The development of the past has also left Malaysia with serious social problems. Unemployment is heavily concentrated among the young, while income and wealth are disproportionately concentrated in the hands of non-Malay minority groups.

Past success in economic development has resulted in rising expectations, which, if they are not to be frustrated, will require continued high rates of growth.

While most Malaysians understand in a general way that they are more prosperous than their neighbours, the full significance of this fact is not always appreciated. As will be seen in more detail below, there is still scope in Malaysia for development in the form of structural change within

¹ Excluding the small countries of Hong Kong, Singapore and Brunei.

² Cf. P. N. Rosenstein-Rodan "International Aid for Underdeveloped Countries" *Review of Economic and Statistics*, 1961 pp. 107-138; and B. Higgins, *Economic Development* New York 1968 Appendix Table I. Excludes mini states of Singapore, Hong Kong and Brunei.

³ The 1970 figure for West Malaysia alone was 9.2%.

agriculture: moving people from low-productivity traditional agriculture to high-productivity modern agriculture. However, the scope for continued growth along these lines is limited, for the simple reason that possibilities for raising productivity and income in agriculture, so as to keep them reasonably close to the national average as industrialisation and urbanisation takes place, are limited. It is readily apparent that no country can attain continued economic growth by putting people only into jobs that yield output and income below the existing average, even if productivity and income are higher than in previous occupations. Eventually continued growth of per capita incomes will require transferring some people from below-average-productivity jobs to above-average-productivity jobs. This simple arithmetic precludes for Malaysia a whole range of development projects that would make perfectly good sense in neighbouring countries where present per capita incomes are one quarter to one half of Malaysian level. Projects which promise per capita output and income of US\$200 per year may be highly welcome in Indonesia where per capita incomes are still around US\$100. In Malaysia, with a per capita income of around US\$400 per year, such projects should be undertaken only as a last resort, and then only if unemployment or traditional agricultural activities on smallholdings are the only alternatives in sight. In short, continued growth in Malaysia requires investment in the modern sector, where both capital: output ratios and capital: job ratios tend to be high.

2.2 DELAYED POPULATION EXPLOSIONS AND ABUNDANCE OF LAND

In Malaysia as elsewhere in Southeast Asia, the population explosion was associated with the improvements of public health, and to a lesser degree of law and order, brought by European settlement. Since economic penetration of Europeans came late to Malaysia, and settlement of Europeans was very thin outside the major cities, the population explosions also came late. It was not until after World War II that truly high rates of population growth set in. In recent years, it is true, they have been very high indeed, 3.2% per year between 1958 and 1961, falling to about 2.8% in the late sixties. But this high growth takes place from a low base. In 1911 there were 2.3 million people in the Federation of Malaya, including Singapore. Death rates in the 19th century were high, and had it not been for immigration, the population would have been almost stationary. Smallpox, cholera, enteric fever, and plague kept the natural growth of population low. Infant

mortality rates were also high. As usual, however, the increasing interest of the colonial power in economic development was accompanied by a greater concern for public health. The late 19th and early 20th centuries saw a concerted effort to reduce the incidence of disease. There was a marked acceleration of the population growth in the decades after 1911. The population was 2.9 millions in 1921, 3.8 millions in 1931, and 4.9 millions in 1947. Thus, the rate of population growth increased from about 2% per year at the beginning of the period to about 2.5% at the end. It was only in the period after the Second World War that it was to rise to above 3.0%.

2.3 THE COLONIAL HERITAGE

British colonialism disrupted local Malay culture relatively little, and left Malaysia, at the time of independence, with no population problem. Most fundamental of all is the fact that in 1947, less than half of the Malays, and only 6.2% of the Chinese population, were engaged in peasant rice agriculture. Some 20% of the Malays and 23.4% of the Chinese (25.9% of the total population) were employed in the rubber sector. About 4.8% of Malays and 3.1% of the total population were engaged in fishing. Nearly 12% of the Malays, and 21.5% of the total population, were engaged in manufacturing, commerce and finance, transportation and communication and mining. Even allowing for some "traditional" activities in the manufacturing, trading and financial sectors, it seems clear that in 1947 nearly half of the Malays, and more than half of the total population of Malaya had been absorbed into the modern sector. This figure stands out in sharp contrast to the 7% of the Indonesian population who had been drawn into the modern sector at the time of the transfer of sovereignty.

This relatively happy story of relationships with the Colonial Powers goes far to explain Malaya's superior performance since World War II. With a per capita income at US\$368 in 1961¹ Malaya was much the most advanced country in Southeast Asia, with a per capita income nearly 9 times as high as that of Laos. The loss of Singapore and the addition of Sarawak and Sabah, of course, lower the statistical average; but the close ties with Singapore still enhance Malaysia's growth potential, and so in the long run do the large areas of unexploited resources in East Malaysia. Moreover, the rate of growth of national income has been fairly high and increasing through the post-war period: 3% per year between 1950 and 1955,

¹ Rosenstein-Rodan estimates.

4.1% between 1955 and 1960, and 6.0% between 1960 and 1970, or about 5.3% at constant prices. True, with a population growth in the neighbourhood of 3%, these figures do not represent a high rate of growth of per capita income for the period as a whole. However, the growth rate of real per capita income of 3% per year from 1960 to 1964, and only slightly lower since, was certainly a respectable one. Malaysia's economic problems lie mainly in the uncertain prospects for its major exports, especially rubber, tin and palm oil. The social and political problem lies in the concentration of entrepreneurship or ownership in the hands of non-Malays and in the inadequate opportunities for young people emerging from the school system. The very factors which account for Malaysia's unique prosperity in Southeast Asia also complicate the twin problems of maintaining high rates of growth of per capita income in the future, while sharing more equitably the fruits of progress.

In the education sector, it could hardly be said that the British made a major effort to educate Malaysians from the beginning. Their economic interest in the area was of prime concern. At the same time, the education story in Malaysia is considerably less dismal than, for example, in Burma or Indonesia. Mission schools and other privately supported schools were started in Penang, Singapore and Malacca in the first two decades of the 19th century. More such schools were established as the century wore on. Between the First and Second World Wars, there was a substantial expansion of the education system. A teacher's training college was established in 1922, a technical school of agricultural in 1931. The University of Malaya was established in October, 1949, the University of Penang in 1967 and the University Kebangsaan in 1970.

2.4 LIMITED STRUCTURAL CHANGE

Since the Malaysian economy has not been characterised by rapid structural change, the general nature of the economy is not strikingly different today from what it was when Malaysia was formed in 1963, or when Malaya became independent in 1957, except for the changes in geographic scope (loss of Singapore from Malaysia, addition of Sarawak and Sabah to Malaya). The respectable growth rates have been achieved more by raising productivity within each sector than by rapid structural change. There has been a modest decline in the share of the labour force engaged in agriculture, modest increase in the proportion employed in manufacturing and services. The general character of the economy, remains much the same.

2.5 MAIN FEATURES OF THE MALAYSIAN ECONOMY

No attempt will be made here to provide a complete survey of Malaysian economic structure, potential, and problems. Rather we shall confine ourselves to restating the main features of the economy, as they bear on the design of a development strategy for Pahang Tenggara. These main features are:

2.5.1 An Export-Oriented Economy

In 1970 exports (M\$5,636 million) remained nearly half of gross national product (M\$11,537 million).¹ Exports also remained highly concentrated: rubber about 30%, tin nearly 20%, lumber and products about 15%, iron ore, palm oil and petroleum another 10%. By the same token, about half the labour force is still engaged in export or export-oriented activities. Another aspect of this peculiarity of the Malaysian economy, too seldom stated, is that Malaysia is still dependent on imports for close to half of total goods and services consumed. Foodstuffs and beverages are still a major import category. Thus, Malaysian welfare is highly vulnerable to fluctuations in the volume, balance, and terms of trade. So is Malaysian development: machinery and transport equipment are the biggest import category of all. This situation also lends support to a development strategy that includes import replacement, despite the fact that the domestic market is limited in size, and that the industrial resource base is also limited, and that considerable import-replacement has already taken place.

2.5.2 A Relatively "Advanced" Occupational Structure

In other Southeast Asian countries, we have seen, the great bulk of the population consists of peasants growing rice or other staples (cassava, maize, yams) on very small holdings. Mass poverty is built into such economies. In Malaysia on the other hand, only 18% of the labour force was engaged in producing rice (or mainly rice) in 1967. Only about 21% were engaged in hunting, fishing, forestry and logging, and agriculture aimed at the domestic market. About 26% were in the export agriculture sector, mostly rubber, either on estates or small holdings, another 15% were in manufacturing, mining and construction, some 17% in commerce and at least 17% in other modern

¹ Second Malaysia Plan, pp. 19, 25.

services.¹ As seen in Table 2.5a, over half the labour force could be regarded as being in the modern sector.

2.5.3 High and Growing Unemployment

As underdeveloped countries go, an 8% level of open unemployment is not particularly high. However, in this respect, as in others, Malaysia might be better compared with moderately advanced countries rather than with other less developed countries. One gets a more accurate impression of the significance of 8% unemployment if one does so. That is, the unemployment is open, registered, and largely urban. In 1967, the rates of unemployment were 10.1% in metropolitan centres, 10.0% in other urban centres, and only 5.5% in rural areas. For this reason, unemployment is higher among Indians (10.5%) and Chinese (7.0%) than among Malays (6.0%).

¹ Donald Snodgrass, *A Survey of Labour Utilization in West Malaysia* (EPU) Table B1, p. 9.

Such urban and open unemployment is much more difficult to handle than the unemployment and underemployment in peasant agriculture, which can be dealt with by traditional "village social security" systems and traditional work spreading devices. And in Malaysia the 8% open unemployment is aggravated by undisclosed amounts of underemployment, plus withdrawals from or failures to enter the labour force. Moreover, it is concentrated in a particularly dangerous place: among youth, and increasingly among educated youth. The figure for the 15-25 age group (1967) is 17.2% and for this age group the figure in non-metropolitan towns reaches 23.6%.¹ It is particularly distressing that virtually none of the EPU projections—including the Second Malaysia Plan—foresee a reduction in numbers of unemployed and some do not even foresee a reduction in the rate of unemployment.

¹ EPU, *The Employment Problem in West Malaysia* p. 10. For the 15-19 age group, the Bank Negara gives a figure of 20.5% (Annual Report 1969 p. 61), while the World Bank gives a figure of 50.6% for 1967. (*Current Economic Position and Prospect of Malaysia* Volume II, Tables 1-4).

Table 2.5a—Employment Structure, West Malaysia, 1967
(Employment in Thousands)

INDUSTRY:							Total Employment
0.	Agriculture, forestry, hunting and fishing	..	..	..	..	..	622.6
0.1	Agriculture and livestock	..	..	..	..	..	527.7
	011. Rice or mainly rice	..	..	..	..	..	369.8
	012-019. Others	..	..	..	..	..	157.9
02.	Forestry and logging	..	..	..	..	..	26.6
04.	Fishing	..	..	..	..	..	68.3
1.	Agricultural products requiring substantial processing	..	..	..	..	..	766.2
11.	Rubber cultivation	..	..	..	..	..	695.6
	Estates	..	..	..	..	..	222.1
	Smallholdings	..	..	..	..	..	473.5
12.	Oil palm cultivation	..	..	..	..	..	35.8
	Estates	..	..	..	..	..	25.8
	Smallholdings	..	..	..	..	..	10.0
13.	Coconut cultivation	..	..	..	..	..	30.5
	Estates	..	..	..	..	..	3.8
	Smallholdings	..	..	..	..	..	26.7
14.	Tea cultivation	..	..	..	..	..	4.3

											Total Employment
8.	Transport, storage, communication	..	..	..	..	..	..	..	..	..	108.1
	8132. Trishaw	..	..	..	..	..	..	..	..	..	5.0
9.	Services	..	..	..	..	..	..	..	..	..	500.2
91.	Government services	..	..	..	..	..	..	..	..	..	210.4
	911-912. Federal Government administration	..	..	..	..	..	..	..	..	..	81.0
	913. Military	..	..	..	..	..	..	..	..	..	50.0
	914. Police	..	..	..	..	..	..	..	..	..	31.0
	915. State, local, foreign government admin.	..	..	..	..	..	..	..	..	..	48.4
92.	Community Services	..	..	..	..	..	..	..	..	..	127.7
	921. Education	..	..	..	..	..	..	..	..	..	76.7
	922. Health	..	..	..	..	..	..	..	..	..	40.4
	924. Religious	..	..	..	..	..	..	..	..	..	6.3
	923, 925-928. Research, welfare etc.	..	..	..	..	..	..	..	..	..	4.3
93.	Business Services	..	..	..	..	..	..	..	..	..	8.9
94.	Recreation Services	..	..	..	..	..	..	..	..	..	13.6
95.	Personal Services	..	..	..	..	..	..	..	..	..	139.6
	951. Domestic Services	..	..	..	..	..	..	..	..	..	47.2
	952. Restaurants, etc.	..	..	..	..	..	..	..	..	..	52.2
	953. Hotels, etc.	..	..	..	..	..	..	..	..	..	4.5
	954. Laundries, etc.	..	..	..	..	..	..	..	..	..	8.2
	955. Barbers, etc.	..	..	..	..	..	..	..	..	..	17.0
	959-96. Miscellaneous Services	..	..	..	..	..	..	..	..	..	10.5
TOTAL											2,762.7

Source: D. Snodgrass, *A Survey of Labour Utilization In West Malaysia*, EPU, 1970, Table B1.

Finally, it is quite clear that open unemployment is lower than it otherwise would be because of the current "big push" in secondary education. The First Plan foresaw an increase in numbers leaving school after lower secondary education from 23,725 in 1965 to 99,100 in 1970; after upper secondary training from 14,494 to 54,370; while numbers leaving after primary school only would drop from 30,800 to 20,900. Yet high-school leavers are precisely the age group (15-19) where unemployment is highest of all—above 20%, perhaps 50%. The number of unemployed high school leavers increased from 29,000 in 1962 to 67,000 in 1967, and is no doubt higher today.² Unless the rate of generation of job opportunities for this age and education group is stepped up considerably, Malaysia is heading for a very serious problem of educated unemployment.

² EPU, "The Employment Problem", *op. cit.* Table 6, p. 12.

2.5.4 Small Manufacturing Sector Relative to Level of Per Capita Income

British colonial policy did not include a major effort at industrialisation prior to World War II. Economic development by the British was a matter of four or five decades—in some ways less, since the great depression of the thirties retarded development of the export sector. Great Britain was more than happy to do the manufacturing at home and confine economic development of the colonies to the production of raw materials. This policy seemed particularly appropriate in Malaysia, where the rubber and tin industries were so prosperous. Thus, industrialisation became a part of development policy only after independence, and became a major item of development policy only in the last few years. The manufacturing

sector has been growing considerably faster than the economy as a whole—12.1% in 1961-65, 10.7% in 1965-67, about 10% in 1967-69—and the total value of manufacturing output (at 1964 prices) has more than doubled in a decade. Yet the manufacturing sector still accounts for only some 8% of employment and 11% of gross national product. The World Bank, applying norms derived from a United Nations Study of 53 countries, concludes that Malaysia is “under industrialised” for its level of income and population in all fields except rubber products, wood products, chemical and petroleum products, and basic metals. A “normal” manufacturing sector would produce nearly twice as much as the actual sector.

Moreover, most of the manufacturing is on a very small scale. In 1965 over 80% of manufacturing establishments employed less than ten workers. These small enterprises accounted for only 14% of net manufacturing output. At the other extreme, the 4% of the enterprises employing more than 50 workers produced 60% of manufacturing output.¹ Malaysia has a long way to go in industrialisation.

2.5.5 Large, But Substantially Modern Services Sector

About 12.5% of the labour force was engaged in traditional services in 1967, including traditional commerce and trishaws. Another 11% were employed in Government and community services. Modern services, including construction, commerce, transport and other modern services, accounted for 17% of employment. The total of all these categories is 40.5%. Among Asian LDC's only Hong Kong and Singapore, which are essentially cities, have higher shares of their labour force in services. However, the Malaysian experience is by no means unique. In AC's and LDC's alike, the push from the farms has been stronger than the pull to the factories in recent decades. The tertiary (services) sectors have grown by default, and a certain amount of disguised unemployment has been transferred from agriculture to services.

Indeed, “Colin Clark's Law” breaks down where services are concerned. There is a .92 correlation between per capita incomes by country and the share of the labour force engaged outside of agriculture;² but there is no clear correlation between

per capita income and size of services sector. Some very poor countries have more than half their labour force in services, because the agricultural sector is full and the industrial sector is not expanding fast enough to absorb the increase in the labour force plus rural-urban migration. It is clear for this reason that the French economists, and more recently others too, have been dividing the services sector into a “tertiary” (low productivity or traditional services) and “quaternary” (high productivity or modern services) sector. What counts is less the total size of the services sector than the division between “tertiary” and “quaternary”. In this respect Malaysia appears to be moderately well off, although many of the activities classified here as “modern services” are not of the highly sophisticated type usually regarded as “quaternary” (consulting services, professional services, communications, computer services, etc.). Indeed, the percentage of “professional, technical and related” workers to total labour force is lower in Malaysia than in Ceylon, the Philippines, and Taiwan, where per capita incomes are lower. Some shift from traditional to modern services would certainly be desirable; but Malaysia's main structural problem is to reduce the relative size of the primary sector by the elimination of traditional agriculture, fishing and forestry, and the expansion of the industrial sector. As industrialisation and urbanisation proceed, the desired internal shifts within the services sector will tend to take place almost automatically.

2.5.6 A Special Pattern of Urbanisation

The combination of abnormally small industrial sector and abnormally large services sector (for income and population) together with the persistent residue of traditional urban services results in a somewhat peculiar relationship between urbanisation and development. In some respects Malaysian experience follows the common international pattern. The “urban hierarchy” conforms reasonably well to the well-known “rank-size rule” relating rank of cities to their relative size. The urban structure is quite stable, and seems to be getting more so, again in accordance with universal experience. There have been few changes in rank-order of cities during the last fifty years and (if Petaling Jaya is considered part of metropolitan Kuala Lumpur) none in the last fifteen years. Also, in conformity to the results of the UNRISD study of 115 countries,¹ the 20,000 population borderline seems to be the most important threshold for city size, and the correlation of “urbanisation” with per capita incomes by State is fairly high when proportion

¹ *First Malaysia Plan* p. 124.

² L. J. Zimmerman, *Poor Lands, Rich Lands: the Widening Gap* New York 1965 p. 47.

¹ D. V. McGranahan, et. al. *Contents And Measurement Of Socio-Economic Development*. Geneva 1970.

of population in cities of 20,000 or over is used as an index for urbanisation.

In other respects, however, the Malaysian experience with urbanisation is unusual (see Tables

2.5b and 2.5c). Malaysia seems to be "under-urbanised", just as it is "underindustrialised", although the departure from the norm seems to be less for urbanisation than for industrialisation. This question is discussed in detail in Section 3 below.

Table 2.5b—Per Capita GDP 1967, Population Density 1970 and Percentage of Population in "Urban" Centres 1970

	Per Capita GDP (US\$)	Proportion "Urbanised" %	Population Per Sq. Km.	
			Total	Arable
Malaysia	\$ 350	30.2	32	302
Afghanistan	90	09.7	26	216
Burma	70	18.0	41	172
Ceylon	159	19.9	192	632
India	85	19.2	170	339
Indonesia	94	17.8	64	955
Iran	307	39.3	17	245
Japan	1,201	72.2	280	1,821
Pakistan	117	15.9	145	485
Philippines	305	33.1	127	458
South Vietnam	172	24.1	103	633
Taiwan	272	60.0	390	1,559
Thailand	155	14.8	70	—

Source: United Nations, except for Malaysia: for Malaysia, 1970 Census for Population and Rosenstein-Rodan estimates for income.

Table 2.5c—Urban Growth, Malaysia and Other Countries 1950/60 and 1960/70 (Population in Cities of 10,000 and Over)

	(% Annual Growth)	
	1950/60	1960/70
Malaysia ¹	7.8	4.3
LDC's	4.3	4.6
East Asia	5.5	4.8
South Asia	3.3	4.4

Source: Malaysia, Economic and Social Survey 1957 Census.

Other Countries: United Nations.

¹ 1947/57 and 1957/67.

Table 2.5d—Urbanisation and Per Capita Gross Domestic Product by States

State	Per Capita GDP	Rank	Proportion of Population In Cities Of					
			20,000+	Rank	10,000+	Rank	5,000+	Rank
Selangor	\$ 1,493	1	43.4	2	44.9	2	51.7	2
Pahang	985	2	13.14	7	19.0	8	23.19	8
Negeri Sembilan	901	3	16.7	6	21.4	7	27.4	6
Perak	891	4	25.3	3	27.6	3	37.5	3
Penang/ Wellesley	870	5	49.4	1	51.0	1	55.9	1
Johore	729	6	23.04	4	26.3	5	31.3	4
Malacca	638	7	21.4	5	24.9	6	26.4	7
Perlis	536	8	0	11	0	11	7.2	11
Kedah	518	9	10.7	9	12.6	10	14.4	10
Trengganu	449	10	13.15	8	27.0	4	28.8	5
Kelantan	369	11	8.1	10	15.2	9	18.3	9

Source: 1970 Census.

Trengganu Project "Regional Accounts for West Malaysia".

Rank correlations:

Per capita GDP and population in cities of 22,000+ = .664

Per capita GDP and population in cities of 10,000+ = .446

Per capita GDP and population in cities of 5,000+ = .519

2.5.7 A Special Breed of "Cobweb" Cycle

In Malaysia there appears to be a special breed of "cobweb" cycle related to the prices of major exports, and especially of rubber. Both private profits and Government revenue are attached, directly or indirectly, to export prices and therefore vary directly (with some time lag) with these prices. In particular, when rubber prices are high, the pace of industrialisation is accelerated, and *vice versa*.

Thus the export boom in 1965 led to an 11% increase in development investment. The stagnation of the export sector in 1966 and 1967 led to less vigorous investment, which increased only 4% in 1967 and 1968. In these years excess capacity appeared in the industrial sector. These derived fluctuations in investment provide Malaysia with a "cycles" problem not found in most less developed countries (LDC's) and complicates the fiscal aspects of development planning.

2.5.8 Price Stability and Strong Balance of Payment Position

Mention should also be made of the price stability and strong balance of payments position

of Malaysia. In terms of monetary and fiscal policy, Malaysia should be the darling of the IMF and IBRD; the currency is stable both internally and externally. Monetary expansion has been moderate, and retail prices have risen only 10% in a decade. The surplus on commodity account exceeds the deficit on services, and there is a useful inflow of both private and public long-term capital. It could well be questioned whether the monetary and fiscal policy may not have been *too* conservative; it is possible that a bolder and more imaginative development policy, while imposing strains on price stability and foreign exchange reserves in the short run, would accelerate economic development and produce a stronger economy in the long run.

2.5.9 Wide Regional Disparities Overlapping With Ethnic Disparities

The Socio-Economic Survey of 1967 divides West Malaysia into five regions: the Southwest (Selangor and Negeri Sembilan); Central (Perak); North (Kedah, Perlis and Province Wellesley); South (Johore and Malacca); and East (Pahang, Trengganu and Kelantan). The regions are listed here in order of levels of per capita regional product. The figures for 1967 are in Table 2.5e.

Table 2.5e—GRP Per Capita and % Malay Population

	GRP Per Head	% Malay Population
Southwest ...	M\$1,214	33.8
Central ...	778	34.3
North ...	615	54.1
South ...	660	50.1
East ...	540 (\$500)	82.3

Because of the importance of the now closed Rompin and Dungun Iron Ore Mines, it is unlikely that the current level of *per capita* product in the East is above \$500, while the *per capita* income of the Southwest is probably approaching \$1,400. Thus, the gap in *per capita* incomes between the richest and the poorest region is somewhere between 250 and 300 per cent at the present time. There is also a very strong inverse correlation between the percentage of the population that is Malay and the gross regional product. Both points will be discussed in Section 4 following.

As may be seen from Table 2.5e above, there is a strong inverse correlation between the proportion of Malays in the population of each region and the level of *per capita* regional product. Both the regional and the ethnic disparities reflect in turn differences in occupational structure. As may be seen in Table 2.5f, there is a high correlation between the level of *per capita* regional product and the share of the labour force engaged outside of agriculture. The richest region, the Southwest, has only 39% of its labour force in agriculture, and only 9.2% in traditional agriculture. In sharp contrast, the East, the poorest region, has 61.5% of its labour force in agriculture and 37.3% in traditional agriculture. Conversely, the Southwest has 10.9% of its labour force in manufacturing and 59% in services, the East has 8.9% in manufacturing and 26% in services.

Similarly, the fact that incomes of non-Malays average 1.8 times those of Malays reflect differences in occupational structure more than

differences in earnings in each occupation. There are, it is true, gaps between productivity (and so incomes) of Malays and non-Malays within broad occupational categories; M\$3,245 vs. M\$3,340 on rubber estates, for example, or M\$4,025 vs. M\$5,075 in "modern manufacturing".¹ But if these categories are broken down into narrow classifications, even these differences may well tend to disappear. The main factor in income gaps among ethnic groups, obviously, is that only 27% of employees in the modern agriculture sector and only 26% of employees in the modern urban sector (apart from Government) are Malays, while Malays account for 75% of the employment in the traditional urban sector (which in turn accounts for 16% of total employment) and 79% of employment in the traditional rural sector (with 41% of total employment).²

In short, both regional disparities and ethnic disparities are caused mainly by differences in occupational structure, and by tackling regional gaps in the right way (bringing Malays into high-productivity occupations in developing regions) ethnic disparities can be reduced at the same time. It will be noted from Table 2.5f that the rank correlation between level of *per capita* GDP and share of employment outside agriculture is not quite perfect: the South has a larger proportion of its labour force engaged in agriculture than the North, yet its *per capita* GDP is slightly higher. The reason for this apparent anomaly is not far to seek. The South has only 10% of its labour force in essentially traditional agriculture, the North 29%. Conversely, the South has half its labour force in essentially modern agriculture, the North only 21%. We have here confirmation of the fact that the *kind* of agriculture counts as well as the amount of agriculture. Malaysia can make considerable economic progress by improving the structure of output and employment within the agricultural sector, and projects like the development of Pahang Tenggara can make an important contribution to such structural change. However, a word of caution is in order here: structural change *within* agriculture cannot take place unless the total employment in agriculture grows less than employment in the modern agricultural sector. Since the amount of land suitable for modern agriculture is limited, it follows that a point will be reached, and perhaps not too far in the future, when total agriculture employment must cease to grow if Malaysia is to attain her development objectives.

¹ Donald Snodgrass, *Income, Employment And Racial Disparity* (EPU) Table 12 p. 59.

² *Ibid.*

Table 2.5f—Employment by Sector: Main Region

Industry	Total	South-West	Central	North	South	East
1a. Agriculture, forestry, hunting and fishing	500,983 (21.1%)	(1) 52,835 (9.2%)	(2) 95,079 (22.2%)	(3) 121,606 (29.3%)	(4) 44,973 (10.1%)	(5) 186,490 (37.3%)
1b. Agricultural products requiring substantial processing	718,741 (30.4%)	171,783 (29.8%)	114,798 (26.8%)	87,268 (21.1%)	223,873 (50.2%)	121,019 (24.2%)
1c. Total agriculture	51.5%	39.0%	49.0%	50.4%	60.3%	61.5%
2. Mining and quarrying	71,995 (3.0%)	23,504 (4.1%)	31,910 (7.4%)	2,775 (0.7%)	3,743 (0.8%)	10,063 (2.0%) (1.6) ¹
3. & 4. Manufacturing	215,125 (9.1%)	62,512 (10.9%)	36,949 (8.6%)	37,229 (9.0%)	34,102 (7.6%)	44,333 (8.9%)
5. Construction	79,004 (3.3%)	28,444 (4.9%)	15,482 (3.6%)	12,060 (2.9%)	10,867 (2.4%)	12,151 (2.4%)
6. Electricity, gas, water and sanitary services	22,328 (0.9%)	7,175 (1.2%)	5,048 (1.2%)	4,143 (1.0%)	3,297 (0.7%)	2,665 (0.5%)
7. Commerce	255,182 (10.8%)	71,609 (12.5%)	43,214 (10.1%)	52,913 (12.6%)	40,914 (9.2%)	46,532 (9.3%)
8. Transport, storage and communication	86,065 (3.6%)	29,102 (5.1%)	11,332 (2.6%)	20,859 (5.0%)	11,547 (2.6%)	13,225 (2.6%)
9. Services	413,313 (17.5%)	127,335 (22.1%)	75,282 (17.5%)	74,939 (18.1%)	72,468 (16.2%)	63,289 (12.4%)
10. Industry not specified	3,194 (0.1%)	1,411 (0.2%)	30 (0%)	326 (0%)	617 (0.1%)	810 (0.2%)
TOTAL	2,365,930 (100.0%)	575,710 (100.0%)	429,124 (100.0%)	414,118 (100.0%)	446,401 (100.0%)	500,577 (100.0%)
Per Capita Regional Product (M\$)		1,214	778	615	660	540 (500) ¹

Source: Economic and Social Survey.

¹Figures for the East Region adjusted for closure of Rompin mine.

2.6 MALAYSIA: A REGIONALISED ECONOMY

Are the regions (or zones) distinguished by the Socio-Economic Survey true "economic regions"? Do the gaps among them have the same significance as, say, the gap between the Northeast and East Central regions in Brazil, or the North and South of Italy, or Sumatra and Java in Indonesia?

There is a vast literature on the concept of "region" and most regional economists and geographers have come to the conclusion that it is impossible to formulate a single definition of "region" that will be suitable for all analytical and policy purposes. Instead effort is directed towards defining "region" in a way that is suitable for the purpose at hand. It is necessary to

formulate a policy regarding regional development in relation to national development.

Although no ideal method of defining regions for development planning purposes has been found, useful work has been done to this end. The Associon Panamericano por Geografia e Historica has devoted two of its biennial international conferences to the problem of defining techniques for delineating regions for development planning. Homogeneous regions were defined, at the end of the first conference, by a matrix of geographic, cultural, and economic criteria that would serve to "bracket" each geographic region and permit lines to be drawn around them. For example, an area might be essentially empty (in terms of population density), largely primary and rural, culturally retarded, (in terms of educational levels etc.) and resource-rich (soils, forests,

minerals) and a "frontier" (area of net immigration associated with exploitation of natural resources) and constitute one region. Another area which is the same on all counts but resource-poor (in which case it would probably not be a frontier either) would be a different region. The second conference was concerned with the problem of regrouping homogeneous regions for planning purposes. For example, it is possible to lump together a dynamic metropolitan region with a lagging agricultural one, and treat them as a unit for development planning.

Another technique frequently used in the "zone of influence", however defined: shopping, newspaper circulation, commuting to work, TV or radio coverage, etc. Usually this technique uses some metropolitan centre as a base, although it may be necessary to consider a whole urban hierarchy in order to complete the picture of a region.

Another possibility is to define regions in terms of an index of mobility. The index might be defined in terms of elasticity: percentage of the labour force that will move for a given percentage spread in wage rates or incomes. Any area can be divided arbitrarily into sub-units, using any convenient available statistical

unit—counties in Quebec, or Districts in Malaysia. Next a matrix showing elasticities of mobility from each District to each District can be assembled. Where sharp breaks in measures of elasticity occur a line can be drawn to divide one "region" from another.

None of the concepts of "region" suggests that "regions" can be defined simply in terms of area or distance. It would be absurd to divide up the Sahara, simply because it covers a lot of space, except to distinguish the oil fields and copper mines etc. There is a sense in which "The Prairies" in Canada is "a region" (perhaps excluding the Alberta oil fields), vast as it is. By the same token the East and Southwest of Malaysia do not comprise a single region, short as the distance is and small as the areas are.

At the present time, then, Malaysia is a regionalised economy, using "regions" in the sense in which the concept is important for economic analysis. The geographic, cultural, and economic differences, the limitations on mobility, the differences, in zones of influence—all these are too marked to consider the East and Southwest as parts of a homogeneous region.

3.0 THE ECONOMY OF PAHANG

According to the available figures (Table 2.5d) in 1965 Pahang was the second richest State in the Federation, with per Gross State Product (GSP) *capita* about 115% of the national average. Richest was Selangor, at 185% of the national average, and third was Negeri Sembilan at 107%. All the other States had *per capita* products below the national average. The poorest States were those on Pahang's northern border. Poorest of all was Kelantan, with *per capita* GSP only 41% of the national average. Next poorest was Trengganu, with a Gross Domestic Product per head which was 65% of the national average.¹

It is doubtful that Pahang still has GSP above the national average today, because of the importance in State income of the Rompin mine, which closed at the end of November 1970. To some extent, however, this event has been offset by the expansion of forestry operations, which can yield levels of output and income per head well above the average for the nation as a whole. It seems likely that today the *per capita* GSP of Pahang is not far from the national average.

The reason for Pahang's relative prosperity among Malaysian States is not immediately apparent. Rough figures are available for structure of production by States. More useful would be statistics of occupational structure, but these are not available. Therefore, the analysis must be based on data on the structure of gross domestic product by State.

3.1 MANUFACTURING

Pahang's position as the second most prosperous State in the Federation was clearly not due to a more advanced stage of industrialisation. The manufacturing sector is small, contributing M\$25 million to a GSP of M\$395 million (1965). Thus only 6.3% of GSP could be attributed to manufacturing in that year, compared to 10.2% for the country as a whole. Selangor, the most advanced State, derives about 15% of its GSP from manufacturing. Even Johore, although lower on the list in terms of *per capita* income, produces over 11% of its income in the manufacturing sector. On the other hand, manufacturing is more important in Pahang than it is in the very poor States of Trengganu (3.8%) and Kelantan (5.1%).

¹ EPU, "A Tentative Breakdown of West Malaysia's Gross Domestic Product by States for the Year 1965".

It does not seem likely that productivity per man year in Pahang's manufacturing industries was especially high. In 1965 nearly half of manufacturing production (M\$11.2 million) came from sawmills and plywood factories.

3.2 SERVICES

The services sector as a whole is not large in Pahang. In 1965 it accounted for about 36% of GSP, as compared to the national figure of 48%. As might be expected, the rich State of Selangor derives a very large proportion of its regional income from services: some 56%. However, the poor States also have large services sectors; 44% of GSP in Trengganu and 42% of GSP in Kelantan is generated in the service sector. The importance of distinguishing "tertiary" from "quaternary" services is clear. Selangor, for example, has nearly half the nation's banking, insurance and real estate. Over thirty per cent of its service income comes from public administration and defence, since the national capital is in Selangor. These services are presumably at a relatively high level. Pahang also derives almost one third of its service income from public administration and defence, presumably at a relatively low level, and another third from commerce. Trengganu on the other hand generates only 20% of its service income in trade and only 14% in public administration and defence. In comparison with the national average Johore has a "normal" trading sector, a slightly "supernormal" education sector and a "subnormal" public administration and defence sector. As for Pahang, the most striking feature of its services sector is the extraordinarily large role of trade, which constitutes 42% of the sector; compared to about one third for Selangor and for the nation as a whole. This figure in itself also suggests a high degree of urbanisation in the State, and may be one factor for Pahang's relatively high levels of *per capita* income.

3.3 FORESTRY

Forestry is a much bigger factor in the income creation of Pahang than it is in any other State. Even in absolute terms the Pahang lumber industry was considerably more important than that of any other State in 1965: M\$33 million compared to M\$22 million for Johore, the next most important. In terms of percentage of GSP the differences are more marked. Forestry enterprises accounted for 8.6% of the GDP of Pahang, compared to 1.3% for the country as a whole, 3.1% for Trengganu, 2.3% for Johore, 1.7% for Kelantan, and 0.2% for Selangor. Pahang

accounted for more than one third of total Malaysian forestry production in 1965. According to the available estimates even traditional forestry has a level of man year productivity well above the national average, and not much below productivity in modern manufacturing. Part of Pahang's forestry operations are modern, and the traditional forestry is in the lucrative "creaming off" phase. Thus while the industry does not account for a large share of total income of the State, it seems clear enough that the relative importance of forestry is a factor helping to account for a relatively high levels of *per capita* income of Pahang.

3.4 FISHING

Here again the desirability of a relatively large fishing sector depends on whether the industry is modern or traditional. Productivity in modern fishing is well above the national average, productivity in traditional fishing well below it. In Pahang the fishing industry appears to be largely traditional, and the fact that it is relatively small may be regarded as a favourable factor. Only 1% of GDP is derived from fishing in Pahang, compared to 1.95% for the nation as a whole, 1.3% for Kelantan, 7.4% for Trengganu, 2.2% for Johore and 0.8% for Selangor. It can be simply stated that incomes in Pahang are not pulled down by a large traditional fishing sector.

3.5 CONSTRUCTION

Modern construction has a level of productivity somewhat above the average for all occupations. The construction sector does not appear to be factor of importance one way or the other in the relative position of Pahang on the development scale. It accounts for 3.8% of GSP, a little below the national average of 4.4%. It is also well below the figure for the richest State, Selangor (6.7%) but is higher than in the poorer States: Johore 3.5%, Trengganu 2.5%, and Kelantan 2.1%. There is evidently a high rank correlation between general level of development and importance of the construction industry, and Pahang's relatively sizeable construction sector may make a modest contribution to the State's relative prosperity.

3.6 RUBBER

As has been seen in recent years, rubber has been a somewhat dubious asset. Smallholders' rubber comes at the bottom of the list in terms of value

added per man year, according to the EPU estimates. Productivity on rubber estates is currently well above the average for all occupations, but the future even of estate rubber depends on the outcome of the race between increasing yields and falling prices. In Pahang rubber is about as important as a source of income as it is for the country as a whole. 15.9% of Pahang's GSP comes from rubber, compared to 14.9% for the nation. The richest State, Selangor, derives only 7.2% of its GSP from rubber, the poorest State, Kelantan 15.7% and Johore, the most "middle-class" of all States (with the medium level of *per capita* product among the eleven) 27.4%. It can almost be said depending on the blend of smallholder's and estate operations, that rubber planting is a strictly middle-income occupation. As for Pahang, with rubber playing much the same role in its economy as it does in the Malaysian economy as a whole, this sector has little effect on the relative economic position of the State.

3.7 AGRICULTURE AND LIVESTOCK (EXCLUSIVE OF RUBBER)

"Zimmerman's law" applies to the States as well as to the regions of Malaysia: generally speaking, the rich States have a relatively small proportion of their labour force in agriculture and livestock, the poor regions a relatively large share in agriculture and livestock. Even in terms of GSP the law stands up quite well for Malaysian States. Thus rich Selangor derives only 5.6% of its GSP from this sector, while at the other end of the income scale Kelantan, the poorest State, derives 25% of its GSP from agriculture (other than rubber) and livestock. However, the composition of agricultural output is also important in determining the relationship between employment and income in this sector. Trengganu, with 63% of its labour force in agriculture and livestock (presumably including rubber), forestry and fishing in 1966,¹ derives 10% of its income from rubber and only 7.4% of its GSP from the rest of the agricultural and livestock sector, where the bulk of the population was engaged. The reason for the extremely low levels of productivity in this sector in Trengganu is that half the value of output, and a considerably larger proportion of employment, is accounted for by rice production. Livestock and smallholder's coconut, also low productivity activities, provided together another third of the total agricultural output, with durians next most important. At the other extreme is Selangor, with about one-quarter of

¹ *Regional Economic Development Plan for the State of Trengganu* Vol. 1 page 90.

its agricultural output (not counting rubber) obtained from oil palm, another 20% from livestock and around 10% each from rice, vegetables, and smallholder's coconut. In Kelantan, the poorest State, three-quarters of the agricultural income comes from rice, livestock, and vegetables (in order of importance).

Johore is fortunate in deriving nearly 38% of its agricultural income from oil palm, followed by livestock and (unfortunately for Johore) durians.

Pahang has a moderately advanced agricultural sector. The State is fortunate in having relatively little land under rice or smallholder's coconut. Rice accounts for only 6% of non-rubber agricultural output, smallholders' coconut for only a relatively high productivity agricultural activity, plantation tea. On the other hand a bit more than that comes from vegetables and livestock in that order. On the whole, it might be concluded that this sector as presently constituted plays a rather neutral role in the State's relative position among the eleven States of West Malaysia.

It may be worth noting that for the country as a whole livestock accounts for nearly one-quarter of the total value of agricultural production, followed closely by rice (21%) oil palm (12%) vegetables (11%) tapioca (7%) durians (6%) and smallholders' coconut (6%). In comparison with the country as a whole, therefore, Pahang may well have an above average level of productivity in the agricultural sector.

3.8 MINING

In 1965 Pahang had the third biggest mining sector of all States of Malaysia (M\$64 million in 1965) after Perak (M\$291 million) and Selangor (M\$151 million). Mining output accounted for 16.2% of total GDP of Pahang in 1965, compared to 8.7% for the country as a whole, 3.6% for Johore, and 3.0% for Kelantan. Trengganu, with a value of production about half that of Pahang (M\$36 million) obtains a larger proportion of its income from mining (24%) because its total income is so much lower. Perak gets about 21% of its income from mining.

Since the great bulk of this mining income came from the Rompin iron mines and the tin mine at Sungai Lembing (most of the other tin mines are small scale operations) it can be said that Pahang's mining sector was a very modern one. Productivity in modern mining in Malaysia is much higher than in any other sector, nearly four and a half times as high as the national average for all sectors. The fact that modern mining was the second biggest sector of the Pahang economy, after services, no doubt goes a long way to explain the relative prosperity of the State in 1965.

It seems likely that the iron production of the Rompin Mining Company amounted to some 6% of GSP of Pahang. For the region, as distinct from the State, the iron mining operation may have provided, directly and indirectly, close to half the gross domestic product. However, as mentioned above, the closing of the mine is partially offset by the expansion of forestry operations, and for the State, by construction and new manufacturing activities.

3.9 STRUCTURE OF PRODUCTION vs. STRUCTURE OF EMPLOYMENT

As indicated above, the structure of employment in each State would be more revealing than structure of production for the explanation of regional disparities. Unfortunately it is not at the moment possible to make comparisons of occupational structures of the eleven States. However, the Trengganu Report presents figures of both occupational structure and structure of production for that State, which gives an idea of the relationship.

These figures reveal the typical structure of a poor region: the bulk of the population is in agriculture and livestock where productivity is very low; a sizeable group in fisheries where productivity is also low; a few in mining, manufacturing and construction where productivity is relatively high; a very few in forestry where productivity is even higher; and the second largest proportion in services, where productivity is moderately high on the average (the allocation within the sector between tertiary and quaternary

Table 3.9—Structure Of Trengganu Economy 1966

	% Of Employment	% Of GSP
Agriculture and livestock	53.4	18.4
Forestry	0.3	2.3
Fisheries	9.3	5.1
	<hr/>	<hr/>
Total primary	63.0	25.8
	<hr/>	<hr/>
Mining, manufacturing and construction	11.0	31.2
Services	26.0	41.6

Source: Regional Economic Development Plan for the State of Trengganu pages 83 and 90.

activities being fundamental). The importance of the distinction between modern and traditional activities within each major sector has been stressed. Nonetheless it is safe to say that any region in Malaysia that continues to have more

than half its labour force in agriculture, livestock and fishing will be a relatively poor region within the Malaysian economy.

3.10 SUMMARY OF REASONS FOR PAHANG'S PROSPERITY

In general it may be said that Pahang was a relatively prosperous State up to this time because it was still thinly settled, had relatively few people engaged in very low productivity activities, a substantial proportion of the labour force employed in average-productivity occupations, and a significant proportion engaged in high productivity activities. The small numbers engaged in rice growing and fishing must be considered an advantage, and one to be preserved if possible. The relative importance of forestry, at present in a high-yield phase of exploitation, is another factor on the plus side. Even more important was the major role played up to 1971 by modern mining, which was probably the most important single factor in the explanation of Pahang's relatively high level of per capita incomes. Also on the plus side is a fairly large proportion of the sector consisting of commerce.

4.0 PAHANG TENGGARA TODAY

4.1 DEVELOPMENT HISTORY

Until about 1960 there was very little activity in Pahang Tenggara. Until 1890, the same was true of substantial parts of the rest of West Malaysia, but during the first 30 years of this century large areas, particularly along the West Coast, were transformed, largely by the planting of rubber trees. This wave of agricultural expansion came to a halt at the borders of the Pahang Tenggara region with the onset of the world depression in 1929. The remaining jungle of West Malaysia including the Pahang Tenggara was left virtually untouched through the depression of the thirties and the war and communist insurrection periods of the forties and fifties.

The region was left undisturbed largely for geographical reasons. The good land suitable for agriculture is masked by coastal swamps to the East, and the Tasek Bera, Tasek Dampar complex of shallow lakes and swamps in the West. To the North, between the two swampy areas stands the horseshoe of hills surrounding the Jeram and Mentiga river valleys. The southeast corner is blocked by the even more formidable hills of the Lesong, and even the remainder of the southern boundary is marked by a range of hills which form the Pahang-Johore State boundary. To get effective access to the centre of the region needed the construction of relatively long roads or railways, and this has only been done since 1960.

However, since 1960 the jungles of the Pahang Tenggara have been disturbed by:

- (a) *The Rompin Iron Mine (closed 1970).*
- (b) *The "creaming" of the forest for the best timber.*

The great extension of the forest operations is partly the result of the growing demand for timber from tropical forests not only in Malaysia, but throughout the world; partly the effect of changes in the technology of Malaysian forest operations (e.g. chainsaws, heavy timber lorries, and the bulldozers and other equipment used for the construction of forest roads) which have meant that for the first time in Malaysia sawlogs could be cut and transported relatively cheaply from regions

far away from the river banks; and partly the effect of Government policies which permitted the type of operations which have actually occurred.

- (c) *Settlement for agricultural purposes of increasing areas around the edge of the Pahang Tenggara region.*

This activity is partly a logical extension of existing settlements; partly the result of the forest operations, at least in so far as these operations have led to the building of roads and thus made large parts of the region accessible for the first time; and partly the result of the construction of roads built by the JKR both to serve the long established riverine communities, and to aid the newer logging industries.

4.2 PRESENT ECONOMY

There are of course no figures for per capital incomes of Pahang Tenggara. In any case the region today is still essentially empty. The entire labour force is only about 20,000 people, the total population about 60,000, including the towns and villages on the East Coast that lie within the region. Incomes are probably close to the average for the State. There is little in the way of traditional agriculture or open unemployment, and the current importance of forestry operations suggests that per capita incomes are relatively high. On the other hand very little of the region's population is urban (Pekan has less than 5,000 people, Rompin less than 1,500, and there are no other cities except Bukit Ibam, with perhaps 2,000 at the present time). The region lacks the relatively high-productivity urban activities to be found in Kuantan or even in Temerloh and Mentakab.

4.2.1 Rapidly Changing Patterns of Land Use

There can be little doubt that logging and related forestry operations involve more acres than any other economic activity in Pahang Tenggara at the present time. Table 4.2 presents figures for agricultural land uses in 1966. At that time less than 40,000 acres were under cultivation, with rubber accounting for nearly half the total. Mixed gardening was second in importance. However, in terms of recent rates of clearing and planting oil palm was of much greater importance. In early 1971 the acres alienated for oil palm were

more than six times of total agricultural acreage in 1966, and the acreage already planted to oil palm was about three quarters the total acreage under cultivation in 1966. These figures are, however, of only limited significance for the planning for the future; as the 1.4 million acres of

cultivable land are brought to use, there is no reason to suppose that the pattern of land use will resemble closely that of the recent past, except that forestry and oil palm will no doubt continue to be major economic activities in the region.

Table 4.2—Calculation of 1966 Land Use in Pahang Tenggara—Acres

<i>Land Use</i>	<i>Pekan District</i>	<i>Pekan District North of S. Pahang (-) Subtract</i>	<i>Part of Temerloh District (+) Add</i>	<i>In Project Area</i>
1. Building	1,406	309	54	1,150
2. Mining and Quarrying	760	77	—	683
3. Mixed horticulture	6,137	2,172	1,113	5,078
4. Market gardening	4	—	—	4
5. Rubber	30,789	21,499	9,696	18,986
6. Coconut	4,252	624	50	3,678
7. Sago	34	31	—	3
8. Fish ponds	6	—	—	6
9. Orchards	27	—	—	27
10. Wet padi	6,916	4,331	2,380	4,965
11. Diversified crops	320	12	—	308
12. Shifting cultivation	2,865	49	722	3,538

4.3 EXISTING COMMITMENTS¹

In addition to the land presently in production as described above there are existing legal commitments to develop about 900,000 acres already alienated or assigned to specific uses. These include the following:

- (a) 136,000 acres are alienated to FLDA (9,000 acres cleared; 5,000 acres planted in 1970).
- (b) 140,000 acres alienated to nucleus estates, all of which are allocated to oil palm (24,500 acres cleared; 20,000 acres planted by 1970).
- (c) 57,000 acres alienated to the Ladang Pegawai, of which it is expected that 39,000 acres will be put under oil palm and the remainder under rubber (or left in forest).

¹ Defined as permanently designated land-use over the planning horizon. Not included in this category are the numerous Reserves and Licencing Agreements applying to the region.

4.3.1 The Planned Kuantan-Segamat Highway

The Government is committed to the construction of a main north-south road artery through the region to provide a good road connection between the Kuantan area of Pahang, Trengganu and Kelantan on the one hand with Segamat and the adjoining areas of the States of Johore, Negeri Sembilan and Malacca on the other hand. The effect of this commitment is to establish a "corridor of development" strategy for opening up Pahang Tenggara.

4.4 SUMMARY

In summary it can be said that the region is relatively underdeveloped when compared with other parts of West Malaysia. It is because Government commitments and the advent of modern technology in the forest industry on the verge of development on a large scale.

5.0 PAHANG TENGGARA 1990

Consideration must now be given as to what the targets for development of Malaysia by 1990 imply for the development of Pahang Tenggara.

It goes without saying that any Masterplan for the development of Pahang Tenggara should not run counter to the stated objectives of the Malaysian Government. With respect to the Pahang Tenggara, these objectives might be paraphrased as follows:

- (a) The creation of efficient, well-managed, technologically advanced and large scale enterprises in agriculture and forestry and the assurance of employment opportunities for participation of Malays in these enterprises at all levels. Small scale enterprises in these fields should be seriously considered only if there is reason to believe that they can be as modern technologically and as well managed as larger scale enterprises in the same fields.
- (b) The promotion of substantial amounts of industrialisation and urbanisation of a kind which provides opportunities for Malays as well as for other Malaysians to find employment at all levels in the modern sector.
- (c) Assuring a pattern of development which will contribute to reduction of regional gaps. This objective requires a pattern of development which will prevent levels of income and social welfare in the region from dropping too far below the national average, and permit substantial migration from relatively low productivity sectors of the poor regions.
- (d) Providing means of acquiring higher levels of skills, particularly for Malays but also for other Malaysians.
- (e) Providing employment opportunities. (It should be noted that the Second Malaysia Plan does not suggest anything like "make-work" projects for creation of employment opportunities, even for the period of the Second Malaysia Plan. It foresees no reduction in the overall rate of unemployment. The references in the plan to employment creation are hedged in by

references to raising productivity at the same time. Thus in the two quotations presented above, the references are to "more productive employment", and to "enhanced rural incomes and expanding job creation", in that order).

- (f) Building a base for attracting manufacturing and service enterprises not directly related to resource exploitation. (The development of Pahang Tenggara should not aggravate the unemployment problem. Consequently, when the point is reached where the natural rate of population growth in the region exceeds the rate of employment creation through resource development, plus industry and tertiary activities directly related to resources development, the plan should permit either of two options:
 - (i) net emigration from the region, if suitable employment opportunities exist elsewhere; or
 - (ii) the creation of other employment opportunities within the region. Essentially, the latter option means of attracting "footloose" industries and sophisticated "quaternary" services. Consequently, the relative capacity for attraction of such activities of various patterns of development should be given some weight in the formulation of the Masterplan).

5.1 NEED FOR STRUCTURAL CHANGE

Economic development anywhere requires structural change of a kind which reduces the share of the labour force in agriculture, with attendant increases in the ratio of urban to rural population. While this proposition is now part of the "received doctrine" of development economics, it may not seem self-evident to readers not well acquainted with the economic development literature. It is important that this principle be thoroughly understood, because it applies to Malaysia with peculiar force; and a plan for Pahang Tenggara that does not contribute to the needed structural change will be an inadequate plan. Accordingly, this section presents some of the salient facts regarding structural change and economic development.

The available empirical evidence argues overwhelmingly against the view that prosperity can be achieved in an economy characterised by large rural populations and a scatter of small cities. To begin with, what might be called "Zimmerman's Law", Prof. L. J. Zimmerman of the Institute of Social Studies in the Hague has shown for a large sample of countries that the coefficient of correlation between levels of per capita income and the share of the labour force engaged outside of agriculture is 0.92.¹ Economic development, in short, is very largely a matter of getting people off the farms and into cities. A more recent study by the United Nations Research Institute for Social Development, aimed at finding more satisfactory indicators of development than per capita income by itself, found in a multiple-regression analysis of 73 economic and social indicators that "the best single indicator to represent the generality of all the development indicators used in the study would be either agricultural productivity (value of production per adult male worker) or the percentage of adult male labour in agriculture".² Agricultural productivity and the share of the labour force in agriculture are themselves highly cross-correlated: $r = .875$. That is, there is a good reason to believe that even raising agricultural productivity is mainly a matter of getting people off farms and into cities. (This conclusion is of course, supported by direct evidence as well). The regression coefficient between all other indicators of development and population proportions in cities of 20,000 or more is 0.73, one of the 18 especially significant inter-correlations retained by UNRISD.

Next there is the overwhelming evidence that productivity and income progress with size of cities. This can be explained in terms of the progression of technology normally associated with large urban centres. The advanced technologies cannot function efficiently without the economic advantages normally met in the large cities of the industrially advanced world. A minimum urban scale, therefore, may be a precondition of the effective employment of modern productive technologies, the achievement of which may yield extensive social returns.¹

¹ L. J. Zimmerman, *Poor Lands, Rich Lands: The Widening Gap* New York, 1965 pp. 35-37. The equation is $\log y = 0.202x + 1.3255$ where y is per capita income and x is percentage of total employment outside agriculture.

² D. V. McGranahan and others, *Contents and Measurement of Socio-Economic Development*, Geneva (UNRISD) 1970, p. 39.

¹ Lowden Wingo, "Latin American Urbanisation: Plan or Process?" in B. Frieden and W. Nash, editors, *Shaping Our Urban Future*, Cambridge, 1969, p. 121.

In short, all the available knowledge regarding urban growth and regional and national development leads to the conclusion that a Pahang Tenggara with cities, one or two which would have populations of more than 50,000, would be a poor Pahang Tenggara. Malaysia too has thresholds of city-size, as Working Paper No. 39 shows² and is discussed in section 3 following.

5.1.1 Patterns of Urban Migration

Further indirect evidence of the relationship between productivity and incomes on the one hand and urbanisation on the other is provided in Table 5.1. The Table makes it clear that in cities of less than 20,000 and particularly in cities of 10,000 to 20,000 the growth of population has been less than natural population growth: that is, there has been net emigration from these towns. As already noted, there has been only limited net immigration into Malaysian cities as a whole; during the period 1957-1970 urban growth for the entire period was only 1.5% higher than total growth. There has, however, been a movement from smaller to larger cities. This movement is in large measure a response to the superior economic and social opportunities offered in the larger centres, and easier access to them afforded by better transport facilities.

5.1.2 Lessons of History

Economic history suggests other uniformities which are of importance in setting targets for Malaysian development. First, while the industrial sector grows with rising per capita incomes, it does not grow continuously at the same rate, but tends to taper off as "mature" structures of output and employment are achieved. Thus in the United Kingdom, for example, the share of "industry" (manufacturing, mining, construction and utilities) in employment rose only from 54% to 57% in the whole period from 1901 to 1951; it was already 46% in 1907. Similarly, in Canada, the share of industry in employment rose only from 47% to 48% between 1926/28 to 1961/28.¹ Second, the services sector also tends to stabilise around 40% to 45%, and may do so at a fairly

² J. J. O'Callaghan "Town Sizes and Thresholds for Manufacturing Activities in West Malaysia", July, 1971.

¹ The statistics in this section are derived largely from Simon Kuznets, *Modern Economic Growth*, New Haven 1966, Chapter 3.

early stage of development. Thus in the United Kingdom the services sector already accounted for 36% of employment in 1801 and had risen only to 38% in 1951. By the same token, a large services sector is not a sign of a high level of development. Some poor countries (like those in North Africa) have shares of the labour force in services as high as in the most advanced countries. In advanced and underdeveloped countries alike, employment in services tends to grow faster than output from services; productivity lags in the services sector, and rapid growth of this sector often reflects a push from the farms that is stronger than the pull to the factories. When the

services sector grows faster than the industrial sector it is usually a sign of trouble, in particular the transfer of disguised unemployment (low-productivity employment) from agriculture to services. Third, where the share of the labour force in agriculture is both low and falling—and only then—it is possible to maintain levels of output per main year in agriculture close to the national average. Thus ratios of output per worker in agri-output per main year in agriculture close to the 0.9 and 1.2 are found in the United Kingdom for the period 1801-1955; for Denmark in the post World War II period; for Australia between 1891 and 1939.

Table 5.1—Urban Growth by City Size in West Malaysia, 1957-1970

Urban Centres	Total Population	Number	% Growth 1957-1970
POPULATION:	(000s)		
100,000+	2,835.1	5	56.7%
50,000-100,000	8,259.1	9	41.0%
	(excluding P.J.)		
	including P.J. =	83.5%	
20,000-50,000	4,904.2	11	44.5%
10,000-20,000	4,801.4	18	26.7%
5,000-10,000	7,841.0	25	31.4%
TOTAL ..	28,733.4	68	41.6%

NOTES:

1. Growth of all urban centres 5,000 + was 41.6%.
2. Growth of total population West Malaysia was 40.1%.
3. Therefore, growth of all urban areas (5,000 and above) was 1.6% above Malaysia as a whole.
4. Centres above 100,000 had highest growth rate which was 16.6% above Malaysia as a whole.
5. Centres below 20,000 were all declining relative to the population growth with greatest relative decline in the 10,000 to 20,000 range.

Source: 1970 Census.

5.2 A TARGET FOR MALAYSIAN STRUCTURAL CHANGE

Against the background of world-wide experience, what might be said regarding reasonable targets for structural change in Malaysia? It is not possible to answer this question with total precision. Nonetheless, there are guidelines which permit suggestions as to order of magnitude.

5.2.1 The Zimmerman Equation

As a first step the Zimmerman equation has been applied, relating share of employment in agriculture to levels of per capita income, to Malaysian growth targets. Taking the 1970 per capita income of West Malaysia at US\$360.00 (since the equation is expressed in terms of United States dollars) and projecting the target of 3.5% annual

growth of the SMP to 1990, gives a target per capita income in that year of \$720.00. From the Zimmerman equation a share of agriculture in total employment of just under 25% is obtained.

Adjustments in both directions may be called for. On the one hand, the official estimates of per capita income tend to underestimate the real value of Malaysian incomes in terms of purchasing power, for the purpose of comparisons with other countries. In other words, converting incomes from Malaysian to American dollars at official rates tends to under-estimate the true level of welfare in Malaysia in comparison with other countries. Careful and comprehensive efforts to take account of this factor, so as to make national incomes more meaningful for international comparison (notably the heroic efforts of Professor Paul N. Rosenstein-Rodan¹ suggest that the Malaysian figures should be raised by at least 10%. This would produce a figure of \$400 for 1970 and \$800 for 1990. The Zimmerman equation then gives a proportion of the labour force in agriculture of 22%.

On the other hand, Malaysia has demonstrated a capacity to produce given levels of per capita income with an above-average proportion of the labour force in agriculture. Malaysia's agriculture is more productive than that of most developing countries. On the basis of experience in other countries, however, it is doubtful whether this "premium" on agricultural employment can be maintained indefinitely, unless rapid structural change is taking place. It is nonetheless possible that in 1990 Malaysia may still be able to get relatively high levels of output from agriculture, in comparison to other developing countries. It is impossible to guess what the "premium" might be in 1990, but if it were still half to what it is today it would offset the error in the other direction. Taking both considerations together, 25% of the labour force in agriculture would seem to be a reasonable target for 1990.

5.2.2 The World Bank Equation

Second, a similar exercise for the World Bank Equation relating industrialisation to population and income has been undertaken. The equation, derived from experience of 53 countries is

$$\log V_0 = -1.637 + 1.369 \log y + 1.124 \log P$$

¹ P. N. Rosenstein-Rodan, "International Aid for Under-developed Countries" *Review of Economic and Statistics* 1961 pp. 107-138.

Where V_0 is value added in manufacturing, y is per capita income and P is population. Using a target per capita income of US\$720 for West Malaysia in 1990 and a projected population in that year of 15.4 million, we get a figure for value added in manufacturing of US\$4,068 million. The corresponding figure for GDP would be US\$11,100 million; thus manufacturing would be about 37% of GDP. It might be noted that if the target rate of growth of manufacturing in the Second Malaysia Plan were projected to 1990, the value added in manufacturing would be \$3,850 million, which is very close to the figure obtained from the World Bank equation.

It will be noted from the form of the equation that population growth alone, without a rate of increase in productivity in manufacturing higher than elsewhere in the economy and even without a rise in per capita incomes, would normally entail an increase in the relative importance of the manufacturing sector. Population growth *requires* industrialisation to relieve population pressure on the land, and *eases* the problems of industrialisation, especially in the form of import replacement, by broadening the market.

5.2.3 Manufacturing and Industry

The Second Malaysia Plan implies a rise in the ratio of manufacturing to total "industry" (with mining, construction, and utilities added in (in accordance with the Kuznet's definition)¹ from about 60% to about 65%. This assumption is in accordance with general experience; historically, there has been a tendency in most countries for the share of manufacturing in total "industry" to rise as development takes place, in large measure due to the declining importance of mining. If it is assumed that in 1990 manufacturing would be 70% of "industry", the figure of 37% for manufacturing would correspond to an industrial sector that would account for nearly 53% of GDP. This figure might be regarded as too high on two grounds: first, the general tendency for the industry in GDP to taper off as figures above 45% are reached; and second, the relatively efficient character of Malaysia's agriculture. On the other hand, it is necessary to once again consider the probable underestimation by the official figures of the position on Malaysia on the international scale of per capita incomes. Substituting \$800 for \$720 in the World Bank equation would raise the figure for manufacturing. Perhaps somewhere between 45% and 50% for

¹ "Utilities" include light and powers, water, transport and communications.

industry would be a reasonable target. A somewhat higher ratio of manufacturing to total industry than 70% appears to be implied.

An industrial sector of that magnitude would support a large services sector as well, without excessive transfers from agriculture. Countries that achieve industrial sectors producing 45% to 50% of gross domestic product usually have services sectors that are responsible for 35% to 45% of GDP. Thus if Malaysia attained the suggested target for industry, agriculture and forestry and fishing would be left with 15% to 20% of GDP. Since there is reason to hope that structural change at such a speed and to such an extent would keep agricultural productivity close to the national average, these figures for GDP would imply 20% to 25% of the labour force in agriculture.

5.2.4 The Perspective Plan

The First Malaysia Plan includes a Perspective Plan for 1985, which has not as yet been formally replaced by a revised Perspective Plan. It shows the share of agriculture in GDP falling from 32% in 1970 to 26% in 1985. However, the 1970 figure was a projection, and turned out to be high. The actual figure for 1970 was 30.6%. Thus with the same rate of structural change the figure for 1985 might be around 24%, and for 1990 around 22%. The Second Malaysia Plan shows the ratio of share of agriculture in employment to share of agriculture in GDP falling from about 1.6 in 1970 to about 1.53 in 1975. With the expected structural change within agriculture (disappearance of traditional subsistence agriculture) this ratio might fall to 1.20 in 1990. Then there would be 24% of the labour force in agriculture in 1990.

5.2.5 The Second Malaysia Plan

The Second Malaysia Plan provides for modest structural change. The statements about trends of output and employment in the longer run, however, suggest an acceleration of structural change in future plans. (Table 5.2a). If we retain the same growth rates for each of the three major sectors (agriculture, industry, and services) we are left in 1990 with 36% of the labour force in agriculture, 23% in industry and 40.8% in services (See Table 5.2b). Such a structure would mean that in 1990 Malaysia would still be an under-developed country even in 1970 terms. The structure would be much the same, for example,

as Great Britain in 1801, except that Great Britain was already somewhat more industrialised than that. At the beginning of this century Canada, Australia and the United States were all considerably more industrialised than such a projection would imply for Malaysia in 1990; in 1990 Malaysia would still be a century behind these countries. Moreover, such a structure would almost certainly imply disguised unemployment in the services sector. No country has ever had a healthy economy with nearly twice as many workers in services as in industry.

Accordingly, another projection from the Second Malaysia Plan with different assumptions has been tried. This exercise retained the 1.7% growth of agricultural employment up to 1975, but assumed that total agricultural employment ceased to grow thereafter. In this way a hypothetical framework, was provided that would permit both a transfer of agricultural workers from traditional to commercial agriculture, with the abandonment of submarginal land and opening up new land of superior quality, and an increase in the average size of holdings. In this fashion output and incomes per man-year in agriculture can be prevented from falling too far below those in other sectors. Similarly, the 5.4% growth of industrial employment for the Second Plan period has been retained but raised to 6.1% thereafter; and for services the 4.1% growth rate to 1975 is retained and raised to 4.9% thereafter.¹ The 6.1% target for industry is not over optimistic; the Second Plan requires a 7% growth rate for manufacturing, and as time goes by it will be this growth rate that will dominate the industrial sector. Also, mining will not continue to shrink indefinitely, if mining law is changed.

Even these assumptions do not give entirely satisfactory results. The share of agriculture in total employment drops to 28.2% in 1990 (see Table 5.2c) close enough, given margins of error, to the targets obtained by other methods. However, the industrial sector expands only to 25.7% of the labour force, while services grow to 46.1%. Thus the imbalance between industry and services remains. The conclusion must be that sometime between 1975 and 1985 the rate of growth of industry must be raised to a level of about 6.1%, which is by no means impossible. If the entire industrial sector grew at the 7% rate projected for manufacturing, the sector would reach 36% of total employment, or about 45% of GDP, by 1990. Another major conclusion derived from these

¹ These adjustments are needed to assure a growth of employment equal to the projected 3.2% growth of the labour force.

projections is that if the agricultural sector is not to be too large in 1990 it must cease to grow in total numbers after 1975, or, if it grows for some time after that year, it must shrink in absolute numbers during some later period, so as to restore total agricultural employment to its 1975 level by 1990. To reiterate, this target does not mean that agricultural output will cease to grow after 1975, nor that no new settlement will be desirable. On the contrary, it implies an acceleration of the growth of agricultural output, by replacing relatively poor with relatively good land, increasing the average size of holding so as to permit technological improvements, elimination of traditional agriculture and continued adoption of new technology by all subsectors of agriculture.

5.2.6 Comparisons with other countries

One more method of determining appropriate targets for structural change in Malaysia remains: to examine the experience of other countries that might be regarded as models or analogues.

Malaysia, with a solid agricultural base and still an abundance of land in 1971, might expect to develop along lines similar to those that have characterized development of other countries similarly blessed. In Table 5.2d figures of structural change have been assembled for other countries that are "agricultural", in the sense that the major exports agricultural and forestry products (raw or processed, but not final products) and that a large share of the industrial and services sectors is concerned with transporting, storing, processing, financing, insuring and selling indigenous raw materials. In all of these countries, economic progress has taken two forms: import replacement, and the further processing of raw materials before exporting them. Thus in Canada exports have moved from furs to fur coats, from wheat to flour, from lumber to newsprint; and in Australia from wool to woollen goods, from beef to packaged foods, etc. In a sense all of these countries have remained close to their natural resource base, but the two forms of progress combined have nonetheless brought the decline in relative importance of agriculture and forestry, and growth of industry and services, that have characterized the economic history of all advanced countries.

Table 5.2a—Structure of Output and Employment Malaysia, 1970 and 1975

	1970		1975	
	GDP (%)	Employment (%)	GDP (%)	Employment (%)
Farming, Fishing, Forestry ..	30.6	49.5	30.2	46.0
Manufacturing	13.1	9.2	16.9	11.0
Construction	3.8	3.5	4.3	3.9
Utilities	2.7	0.6	3.0	0.7
Commerce	14.4	11.6	13.0	12.2
Services	24.4	23.4	24.3	24.7

Source: Second Malaysia Plan.

Table 5.2b—Projections of Demand for Labour by Sector: SMP

Annual Growth Rates	No.	1970		1975		1980		1985		1990	
		No.	% Total	No.	% Total	No.	% Total	No.	% Total	No.	% Total
Agriculture 1.7% ..	1,454	49.5	1,579	46.0	1,718	42.6	1,869	39.3	2,033	36.0	
Industry 5.4% ..	456	15.5	594	17.3	773	19.2	1,005	21.1	1,307	23.2	
Services 4.1% ..	1,030	35.0	1,262	36.7	1,543	38.2	1,886	39.6	2,306	40.8	
	2,940	100.0	3,435	100.0	4,034	100.0	4,760	100.0	5,646	100.0	

Table 5.2c—Employment Projections by Sector—Constant Agricultural Employment after 1975

Annual Growth Rates	1970		1975		1980		1985		1990	
	No.	% Total	No.	% Total	No.	% Total	No.	% Total	No.	% Total
Agriculture:										
(1.7% 1975-1990 } (0% 1975-1990 }	1,454	49.5	1,579	46.0	1,579	39.7	1,579	33.7	1,579	28.2
Industry:										
(5.4% 1970-1975 } (6.1% 1975-1990 }	456	15.5	594	17.3	799	20.1	1,074	22.9	1,444	25.7
Services:										
(4.1% 1970-1975 } (4.9% 1975-1990 }	1,030	35.0	1,262	36.7	1,603	40.3	2,036	43.4	2,586	46.1
TOTAL ..	2,940		3,435		3,981		4,689		5,609	

Source: 1970, 1975: Second Malaysia Plan
Other Years: Calculated.

Table 5.2d—Structure of Employment—Various Dates and Countries (%)

					Primary	Industry	Services
MALAYSIA (SMP):							
1970	..	..	..	..	49.5	15.5	35.0
1975	..	..	..	..	46.0	17.3	36.7
AUSTRALIA:							
1891	..	..	..	..	26	43	31
1947	..	..	..	..	17	48	35
1965	..	..	..	..	10	52	38
CANADA:							
1901	..	..	..	..	44	33	23
1951	..	..	..	..	19	44	37
1965	..	..	..	..	9	—	—
DENMARK:							
1901	..	..	..	..	42	28	30
1952	..	..	..	..	19	38	43
1965	..	..	..	..	12.7	—	—
NETHERLANDS:							
1899	..	..	..	..	28	36	36
1947	..	..	..	..	17	37	46
1965	..	..	..	..	8.5	—	—
SWEDEN:							
1870	..	..	..	..	55	12	33
1910	..	..	..	..	41	36	23
1951	..	..	..	..	19	50	31
1965	..	..	..	..	9.1	—	—

Source: Kuznets, *op-cit*; OECD.

Thus it can be seen that in Australia, which is often thought of as a "successful agricultural country", the share of employment in agriculture was already down to 26% in 1891. By 1947 it had fallen to 17%, and today it is about 10%. In Canada the transformation came later but was more rapid: 44% in agriculture in 1901, but only 19% in 1951 and less than 9% today. Denmark, Sweden, the Netherlands—all show the same pattern of structural change.

5.2.7 Development Must Become Based on Human Resources

One thing that can be said with some assurance is that any country, or any large region, that remains forever attached to its natural resource base as the generator of development will sooner or later be "retarded" in one of two senses: remaining essentially empty (Amazonia, the Northern Territory of Australia, Northern Ontario, le Grand Nord de Quebec)—which is the better fate of the two; or becoming relatively poor because the occupational structure and level of technology have lagged behind progress in other countries or regions (the Italian South, the Brazilian Northeast, Java, Gaspésie, New Brunswick). Historical comparisons suggest that the combination of regional convergence and high rates and levels of national development requires, in one region after another, a shift from natural-resource-based development to human-resource-based development. Any economy that continues to grow will arrive sooner or later at the point where further growth requires major structural change. Some countries or regions, perhaps, face this need more than once. If technological progress happens to coincide with repeated new resource discovery related to the newest technology, as has been the case in the United States and Canada, the structural change needed for continued growth may take place through a shift from one natural-resource-based pattern of output and employment to another.

5.2.8 Need For a Sharp Shift

The relatively difficult cases are those where growth on the basis of a particular set of natural resources nears its end, while no saviour in the form of new resource discovery and technological change appears on the horizon. For in these cases further development requires a sharp, discontinuous quantum leap from a natural-resource-based to a human-resource-based pattern

of development.¹ Continued economic progress in any large region or any country requires, sooner or later, a shift from natural-resource-based development to human-resource-based development. Indeed the basic economic problem in Malaysia is that it is now approaching the point where such a shift is necessary for further growth. Of course Pahang Tenggara is not a "large" region in this sense; and it could be retained as a thinly settled, natural-resource-exploiting region in a highly industrialised and urbanised Malaysia. It cannot be said at this point how the Malaysian population should be distributed in 1990 in order to maximise the potential for the needed structural change.

5.2.9 Conclusions

All of the analysis presented above, speculative as it may be in some respects, leads to the same conclusion: if Malaysia is to have a satisfactory pattern of economic and social development over the next twenty years, it must aim at reducing the share of employment in agriculture to about 25% in 1990. The industrial and services sectors, moreover, should not be permitted to drift too far apart. Probably neither should account for less than 35% or more than 40% of total employment, unless technological changes not now foreseen take place, or unless it becomes desirable and possible to reduce the share of agriculture below 25%. Even in advanced countries, as we have already pointed out, a services sector that is much bigger than the industrial sector usually reflects a push from the farm that is stronger than the pull to the factory, and a consequent transfer to "disguised unemployment" from agriculture to services². In thinking of targets for Pahang Tenggara, therefore, we shall assume that the target for Malaysia is an agricultural labour force

¹ i.e. in one generation or less. With advance planning the transition can be smoothed.

² It is interesting to note that the danger of excessive growth of the services sector is implicitly recognised in the Second Malaysia Plan. Comparison of targets for employment with targets for GDP, as well as Table 2.5d and Table 5.1, show that productivity in agriculture is expected to grow somewhat more than the national average, productivity in manufacturing a good deal more than the national average, construction and utilities a bit faster than agriculture, and services well below the national average. The more detailed projections of the Economic Commission for Asia and the Far East of growth of output and employment 1970-1980, based on EPU figures, are even more striking. They imply virtually no rise in productivity in the Malaysian services sector for the decade. ECAFE, *Sectoral Output and Employment Projections for the Second Development Decade* Bangkok 1970, Chapter VII.

amounting to some 25% of the total, and industrial and services sectors each in the range of 35% to 40% of the total.

5.3 REGIONAL CONSIDERATIONS

The economic "law" regarding structural change and development stands up just as well for regions within a country as it does for gaps between countries. In any country the poor regions tend to be those with a relatively high proportion of the labour force engaged in farming (plus fishing and forestry). In less developed countries (LDC's) the "rich" region is typically the one in which the modern sector, including modern mining, manufacturing, and services is concentrated, and the "poor" region is the one where traditional agriculture is concentrated. Even in advanced countries, where traditional agriculture has largely disappeared, the general principle still holds. The dramatic convergence of regions in the United States since 1860 (when the gap in per capita incomes between richest and poorest regions was in excess of 400%, as in many LDC's today, compared to about 60% in 1970) is largely the result of the convergence of occupational structures; today one region looks much like another in this respect. By the same token the failure of Canada to produce a similar regional convergence reflects the continuing differences in regional structures. The share of the labour force in the primary sector has of course fallen and is now about 10%; but the relative differences among regions remains more or less unchanged, and so do the regional gaps.

Two words of caution are in order. First, the kind of agriculture obviously makes a difference. A World Bank study shows, Malaysia has managed to produce levels of per capita income which are above average for the proportion of labour in agriculture or more precisely, for the share of employment in manufacturing.¹ Malaysia need not be poor and Pahang Tenggara need not be a poor region within the Malaysian economy, even with a relatively large proportion of the labour force in agriculture, provided the pattern of development permits structural change, with a falling proportion of the labour force in agriculture as time goes by, with

technological progress and improvements in the product-mix within agriculture, with increases in the average size of farm, and with more mechanisation.

5.3.1 Alternative Strategies of Malaysian Regional Development

There are of course alternative views of regional development that could be considered. In terms of physical and present economic characteristics it is possible to divide Malaysia into three major regions: a northern, mountainous region with a "tongue" extending down the centre of the country to the borders of Pahang Tenggara that has little potential other than forestry, recreation, and (in spots) mining; the West Coast regions that is already highly developed; and a "region of opportunity" comprising the rest of the country, including most of Pahang and Johore, which has promising natural resources but is now thinly settled. The northern region is thinly settled and should remain so. The Penang-Kuala Lumpur-Johor Bahru axis is highly developed, thickly populated, and is likely to continue to progress economically under its own steam. A case can be made, therefore, for concentrating the governmental effort in the "region of opportunity."

Pahang Tenggara is the core of this "region of opportunity". If the accepted national strategy of regional development were to plan the development of this region as a unit, then from both an analytical and a policy point of view Pahang Tenggara should be treated as being tied economically to Johor and to the Southwest axis of development, rather than to "the East". Given a strategy of developing the region of opportunity so as to make it an extension of the existing region of high development, Kuantan would cease to be the major growth centre and potential development pole of the region which Pahang Tenggara is a part. A new urban centre at the heart of the Opportunity Region, and at the intersection of what would become a major north-south and a major east-west road would be a strong candidate for the role of growth-centre-ultimate-development-pole. Within such a strategy, too, it might be more effective to construct the major east coast port at Endau rather than Kuantan, so as to strengthen still further the new urban centre's role as a growth centre. With this strategy, energetically and efficiently applied, Pahang Tenggara could have a main city which might replace Kuantan in the urban hierarchy of 1990, and would then be a city of 250,000 people.

¹ International Bank for Reconstruction and Development *Current Economic Position and Prospects of Malaysia, 1970*, Vol. 1, Annex II.

There are several dangers in this alternative strategy, dangers that would have to be eliminated or circumvented if the resulting pattern of regional development were to contribute to the stated goal of reducing regional and racial disparities rather than aggravating them. First, there would be a grave danger that the heavily Malay population on the northeast coast would be left stranded. To avoid this danger, it would be necessary either to empty this northeast region or to design development programmes for it, tailor-made for the needs and potentialities of this "fringe area". Second, this strategy could hardly avoid strengthening the existing urban centres on the Penang-Johor Bahru axis. In so doing it would automatically strengthen the existing economic and social structures of the cities in that axis. While immigrants into the region of opportunity could be Malay, the built-in opportunities for immigrants to move into high-level urban occupations, which is the core of our recommended strategy, would be lacking. Much would then depend on how the urban centre of Pahang Tenggara developed. To have favourable effects in terms of national unity it would be necessary both to make a consolidated effort to create a dynamic and attractive city of some 250,000 people, and to see to it that the majority of high level posts within that city was reserved somehow or another for Malays.

Such a strategy is not impossible but the study concluded that it would be more difficult to steer regional development so as to contribute to reducing gaps between Malays and non-Malays by this strategy, than if development is pushed and pulled towards the East, with its heavy concentration of relatively poor Malays, by encouraging Kuantan as a growth centre and tying Pahang Tenggara to Kuantan rather than to the Penang-Johor Bahru axis. Since official statements thus far also indicate a preference for reducing the gap between the East Coast and the West, rather than giving top priority to developing the "opportunity region" as such, the study has been guided by this concept of overall regional development strategy.

5.4 PAHANG TENGGARA AS PART OF THE KUANTAN REGION

While Malaysia is a regionalised economy, it has been shown that Pahang Tenggara as such is not an *economic* region in a sense that is meaningful for economic analysis. There is some justification for following the Pahang border to the south, since the State of Pahang has certain political

powers that may affect land use, and—perhaps more important—because the border is probably not far from the "watershed" between the Kuantan and Johor Bahru zones of influence, or between "the East" and "the South". The border to the west may also make some sense, less because it is the State border than because it is the edge of the highly-developed estate area that is tied to Kuala Lumpur, Johor Bahru, and Singapore rather than to Kuantan. The Northern border makes no economic sense at all; "spread effects" may not swim, but neither do they stop at a river if a bridge is built or ferry service provided. It is obvious that both sides of the river belong to the same economic region.

In fact, the simplest concept of the economic region of which Pahang Tenggara is a part, might be "the Kuantan region". The question then would be, "how far north does the region extend?" There is reason to think that "the East" as defined for the purposes of the Socio-Economic Survey makes good sense as an economic region. It might be debated as to how the rest of West Malaysia can best be divided for economic analysis, but for the purposes of this Report, the divisions of the Survey are accepted.

It should also be recognised that the borders of an economic region can change. Once the East-West highway is built, Kota Bahru may be more closely tied to Penang than to Kuantan, and "the East" would have to be redefined accordingly. Implementation of the Trengganu Plan (perhaps in revised form) and launching of some development programme in Kelantan—whether or not tied to Penang as growth pole with completion of the new east-west highway—simultaneously with implementation of the Pahang Tenggara Plan could be highly desirable. A faster-growing Kuantan can only facilitate the development of Pahang Tenggara. Even if the ultimate decision were to consider the "opportunity region" rather than "the East" as the top-priority development region, with a new urban centre in Pahang Tenggara rather than Kuantan as the favoured development pole, it would still be important to have some development under way in the northern part of the region, to counter-balance the development in the south and circumvent the dangers outlined above.

Perhaps the most important development in assuring that Kuantan becomes the growth centre of a prosperous and expanding Eastern region would be the construction of deep sea port at Kuantan through which most of the produce of Pahang including Pahang Tenggara and of

Trengganu would move. Initially such a port would mainly serve as a bulk export port, and the flow of 2-3 million tons of exports would encourage the development of processing industries and a high level of services, in or near Kuantan. However, in the course of time it could also act as the point of entry for some products needed to make products for both Malaysia and export.

It could be pointed out, however, that for the next decade the tactics for development of the study region are much the same whichever of these strategies is chosen (*see* Section 8). Both imply giving every possible encouragement to the rapid growth of the urban centre of Pahang Tenggara so as to assure its evolution into an attractive and dynamic city. By 1975 national policy with regard to urban growth and regional development should have crystallised. By 1980 it should be clear whether or not the "big push" in industrialisation is likely to succeed. Decisions regarding the relative roles of Kuantan, the Pahang Tenggara urban centre, Segamat and other Malaysian cities, and the interaction between growth of these cities and development of the region can be safely postponed for a few years.

5.5 DEVELOPMENT TARGETS FOR PAHANG TENGGARA

While the desired "style" of development of the region is thus clear enough, three basic questions remain to be answered before a detailed picture of "what Pahang Tenggara should look like in 1990" can be provided.

- (1) What is the appropriate scale of development of the region?
- (2) How does the desired "style" or development translate into patterns of land use, product-mix, and related patterns of industrialisation and urbanisation?
- (3) What does the image of "Pahang Tenggara 1990" imply for the phasing of development for each successive five-year plan?

5.5.1 The Question of Scale

There are no established principles which can be used to determine the proper share of Pahang

Tenggara in the national economy of 1990, in terms of population, employment, output, income, exports, or anything else. However, some reasonable orders of magnitude can be established.

There is no way of calculating what Pahang Tenggara's share of total population "ought" to be. A forecast of Malaysian population in the neighbourhood of 18 million or 15.5 million for West Malaysia for 1990 seems reasonable. But how it "should" be distributed geographically depends on the whole set of economic and social variables in the model of development. In particular, it depends on the region's natural resource base, the technology for using these resources, the market situation for the potential range of products, and—much more difficult to establish—the potential for attracting to the region the kind of human resources that form the base for "footloose", scientifically oriented enterprises and "quaternary" services. It also depends a great deal on developments outside the region, and alternative uses of scarce resources elsewhere in the Malaysian economy. However the only logical policy appeared to be to establish the number of primary workers and to proceed from there. It has been established that only about one quarter of the Malaysian labour force in 1990 should be in agriculture, and that this would amount to about 1.3 million workers, per capita incomes by 3.5% per year in accordance with the target of the Second Malaysia Plan, doubling average incomes in two decades, it will be necessary to reduce employment in agriculture to about 25% of the total by 1990. Thus with a West Malaysian population of 15.5 million and a labour force of 5.2 million in 1990 there might be 1.3 million in the primary sector, mostly farmers.

It should be noted that this figure is some 100,000 below the level of agricultural employment for 1970 and some 300,000 below the figure projected for 1975 in the Second Malaysia Plan. In other words, Malaysia is unlikely to achieve the suggested target occupational structure, with its implications for achievement of fairly high levels of per capita income, unless the secondary and tertiary sectors expand enough to permit net emigration from agriculture to the tune of 20,000 workers per year from 1970 to 1990. This net emigration would provide sufficient scope for increasing the number of acres per farm family to prevent farm incomes from falling too far below the national average, and in so doing to make some contribution to reduction of the income gap between Malays and non-Malays.

5.5.2 Heavy Investment Required

Absorbing the entire increase in the labour force over the next two decades, and 100,000 emigrants from agriculture as well, into the industrial and services sectors would require heavy investment. Either a substantial rise in the ratio of savings and investment to national income, or an increased inflow of foreign capital would be necessary. Even if this financial problem is solved, there would remain a problem of marketing the greatly increased output, at home and abroad. Some future Malaysian government might well decide that the sacrifices and risks entailed are too great, and settle instead for a slower rate of structural change and a lower rate of increase in per capita income. Studies of the potential for agricultural improvement, through a combination of structural change and technological progress within agriculture, suggest that it may be possible to maintain a 3.5% annual increase in per capita income during the Third Malaysia Plan period with the same general pattern of development as has taken place in recent years.

5.5.3 Effects of a Slowdown After 1980

Provided the major objective of reducing economic and social gaps between Malays and non-Malays is attained, the Government of 1980 may feel that a deceleration of growth to 3.0% or 2.5% thereafter would not be a major threat to social and political stability; and Malaysia would then be so prosperous in comparison to other Asian countries that the slower growth rate need occasion no real hardship. Dropping the growth rate from 3.5% to 3.0% after 1980 would reduce per capita income in 1990 from M\$2,100; to M\$2,000; at a 2.5% the figure is M\$1,900. However, according to study calculations even these rates of growth would probably require a reduction of the agricultural labour force below 1970 levels. If the labour force remained at 1975 levels, unless Malaysia has an experience quite different from that of other countries, virtual stagnation would ensue after 1980; and even if agricultural employment reverted to 1970 levels, growth would be slow. The present indications are that the present governments would rather trade income for employment now rather than later. No one can speak for future Malaysian governments and therefore the 3.5% target rate of growth established by the present government has been retained, with all its implications for pattern and pace of economic and social development.

5.5.4 Scale of the Primary Labour Force

How many of the projected 1.3 million workers in the primary sector might properly be employed in Pahang Tenggara in 1990 should be determined. Soil analysis and agronomic studies indicate that of the 2,485,000 acres in the region some 1,148,000 gross acres may be suitable for agriculture of one kind or another. About 450,000 of the acres unsuitable for agriculture have some logging potential. Studies also indicate that in order to take advantage of the most efficient management available, and to make full use of technological advances in agriculture, so as to maintain per capita incomes of the region reasonably close to the national average, acres per worker must increase and a reasonable figure would be at least 12 by 1990. To this figure must be added a margin of at least 20% to allow for roads, communication lines, town sites, and small pockets of unusable land within the agricultural areas. To be on the safe side 15 acres per agricultural worker has been allowed. There might then be some 80,000 agricultural workers plus perhaps 5,000 in forestry, and another 5,000 in mining and fishing, giving a total of 90,000 in the primary sector. This figure is clearly subject to a large number of possible errors. Detailed soil surveys of the rest of the region may increase or decrease the area of land suitable for agriculture. Estimation of employment in mining is peculiarly subject to uncertainty. However, the errors are likely to be self cancelling. When setting such broad targets it appears reasonable to think of about 90,000 primary workers by 1990, while recognising that this figure may well be 5-10,000 above or below that actually attained¹. The figure of 90,000 workers is approximately 7% of the 1.3 million workers in primary industries estimated for 1990. The 1,148,000 acres in the Pahang Tenggara estimated to be useable for agriculture also amounts to 7% of the 15.9 million acres in West Malaysia that are believed suitable for agriculture. The overall scale of development therefore appears to be about right.

5.5.5 Induced Employment

There also does not appear to be any orthodox way of estimating the amount of employment which might be induced by given autonomous developments in a presently largely undeveloped region such as Pahang Tenggara, and very little

¹ In the interests of simplicity of presentation, the above analysis uses such averages as "15 acres per agricultural worker". Using detailed data such as employment by crop by year of planting, the total number of primary workers in 1990 is also estimated to be about 90,000.

data is available. However, on reasonable grounds, it has been assumed that for every autonomous job created in Pahang Tenggara (autonomous jobs would be jobs in mining, agriculture, primary processing of agricultural products, timber including manufacturing of timber products, and tourism) one other job will be induced in the region or on its fringe. The main basis of this assumption is the present industrial structure of employment in West Malaysia which is approximately in this ratio between the agricultural sector (which includes forestry) and all other employment. Thus, it is being assumed that Pahang Tenggara will develop in a way similar to the present West Malaysian average. Since present agricultural employment in West Malaysia is heavily weighted with smallholder rubber and padi farmers, there would seem to be a fairly strong *prima facie* case for suggesting that the marginal primary: non-primary ratio would be greater than the West Malaysian average ratio. This would be because new agricultural developments would in general be more efficient and productive than existing agriculture which is heavily weighted with inefficient low productivity agriculture.

Although the need to consider the overall national implications of development in Pahang Tenggara is ever present, the study is primarily concerned with the welfare, settlement pattern and style of life of people who are going to migrate to the region. For that reason, the multiplier from primary to total employment of 2 is felt to be justified. This is not to suggest that no other jobs will be created outside the region; indeed, it is highly likely that they will be. Nevertheless it is assumed that by the time the region and the towns ringing the region to the west side are fully developed the multiplier of 2 will have been attained.

The situation in Pahang Tenggara is unique in Malaysia. On the edge of the Johor Tenggara are

the towns of Kluang and Kota Tinggi, and the Johor Baharu forms a natural centre for the region as a whole. There are no equivalent towns for the Pahang Tenggara, and such regional centres must form inside the new development area. In the Johor report, 0.6 of the 1.2-1.4 induced jobs per leading sector jobs were assumed to be inside that region. This study's calculations project that 0.7 of the induced jobs will be inside the region by 1975 (or only slightly more than in the Johor report), but that this will climb to 0.8 in 1980, 0.9 in 1985, and 1.0 in 1990, as both the regional population grows, and, more importantly, as the regional centre and sub-centres become established, growing cities, more than able to compete in supplying regional services to the region as a whole with such peripheral centres as Mersing, Segamat, Bahau, or Temerloh.

5.5.5.1 Comparison with overall Malaysian figures

The 1.0: 1.0 ratio must be compared with a ratio of 1.0: 3.0 projected for the country as a whole by 1990. In comparison, Pahang Tenggara should have a very large proportion of its work force in the primary sector at the 1.0: 1.0 ratio. In a Malaysia as industrialised as projected for 1990, it may well be that even such primary producing areas as Pahang Tenggara will have their share of "footloose" industries. There may well be the spillover from relatively nearby major metropolitan centres that has occurred in many other countries. There may therefore be rather more than one other job for every one resource-based job. However, since Pahang Tenggara is a developing region experience elsewhere suggests that there may be some lag in creating "induced employment" and therefore the conservative target is retained.

6.0 STRATEGIES OF DEVELOPMENT

6.1 THE "TWO-PRONGED" APPROACH TO PLANNING

In following a "two-pronged" approach to planning development of Pahang Tenggara, estimates have been made of what the Malaysian economy (and the Malaysian society) might look like in 1990, at the end of the Fifth Malaysia Plan, given the Malaysian government's basic objectives; and to envisage the role that the Pahang Tenggara Region might properly play in such a Malaysia. It has then been asked, "In order to have such a Pahang Tenggara in 1990, what should the region look like in 1985, in 1980, in 1975?". This analysis might be called the "then-to-now" approach. Starting from the present, it has also been asked, "Given the natural resource base of the region, the technological and marketing prospects for various possible products, what would be a sensible way of developing the region?" This analysis, which entails the isolation of basic options with respect to development patterns, might be called the "now-to-then" approach. The results of the two approaches were then compared to see whether the patterns of development that seemed most attractive in terms of the "now-to-then" approach would likely give to a Pahang Tenggara in 1991, or 1986, which would conform more or less to the estimates prepared in the light of Government policy statements, in particular the New Economic Policy and the Second Malaysia Plan.

6.1.1 Areas of Uncertainty

The "then-to-now" approach thus involves speculation about government policy during the next twenty years. It is, of course possible that future governments will have different developmental objectives. There is no choice, however, but to project into the future the policy statements made by the present Government. It is believed that the stated objectives are so basic to the economic and social welfare of Malaysia that they are likely to survive any foreseeable change in government, at least in broad outline. The element of uncertainty in this respect, however, is an added argument for retaining as much flexibility as possible in the plan during the first ten years, so as to keep all major options open if there should be a change in the Malaysian economic, social, and political situation that

would call for a major revision of development policy.

The "now-to-then" approach also involves uncertainties. There are gaps in knowledge with respect to the natural resource base. Some of these (particularly with respect to minerals) are likely to still be there for many years in the future. The "crystal ball" becomes still more clouded when forecasting the technological and marketing situation for particular commodities twenty years hence: rubber, oil palm, forest products, cattle, sago, tourist facilities, general manufactures. There is no choice but to make the most reasonable assumptions possible on the basis of present knowledge. The major assumptions underlying the analysis are presented in Study Report No. 7.¹ However, these uncertainties also constitute an argument for flexibility and for keeping options open as long as possible. In particular, it is anticipated that there will be a need for a major reconsideration in about 1980—mid-way through the planning period.

The previous Section 5 has established the objectives for the development of Pahang Tenggara through what is essentially a "then-to-now" exercise. The following section examines the results of various strategies applies to a "now-to-then" analysis.

6.2 ALTERNATIVE STRATEGIES

To simultaneously consider all aspects of the development in the context of the social and economic policies of the government is impractical. Accordingly, in order to simplify work in this phase, the Study found it useful to consider what the course of development might be if individual aspects of the government policy had priority in the development programme i.e. if different "Concepts" of development were followed.

Each "Concept" was designed as a hypothetical regional development plan, the parts of which were selected by giving an over-riding emphasis

¹ "The Economic Development of Pahang Tenggara".

to one aspect of Government Policy. Three alternatives were compared on this basis:

- (a) **EMPLOYMENT:** To maximise employment opportunities in the region and particularly their contribution toward opportunities for Malays.
- (b) **INCOME:** To maximise the growth of per capita income over the planning period while at the same time improving its distribution particularly as between Malays and non-Malays.
- (c) **TRANSITION:** To maximise the diversification of opportunities in both income and employment. This Concept examines the role of industrialisation and urbanisation within the region in providing such diversification and particularly methods of ensuring Malay participation in all aspects of the social and economic community.

To assess the impact of any development on the ecology of the region, a fourth Concept was generated to examine the consequence of giving over-riding emphasis to this consideration. Although "ecology" does not express a goal comparable with the other policies it was included in the initial examination because otherwise this aspect could not be examined at a regional level, only for its constraints at a project level.

- (d) **ECOLOGY:** To maximise development of the region which is complimentary to good environmental management and conservation. This Concept examines both the direct and indirect consequences of individual activities on the natural equilibrium of the region.

To facilitate the cross referencing and retrieval of data and the evaluation of the masterplan through systematic consideration and reconsideration of the basic elements of the plan, the study designed what is called the "Regional Model". The term "model" is used to describe the total assembly of inter-related information resulting from individual projects, and their relationships with each other. It should be emphasised that the use of the model is complementary to and not competitive with purely economic techniques by

providing a reference framework for assessing the implication of economic adjustments on other parts of the masterplan. The techniques used in this comparison are not discussed in detail since they are standard and involve the use of flexible priority formula to permit giving major weight to each of the four Concepts in turn, and comparing the resulting patterns of programmes of development.

Alternative Concepts, however, are not mutually exclusive and most activities occur in more than one Concept. Thus, not one of these four alternative Concepts could itself be selected as a masterplan.

The following is a brief¹ summary of the main features of this comparison which was performed in two stages (between January and June 1971). The matrix Fig. 6.2a indicates both the assumptions and the detailed aspects of development which were compared in each alternative.

The primary activities of Agriculture and Forestry were systematically examined as shown in Figures 6.2b and 6.2c to determine which operation was best suited to the objectives of the alternative Concepts. In each case the chosen system is plotted from the resource through processing to record the statistical basis of the plan and to permit re-appraisal of decisions as field information and analysis were made available. The other activities necessary to complete the economic spectrum and permit comparison were adapted from developed regions of West Malaysia. A major and intended, side effect of the exercise was to focus attention on weaknesses in data availability. The land use of the mature region was "mapped" in order to obtain realistic infrastructure estimates related to the settlement distribution pattern suggested by each Concept.

The "employment Concept" resulted in a maximum area being cleared for agriculture assumed to be 1.6 million acres with allowance for sago proving feasible on organic clay and muck soils. A heavy emphasis was given to

¹ Working Paper No. 21 "Regional Model Rough Cut-IB" April, 1971.

Working Paper No. 38 (and Appendices I and II) "Regional Model Cut 2" August, 1971.

rubber planting with no sustained yield forestry. This Concept was statistically divided into "high" and "low" employment to reflect the range implied between modern and traditional agricultural management.

The "income concept" land use was markedly different from that of "employment", reflecting the assumption that individual worker incomes in forestry were substantially higher than those likely to prevail in agriculture. Thus agricultural land use was limited to areas either subjected to "pre-study" commitment or presumed to have good soils on which the forest resource had already been depleted. The remaining agriculture had heavy emphasis on oil palm and diversified crops. Again it was assumed that sago would prove feasible on soils otherwise unsuitable for forestry or agriculture. Agricultural land use was assumed at 1.0 million acres with 0.6 million acres in forestry production.

The "transition Concept" provided the opposite land use to that of "employment" in as much as forestry uses encompassed all land suitable for forestry which was not already committed to agriculture¹. This pattern reflected the overriding emphasis given to diversity of the choice of jobs and a preference for jobs which facilitated the acquisition of skills (forestry preferred). Thus upward mobility in the employment hierarchy was considered paramount and the settlement and infrastructure of this regional plan were designed to present "non-resource based" employment to settlers to the greatest degree considered practical. Acreages were 1.1 million and 0.5 million respectively for forestry and agriculture.

6.2.1 Concept Comparisons

The comparison of development paths for each Concept brings to light some significant differences in the pattern of major activities in the region, for example employment generation, in and out migration, capital costs and urban pattern. These differences in turn can be used as a guide to strategy development.

To avoid excessive repetition a letter is used to designate each Concept—N (H) denotes the high employment Concept; N (L) low employment

¹ Therefore "sago land" still shown as agricultural production.

Concept; Y the income Concept and T—the Transition Concept.

6.2.1.1 Employment

A comparative summary of both the total and sectoral employment is shown in Table 6.2. The potential "spread" is nearly 2.5 times in the 4 Concepts analysed. As might be expected the "high" employment Concept N (H) generates the largest overall employment at "maturity" whereas the Transition Concept generates the lowest. However, during the early development phase up to years 6 to 8 the Concepts show remarkably similar paths. Following this the high employment begins to gain over the other three. This is illustrated in Figure 6.2d.

On the other hand Concept N (L) which has a higher level of technology and management in the agricultural sector produces a slightly lower total employment than both Y and T. This may be surprising at first glance but can largely be explained by the analogue that was used to determine non-primary employment. (See discussion on sectoral structure). Since both N (L) and N (H) proceed on the assumption that the same percentage relationship of primary to non-primary employment can be applied, it follows that a net reduction in primary employment would result in a decline in the non-primary sectors.

6.2.1.2 Development maturity

A significant feature that emerges during the study of the phasing in each Concept is the difference in time taken for each development to be "completed". In order to determine the total employment generated by each objective at a comparative point in time, it is necessary to establish a definition "maturity". For model purposes development maturity is defined as the point at which the last agricultural crop could be harvested and the processing and secondary industry resulting from the resource development could be initiated. While this does not necessarily represent the peak production time it does provide a basis for increasing potential differences in time scale for each Concept as well as the impact on resource utilization (e.g. Forestry) on the one hand, and the maximum or minimum speed of sectoral growth on the other.

REGIONAL MODEL
INFORMATION MATRIX




	BASE CONDITIONS			LAND USE ALTERNATIVES		PRIMARY ACTIVITY SECTORS						OTHER ACTIVITY SECTORS					SUMMARY TOTALS					
	AREA RECONCILIATION	EXISTING CULTIVATION	EXISTING POPULATION	AREA ALTERNATIVES 1-6	UTILIZATION ALTERNATIVES (AGRIC - FORESTRY)	AGRICULTURE	FORESTRY															
						CROP SELECTION	LAND CLEARING/PLANTING	PRODUCTION	PRIMARY PROCESSING	INVENTORY	EXTRACTION	UTILIZATION	MINING	RECREATION	PUBLIC SERVICES	INFRASTRUCTURE	PRIVATE SERVICES	OTHER MANUFACTURING	CONSTRUCTION			
ASSUMPTIONS		●	●	●	●	●	●	●	●	●	●	●										
MAP DELINEATION OF AREA OF ACTIVITY	●	●												○						MAP		
<u>SOCIO ECONOMIC</u>																						
EMPLOYMENT: WORKERS/UNIT, INCOME, LEVEL OF SKILL			●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	EMPLOYMENT	
SOCIAL: TOTAL POPULATION, AGE/SEX, FAMILY SIZE, WORKERS/FAMILY, NATURAL INCREASE, IMMIGRATION			●							○	○	○							○	○	SOCIAL	
ORGANIZATION: BUSINESS STRUCTURE, LAND TENURE, MANAGEMENT.										○	○	○							○	○	ORGANIZATION	
<u>PHYSICAL</u>																						
TRANSPORT: ORIGIN, DESTINATION, MODE COST/ TON MILE, VOLUME.				●							○	○	○						○	○		
PHYSICAL PLANT: SIZE, NUMBER, LOCATION, UTILITY REQUIREMENTS				●									○						○	○		
<u>OPERATIONAL</u>																						
COST: CAPITAL COST, CONSTRUCTION COST, COST/JOB CREATED										○	○	●	○	○					○	●	COST	
CONSTRAINTS: PHYSICAL - SLOPE, FLOODING ETC; CAPABILITY - CLEARING, FINANCING, MANAGEMENT ETC.	●			●	●	●	○	○	○	●	●	●	○						○	○	CONSTRAINTS	
PHASING: RESEARCH, TIME, YIELD TIME, PEAK PRIMARY EMPLOYMENT, LAND DEVELOPMENT SEQUENCE, PHYSICAL PLANT PHASING				●		●	●	●	●	●	●	●	●						○	●	PHASING	

Fig. 6.2a

AGRICULTURE

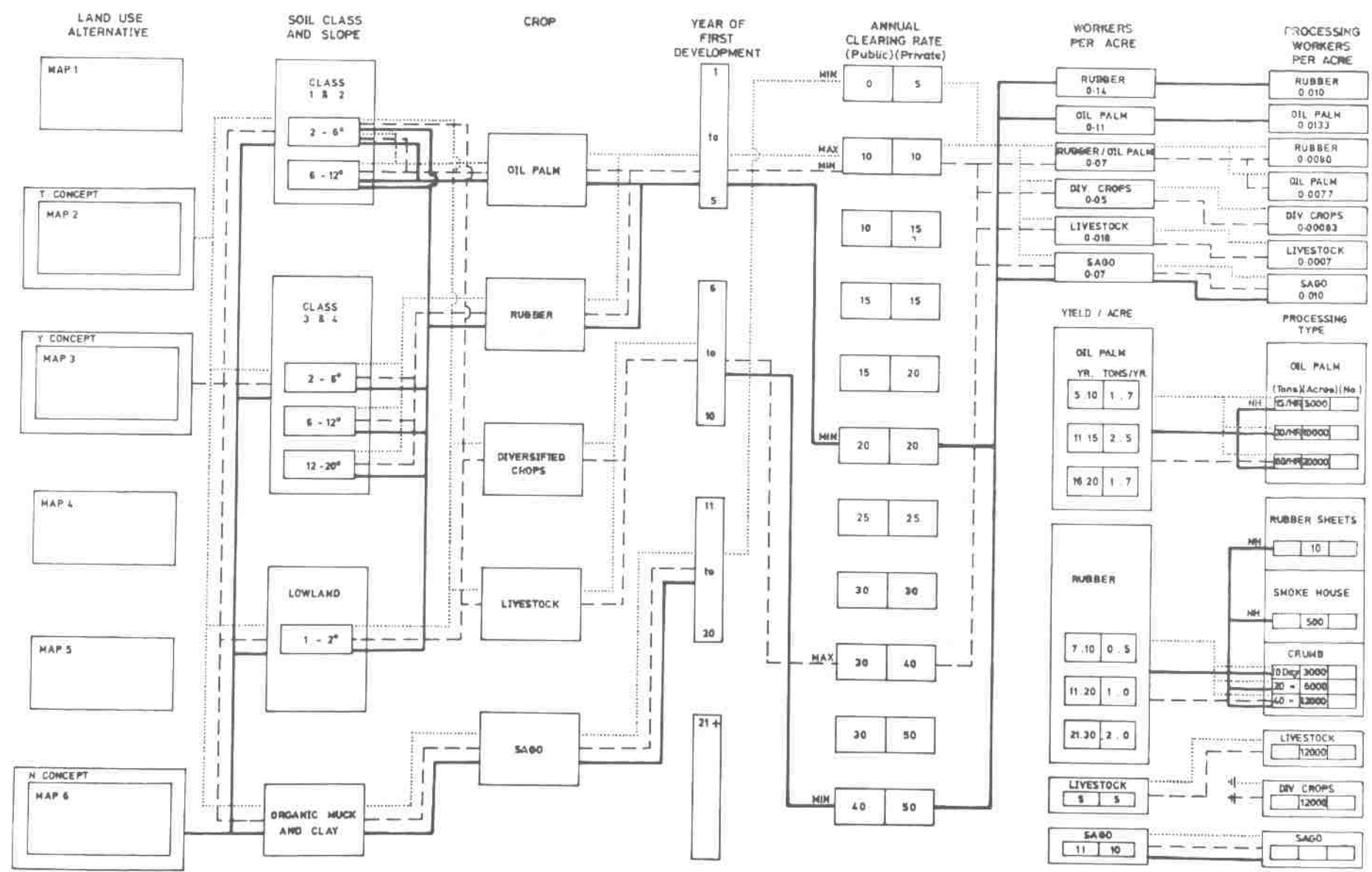
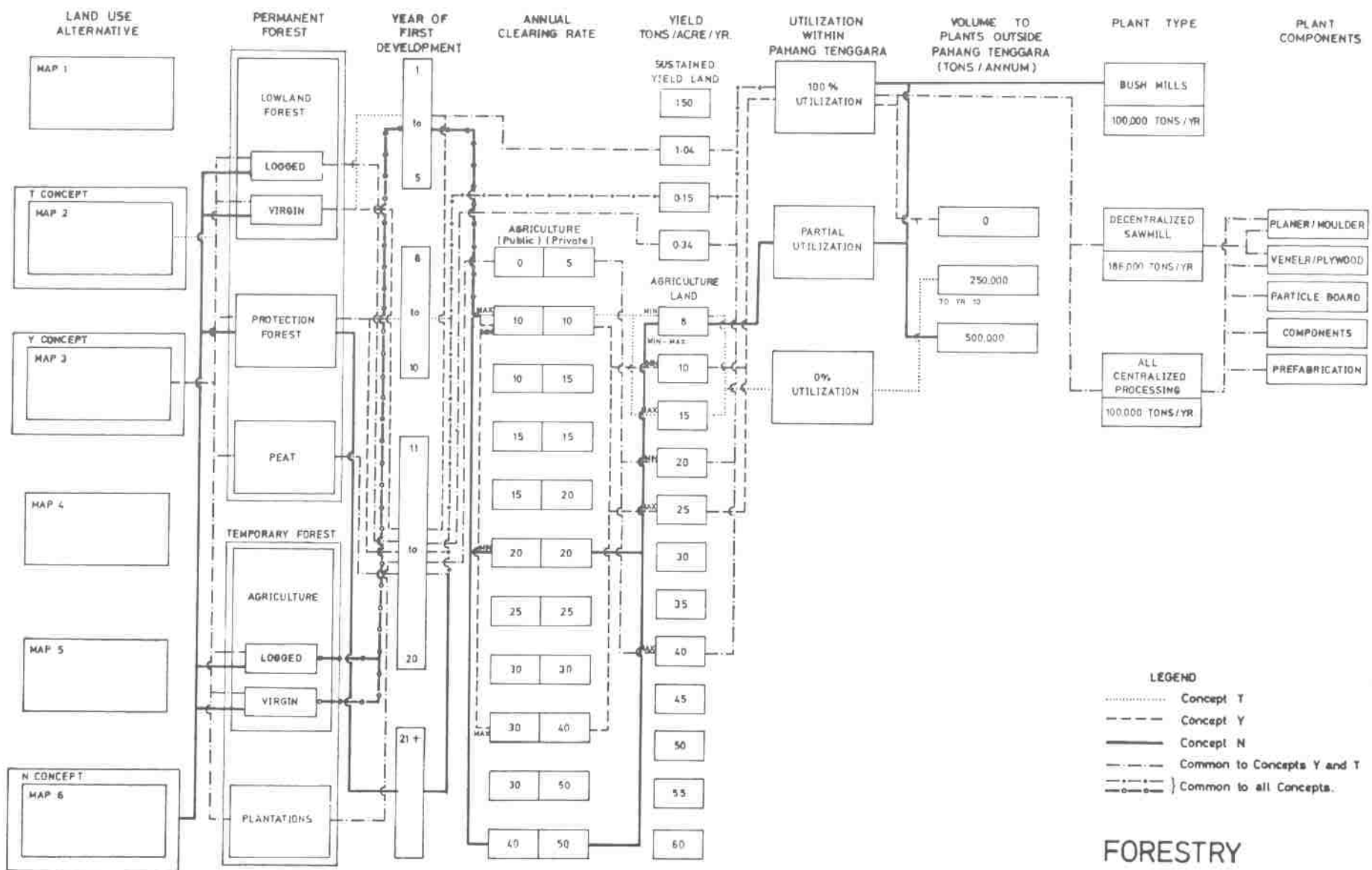


Fig. 6.2b



FORESTRY

EMPLOYMENT GROWTH ALL CONCEPTS

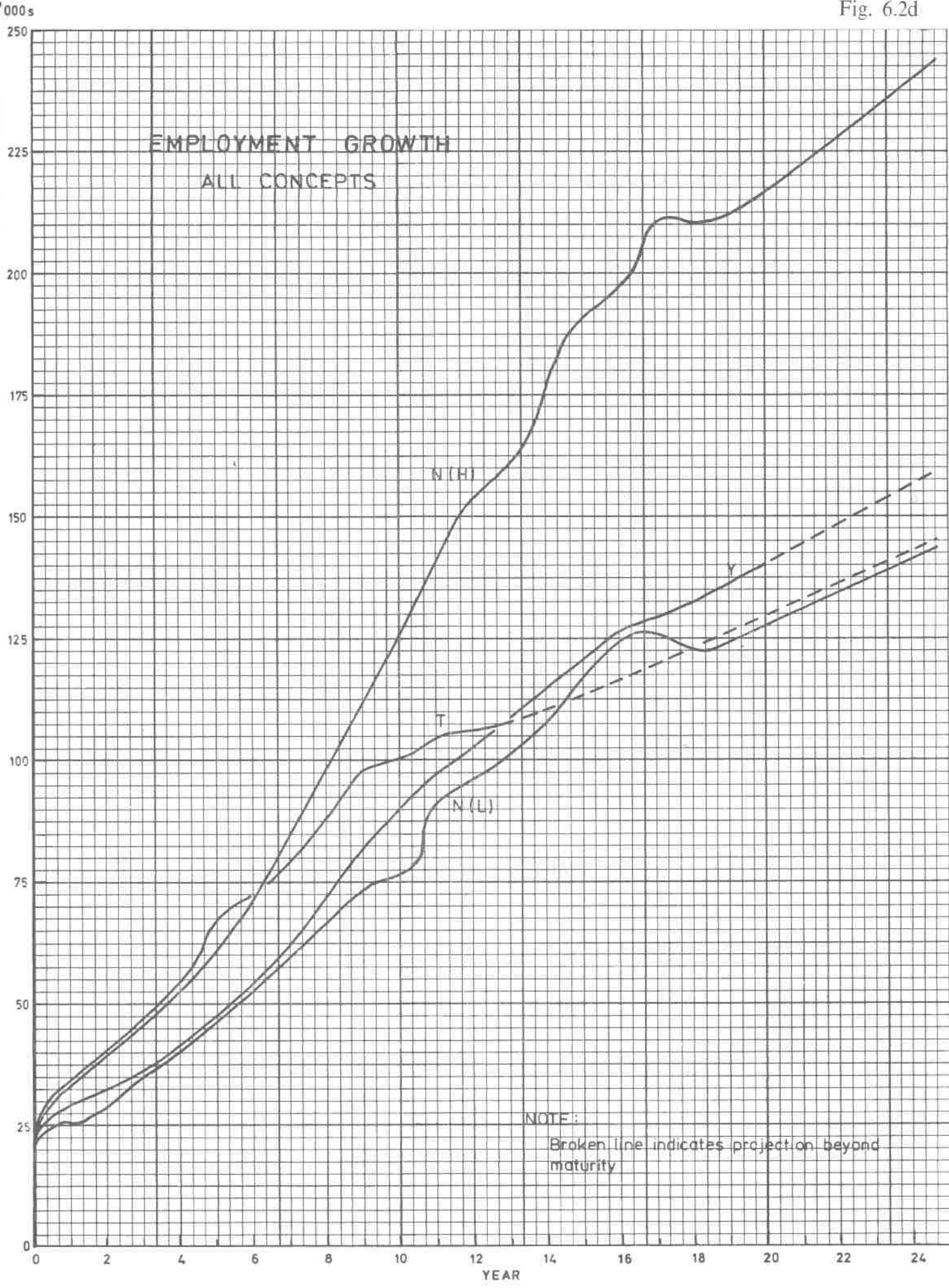


Table 6.2—Population and Employment at Maturity¹
(’000)

	<i>N (HIGH)</i>		<i>N (LOW)</i>		<i>L</i>		<i>T</i>	
Year of maturity	25		25		20		13	
Total population	585.1		344.7		350.6		248.1	
Total employment	245.1		144.9		140.3		107.6	
Workers/Non-workers:								
Primary employment	147.8	60.3%	87.4	60.3%	54.7	39.0%	26.9	25.0%
Manufacturing	18.6	7.6%	11.0	7.6%	16.3	11.6	16.6	15.4
Construction	5.9	2.4	3.5	2.4	7.2	5.1	5.3	4.9
Commerce	22.5	9.2	13.3	9.2	18.4	13.1	17.8	16.5
Utilities	1.7	0.7	1.0	0.7	1.8	1.3	1.7	1.6
Transportation	6.4	2.6	3.8	2.6	7.4	5.3	7.2	6.7
Services	39.9	16.2	23.5	16.2	32.5	23.2	31.3	29.1
Mining and quarrying	2.0	0.8	1.2	0.8	1.5	1.0	0.9	0.8

¹ Taken as the point in time when the last Agricultural crop to be planted in the development programme could be harvested.

The analysis indicates a considerable difference in the maturity dates, in particular Concepts N and T. (See Table 6.2). Whereas N requires 25 years to reach maturity, T requires only 13. It is apparent, however that for T to meet the projected development in *non primary* sectors by its maturity date, the industrial and urban based activities would have to be a very large proportional of employment.

Conversely for Concept N, by maximizing employment, agricultural development would have to proceed so fast that other potential resource based activities (e.g. Forestry and its spin-off industries) would be under-utilizing the resources in the region. This further aggravates the manufacturing and service potential of this Concept.

The employment estimates shown in Table 6.2 do not of course give a comparative figure at a specific point in time much *beyond* the first decade—say year 20 or 25. Assuming a projection based on the average national economic growth beyond year 13 in the case of T Concept and beyond year 20 for Y, the expected employment would be as shown by the dashed line in Figure 6.2d. From this it would appear that the total employment generated in the low employment Concept N (L) and Transition Concept (T) would be about equal at year 25, while the income Concept (Y) would occupy an intermediate

position between the “low” and the “high” employment Concept.

6.2.1.3 Sectoral structure

The preferred basis for developing a sectoral structure for the region model is to build from individual employment categories. However, this is not possible in all sectors because of the absence of data on the forward linkage effects of various activities. In the absence of this data a “macro” approach for non-primary sectors is employed based on regional analogues. The analogue is considered to be a sound approach since any unit relationships that were built “from the ground up” would have to be derived in part from the same data sources as the regional analogue in any event.

The use of regional analogue carries with it a number of specific and implied assumptions all of which are too lengthy to describe here. The prime concern is to determine the rationale for the application of analogues to specific development goals (or Concepts) and the point in time that the analogue would apply. In the deviation of the employment structure for the model, it is assumed that the regional analogues would only apply when Pahang Tenggara reached a matured economy (relatively speaking). For induced deve-

lopment it is assumed that in the period up to maturity, activities other than economic based activities develop according to a mathematical formula¹. Based on these major assumptions it is possible to construct the sectoral picture over the development time span for each Concept as illustrated in Figures 6.2e, f, g and h.

Each Concept starts with the same percentage sectoral split and proceeds to its predetermined analogue at maturity. The path of sectoral change varies considerably for each Concept but it is readily apparent from the curves that the greatest structural changes occur in the Transition Concept (See Fig. 6.2h). The structure of the high employment Concept is relatively unchanged at inception and at maturity but shifts dramatically in the Transition Concept and to a lesser degree in the income Concept. For example, in Concept T, agriculture, forestry and mining decline from about 60% to 25% reflecting a development profile which approaches that of the most advanced "sub regions" of West Malaysia and parts of Europe and the target set for the region in Section 5. Construction employment occupies a prominent position in the non-primary activities in all Concepts and reaches its percentage peak (not necessarily numerical peak) at about year 5 in all cases.

What is perhaps most significant is the change relative to the primary sector² and the proportionally higher increase in commerce and services in both income and Transition Concepts as compared to the employment Concept.

6.2.1.4 In-migration and unemployment

In all concepts the pattern of in-migration appears to follow a very similar path except for the differences in the peak of movement approaching maturity.

In year 1 there is a sharp increase in in-migration comprised mainly of construction workers and their families. This drops sharply in the second

year and gradually rises thereafter. After reaching a peak, in-migration then declines and finally ceases some years prior to maturity. In the case of Concept N (H) and Concept N (L) the last in-migration takes place in the 17th and 16th year respectively. In Concept Y the last in-migration takes place in year 16 and Concept T it is in year 11.

When in-migration ceases, the natural increase in the region's population and work force becomes greater than the increase in employment. At this stage two things can happen (individually or in combination).

- (a) work force and population can out-migrate.
- (b) unemployment can increase to levels higher than that inherent in the use of regional analogues. The number of additional jobs which would have to be created at maturity so that these would have been neither out-migration nor unemployment is by Concept:

		% of total employment
(i) Concept N (H) ...	45,100	18.4%
(ii) Concept N (L) ...	30,800	21.3%
(iii) Concept Y ...	7,400	5.2%
(iv) Concept T ...	6,700	6.3%

On a percentage basis the "potential unemployment is most severe in both the high and low employment Concepts. The reasons for the potential unemployment or out-migrant and the disparity between each Concept are many, but the principal factors appear to be as follows.

- (a) at about the time in-migration ceases in every Concept, agricultural employment (including logging) begin to stabilize. This shift is particularly evident in Concept N (High & Low) and Concept Y since each have a large agriculture or forestry component.
- (b) largely as a result of this stabilization of agricultural employment, construction employment declines drastically. Other sectors (e.g. manufacturing, services) are still growing but not at a sufficient rate to prevent a decline in the growth rate of total employment to a very low levels. For example for Concept N (H) and Concept Y in the period after in-migration ceases the

¹ See Working Paper No. 38 Regional Model, Cut 2", appendix 1, p. 15.

² In interpreting these changes it should be noted that the data for primary employment (i.e. agriculture and forestry) has been built up for each year and therefore reflects actual anticipated employment whereas the non-primary activities are derived from the analogue and the formula referred to earlier.

Fig. 6.2e

CONCEPT N(L) Change in Sectoral Structure of Employment

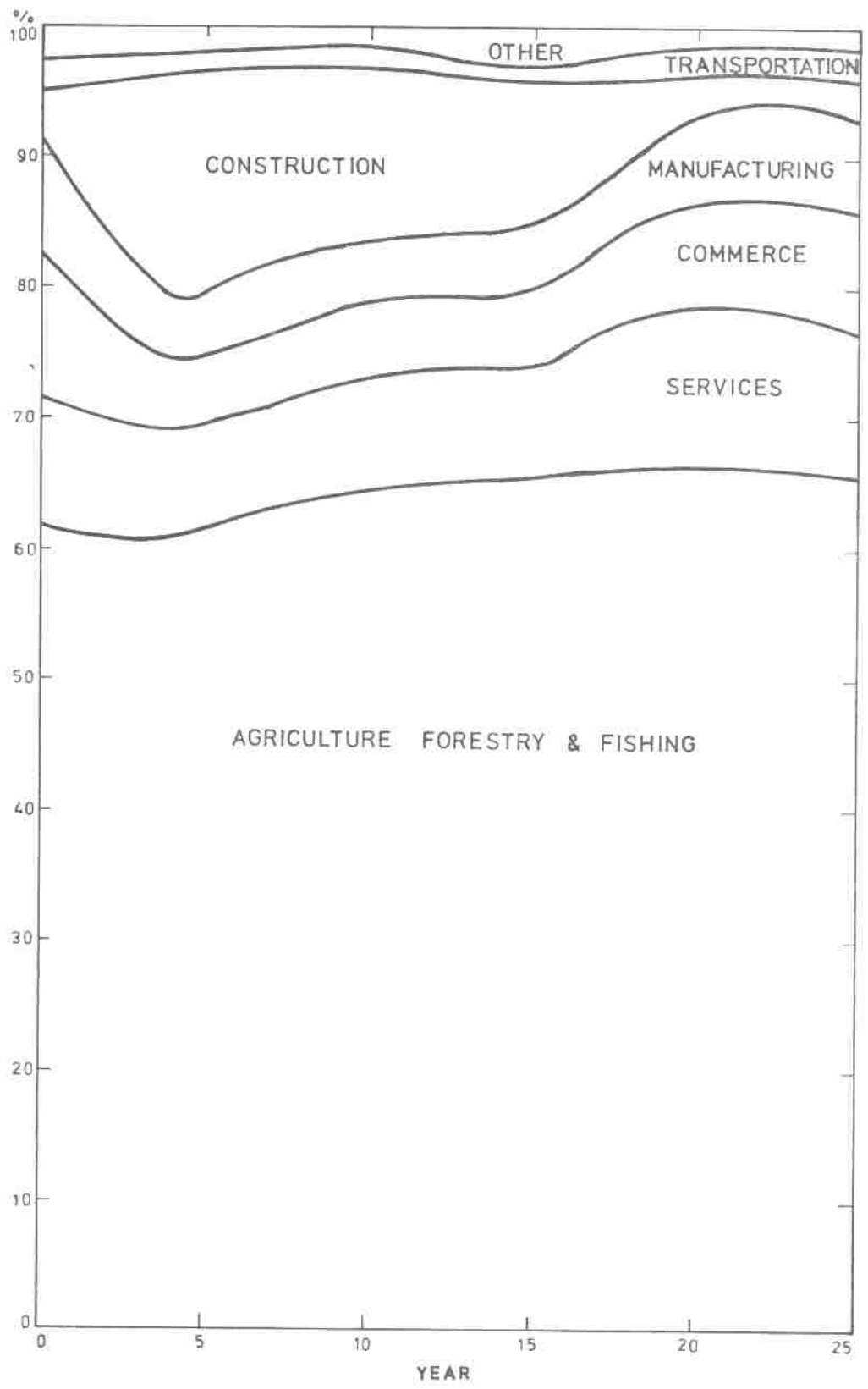


Fig. 6 2f

CONCEPT N(H)
Change in Sectoral Structure
of Employment

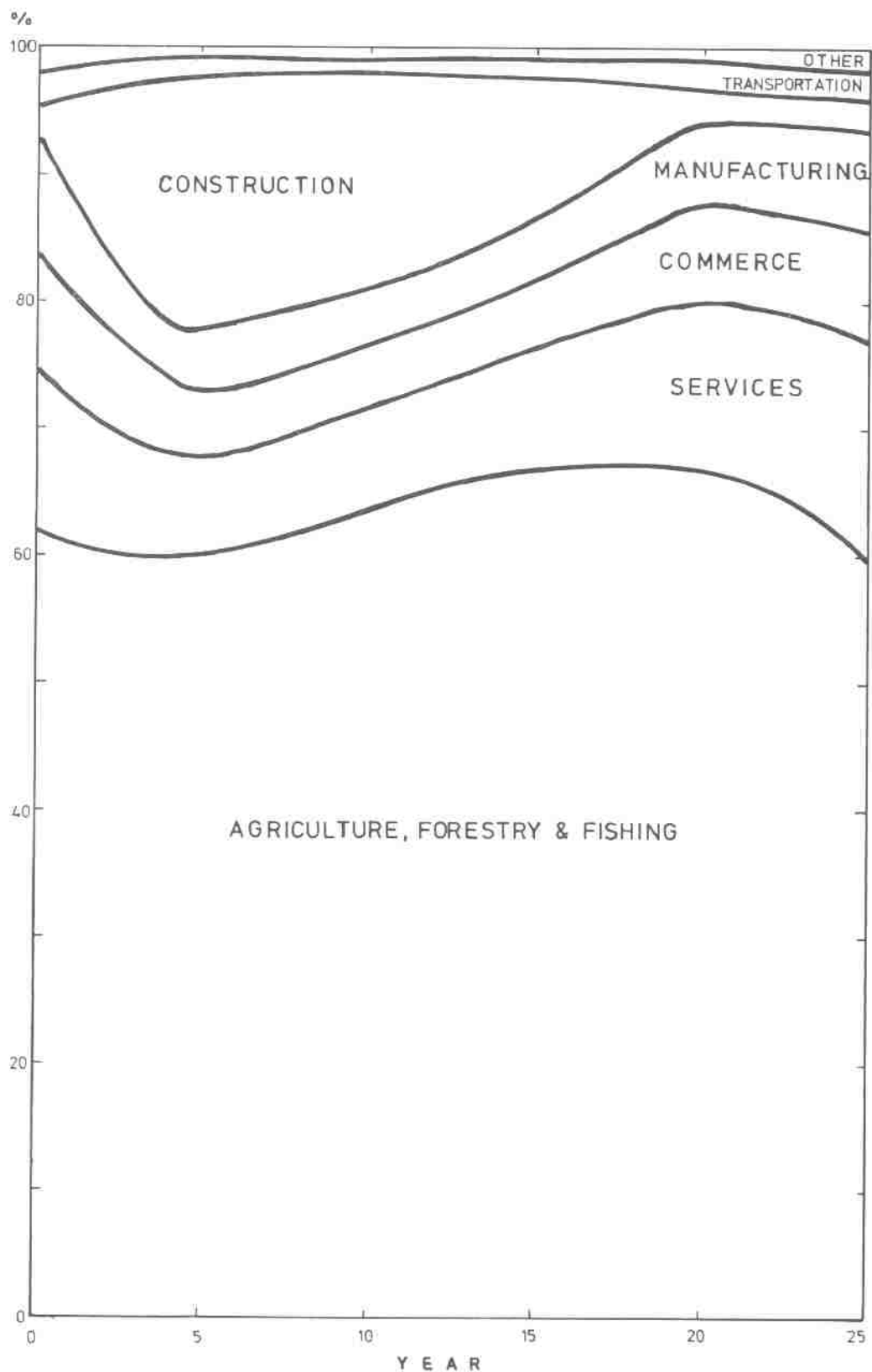


Fig. 6.2g

CONCEPT Y

Change in Sectoral Structure of Employment

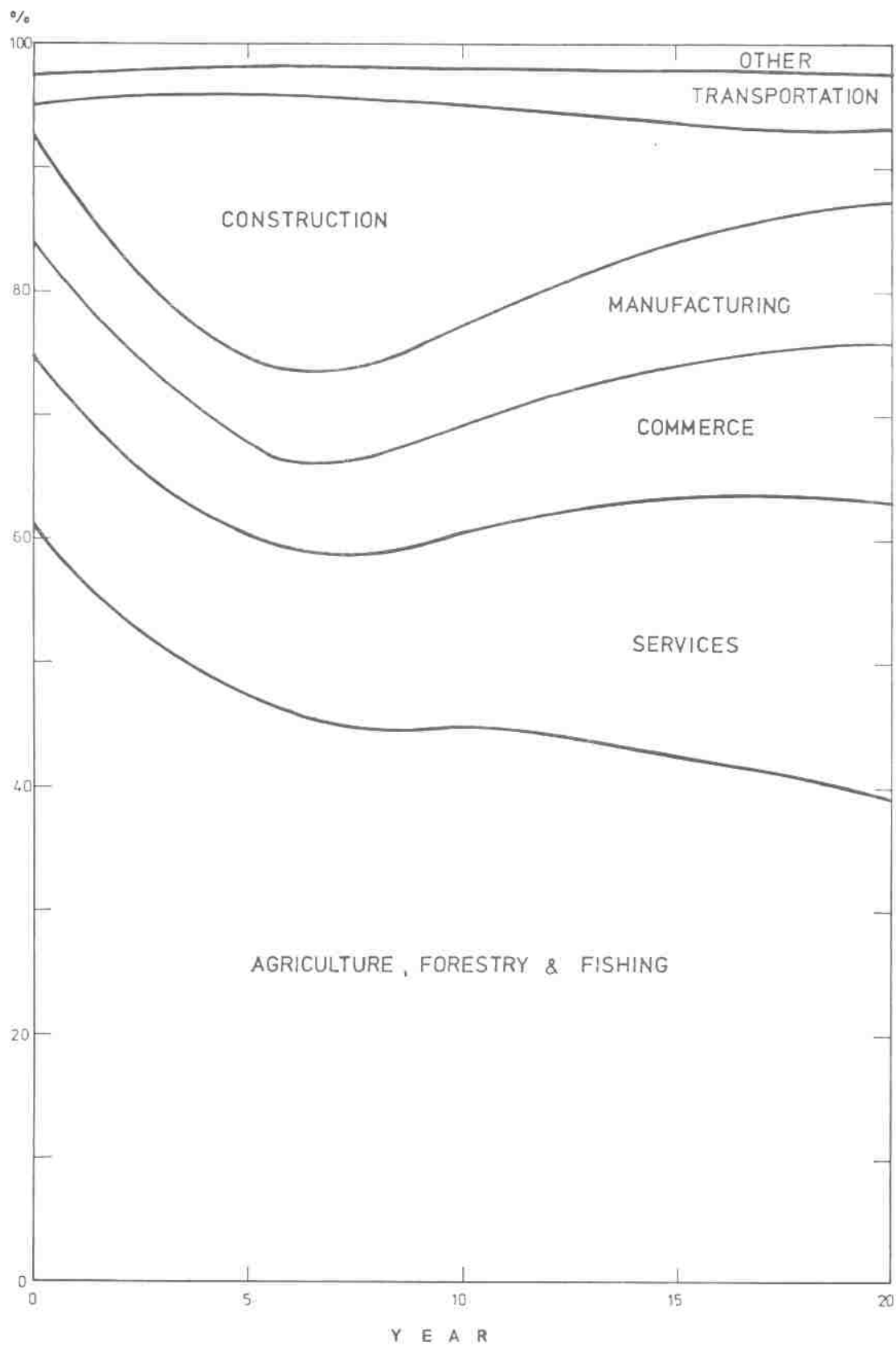
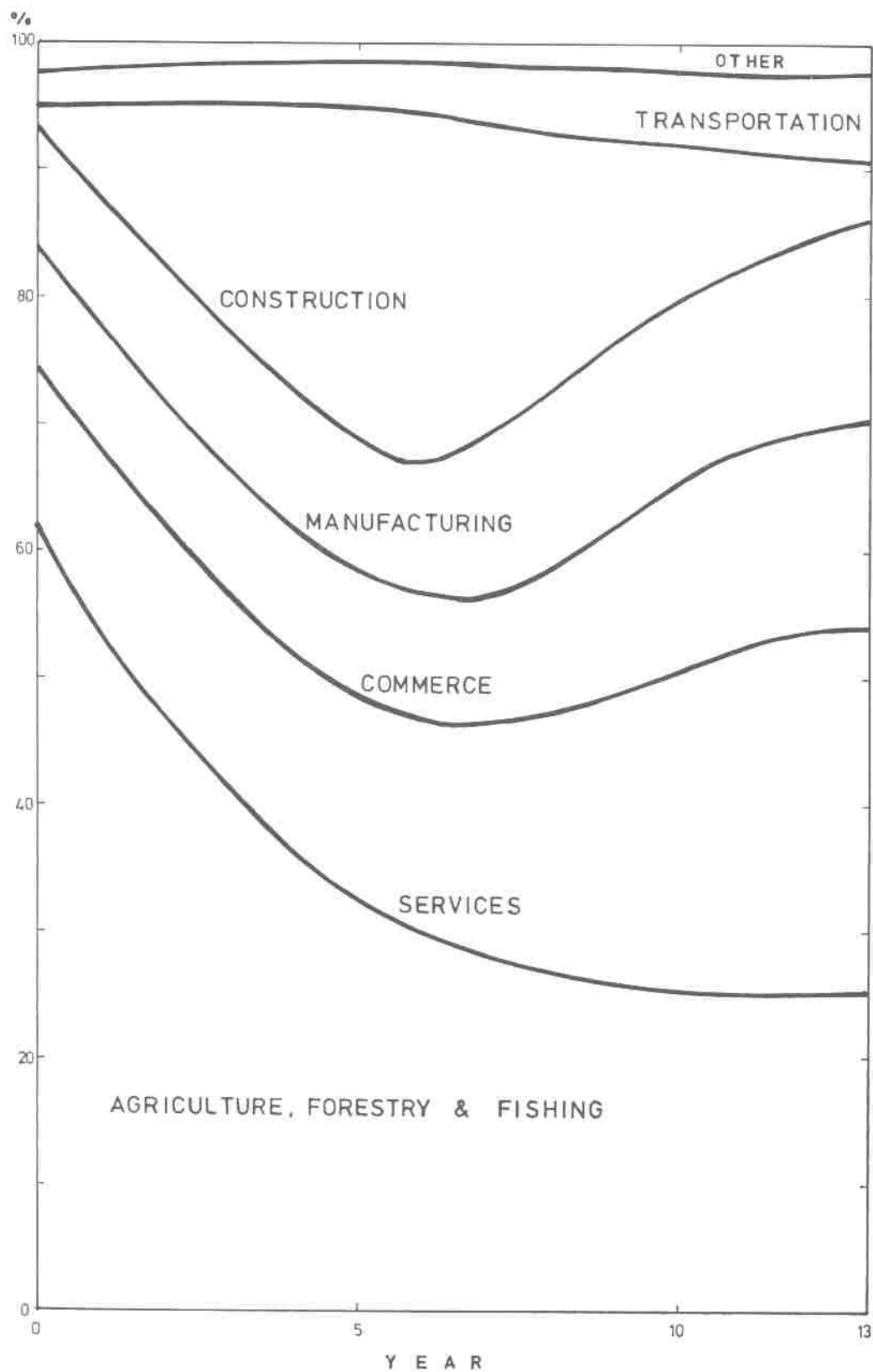


Fig. 6.2h

CONCEPT T

Change in Sectoral Structure of Employment



growth rates of total employment are only 1.9% and 2.8% p.a. respectively.

- (c) at the same time the first effects of the relative youth of in-migrants in the early years are being reflected in a large natural increase in the potential labour force. We have assumed that, at the time of in-migration, 25% of the in-migrating population is in the age group 0 to 4 years. As a result, maturity in Concept N (H) for example the overall participation rate is about 40% compared with only 32% at the time in-migration arrive. Thus twenty years after the first in-migration there is a bunching of new entrants to the labour force at the time the rate of job is levelling off.

The relationship between the projected total employment and the total employment required to prevent unemployment or out-migration for each Concept is illustrated graphically in Figures 6.2i, j, k and l.

6.2.1.5 Capital Formation

Estimates of capital formation calculated for the region include cost of construction and expenditure on equipment and machinery. From these figures it is possible to derive reasonably reliable estimates of the following:

- The investment capital required per job created in each Concept.
- The required investment over 5 year periods for each Concept.
- The total employment in construction for each Concept.

In the case of construction, costs are estimated from "actual" construction in each activity to the date of maturity then translated into construction employment as previously discussed.

Below are summarized the capital formation and investment for each Concept.

	N (H)	N (L)	Y	T
Total Capital Formation Per Job Created (\$ M)	18,900 ..	27,300 ..	29,300 ..	31,800
Av. Investment Per Year to Maturity (in \$ million) ..	170 ..	135 ..	176 ..	213
Estimated Investment Per 5-Yr Period ¹ (in \$ million)				
(a) 1st 5 years	623 ..	541 ..	549 ..	1,067
(b) 2nd 5 years	1,186 ..	873 ..	1,186 ..	1,302
(c) 3rd 5 years	1,371 ..	1,144 ..	1,081 ..	407 ²
(d) 4th 5 years	692 ..	540 ..	701 ..	—
(e) 5th 5 years	370 ..	286 ..	— ..	—

¹ Distributed over time in the same proportion as total construction employment.

² Includes only investment for 3 years up to maturity in Year 13.

It is evident from the above that the investment per job created is greatest in Concept T and least in Concept N (H). These estimates are high compared with the average investment per job created for all of West Malaysia. For the period 1962 to 1967 the latter figure was \$15,700 compared with \$18,900 estimated for Concept N (H), \$27,300 estimated for Concept N (L), \$29,300 for Concept Y and \$31,800 for Concept T. It should be pointed out that the results of this comparison were to be expected. The data for West Malaysia is for an economy operating at the margin with, for example, possibly under-utilized infrastructure whereas our estimates are all for a region which is starting development from a much lower level.

In terms of investment over the first 5 years, Concept N (H), N (L) and Y would require under \$625 million. For Concept T, the cost would be \$1,067 million. These estimates should be compared with the development expenditure (not all of which will be capital expenditure) in the Second Malaysia Plan (SMP) period which is expected to be about \$14,000 million. Thus under Concept (N) total investment would only require about 4.5% of the total SMP development expenditure. Under Concept T about 7.5% would be required.

Assuming that development expenditure in the Third Malaysia Plan is 35% greater than in the

Fig. 6.2i

CONCEPT N (HIGH) : Employment Growth

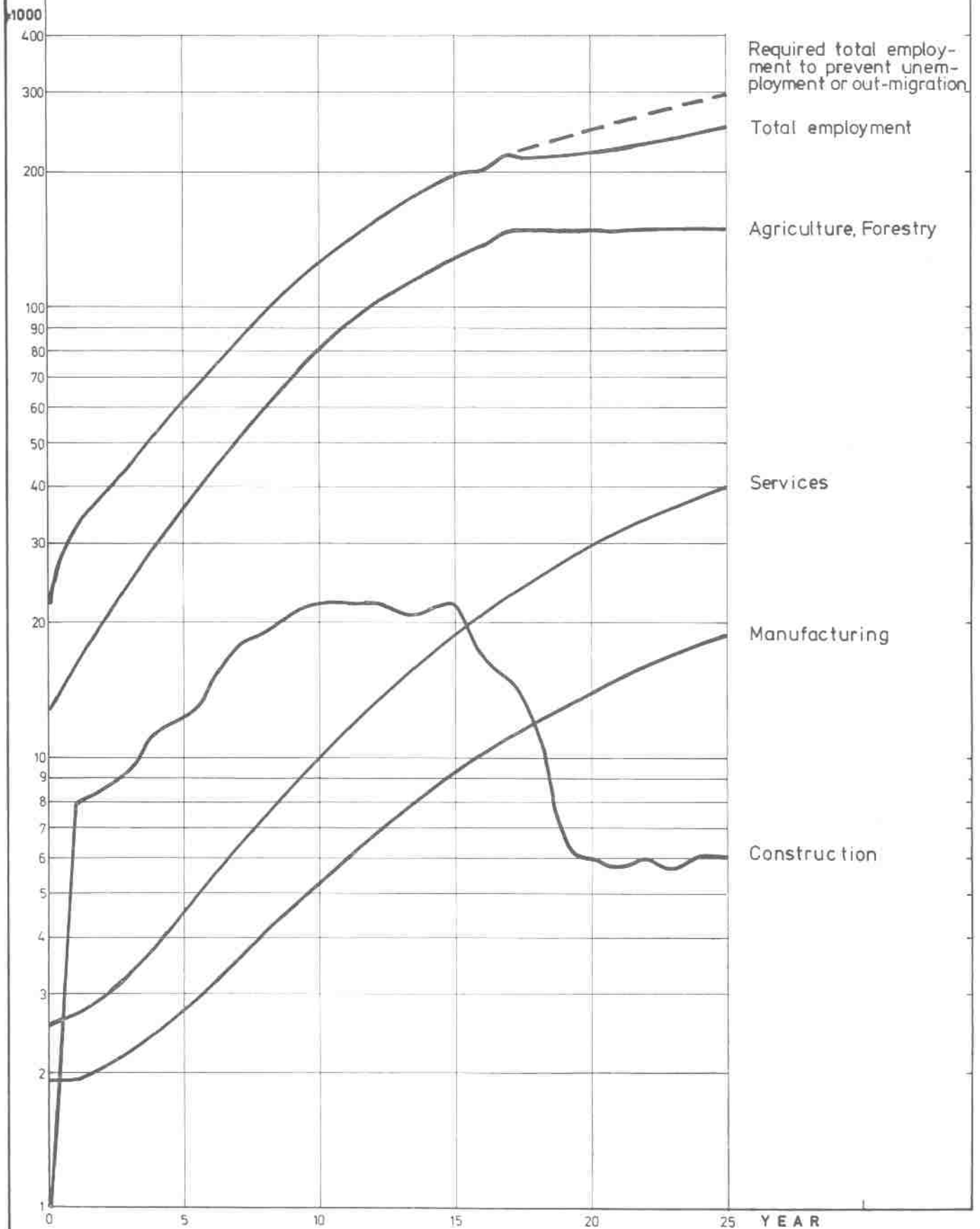


Fig. 6.2j

CONCEPT N (LOW) : Employment Growth

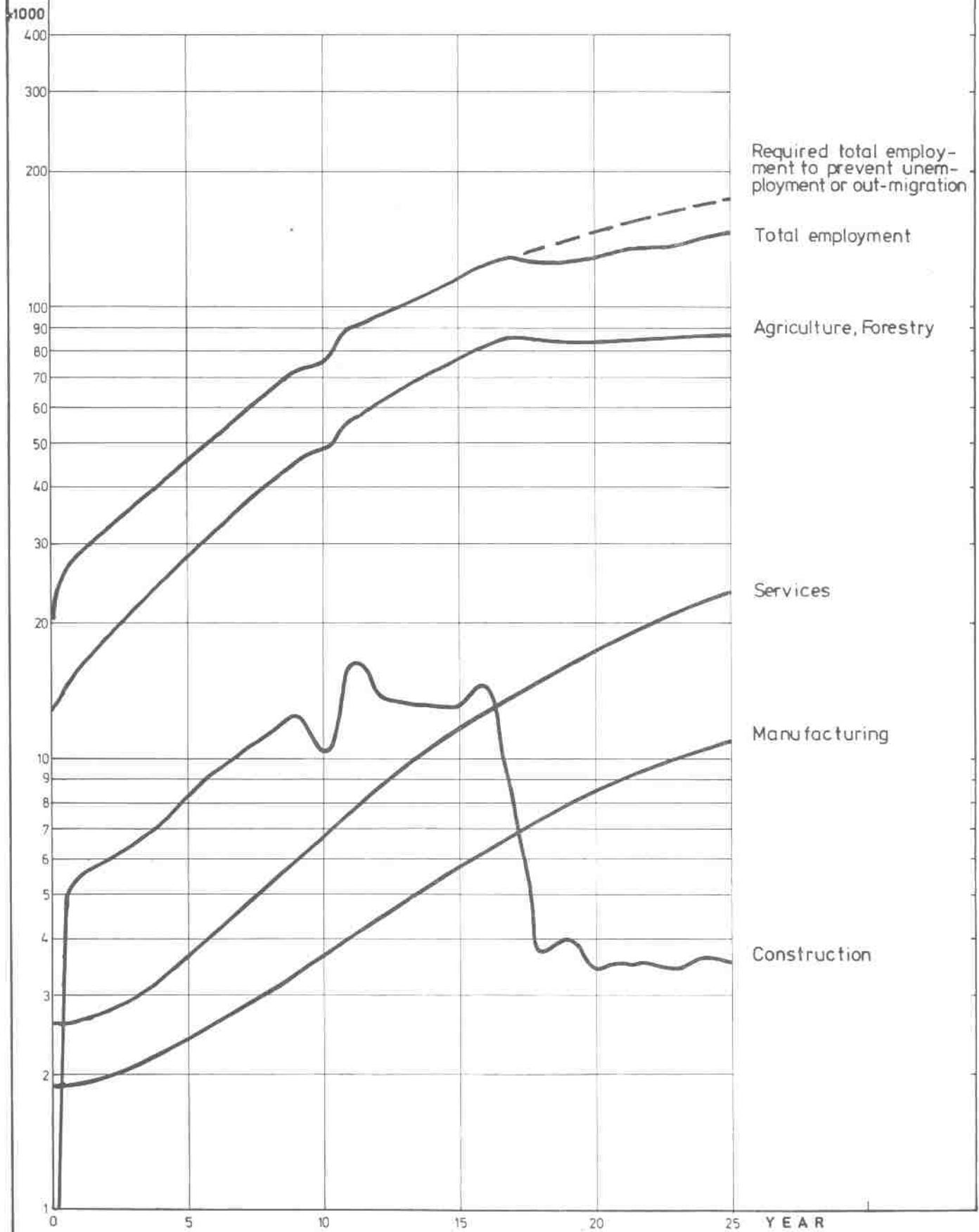


Fig. 6.2k

CONCEPT T : Employment Growth

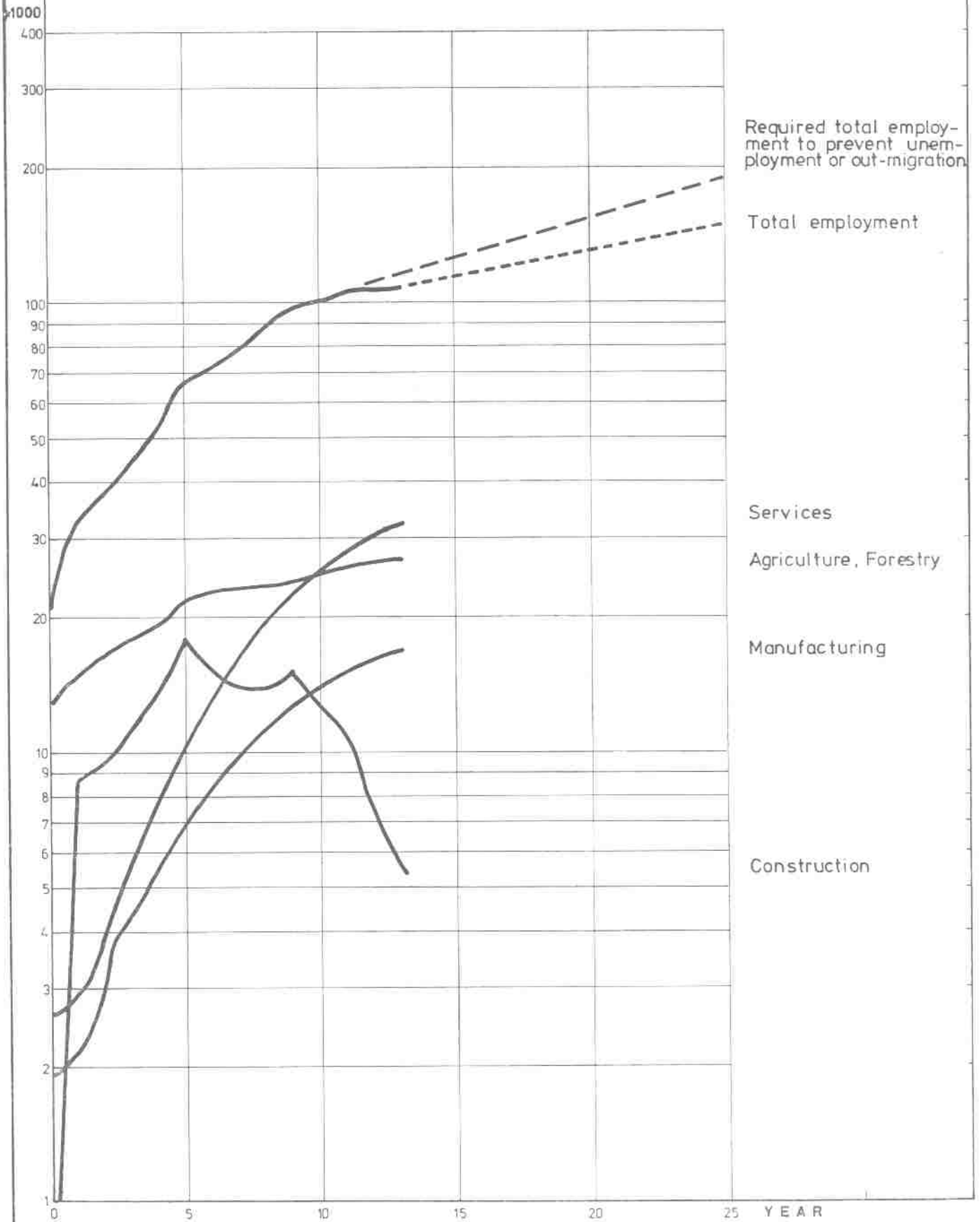
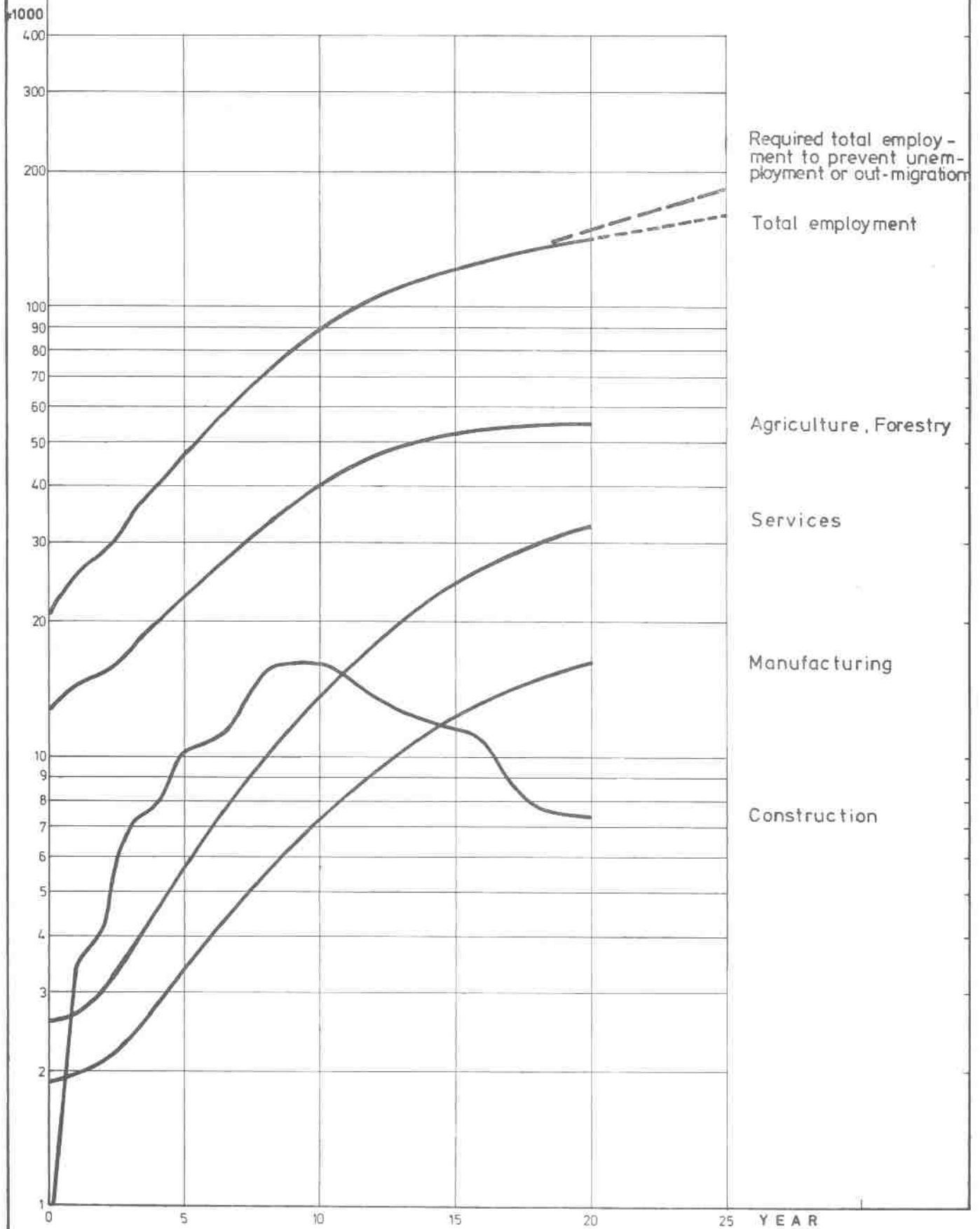


Fig. 6-21

CONCEPT Y : Employment Growth



SMP (i.e. \$19 billion) both Concept N (H) and Concept Y would require about 6% of the total while Concept T would require about 7%.

6.3 ANALYTICAL CONSIDERATIONS

The comparison of alternative Concepts has been based on a number of assumptions, some of which must necessarily remain as assumptions until the implementation or even later, but others of which were resolved by study analysis and discussions with responsible Government agencies which, because of time limitations, had to proceed in parallel with concept analysis. Before proceeding further to determine the actual options which are possible as strategies of development, it is therefore essential to summarise certain aspects of the study analysis which have a direct bearing on the masterplan and a major significance in the evaluation of strategies.

The most far-reaching assumptions in the foregoing section dealing with alternative Concepts of development concerned the non resource based activities. In the absence of data at that time a series of analogues were used to reflect Malaysian conditions in these sectors. The following Section 6.3.1 covers the assessment of data which was collected and discusses its applicability to Pahang Tenggara.

The study fieldwork was carried on throughout the entire period of the analysis necessitating retroactive adjustments to be made to the detailed masterplan. To simplify the presentation of the evolution of the plan this section will also indicate in 6.3.2 the relevant data resulting from the physical inventory.

6.3.1 Assessment of Industrial Patterns in West Malaysia

While most statistics are only available by region, manufacturing statistics are available by State and data from the 1968 Census of Manufacturing Industries for West Malaysia has been analyzed for indications of regional cost differences that may be significant for potential future manufacturing activities in Pahang Tenggara. Details are contained in Working Paper No. 31.¹

¹ "Apparent Cost Differences In Manufacturing Activities In Different States In West Malaysia".

It should be emphasized that this was not a full scale investigation of these cost differences nor of the structure of manufacturing activity by state in West Malaysia. The time and effort required for such investigations is beyond the scope of this study.

Rather, the intent was to obtain a general indication of the effect of location of the costs of inputs, considered in relation to the value of outputs. Because of this, it was appropriate to assess inputs in relation to gross values of sales.

6.3.1.1 Pioneer establishments

Pioneering establishments are of substantial importance in the country's manufacturing operations, making up almost 30% of gross and net output and providing nearly 20% of total employment in manufacturing. Their characteristics are quite different to those of other manufacturing establishments, however, and their varying presence in individual States greatly influence the comparability of the data. These different characteristics may be illustrated as follows:

Table 6.3—Pioneer and Non-Pioneer Establishments

	Sales Per Establishment	Capital Per Worker
All establishments ...	\$ 340,000	\$ 7,400
Pioneer Establishments	6,130,000	19,800
Non-Pioneer Establishments ...	245,000	4,500

Recognizing this and with the aim of improving comparability, the results for pioneer establishments have been excluded from the data whenever possible.

The States in the Central and North-Central zones (Negeri Sembilan, Selangor and Perak) had relatively low material costs and high labour costs. The adjoining States (Johore, Malacca and Penang) paid more for materials and utilities and less for labour. Trengganu and Pahang had a comparative advantage compared to all other States in materials but paid much more for labour.

The special position of Pahang and Trengganu results from the importance of sawmilling in these States and from the way this industry is carried on and manned.

Therefore, the not unexpected general conclusion would seem to be that States that are less developed in manufacturing may pay something more for materials and utilities and something less for salaries and wages than the more developed States.

6.3.1.2 Applicability to Pahang Tenggara

It is very difficult to attach magnitudes to differentials that could be used for projection purposes and that would provide a measurement guide for potential manufacturing in Pahang Tenggara in the future.

It is clear that in Pahang up to now the scarcity of an adequate labour force has resulted in relatively high rates of payment. Consequently for Pahang Tenggara it may be concluded that the main problem at least in the early years will be the attraction of suitable people to the area and the provision of considerable settlement and training facilities to them. Although the associated costs would likely be treated as a public, developmental charges rather than being a part of the wage cost, it would seem that market-determined wage rates are more likely to be high rather than low.

Also, a good part of required materials will have to be brought into the region from outside, at least initially. Moreover, power will be diesel-generated until such time as a connection is made to the national grid to the south or in the north to the line to reach Kuantan by 1978, and power costs will also be high for some time.

At least for the first five years and likely longer, then, manufacturing activity in Pahang Tenggara looks like being a high cost operation.

6.3.2 Physical Constraints

Any analysis must start from the present economic base of the region as described in section 4. However the foregoing section used the available

data also to establish the physical restraints of the region. Fieldwork subsequently enabled a better assessment to be made of the quality of soils, topography (particularly steep land and land subject to flooding) and characteristics of the terrain affecting transport costs, which are particularly important in the case of forestry complexes.

Of the region's 2,485,000 acres, 592,000 acres have been found to be unsuitable for either agriculture or forestry given present technology. In addition there are some 165,000 acres of land which are not suitable for agriculture or forestry which are recommended to become park and conservation areas. There are also some 200,000 acres of peat swamp and 70,000 acres of steep-land which have some logging potential but no agricultural potential.

Some half a million acres over and above the permanently wet areas (partially accounted for in the previous paragraph) were flooded in January 1971 and this has been taken account of in formulating the land use plan for the region.

Of the 1.5 million usable acres, perhaps 700,000 consist of Class I and Class II soils. However, because of the way this land is distributed and the need to allow for roads, town sites, etc., only 550,000 might be regarded as usable for agriculture. This acreage may be regarded as the amount of land effectively available for oil palm and diversified agriculture. The prospective rates of return on Class III and IV soils are so low that they cannot be seriously considered for oil palm.

6.3.3 Other Restraints

One other type of restraint might also be considered, although it is different in quality from the other two, arising out of the analysis rather than being given to the team in advance. Certain new agricultural activities, such as beef and dairy cattle, tapioca, tea and fruits look promising enough to warrant trial on a small scale. Some 30,000 acres should accordingly be reserved for these activities during the first five years.¹ Ultimately as much as 100,000 acres might be used in these ways.

¹ These would not necessarily be developed in the first five years.

Finally, about 15% of all cultivable land must be retained for roads, town sites, and the like. Since these facilities must be where the people are, it is not always possible to avoid loss of good agricultural land for these purposes. Also, because some of the good land is in scattered small plots it is not effectively available for agriculture.

6.4 LAND USE DEVELOPMENT OPTIONS

The fundamental options in the development of the usable land Pahang Tenggara are three:

1. Maximise the amount of land planted to rubber, with the secondary processing, services, and urbanisation appropriate to this strategy.
2. Maximise the amount of land planted to oil palm with the secondary processing, services, and urbanisation appropriate to this strategy.
3. Maximise the amount of land devoted to support of forestry-wood-products complexes, with the secondary manufacturing, services, and urbanisation appropriate to this strategy.

In delineating these three alternative development strategies, it is recognised that there are other possibilities within the region and that there will be other significant economic activities within the region. However, these other activities do not affect very much the basic land use strategies. For example, it is obvious that if rich mineral deposits are found they should be exploited but the proportion of land devoted to mining uses in any one year will be small, and the mining must be done where the minerals are. Similarly, the Masterplan includes recommendations for diversified agriculture, including cattle, poultry, tea, sago, etc. Once again, however, the share of resources allocated to such activities will be small, at least until results of preliminary experiments have been obtained, and these efforts will not affect fundamentally the overall development strategy. There will also be some fishing activity but this will engage only a small fraction of the labour force.¹ Significant development of tourism

¹ See J. J. O'Callaghan, *The Potential for Inland Fishing in Pahang Tenggara*, Working Paper No. 48 October, 1971.

is expected, but this development will not compete for scarce resources of the region, except to a limited degree, perhaps, for entrepreneurial and managerial capacities. It is always possible that some commercial or industrial activity not related to resource development will decide to locate within the region, even in the first ten years but as discussed in Section 6.3 the region has little or no locational advantage for manufacturing not related to resource development, nor for services not related to population in the region. Accordingly not much development of this kind is expected, unless there is a powerful incentive system to encourage it.

The possibility of attracting "footloose" manufacturing activity and Quaternary" services enters the calculations in a different fashion. No matter which strategy is chosen, a point is reached, although at somewhat different times according to strategy, where the natural rate of growth of the labour force exceeds the rate of job-generation through development of natural resources and related manufacturing and service activities. Accordingly, if both unemployment and net emigration from the region are to be avoided, it will be necessary at that point to attract footloose industries and quaternary (sophisticated export) services. The capacity of the region to attract such activities will vary according more to the urban strategy applied than the pattern of land use and this question is discussed in Section 6.6 following.

Finally, it is recognised that the development of the region will involve some blend of rubber, oil palm and forestry complexes. The purpose of the analysis presented in this section is to aid in determining what blend of these activities is likely to prove optimal.

6.4.1 Relative Economic and Social Considerations

Table 6.4a presents a "macro cost-effectiveness matrix" which shows the various measures which have emerged from the valuation of the three major options for the development of the usable land of the region. The more important assumptions underlying the figures are presented in the footnotes to the Table.

Table 6.4a—Macro Cost-Effectiveness Matrix

	Internal Rate of Return			Net Present Value			Value Added Year 20			Employment (per 1,000 Acres Yr 10)		
	Worst	Best	Probable	Worst	Best	Probable	Worst	Best	Probable	Worst	Best	Probable
Oil Palm	8.3 ¹	17.0 ²	15% ³	\$186	\$ 1,103	\$686	\$7,024 ⁴	\$9,552 ⁹	\$8,500 ¹⁰	60 ¹³	67 ¹⁴	65 ¹⁵
Rubber	10.4 ⁴	16.0 ⁵	13.0 ⁶	69	1,287	511 ⁷	5,461	8,590 ¹¹	7,000 ¹²	96 ¹⁶	146 ¹⁷	146 ¹⁸
Forestry	30.0 ¹⁹	34.5 ²⁰	32	—	—	677 ²⁰	—	—	30,711 ²¹	—	—	8

- 1 Class III soils; present high yield seeds.
- 2 Experimental seed.
- 3 Best minus 1 standard deviation.
- 4 Present clones, no stimulant, limited soils.
- 5 Experimental clones, best soils, stimulants.
- 6 As in "3". With limited soils, new clones, stimulants, IRR = 14.3%²±.5
- 7 As in "3". With limited soils, new clones, stimulants, NPV = \$854±608.
- 8 Present varieties.
- 9 Present varieties, new methods.
- 10 Average.
- 11 With mechanization, stimulated present clones, best soils.
- 12 Average.
- 13 Present varieties.
- 14 Future varieties.
- 15 Guess.
- 16 Present clones new techniques, Class I @ 2 soils.
- 17 Present methods, present clones, limited soils.
- 18 Employment year 5.

	Worst	Best	Probable
Oil Palm	84	92	96
Rubber	36	66	60

- 19 Bukit Ibam.
- 20 Lesong.
- 21 Lesong, \$18,674 at year 10, assumed increase of 5.1% per year.

The first conclusion that emerges is that if the Government were choosing between putting the whole region under rubber or the whole region under oil palm, the decision would rest ultimately on the Government's "time preference" with respect to employment creation. Given the margins of error (expressed in terms of one standard deviation in Tables 6.4b to j inclusive,) it can hardly be said that there is any significant difference between oil palm and rubber in terms of internal rate of return, net present value per acre, or value added per man-year. The "worst" results can be avoided by careful planning. There is no need, for example, to renounce the opportunities for raising productivity through introduction of improved planting material, use of stimulants at appropriate times for rubber, and choosing Class I and II soils for oil palm. Doubts arise as to how quickly new planting material will become available and can be used, how early stimulants can be safely used on new rubber trees, etc. The new clones for rubber are more advanced than the new seeds for oil palm, but neither will be available before 1975. Under present practice stimulants will not be used on trees less than 15 years old: the combination of new clones and stimulants will

not be available within our twenty year planning period. Doubts also arise, of course, about future world market prices; but these uncertainties have to some extent been built into the calculation of rates of return. In the case of rubber, there is a further doubt as to whether or when wage rate will rise enough to warrant introduction of labour-saving but capital-using mechanisation. It will take a 2% annual rise in wages to justify the new techniques. A 3.5% increase is assumed. The "best" figure for value added in rubber is therefore present clones (which can be planted right away) plus stimulants and new methods. Under "best" conditions internal rates of return are slightly higher for oil palm than for rubber, but the margin of error exceeds the difference; net present value is higher for rubber than for oil palm, but again the margin of error exceeds the difference and here there is the further doubt about desirability of introducing the mechanization on which the figure for rubber is based. On the "probable" figures, oil palm looks a bit better for the three income criteria, but given the margins of error there is really little to choose. For employment, oil palm is somewhat more promising for the first five years, and rubber is considerably more promising thereafter.

**Table 6.4b—Summary of Economic Evaluation of Rubber 10,000 Acre Estate 8,500 Acres Planted
Time Horizon 1972-2002**

	CLONES PLANTED 1972-75		IMPROVED CLONES PLANTED AFTER 1975	
	STIMULANT USED		STIMULANT USED	
	Best Soils	Soils with Limitations	Best Soils	Soils with Limitations
Internal Rate of Return	12.8%	11.8%	16.0%	14.3%
Net Present Value Per Acre @ 10% Discount Rate	\$452	\$311	\$1,287	\$854
Undiscounted Negative Cash Flow Per Acre	\$1,580	\$1,650	\$1,582	\$1,650
Total Employment at Maturity—				
Estate	1,208	1,205	1,243	1,230
Factory	83	78	105	98
Planted Acres Per Estate Worker at Maturity	7.0	7.1	6.8	7.0

**Table 6.4c—Rubber—Estimated Internal Rate of Return and Net Present Value Per Acre at
10% Plus or Minus Variability of One Standard Deviation¹**

10,000 Acre Rubber Estate Planted to Present Clones

	Stimulant Not Used	Stimulant Used
INTERNAL RATE OF RETURN %:		
Best Soils	12.0 ± 2.4	12.8 ± 3.0
Soils with Limitations	10.4 ± 2.8	11.8 ± 2.4
NET PRESENT VALUE PER ACRE @ 10%:		
Best Soils	\$311 ± 446	\$451 ± 618
Soils with Limitations	69 ± 501	311 ± 491

¹ The variability of net benefits was estimated by simulating 200 results selected at random within the range of input and output prices assumed in the analysis. One standard deviation about the mean indicates that two thirds of the random simulations fell within that range. Thus there is a 66% chance that an investor would obtain an internal rate of return of between 9.6 and 14.4% from planting the present clones on "best" soils in the project area and a 33% chance that the results would be greater or less than range.

Table 6.4d—Rubber—Estimated Internal Rate of Return and Net Present Value Per Acre at 10% Plus or Minus Variability of One Standard Deviation

10,000 Acre Rubber Estate Planted to Experimental Clones

	Stimulant Not Used		Stimulant Used	
INTERNAL RATE OF RETURN %:				
Best Soils	14.7	± 2.9	16.0	± 3.1
Soils with Limitations	13.4	± 2.8	14.3	± 2.5
NET PRESENT VALUE PER ACRE @ 10%:				
Best Soils	\$897	± 652	\$1,287	± 776
Soils with Limitations	569	± 582	854	± 608

Table 6.4e—Oil Palm—Estimated Internal Rate of Return and Net Present Value Per Acre at 10% Plus or Minus Variability of One Standard Deviation

	IRR		NPV Per Acre @ 10%
(1) Soil Class 1 and 2 High Yielding Current Planting Material	13.2%	± 2.37%	\$ 429.9 ± \$ 311.1
(2) Soil Class 3 20% Lower Yield	8.3%	(na)	- \$ 185.7
(3) Soil Class 1 and 2 High Yielding Experimental Varieties	17.0%	± 1.9%	\$1,103.3 ± \$ 416.6

Table 6.4f—Oil Palm: Value Added Per Manyear (Class I and II Soils)

Year	Present Varieties	Experimental ¹ Varieties
5	666	
6	4,000	4,268
7	8,663	8,247
8	9,143	8,680
9	9,181	8,708
10	10,738	10,068
11	10,748	10,027
12	10,696	9,978
13	10,960	10,204
14	10,902	10,110
15	10,525	9,715
16	10,471	9,652
17	10,286	9,503
18	7,452	6,705
19	7,109	6,638
20	7,085	6,321

¹ 15% deducted for limitations on use of new varieties.

Table 6.4g—Value-Added Per Worker in Rubber Estates under Various Conditions

Year	PRESENT TAPPING SYSTEM, Etc.								RE-ORGANIZED TAPPING SYSTEM, Etc.							
	BEST SOILS				SOILS WITH LIMITATIONS				BEST SOILS				SOILS WITH LIMITATIONS			
	Pres. Excl. Taxes, Etc.	Clones Incl. Taxes, Etc.	Future Excl. Taxes, Etc.	Clones Incl. Taxes, Etc.	Pres. Excl. Taxes, Etc.	Clones Incl. Taxes, Etc.	Future Excl. Taxes, Etc.	Clones Incl. Taxes, Etc.	Pres. Excl. Taxes, Etc.	Clones Incl. Taxes, Etc.	Future Excl. Taxes, Etc.	Clones Incl. Taxes, Etc.	Pres. Excl. Taxes, Etc.	Clones Incl. Taxes, Etc.	Future Excl. Taxes, Etc.	Clones Incl. Taxes, Etc.
0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	680	798	1,398	1,516	529	636	529	533	810	1,002	810	1,002	589	756	598	764
8	1,433	1,598	1,663	1,843	1,220	1,368	1,428	1,591	2,017	2,280	2,382	2,671	1,656	1,885	1,984	2,236
10	2,964	3,205	3,317	3,583	2,649	2,867	2,965	3,205	4,196	4,560	4,732	5,133	3,685	4,007	4,142	4,496
12	3,304	3,579	4,299	4,642	3,089	3,342	3,841	4,152	4,657	5,066	6,128	6,636	4,231	4,604	5,315	5,764
14	3,780	4,083	4,774	5,146	3,654	3,945	4,282	4,617	5,320	5,768	6,776	7,324	5,010	5,429	5,894	6,366
16	3,362	3,705	4,093	4,543	2,954	3,238	3,489	3,896	4,654	5,156	5,708	6,165	3,851	4,290	4,688	5,266

Table 6.4h—Rubber—Employment Per Acre—Present Methods

(1) PRESENT CLONES, PRESENT METHODS, CLASS 1 AND 2 SOILS:				(3) FUTURE CLONES, PRESENT METHODS, CLASS 1 AND 2 SOILS:			
Year	1	0.240	workers/acre	Year	1	0.240	workers/acre
Average Years	2 - 6	0.066	"	Average Years	2 - 6	0.066	"
"	"	7 - 15	0.145	"	"	7 - 15	0.146
"	"	16 - 25	0.159	"	"	16 - 25	0.170
"	"	26 - 30	0.147	"	"	26 - 30	0.156
(2) PRESENT CLONES, PRESENT METHODS, SOILS WITH LIMITATIONS:				(4) FUTURE CLONES, PRESENT METHODS, SOILS WITH LIMITATIONS:			
Year	1	0.240	workers/acre	Year	1	0.240	workers/acre
Average Years	2 - 6	0.066	"	Average Years	2 - 6	0.066	"
"	"	7 - 15	0.146	"	"	7 - 15	0.146
"	"	16 - 25	0.160	"	"	16 - 25	0.166
"	"	26 - 30	0.145	"	"	26 - 30	0.153

Table 6.4i—Rubber—Employment Per Acre—With Labour-Saving Techniques

(1) PRESENT CLONES—CLASS 1 AND 2 SOILS:				(3) FUTURE CLONES—CLASS 1 AND 2 SOILS:			
Year	1	0.190	workers/acre	Year	1	0.190	workers/acre
Average Years	2 - 6	0.036	"	Average Years	2 - 6	0.036	"
"	"	7 - 15	0.096	"	"	7 - 15	0.097
"	"	16 - 25	0.098	"	"	16 - 25	0.102
"	"	26 - 30	0.089	"	"	26 - 30	0.093
(2) PRESENT CLONES—SOILS WITH LIMITATIONS:				(4) FUTURE CLONES—SOILS WITH LIMITATIONS:			
Year	1	0.210	workers/acre	Year	1	0.210	workers/acre
Average Years	2 - 6	0.048	"	Average Years	2 - 6	0.048	"
"	"	7 - 15	0.098	"	"	7 - 15	0.099
"	"	16 - 25	0.101	"	"	16 - 25	0.104
"	"	26 - 30	0.092	"	"	26 - 30	0.095

Table 6.4j—Oil Palm—Average Workers Per Acre by 5 Year Period From Planting

5 Year Periods ¹	Present Varieties	Future Varieties
1st	0.084	0.0918
2nd	0.060	0.067
3rd	0.055	0.062
4th	0.059	0.066
5th	0.060	0.067
6th	0.060	0.067

¹ Excl. Year 1.

As indicated in Table 6.4c when Ethrel type stimulants are not used the I.R.R. was estimated to be 10.4% for present clones on soils with some limitations increasing to 12.0% for the best soils. The use of the stimulant after year 16 increased this return by about 0.8% on "best" soils and 1.1% on the other soils. If the newer clones with higher yield potential are used¹ the estimated internal rate of return increases by about 2.5% when stimulants are not used and about 2.8% to 3.2% when stimulants are used.

The relative position of forestry complexes is more clear-cut. It would seem that forestry offers opportunities for rates of return well above the other two options, for net present values per acre that are roughly comparable to the other two, for value added per manyear several times as high, and for employment-creation that is a small fraction of the employment potential in rubber and oil palm. Thus the choice between forestry and the other options depends on the relative weight attached to employment on the one hand and to income on the other. Considering the importance attached to employment creation in the next ten years, an "all-forestry" strategy of development must obviously be rejected.

Looking beyond the criteria in the cost-effectiveness matrix, as is shown below, the forestry option does have an advantage over the other two.

Since a substantially larger proportion of the processing will take place within the region, the overall degree of industrialisation and urbanisation will be greater with the forestry-complex

route than with the others. Wood products themselves, as pointed out above, provide opportunities for progressive sophistication of the product-mix and the application of increasingly advanced technology. On the basis of the presence of these enterprises and of the larger cities they will help to create other manufacturing and service activities can be attracted to the region. The larger and more prosperous urban complexes will also permit and justify a wider range and higher quality of public services, including education, health, recreation, and cultural activities. These in turn will make it easier to attract still more footloose activities, both manufacturing and services. The forestry-complex option provides a basis for cumulative expansion and qualitative improvements that is missing in the two other options.

It should be remembered that uncertainties with respect to prices are to a large degree built into the COBE analysis itself. Thus the likelihood of a breakthrough in synthetic rubber is translated into an impact on price of natural rubber, and in effect included in the estimates of internal rate of return and net present value. On the other hand the possibility of a breakthrough in palm oil that would make it applicable to a wider range of uses and so improve its price is not included.

Apart from this difference, there are two major variables for oil palm and three for rubber. With oil palm it is only a question of class of soils (which is not really a question) and of present versus experimental seed. For rubber there is a real question as to type of soil (since yields are lower on Class III and IV land but not disastrously lower as in the case of oil palm) and also real question as to present versus future clones and as to reorganisation of operations. Finally, there is the over-riding consideration that in the case of oil palm one need only wait about five years to start getting answers, whereas in the

¹ These clones are those which yield more than RR1M 600 and which will likely be recommended for large scale plantings by 1976.

case of rubber one must wait seven years to start getting a product and fifteen before the results of stimulation can be tested. Thus all in all the risk attached to rubber is substantially greater than for oil palm. In moving from "best" to "probable" figures for internal rate of return and net present value this difference in risk has been introduced by subtracting one standard deviation from the "best" figure.

However, interesting as it may be as an academic exercise to ask, "If the whole region were to be allocated to one of these three sectors, which would be best?". The question does not in fact present itself in this form.

In the first place, the uncertainties involved are so great and so irreducible at this point in time that some degree of "hedging" is clearly called for. In so far as options can be kept open until more information is available, such "hedging" is clearly the best strategy. With respect to rubber and oil palm there are substantial uncertainties with respect to possibilities and phasing of introducing new technology and to the future world market situation. With respect to forestry there are uncertainties regarding sustained forest management, whether in the form of plantations or an "intensive" management system. There are possibilities but also doubts where use of steep land and peat land is concerned. Here too the crystal ball becomes clouded when questions are asked about future marketing outlook, particularly for new varieties of trees. Some of these uncertainties will be reduced in the next five years. Some may disappear in ten. If irrevocable decisions that might misallocate land in future can be avoided without misallocating land now, then these decisions should certainly be postponed.

In the Second place, Agronomic and Soils considerations limit the freedom of action. It is true that the whole region would be left under forestry. Large parts could be put under rubber. Areas which are suitable for oil palm are much more limited. This is perhaps best shown for the 560,000 acres subject to a detailed soil survey (Table 6.4k).

Only 124,120 acres were judged to be "well-suited" for oil palm. All the area well suited to oil palm was also "well suited" for rubber. Another 104,790 acres were considered "well suited" for rubber, and some of it for other crops, but not for oil palm, and 74,450 acres were well

suitable for one or more of a variety of other crops, but for neither rubber nor oil palm. However, 256,790 acres, or 46% of the total were not "well suited" for any crop, but most of this was suitable for forestry production. Most of this land should be left to forestry although on almost half of the area one or more crops could be grown with varying degrees of difficulty.

6.4.2 Criteria for Ranking Options

The "cost: effectiveness" of the development of the region should be minimised, with effectiveness measured, not only in terms of the four variables set forth in Table 6.4a, but also in terms on the impact of the socio-cultural environment and on the physical environment (ecological balance). These objectives cannot be reduced to a single measure of "benefits". The "internal rate of return" is one way of expressing "benefits" in terms of money returns to capital. Net present value per acre measures "benefits" in terms of money returns to land. Value added per man year is an approximation to "benefits" in terms of national income, also measured in money, but with no direct indication as to who receives this income. Employment is measured in man years per thousand acres, and there is no way of translating these "benefits" into money terms: "shadow prices" are not available for all categories of labour skills that would reflect the relative scarcity or abundance of each category. Finally, the contribution to socio-cultural objectives or to ecological balance can be ranked, but cannot be directly measured.

6.4.2.1 Profitability, value added, and social welfare

Since Table 6.4a presents three measures of income, one of employment, and nothing else, a word of warning may be in order. A strategy, sector, or project that ranked high on all three income criteria and low on employment might seem better than one that ranked high on employment but low on all three income criteria. However, such is not at all the case, given the government's stated objectives. Employment is on the whole ranked higher than income as an objective, especially during the Second and Third Malaysia Plans; and highest priority of all is accorded to social objectives, particularly Malay participation, which does not show in the Table. Value added per man year is only a rough approximation to income of settlers, or of

farmers, or of workers. In using it as a proxy variable for per capita income (which in any case tells us nothing about income distribution) it is being implicitly assumed that the proportion of income not transferred out of the region (ratio of Gross Regional Product to Gross Domestic Product of the region) is the same as for the country as a whole (ratio of Gross National

product to Gross Domestic Product). Considering the importance of resources supplied from outside the region, particularly capital and top management, this assumption may be overly optimistic. The other two "income" criteria are really measures of profitability. Maximising profits is not among the stated objectives of the New Economic Policy or of the Second Malaysia Plan.

Table 6.4k—Classification of Area Subject to Semi-detailed Soil Survey "Well-suited" for Various Crops

<i>Class of Land</i>	<i>Oil Palm</i> ¹	<i>Rubber But Not Oil Palm</i> ²	<i>Other Crops</i> ³ <i>But Neither Oil Palm Nor Rubber</i>	<i>No Crops</i>	<i>Total</i>
I	102,720	1,790	14,870	—	119,380
II	21,420	89,630	50,310	—	161,360
III	—	13,370	8,910	96,380	118,660
IV	—	—	360	40,860	41,220
V	—	—	—	119,550	119,550
TOTALS ..	124,140	104,790	74,450	256,790	560,170

NOTES—

¹ All this area is also "well-suited" for rubber, and much of it for other crops.

² Much of this area was suited for other crops.

³ One or more of the following crop groups: sago, tapioca, tea, grass, citrus, papaya, banana, cashew, cocoa, coconut, maize, rice.

Source: Tables 5.3 and 5.4, Study Paper No. 23 "Soil Survey Studies and Interpretations in the Pahang Tenggara, Volume II" pp. 168-174.

The conditions under which profit-maximisation leads to an optimal allocation of resources are well known and do not exist in any country: pure competition; perfect knowledge; perfect mobility; "well-behaved" production functions without "lumpiness", etc. Even then, to accept profit-maximisation as tantamount to optimisation of social welfare one has to accept what Henry Simons once called "productivity ethics"—that is, that every one has the right to withdraw from nation income what he contributes to it, not matter what factors of production he provides or how he came into possession of them. One also needs to accept the philosophical precept that "maximising" welfare, which means equalising marginal satisfaction, is somehow "good"—as compared, for example, to equalising average or total satisfaction of individuals (giving more income rather than less to the handicapped), which would lead to a completely different income distribution, and accordingly to a totally different allocation of resources. Finally, it is quite clear that the "optimal allocation or resources" that results from profit-maximisation, even with a fairly close approximation to the ideal conditions, does not guarantee a high rate of economic growth, let alone of economic

development.¹ But it also remains true that scrapping the profit system without introducing a better set of criteria for resource allocation and development policy decisions is likely to do more harm than good. In comparing, for example, rubber and oil palm, where market structures, degrees of monopoly power, risk, entrepreneurship and organisation are essentially the same, relative profitability is an important consideration. The government can give whatever weight it wishes to this consideration, in comparison with other objectives, and with a clear picture of the trade-offs involved, when final decisions are made.

On the other hand, profits are not to be confused with income. If land is the scarce factor, of course, maximising net present value per acre will maximise contribution to national income; and if capital is the scarce factor, maximising returns to capital will maximise contribution to national income. But these figures tell us nothing

¹ Cf. Arnold Harberger, *American Economic Review* (Proceedings) May, 1960.

about income distribution—particularly, in the case of Malaysia, the distribution between Malays and non-Malays which is the government's main concern. Accordingly it is necessary to analyse also value added per man year. The potential for Malay participation is discussed as a separate consideration in the supporting report "Organisation and Implementation of Pahang Tenggara Development". Since as will be seen it does not appear to have any great significance in ranking the main options.

6.4.2.2 Impact on the Malaysian economy

On the basis of the study analysis the major options are ranked in terms of their contribution to the stated objectives of Malaysian development. For convenience, the objectives of the Malaysian Government with respect to development of the region can be summarized under four headings: creating productive employment opportunities (N); accelerating the growth of per capital income (Y); contributing the socio-cultural change (modernisation, urbanisation, up-grading levels of skills, especially of Malays, etc.) (C); and protecting and where possible improving the physical environment (E). From the analysis presented above the following matrix tabulates each of the options (strategies) ranked as "A", "B", "C", or "D" in terms of each of the four objectives.

Strategies	Objectives			
	N	Y	C	E
Maximise rubber	B	D	D	C
Maximise oil palm	A	C	C	C
Maximise forestry	C	B	B	A
Maximise forestry plus incentives for manufacturing...	D	A	A	B

There are, obviously, large elements of judgement involved in such rankings, and they are directly related to government policy. For example, the ranking in terms of employment depends on the weights attached to employment creation in each five-year period. The oil palm option has been ranked "A" because it does not lag far behind forestry in the first ten years and is well ahead of rubber; while at year twenty it is not far behind rubber and is well ahead of forestry, with or without the "technological advance" assumptions. A greater concentration on manufacturing as a source of employment would be likely to raise the capital: job ratio significantly.

Similarly, if it were clear that high rates of return in forestry were the result of exercise of manipulation so that wages were low and prices to consumer high, the rate of return could be ignored altogether and consideration only given to value added. How much significance is attached to rates of return, in comparison with other indicators of contribution to national goals, also depends a good deal on how "scarce" capital is considered to be—to the region, to the State, to the country—in comparison with other resources.

Unless employment is weighted heavily, it appears that, across the board, the "maximum-forestry option" is best. Why not recommend it? There are two reasons. First, the amount of employment generated is unsatisfactory. Second, to justify additional forestry-complexes, one needs to be very optimistic about access of available timber to processing centres, about discovery of an effective forest management system involving sustained yield forestry, plantations, and systematic recuperation of logged—over land, about use of steep land and peat land, about acceptability of new species, about markets for forest products in general. In short, the risks are too great to justify the sharp curtailment of agricultural uses of available land implicit in this region. The other options are inadequate in terms of overall economic and social development. As stated above, a blend of the three is therefore inevitable.

6.5 THE RESULTING STRATEGIES

The basic methodology in assembling the master-plan, therefore, was to rank concepts and their projects in terms of the four objectives: income (with three measures) employment (with one measure) socio-cultural impact (rank only) and impact on the physical environment (rank only). The masterplan should retain enough flexibility for any future changes the Government's views regarding weighting to be taken into account in future variations in both the composition and the timing of the development programme. At the same time, the analysis has been carried as far as possible in order to reduce to a minimum the need for purely political value judgements as to what should be done.

This approach has five other major elements:

1. Land is treated as the scarce factor of production *par excellence* and recommendations regarding allocation of resources

among options, sectors, and projects are made primarily in terms of land use. It is recognised that in the final analysis it may turn out that the truly scarce factors of production are entrepreneurial, managerial, scientific and technical skills. However, with the information available at this time, it is not possible to rank alternatives in terms of social returns to these scarce factors. This deficiency is in some measure a consequence of the way in which the project was set up and of the Scope of Work, in which the major emphasis was on land use.

It is also a reflection of administrative and operational procedures. In practice development takes place by converting land from virgin forest to towns, oil palm, rubber, tea, managed forest or other uses.

2. Given the clearcut conflict between employment creation on the one hand and income plus social objectives on the other, with regard to the three major options, (or four if diversified agriculture is included) a blend of oil palm rubber, forestry-complexes (and diversified agriculture) so as to make a substantial contribution to income-creation employment-generation, and an improved socio-cultural framework (particularly for Malays) is the only broad strategy that can be recommended.
3. Because of the many uncertainties in all four major sectors, (adding diversified agriculture as a fourth major sector even though the amount of land to be allocated to it in the first ten years is relatively small) every effort was made to keep options open to 1975, or even 1980, without retarding development of the region or misallocating resources in the early years of the programme.
4. In allocating the 500,000 "free" usable acres (*see* Section 6.3) both among uses and in time, the minimisation of risk is a major consideration. In short, the strategy might well be regarded as a vast "hedging" operation. Those projects which are most certain to contribute to the Government's stated objectives are recommended for the Second and Third Malaysia Plans, together with some small-scale experimental projects. Those which are promising but more uncertain are for the most part postponed until the Fourth and Fifth Malaysia Plans. Thus relatively little rubber is recommended in the first

few, as compared to oil palm, because of the higher risks entailed in planting rubber, the long delay before results of new planting can be tested, and the strong probability that new information will become available within the next five years on the basis of existing planting that will substantially reduce the risk on new planting.

5. Where ranking in terms of the four major objectives is not clearly superior or inferior as among sectors or projects, land can be allocated in terms of suitability of soils for particular uses. As the analysis turned out, a large proportion of the 500,000 acres could in fact be allocated in this fashion, because differences in terms of the pure socio-economic analysis were within the margin of error.

6.5.1 Footloose Industries, the Employment Gap and Potential Population

No matter what the blend of rubber, oil palm, forestry complexes and diversified agriculture, with their related processing and services, a point will eventually be reached where the natural growth of the labour force will exceed the rate of job-generation on this basis alone. Once all the usable land is settled, there will be only a short time lag (while manufacturing and services respond to most recent immigration) before the demand for labour based directly and indirectly on exploitation of natural resources will stop growing altogether. If at this point both unemployment and net emigration from the region are to be avoided, it will be necessary at that time to attract to the region some enterprises which are to some degree "footloose" (not tied to natural resources, energy, or local markets). Such enterprises will be needed also in order to attract to the region a population in the neighbourhood of the 500,000 people suggested in Section 5.0 as a reasonable target for the region, without aggravating the income gap between the East and the more prosperous regions of the country. It is always possible, of course, to increase employment and total population by crowding people on the land. The trouble with this strategy, obviously, is that it would reduce per capita incomes of the region to a level uncomfortably below those of the more prosperous parts of the country, and would also create unpalatable gaps between the urban and rural populations within the region itself. Given the stated objectives of the Government of Malaysia as set forth above, this solution must be rejected. The alternative is to attract to the region some high-level services

and some manufacturing enterprises not related to the natural resource base of the region but drawing most of its resources from outside the region and serving a market broader than the region. Such a strategy is necessary also in order to produce the "style" of society, offering a wide range of employment opportunities and of spare-time activities, with possibilities for both children and adults to improve their knowledge and skills and change their way of life, which has been described above.

By definition footloose enterprises are "export" enterprises in some degree. One might distinguish a whole hierarchy of footloose enterprises in terms of the market they are designed to serve:

- (1) Those located in market towns which "export" in the sense that people come from a wider area to the town to buy their products.
- (2) Those exporting to wholesalers, retailers or processors in other towns in the region and thus serving a regional market.
- (3) Those exporting to cities outside the region and thus serving a national market.
- (4) Those exporting to the world market.

Enterprises in categories three and four, whose scale of activities do not depend on the size of the regional population, might be regarded as the truly "footloose" enterprises. These days such enterprises tend to be scientifically oriented, sophisticated, international, and multi-product (conglomerate). We ought not to be unrealistic about the possibilities of attracting such firms to Pahang Tenggara. As shown in Section 6.3 all the available evidence suggests that this type of enterprise, while nominally "footloose", is in fact rather hard to move, and in particular difficult to attract to any but the larger metropolitan centres.

6.5.2 The Socio-Cultural Environment

By the same token, the forestry-complex option, and all that it implies in terms of economic and social progress, provides much the best basis of meeting the objectives laid down in the New Economic Policy and the Second Malaysia Plan. Reducing gaps between Malays and non-Malays, bring Malays into the modern sector, reducing regional gaps, encouraging industrialization, bring all Malaysians into contact

with the modernizing influences of urban life, promoting modernization and structural change, generating entrepreneurial, managerial, scientific and technical skills (especially among Malays) assuring high rates of economic growth—all these ends are better served by the forestry-complex option than by the other two. The scope for an expanding role of government is also widened. Even where employment is concerned, the picture is mixed. Because of its greater stimulus to industrialisation and the possibility of launching some processing activities fairly quickly, the maximum-forestry option creates more total employment in the early years. At year ten the differences are not great. If the techniques of plantation forestry are mastered while land: labour ratios in rubber and oil palm are substantially increased, the differences may still be fairly small in year twenty.

As pointed out above, the amount of processing within the region of rubber and oil palm is likely to be very limited. The processes themselves are relatively simple and limited in the range of techniques required; the implicit potential for learning a wide range of skills, becoming acquainted with modern technology in a number of its aspects, and having a work-place that serves as "a window on the world" is similarly limited. The forestry-complex option, with the higher degree of industrialisation it generates directly, the larger cities it creates, the footloose industries it can attract, and the wider range and higher quality of public services it justifies and permits, will afford a much higher rate and level of social development than the rubber or oil palm options.

6.5.3 An Urban Strategy

In Section 5.0 it is shown that by 1990 West Malaysia should have a target of 25% of employment to be in agriculture with industrial and service employment each in the range of 35% to 40% of the total.

This target also implies that at least three quarters of the population or some 11 million people will be living in urban centres of more than 5,000 population by that year. Although it is relatively easy to substantiate how Pahang Tenggara's share of the national agricultural and forestry population can be justified, the region's "claim" to a share of the urban centres of the nation is not so evident.

The general economic analysis has shown that, for the income levels in Pahang Tenggara to stay close to the national average by 1990 it will be necessary to attain "regional" economy with an overall 50: 50 ratio between resource and non-resource based employment. To achieve this ambitious target and to meet the broad objectives of the New Economic Policy it is necessary to adopt a policy of settlement and infrastructure within which the greatest benefits could be eventually derived in providing non-resource based employment.

In effect, it is assumed that within the next few years the Government of Malaysia will opt for a genuine policy of regional development, with regional planning undertaken for true economic regional such as the East, and with reduction of regional disparities as a major objective for such a policy. Within such a policy of regional development, it is assumed that the Government will formulate a National Urban Policy, with encouragement to particular Urban centres as growth centres and ultimate development poles for the retarded regions such as the East. In making the recommendations for a detailed urban strategy of development in Pahang Tenggara both the increasing rigidity of the national urban hierarchy, and the vastly differing strength of individual urban centres as reflected in growth rates between 1957 and 1970 have been taken into account. The presence of an existing urban hierarchy that is already rather rigid and becoming more so means that the urban centres in Pahang Tenggara, if they are to thrive as growth centres, must be linked to the existing urban structure. This subject is considered in detail in the supporting report "Settlement and Infrastructure in Pahang Tenggara".

6.5.4 Impact on the Physical Environment of Development

In a region like Pahang Tenggara where much of the jungle is still undisturbed, and where "creamed" forest areas could revert fairly quickly to something like a natural state, the impact of settlement on the ecological balance must be taken into account. The relationship of the pattern of development to flood control and erosion is of particular importance in such a region; but the Second Malaysia Plan also indicates a concern for the air and water pollution implicit in urbanisation. Disturbance of fish, bird, and wild animal life should also be considered. At least part of the attraction of the region for tourists depends on the presence of fish and game.

At the same time, an idea suggested at a recent United Nations Conference on the Environment is worth taking into account. Many under-developed countries have a margin of safety, where air water pollution is concerned, long since passed in many advanced countries. This situation affords opportunities for establishing in LDC's industries that have become dangerous to health in the more densely populated regions of advanced countries (pulp and paper plants, for example). The idea is not to "export pollution" from advanced to under-developed countries; rather it is that with proper planning and controls the LDC's can accept such industries with no danger to the physical environment or to human health, while in the AC's long period regeneration may be necessary before the air and waterways can safely accept more pollutants. In a relatively virgin area such as Pahang Tenggara, the "margin of safety" is presumably very wide, and the possibility that this situation may assist in industrialising the region at a later stage should be borne in mind.

Meanwhile, some generalisations might be attempted regarding the ecological impact of development. Forestry complexes based on permanent yield management of the forests would presumably involve the least threat of erosion, aggravation of flooding, or disturbance to wild life. On the other hand, forestry complexes are likely to lead to the highest degree of industrialisation and urbanisation (apart from a conscious policy of providing incentives to attract "foot-loose" enterprises).

Thus the threat of air and water pollution might appear to be greatest. However, to create urban centres that might attain a maximum of 150,000 population in 20 years, it should be possible, with proper planning and controls, to make sure that no significant air or water pollution results. There seem to be no reason why the ecological impact of oil palm should be different from that of rubber. With both there would be some disturbance of wild life.

Cultivation of rubber or oil palm on an extensive scale would represent a fundamental alteration in the natural characteristics of the region since the existing forest cover would be replaced by new crops. This transformation need not be injurious from an erosion or flooding point of view, if proper bunding and contouring practices are followed. But it would represent a complete dislocation of the environment for the wild life of the region and their annihilation if some forested

areas were not retained. Moreover, the pattern of human settlement that would accompany these crops would also have major ecological effects since these settlements would tend to be more dispersed and to require a more extensive road network for movement of people and produce. While on the face of it a more dispersed population would appear to pose less ecological dangers than a concentrated one, the spreading of people over a wider area and the construction of more permanent roads constitutes a somewhat greater interference with the environment and thus a greater potential for harmful effects. Some would argue that dispersal of people makes it easier to handle disposal of their wastes; even here, however there are differences of opinion and it is held that concentration results in more effective and cheaper disposal as is discussed in the supporting report "Settlement and Infrastructure in Pahang Tenggara".

In closing this section, one point should be underlined. How the options are selected for Pahang Tenggara in each five-year planning period depends at least as much on what happens in the Malaysian economy as a whole as it does on anything occurring within the region itself. In particular, if the industrialisation programme goes well and unemployment disappears at the end of the Third Malaysia plan, drastic revisions in the plans for Pahang Tenggara might then be called for. The disappearance of unemployment would be accompanied by increases in wage rates that might make further expansion of oil palm and rubber unattractive at that time, and the industrial growth would make further clearing and planting unnecessary. Net immigration into the region might then cease by 1980, and forestry-complexes with their higher rates of return might be upgraded relative to oil palm and rubber, and perhaps even in relation to diversified agriculture.

7.0 MACRO COST-BENEFIT OF THE DEVELOPMENT OF PAHANG TENGGARA

7.1 INTRODUCTION

The previous sections of this volume have established the overall rationale and strategy for developing the region. The recommended plan has been evaluated in terms of its potential contribution to Government objectives throughout the planning time horizon. Coincidental to and part of that evaluation was the micro evaluation of the natural resource potential of the region. From this micro evaluation certain activities which were considered suitable in terms of the overall objectives and on cost-benefit grounds were included in the development plan. These activities then form the economic core of the region. In addition to these so-called primary activities induced activity will take place in the region. This section will be concerned with the aggregation of the economic impact of these activities into a macro cost-benefit analysis over the planning time horizon to 1990. The cash flow for the region will be developed first and appropriate costs and benefits extracted first and appropriate the expected rate of return to the economy on the capital required to develop the region under different assumptions. It should be emphasised, and it is hoped that the proceeding analysis has shown, that a rate of return calculation itself is not a sufficient measurement of the ability of the region to meet the diverse objectives established for its development.

7.2 COST DATA

7.2.1 Agriculture

The primary generating activity in the region will be agriculture. Table 7.2a shows the estimated agricultural costs for the period 1969 to 1990.¹ The costs are based on current and projected market prices for all inputs and are derived from the cost-benefit analyses for each individual crop or group of crops. In this regard per acre cost coefficients were developed for each year during the development plan and for each year of the cropping cycle. The cost data were then developed by crop allocation and production agent throughout the period and aggregated to give the total shown in Table 7.2a. Included in the agricultural cost estimates are the quit rent and premia paid to the State Government.

¹ Included for the period 1969-1971 are the nucleus estates developed in this period. Revenues from these estates are included in the revenue projections.

The detailed masterplan was only developed for the period 1972-1980. However, for purposes of estimating population, labour requirements, capital investment, tonnages of products and the settlement pattern for the period to 1990 it was considered necessary to assume certain tentative land-use allocations for the 1980-1990 period. Thus, for purposes of the cost estimates, a series of hybrid coefficients were developed which were based on the following possible allocation for the 320,000 acres of agriculturally suitable land remaining in the region: 50% to rubber, 25% to oil palm, and 25% to various diversified crops. The costs for this category are shown under the heading of Composite Crops in Table 7.2a.

7.2.2 Forestry Costs

The forestry cost estimates are based on the capital and operating cost estimates for the proposed timber complexes and the logging cost estimates for the agricultural development clearing programme. With regard to the proposed timber complexes, included in these estimates are the royalties and premia paid to the State Government. Excluded are depreciation and interest charges and interest payments that are normally part of the financial cash flow and which are included in the feasibility studies for this project.²

The logging schedule for the agricultural clearing programme is determined by the agricultural plan. The estimates assume that all such logs are sold on the domestic market at projected price levels. Royalties and premia accruing to State Government are included in the cost estimates. Forestry cost estimates by category are shown in Table 7.2b.

7.2.3 Social Infrastructure Costs

7.2.3.1 Introduction

This category includes road construction costs, provision for telecommunications and water, school, fire, postal, police, health and local government services.

² See Appendix to supporting Report "Forestry in Pahang Tenggara".

7.2.3.2 Road construction, telecommunications and water supply

The road, telecommunications and water supply construction programmes are determined by the phasing and timing of development of the region's natural resources and are described in detail in supporting reports.¹ Cost estimates for these programmes are shown in Table 7.2c.

7.2.3.3 People related urban infrastructure

The capital costs for these services are shown in Table 7.2c. The construction schedule for the facilities is geared to the arrival of population in the recommended urban centres in the region.² Table 7.2d shows the per unit cost estimates used for education, health, police, fire, postal and local government facilities.

Also included in Table 7.2c is provision for establishment of the induced commercial facilities in the urban centres that is expected to occur as population arrives. Threshold data analysis revealed that for every 1,000 population in a town it could be expected that 16 shops would be built. Of these, 5 are assumed to be temporary at a basic cost of \$5,000 each and 11 permanent at a basic cost of \$15,000 each.

Another entry in Table 7.2c details the cost associated with establishment of induced manufacturing and other services. Manufacturing includes the processing of primary products but this however, has already been taken into account in the agricultural cost estimates. Table 7.2c therefore only includes cost estimates for induced manufacturing. The estimate of the amount of such activity in the region has been made on the basis of an analysis of town sizes and thresholds for manufacturing activities in West Malaysia.³ Given the town sizes an estimate of induced manufacturing composition of employment in the town was made and a cost of \$10,000 per employee was applied. Establishment of other services such as personal and business services and restaurants are provided for with a 10% contingency charge on all other urban infrastructure services.

¹ See supporting report "Settlements and Infrastructure in Pahang Tenggara"; "Climate and Water Resources of Pahang Tenggara".

² See supporting report "Settlements and Infrastructure in Pahang Tenggara".

³ See Working Paper No. 39 "Town Sizes and Thresholds for Manufacturing Activities in West Malaysia".

Table 7.2d—Unit Costs for Urban Infrastructure Facilities

	Unit Cost
<i>Education—</i>	
6 Rooms Primary School (outside FLDA area—i.e., in towns)	\$165,000
9 Rooms Secondary School in towns	310,000
<i>Health—</i>	
Midwife Clinic	\$ 18,000
Health Centre	180,000
Main Health Centre	360,000
<i>Police—</i>	
Post	\$ 21,000
Stations for New Towns	80,000
Central Villages	not used
<i>Fire Station—</i>	
Station	\$ 70,000
1 Fire Engine	40,000
Total	\$110,000
<i>Main Station—</i>	
Station	\$ 70,000
3 Fire Engines	120,000
Total	\$190,000
<i>Postal Services—</i>	
Agency—very small town (5,000 population)	\$ 6,000
Rural Post Office All Other Towns	\$ 50,000
Main Post Office (e.g., Town 10)	\$450,000
<i>Local Government—</i>	
Local Central Village (1,500 sq. ft office space)	\$ 15,000
For less than 5,000 population and not near bigger towns:	
Town Office Space (5,000 sq. ft office space)	\$ 50,000
District Offices (includes quarters) (50,000 sq. ft) (For Bukit Ridan)	\$900,000
<i>New Town Development Costs—</i>	
Community Centre	\$ 20,000
Landscaping, market place, padang and other public works	\$ 55,000
Religious buildings (mosque, etc.)	\$ 55,000
Add contingencies @ 15%	\$150,000

7.3 BENEFIT DATA

7.3.1 Introduction

Revenues resulting from the establishment and operating costs described in Section 7.2 are projected to come from 3 main sources:

- (i) From sales of the agricultural produce of the region.
- (ii) Sales from the forestry development programme and
- (iii) Through taxes, royalties and premia collected by the Government sector.

As explained in the introduction to this section these latter items have been included in the development and operating cost estimates. The next effect of including these items as revenues is to exclude these items from the cash flow for the region. As these are transfer costs and do not in themselves represent the use of any real resource in the economy their exclusion is justified when determining the effect of the development on the national economy.

7.3.2 Agricultural Benefits

As was the case for the agricultural costs, coefficients were developed for the total revenue expected from development of an individual acre of a given crop over the cropping cycle. These were applied to the recommended agricultural development plan to derive the annual revenues expected. Again a hybrid coefficient was developed for the composite crops. Table 7.3a shows the projected agricultural benefits by year and by crop.

7.3.3 Forestry Revenues

Sales of forestry products are derived from the Bukit Ibam and Lesong Forestry Complexes feasibility studies. In addition revenues result from the sale of logs from the agricultural clearing programme. In this regard it is indicated in the forestry volume¹ that the volume of agricultural clearing could perhaps support up to

¹ Supporting report "Forestry Development in Pahang Tenggara".

three new small sawmills in the region over the period 1972—1980 depending on how much volume is required to service the existing industries on the fringe of the region. For the purposes of the macro-cost-benefit analysis it has been assumed that all timber produce from the agricultural clearing programme will be sold in the form of logs at projected market prices. The revenues from forestry may therefore be understated. Forestry revenues are shown in Table 7.3a.

7.3.4 Export Duties, Quit Rent, Royalties and Premia

Export duties are levied on the export of oil palm and rubber at rates of 7½% and 4.37% respectively. Premia are charged on forestry and agriculture at a rate of \$50 per acre as the land is developed in permanent landuse allocations. In agriculture, quit rents are charged at a rate of \$1 per acre developed during the crop's immature period and \$11 per acre thereafter. Royalties in forestry are approximately \$11. per ton logged. These revenues are shown by category in Table 7.3a.

7.3.5 Excluded Benefits

No estimate was made of the revenues associated with the induced manufacturing, commercial and services activities discussed in Section 7.2. These, therefore, do not appear in the cash flow.

7.4 THE OVERALL CASH FLOW

On the basis of the revenues and costs detailed in Sections 7.2 and 7.3 the overall cash flow for the region is shown in Table 7.4a. Table 7.4b summarizes the cash flow by Malaysia Plan periods.

The total negative cash flow, incurred during the period to 1978 is \$647.6 million. After that time it is projected that annual revenues will exceed costs and over the period as a whole to 1990 the excess of receipts over expenditures in the region are projected to be \$1,143.4 million.

**Table 7.4b—Overall Cash Flow by Malaysian Plan Periods
1969 to 1990
(M\$'000's)**

Category	1969 and 1970	1971-1975	1976-1980	1981-1985	1986-1990	Total
COSTS:						
Social Infrastructure ¹	—	61,073.0	69,551.0	52,765.0	53,546.0	236,935.0
Agricultural Development	41,833.0	397,943.17	967,347.12	1,464,527.29	2,022,706.70	4,894,357.28
Roads	—	84,000.0	20,000.0	22,000.0	45,000.0	171,000.0
Lesong Forestry Complex	—	34,245.60	67,376.60	74,183.60	88,975.0	264,780.80
Bukit Ibam Forestry Complex	—	33,889.60	64,581.80	70,860.70	85,005.60	254,337.70
Agricultural Logging	—	98,156.0	103,565.0	40,795.0	40,795.0	283,311.0
Telecom. and Water Supply	—	28,801.60	27,770.8	17,918.90	11,117.10	85,608.40
Total Costs ..	41,833.0	738,108.97	1,320,192.32	1,743,050.49	2,347,145.40	6,190,330.18
REVENUES:						
Agricultural	—	75,693.30	777,300.82	1,879,380.70	2,814,858.78	5,547,233.60
Lesong Revenue ..	—	2,167.30	118,239.30	136,754.70	150,985.0	408,146.30
Bukit Ibam Revenue	—	175.8	111,645.90	129,036.90	142,466.0	383,324.60
Export Duties (agricultural)	—	5,419.69	53,251.02	126,711.10	165,595.97	350,977.78
Quit Rent and Premium (agricultural)	3,191.77	18,851.85	35,054.55	42,802.87	54,727.36	154,628.40
Royalties and Premia (Forestry Complexes)	—	984.6	13,222.62	15,472.44	18,824.27	48,503.93
Agricultural Logging	—	135,117.0	147,775.0	79,000.0	79,000.0	440,892.0
Total Revenue ..	3,191.77	238,409.54	1,256,489.21	2,409,158.71	3,426,457.38	7,333,706.61
TOTAL CASH FLOW ..	(38,641.23)	(499,699.43)	(63,703.11)	666,108.22	1,079,311.98	1,143,376.43

¹ Includes establishment costs for induced manufacturing and commercial facilities. Revenues for this category are not included.

7.5 THE COST-BENEFIT ANALYSIS

7.5.1 Introduction

In evaluating the economic impact of developing Pahang Tenggara on the national economy no attempt has been made to calculate so-called accounting or shadow prices for various factor inputs and for outputs. The plan has therefore been evaluated using current and projected market prices. All transfer payments such as land premia,¹ quit rent and export duties have been

excluded from the analysis. This has been effected by adding all these items back into the cash flow as revenues, as the cost items for the primary economic activities included these items as costs. Infrastructure costs for roads, have been included as costs in the macro cost benefit as have costs for telecommunications and water supply. The latter items are included on the grounds that a considerable upgrading in the services supplied for these 2 items has been recommended than is currently provided in the rest of West Malaysia. Not included on the grounds that such expenditures would have to be elsewhere in the economy regardless of whether or not Pahang Tenggara was developed, are costs for people related social services such as health facilities, schools, fire, police and postal services and religious facilities as well as those items listed under the headings of Commercial, Manufacturing And Services in Table 7.2c.

¹ Calculations have shown that a premium on foreign exchange of between 3 and 6% might be applicable. However, it was concluded that because of aggregated nature of the data used and the crudeness of the technique that the results were not significant. Similarly an analysis of the market for unskilled labour in Pahang State and macro employment trends revealed that the application of a shadow wage would not have much merit.

7.5.2 The Results

7.5.2.1 Best Estimate

After netting out from the cash flow the cost of the people related infrastructure facilities referred to above the rate of return to the investment necessary to develop the region was found to be 11.0% over the planning horizon to 1990. If the opportunity cost of capital in Malaysia is 10% the development of the region is therefore on the internal rate of return criteria.

7.5.2.2 Sensitivity analysis

The sensitivity of the recommended development plan to changes in the price of major output was tested by increasing and decreasing revenues from oil palm sales, rubber sales and forestry sales by 10%. The plan is relatively sensitive to changes in the price of palm oil and palm kernels, as the rate of return to the development increased to 13.4% when palm oil revenues were increased by 10% and decreased to 8.4% when revenues were decreased by 10%.

When rubber revenues were changed by the same percentage the rates of return were 11.3% and 10.6% respectively. Forestry revenues are more significant for the viability of the region than rubber as the rates of return are 12.0% and 9.9% under the same assumptions as compared to the best estimates of 11.0%.

7.5.2.3 Understated rate of return

The calculations understate the rate of return to development of the region. This is primarily due to the fact that, for planning purposes, the time horizon has been limited to the year 1990. It should be recognized that net revenues will continue to accrue to the development and beyond this point.

7.6 PUBLIC FINANCE EFFECTS OF THE DEVELOPMENT PLAN

7.6.1 Public Sector Development Costs

Of interest to Government planners will be the estimates of public sector expenditures required

to implement the plan. Included in these costs are the people related infrastructure costs such as expenditures on education, health, post offices and public facilities. Also included are Government investment expenditures in the agricultural development plan, the forestry operations, public utilities and any Government activity in the induced commercial activity in the region. The latter item is difficult to estimate as it will depend to a large extent on the availability of Government funds for such investment, the previous success of Federal and State Government bodies in such enterprises and the degree to which the Government believes it can meet its objectives through organizations, such as PERNAS and the State Economic Development Corporations. Total investment costs for such activities have been estimated for the region and are included in the overall cash flow for the region in Table 7.4b above¹ under the heading Induced Manufacturing and Commercial. For purposes of estimating Government development expenditures 50% of these costs have been included in Table 7.6a.

Estimated Government expenditures on agriculture and forestry are as prescribed by the development plan. Where joint venture organizations have been recommended 50% of the development costs are assumed to be borne by Government.

Total public sector development costs for the period 1972-1990 are estimated to be \$929 million. Of this 37% will be accounted for by the F.L.D.A. which will incur expenditures in the amount of \$346 million before a positive cash flow for this organization is achieved.

Other major components of the total are the \$57.7 million of State Government financing for the two major forestry complexes, the \$171 million of J.K.R. expenditures on road construction and the \$44.9 million of expenditures by other Government Departments on social infrastructure facilities. Public sector development costs are summarized by category and year in Table 7.6a and by Malaysian Plan periods in Table 7.6b.

¹ See Working Paper No. 58 "Construction in Pahang Tenggara".

7.6.2 Government Revenues

Significant amounts of revenue will accrue to both the State and Federal Governments as a result of the development of the Pahang Tenggara Region. The major sources of revenue are quit rent and land premia resulting from agricultural development, royalties and premia resulting from forestry operations, and export duties on sales of rubber and oil palm grown in the region. Corporation taxes will be paid by the major forestry

complexes in the region. These items are shown by category in Table 7.6c by year and are summarized by Malaysia Plan periods in Table 7.6d. Revenues in addition to those detailed in Table 7.6c could be expected from income taxes, corporation taxes from the induced manufacturing and estates which are expected to establish in the region, and from import duties collected on some imported factor inputs. No attempt has been made to quantify these additional revenues.

Table 7.6b—Public Sector Development Costs by Malaysian Plan Periods and by Category
1972 to 1990
(M\$'000's)

	1972-1975	1976-1980	1981-1985	1986-1990	Total
Social Infrastructure and Local Government	15,226.0	12,951.0	8,965.0	7,746.0	44,888.0
Induced Commercial Establishment Costs	12,400.0	14,500.0	7,600.0	7,100.0	41,600.0
Induced Manufacturing and Service Establishment Costs	10,526.0	13,800.0	14,300.0	15,800.0	54,426.0
Roads	84,000.0	20,000.0	22,000.0	45,000.0	171,000.0
Water Supply and Telecommunication Establishment Costs	28,801.6	27,770.8	17,918.90	11,117.10	85,608.40
Lesong Forestry Establishment Costs ¹	24,000.0	—	—	—	24,000.0
Bukit Iban Establishment Costs ²	33,713.80	—	—	—	33,713.80
F.L.D.A. Establishment Costs	115,542.65	177,563.94	52,003.39	890.30	346,000.28
Joint Venture and Public Estate Agricultural Establishment Costs	26,473.97	64,847.38	28,532.0	8,209.78	128,063.03
TOTAL	350,684.02	331,433.02	151,319.29	95,863.18	929,299.51

¹ Suggested Government Equity and Loan Portion.

² Year 1 and 2 Negative Cash Flow.

Table 7.6d—Estimate of State and Federal Government Revenues by Malaysian Plan Periods
1971 to 1990
(M\$'000's)

	1971-1975	1976-1980	1981-1985	1986-1990	Total	% of Total
State Revenues:						
Agricultural Quit Rent and Premia	18,851.85	35,054.55	42,802.87	54,727.36	151,436.63	20%
Royalties and Premia from Forestry Complexes	984.6	13,222.62	15,472.44	18,824.27	48,503.93	6%
Royalties and Premia from Logging for Agricultural Clearing	25,704.0	26,630.0	14,250.0	14,250.0	8,083.4	11.0%
TOTAL	45,540.45	74,907.17	72,525.31	87,801.63	280,774.56	37%
Federal Revenues:						
Export Duties on Agricultural Products	5,419.69	53,251.82	126,711.1	165,595.97	350,978.58	46%
Corporation Taxes from Forestry Complexes	—	29,008.8	45,588.6	49,023.0	123,620.40	16%
Total	5,419.69	82,260.62	172,299.7	214,618.97	474,598.98	63%
TOTAL GOVERNMENT REVENUES	50,960.14	157,173.79	244,825.01	302,420.6	755,373.54	

Of the total estimated revenues of \$755.3 million 63% or \$474.6 million will accrue to the Federal and the remaining \$280.8 million to the State Government. By far the most significant item, accounting for 46% of total Government revenues or \$350.9 million is the export duties collected by the Federal Government on the sales of oil palm and rubber grown in the region. Also of significance is the \$151.4 million to be collected by the State Government in the form of land rent and premia from the recommended pattern of agricultural development. Of the total estimated, Government revenues 33% or \$252.9 million accrues as a result of the exploitation of the region's forest resource and \$52.4 or 67% because of recommended agricultural development.

7.7 FOREIGN EXCHANGE IMPLICATION OF THE MASTERPLAN

To determine the total effect on Malaysia's balance of payments position of development of the Pahang Tenggara Region would be a task of some magnitude and of questionable validity. Indirect effects such as purchases by consumers of the region, purchases of foreign goods by suppliers of factor inputs into the region's primary and induced activities are almost impossible to quantify. Therefore only the direct foreign exchange effects of the masterplan will be considered. Foreign exchange revenues will accrue from the sales of agricultural and forestry products of the region. Total foreign exchange revenues from these sales including export duties are estimated to total \$5,730.7 million over the period 1972-1990.¹ Of this amount oil palm sales are estimated to be \$3,683.2 million or 64% of the total. Rubber sales are estimated to be \$703.2 million or 12% of the total. Sales of processed timber are expected to be \$474.9 million over the same period representing 8% of the total foreign exchange revenues.²

Foreign sales of tapioca and sago pellets and revenues accruing from export sales of the so-called composite crops will add another \$518.3 million to the foreign exchange earnings of the region or 9% of the total.

¹ On the basis of best price estimates.

² There will also be significant sales of timber on local markets equalling approximately 40% of total forestry sales.

Foreign exchange outflows will be incurred primarily from the result of purchases of processing equipment and equipment for utilities and infrastructure components. Total estimated purchases in this regard are \$240.9 million, the major component being processing equipment for oil palm and rubber in the amount of \$94.6 million. Equipment and foreign expertise for the forestry complexes will require expenditure in the amount of \$37.9 million. Supply of equipment for infrastructure facilities will require another \$100.6 million of foreign exchange.

The direct foreign exchange effects of the development of the region are therefore very positive and are estimated to represent a net inflow of foreign exchange into Malaysia of approximately \$5.5 billion over the period 1972-1990.

The direct foreign exchange effects of the masterplan are summarized in Table 7.7a by category and by year and in Table 7.7b by Malaysian Plan periods.

7.8 THE POST 1980 ALTERNATIVE

Elsewhere in this volume it is suggested that the Government will face a major choice in development of the region around the year 1980. The choice is essentially one of reallocating some of the as yet undeveloped agricultural land to forestry. If this choice were made in favour of the forestry option both the revenue and cost side of the cash flow used in the cost-benefit calculations would be altered by a reduction in agriculture costs and revenues and an increase in the forestry costs and revenues. Infrastructure costs would also change, in the period 1980-1990.

Table 7.8 shows the best estimate cash flow used for the cost-benefit calculations and indicates the adjustments that would have to be made as a result of choosing the forestry option. Given the adjustments shown the rate of return to development of the region increases to 11.6% some .6% above the best estimate for the recommended plan. The net employment effect of choosing the forestry option is negative when compared to the recommended plan. Projected employment would decrease by approximately 4,500 jobs during the period 1980 to 1985 and by another 7,300 during the period 1986 to 1990. Quantitative and qualitative aspects of the decrease in employment are discussed in the Settlements and Infrastructure Volume.

Table 7.7b—Estimate of the Direct Foreign Exchange Effects of the Master Plan by Malaysian Plan Periods 1972 to 1990
(M\$'000's)

	1972-1975	1976-1980	1981-1985	1986-1990	Total
REVENUES:					
Oil Palm Sales	67,067.40	574,614.54	1,433,129.78	1,608,455.73	3,683,267.45
Rubber Sales	—	22,870.30	159,393.02	520,984.22	703,247.54
Tapioca Sales	2,908.0	16,305.0	48,050.0	48,025.0	115,288.0
Sago Sales	—	600.30	4,849.30	33,223.90	38,673.50
Composite Crops Sales	—	—	48,899.01	315,469.90	364,368.91
Forestry Sales	1,405.86	137,931.12	159,474.96	176,070.60	474,882.54
Export Duties on Agricultural Crops	5,419.69	53,251.02	126,711.10	165,595.97	350,977.78
Total Revenues	76,800.95	805,572.28	1,980,507.17	2,867,825.32	5,730,705.72
COSTS:					
Oil Palm Processing Facilities	19,671.45	35,781.26	18,823.70	11,630.99	85,907.40
Rubber Processing Facilities	—	482.6	4,253.77	4,010.72	8,747.09
Tapioca and Sago Processing Facilities	608.94	3,530.46	748.14	2,729.17	7,616.71
Forestry Complexes Equipment and Personnel	29,938.48	7,998.47	—	—	37,936.95
Telecommunications	7,062.44	5,010.60	3,644.20	3,031.60	18,748.84
Water	9,500.0	13,885.40	8,959.45	5,558.55	37,903.40
Roads	21,000.0	5,000.0	5,500.0	12,500.0	44,000.0
Total Costs	87,781.31	71,688.79	41,929.26	39,461.03	240,860.39
TOTAL CASH FLOW¹	(10,980.36)	733,883.49	1,938,577.91	2,828,364.29	5,489,845.33

Because of the decreased number of job opportunities that would result from choosing the forestry option in 1980 people related urban infrastructure requirements would decrease resulting in a decline in Government expenditures. Towns number 28 and 29 would no longer be required. The social infrastructure requirements

for these towns are detailed elsewhere.¹ The total reduction in these infrastructure costs is estimated to be \$1.05 million, \$2.75 million for the periods 1981-85 and 1986-1990 respectively.

¹ See Supporting Report "Settlement and Infrastructure in Pahang Tenggara".

8.0 APPENDIX A

8.0 SOURCES OF CAPITAL

Required fund sources are developed into three groups:

1. Foreign Funds.
2. Local Funds.
3. Foreign Aid.

8.1 FOREIGN FUNDS

Foreign funds can be derived from various institutional resources such as the World Bank, Asia Development Bank and other institutions in many countries.

8.1.1 Institutional Financing

Many industrialized countries make available to development projects; credits on export products and services to cover the use of machinery and services available from the developed countries. The financing of export products depends in most cases on the issuance of an export credit insurance policy providing protection against commercial and/or non-commercial risks.

This export credit insurance is usually granted to the suppliers. Credit is granted by suppliers to the buyers on a medium or long term basis. Credits are between one to five years or on a longer term basis of usually five years to ten years. Since few suppliers selling on deferred-payment terms have sufficient resources to bridge the credit period, most of them finance credit they have granted by borrowing from a credit institution. The financing is usually made available through advances against promissory notes signed by the buyers or against bills of exchange drawn on and accepted by the buyer or the discounting of these notes or bills.

The issuing of export credit insurance by a government institution is usually in favour of the exporter and assigned by him to the credit institutions which finances the credits and serves as collateral for the credit. The policy's period of validity generally determines the length of credit. The credit institution may request, as additional collateral, a repayment guarantee from a reliable bank in the buyer's country, or when deemed necessary, he may also request a commitment from the Central Bank of the buyer's country, to

make foreign exchange available for the servicing of the credit. Buyer's credits are granted directly to the foreign buyer by the credit institution or consortium of credit institutions in the exporting country, in order to enable the buyer to purchase capital goods or services from suppliers in that country on a cash basis, the government of the exporting country guaranteeing repayment under the official export insurance scheme.

Issuance of export credit insurance documents does not give the supplier or the buyer a status of "gilt-edged" paper but must be utilized within the boundaries of correct and normal international commercial practices.

In the case of capital goods, these credits are granted on medium term or long term basis. Medium term commercial export credits usually have maturities between one to five years, while long term commercial export credits are granted between periods ranging from five to ten years. The buyers are usually required to make down-payments averaging 10% of the value of the contract at the time of signature and a similar payment upon delivery of goods. Depending on the type of equipment and various economic circumstances, repayment schedules can be made on a semi-annual basis over the period of the contract or on a yearly lump sum payment over the period of the contract.

8.1.2 Export Credits Available

8.1.2.1 Japan

In Japan, export credits for the acquisition of capital goods are usually financed through "concerted financing" by the commercial banks and the Export-Import Bank of Japan.

The main burden of medium term and long term export credit financing is carried by the Export-Import Bank of Japan. The Bank is a public corporation and is entirely owned by the Government. According to the Act under which it was established, the bank's status is to supplement or to encourage financing of exports, imports and overseas investments by ordinary financial institutions, with a view of facilitating, through financial aid, trade and other economic interchange between Japan and other foreign countries.¹

¹ Export and Import Bank of Japan Act.

Export credits for the acquisition of Japanese capital goods are usually financed jointly by commercial banks and the Export-Import Bank of Japan. Contracts over a period of one year, the Export-Import Bank of Japan finances up to 80% of the value of the contract minus down-payment.

The buyer is asked to make a down-payment of about 20% of the value of the contract and to obtain a repayment guarantee for the remainder from a reliable bank in his own country. The exporter or supplier will also seek an insurance commitment from the Ministry of International Trade and Industry of Japan and with approval of this institutional organization and the Export-Import Bank of Japan, they can proceed to finalize negotiations with the buyer.

Transactions which are eligible for financing by the above organization include those involved in equipment, parts and accessories, other goods manufactured in Japan and technical services supplied by Japan.

In recent years longer terms of repayment than five years have been granted and interest rates will vary according to international standards.

The export insurance section of the Ministry of International Trade and Industry of Japan covers the following risks as from the date of contract.¹

- A. Restrictions or prohibition of exchange transactions in the buyer's country.
- B. Restrictions or prohibition of imports in the buyer's country.
- C. Suspension of exchange transactions owing to war, revolution or civil war in the buyer's country.
- D. Prevention of delivering goods by war, revolution or civil war in the buyer's country.
- E. Suspension of transportation to the destination owing to circumstances occurring outside of Japan.

- F. Any other circumstances occurring outside Japan and which are beyond the control of the parties to the export contract.
- G. Restrictions or prohibition of exports under the Japanese Foreign Exchange Trade Act.
- H. In case of contracts with foreign government or public entities cancellation of the export contract by the buyer or cancellation by Japanese exporters for valid reasons not imputable to him.
- I. Bankruptcy of the buyer.

Over and above assistance given to exporters by Japanese government institutions, various Japanese trading houses have their own financial arrangements for the supply and repayment of processing and logging equipment.

8.1.2.2 Australia¹

Export credit terms are usually classified in three groups:

- Short term — up to 180 days post shipment credit.
- Medium term — 180 days to five years.
- Long term — Over five years.

Generally speaking, materials and consumer goods are traded on short term, manufactures and light capital goods on medium term and capital equipment on long term. Within this broad pattern the actual term approved by the Exchange Control authorities will generally not exceed that which is normally offered in international trade for the particular product or class of product. However, there is a strong and continuing trend, as a result of competition between exporters, towards longer credit terms in international trade for the particular product or class of product.

In Australia, there is a single export credit system which is used in all three fields whenever an

¹ Sources—Ministry of International Trade and Industry of Japan.

¹ Australian Government Trade Commissioner K.L.

exporter provides credit from resources other than his own. The elements of this system are:

- A. Finance for export credits is provided *solely* by private lending institutions such as the trading banks.
- B. This finance is made available in various forms (e.g. overdrafts, term loans, negotiation of bills, etc.) directly to the exporter who, in turn provides credit to the overseas buyer. This is generally referred to as a "Supplier's Credit" system since the supplier gives the credit direct to the buyer.

8.1.2.3 Canada

In Canada, practically all export credit transactions involving capital goods are carried out on a long term basis through buyers credits provided by the Export Credit Insurance Corporation or under its new name The Export Development Corporation (EDC).

Under Section 29, of the Export Development Act (Section 213 of ECIC Act) the EDC may, when authorized by Governor-in-Counsel, provide long term export credit for sale of capital goods and related engineering and technical services. The purpose of Section 29 is "to give encouragement and assistance to enterprising Canadian exporters of capital equipment to develop business possibilities abroad". The exporters who can meet international competition in terms of price, quality and delivery are accorded the opportunity of competing in terms of credit as well. Section 29 financing is a useful form of capital assistance for economic development in recipient countries, but is not intended as an instrument for Canadian foreign aid. Accordingly, while the terms of Section 29 credits match international financing terms for viable projects, they are not intended to match aid-type financial facilities.¹

Commitments on long term financing are given by EDC only on the basis of an application submitted by the Canadian Exporter on behalf of the buyer and accompanied by a complete detail of the project, including engineering studies and supporting economic and financial data. Procedures for commitment within the framework of various international agreements differ from the

usual long term export financing procedures, in that funds are earmarked before the developing country concerned submits specific projects for the EDC's consideration. Once the projects have been selected by the recipient countries and approved by EDC, the foreign buyer undertakes commercial negotiations with the Canadian suppliers who apply for the individual credits on the buyer's behalf. No export credit insurance is required for credits granted by EDC.

Canada, also like other developed countries have export credit insurance facilities. The EDC offers insurance to all persons or corporations in Canada, exporting groups or providing engineering, construction, technical and civil services to clients in foreign countries under deferred payment basis. The goods must be exported from Canada and be fully or substantially of Canadian origin.

The risk covered in the export insurance policy are:

- A. In solvency of the foreign buyer.
- B. Failure of the buyer to pay for goods delivered to and accepted by him within six months after due date of payment.
- C. Non-acceptance of goods by the buyer, where this does not result from breach of contract by the exporter or where proceedings against the buyer would serve no useful purpose.
- D. Blockage of funds or transfer difficulties.
- E. War or revolution.
- F. Cancellation or non-renewal of export permit.
- G. Imposition of restriction on export of goods not previously subject to restrictions.
- H. Any other cause outside the control of both the exporter and the buyer arising from events occurring outside Canada or the United States.

EDC insurance programme carries unconditional guarantees to Canadian Banks, thus enabling exporters to obtain non-recourse financing for sales of capital equipment sold on medium term

¹ Export Credit Insurance Corporation (What it is and how it operates—Ottawa October 1965, page 15-16).

credit. Usually a 20% down-payment is required and the export insurance policy usually covers the balance of the contract.

8.1.2.4 United States of America

The Export-Import Bank of Washington is the most important source of financing for United States' exports and the key institution in the United States export financing system. It is a government agency established under the authority of the National Industrial Recovery Act.

The 1945 Export-Import Bank Act as amended stipulates that the:

"Objectives and Purposes of the Bank shall be to aid in financing and to facilitate exports and imports and the exchange of commodity between the United States or any of its Territories or insular possessions or any foreign country or the agency or nationals thereof".

Major forms of assistance that are available from the Export-Import Bank are:

- A. Project and equipment credits, for financing the purchase of the United States equipment, goods and related services for projects undertaken by foreign governments or public or private enterprises abroad.
- B. Short term and medium term export credit insurance provided by the Export-Import Bank on a partnership basis with the Foreign Credit Insurance Association (FCIA).
- C. Guarantees to commercial banks or credit institutions on medium-term export credit, and in exceptional cases direct financing to the exporters who are unable to secure financing from private sources.

United States suppliers in need of financing for medium-term export credit transactions can obtain export credit insurance policies from the Foreign Credit Insurance Association (FCIA) and then seek financing from commercial banks or private firms. The foreign buyer is usually required to make an initial cash payment of 20% to the

exporter on or before delivery, the remaining balance of the contract value repayable in monthly, quarterly or semi-annual instalments.

United States suppliers can also seek financing from commercial banks or private financial firms which are then guaranteed by Export-Import Bank. Under the Export-Import Bank guaranteed programme, the credit institution is obligated to provide non-resource financing and to assume the commercial credit risks. These credits are often granted on an advanced commitment basis, i.e. a firm commitment of assistance from his bank may be sought by the exporter while he is negotiating with the foreign customer, or when he is obligated to specify the credit terms in his bid to a foreign customer for a sales contract.

The Foreign Credit Insurance Association in collaboration with the Export-Import Bank will issue export credit insurance covering exports to foreign country. The standard insurance policy becomes effective with the shipment of goods to the buyer. The insurance policy covers various commercial risks, political risks, but does not cover exchange fluctuations or devaluation of currency in the buyer's country.

8.1.2.5 Republic of Germany

Financing of capital goods, supplies, engineering services, etc. from the Republic of Germany are usually carried on by commercial organizations in Germany in cooperation with private banking institutes. At this time, the Republic of Germany has no export credit insurance coverage for Malaysia, leaving the credit risks in supplying machinery and equipment to local companies, completely in the hands of German equipment suppliers and the local German banks.¹

8.1.2.6 Italy

Limited information is available on export credits as supplied by the Italian government to assist Italian industry. It would seem that credit facilities that can be offered from Italian suppliers are carried by the private corporations in cooperation with the National or local banks and depend wholly upon the credit risks of the buyer.

¹ Dr Noelle—Republic of Germany Trade Counsellor, Kuala Lumpur.

Italy has export credit insurance scheme administered by the Istituto Nazionale delle Assicurazioni.

The insurance offered does not cover ordinary commercial risk to private suppliers, but there are indications this aspect will be changed in the near future.¹

8.1.2.7 United Kingdom of Great Britain

In the United Kingdom the financing of export credits of capital goods is carried out as part of regular banking business.

Under a scheme introduced in 1966, Banks agreed to provide finance at bank rate against eligible export documents which have been unconditionally guaranteed by the Export Credits Guarantee Department (ECGD).

To be eligible, documents must be either trade bills drawn on the foreign buyer or promisory notes issued by the foreign buyer, and must have a tenure of between 3 days and two years.

For contracts of two years and upwards, the banks have agreed to provide export financing where the credit is covered either by ECGD Bank Guarantees or by the ECGD Financial Guarantees. The latter are designed for major projects involving payment over more than five years and enable the ECGD to cover direct loans made by Credit Institutions to the foreign buyer thus enabling the supplier to be paid on a cash basis.

The Export Credits Guaranteed Department also issue export credit insurance. ECGD have two main types of insurance and are classified as comprehensive and specific. Under comprehensive insurance, the exporter either undertakes to insure all of his export business during the next one or three years, or his export business in specified markets only, during the next year. These specified markets must comply with the department's stipulation of a spread of risks and naturally have higher rates of interest.

¹ Sr. Castelli—Assistant Italian Trade Commissioner—Kuala Lumpur.

The risks covered fall into the following categories:

- A. Commercial risks, such as insolvency of the buyer or his failure to pay.
- B. The buyer's refusal to accept goods which have been exported to him.
- C. Political risks which include import license restrictions, war, revolutions, and other risks.
- D. Additional handling, transport or insurance charges arising from interruption or diversion of the voyage.
- E. Any other cause of loss occurred outside the United Kingdom and beyond the control of the exporter or buyer.

Under the specific policies, the exporter insures individual export transactions in capital goods or large projects which are unsuitable for comprehensive cover. This policy is different than the comprehensive policy in that standard cover is for 90% and no cover is provided for the contingency of the buyer refusing to accept the good.

In addition, special facilities are available from ECGD for large projects. These facilities cover the exporter on terms of five years or more. In such cases, the ECGD may provide a guarantee through a bank undertaking unconditionally to pay the bank should the buyer fail to repay the money due. A direct guarantee is issued to supplement the cover given to the exporter and the exporter normal policy is amended to exclude losses covered by the Bank Guarantee. The bank's resource in the case of non-payment of promisory notes or bills on long term project is to the ECGD and not the exporter.

Alternatively, ECGD may give financial guarantees on loans made by commercial banks or other financial institutions direct to the foreign buyer. This facility is a departure from the ECGD's normal business of guaranteeing supplier's credit and is administered through its Financial Guarantee Division. Financial Guarantees are available for such large projects that require more than M\$40,000,000 excluding local expenditure. The nature of the assets created in all cases must be such that the useful life extends substantially beyond the period of the loan. Normally, the buyer is expected to pay from his

own resources direct to the supplier a minimum of 20% of the contract price, the remaining 80% is paid to the supplier out of the loan made to the buyer, the loan being guaranteed 100% by the ECGD.

These financial guarantees are available only for specially worthwhile businesses which satisfies certain conditions, among which are:

- A. Existence of good commercial grounds for gaining the contract i.e. it might be eventually assist the United Kingdom's balance of payments, or maintain a position in establishing market, or stimulate an industry short of orders.
- B. The credit worthiness of the buyer must be satisfactory to the ECGD and the economic and political risks in the overseas market must be at a level acceptable to the ECGD.¹

8.2 LOCAL FINANCIAL INSTITUTIONS

Malaysia has moved forward rapidly in developing government and private financial resources to assist in the overall industrial development of the country. At the present time, indications are that MARA will gradually withdraw from financing of large industrial developments within the country and concentrate more on smaller developments amongst the Malay business community. A possible trend in industrial development in association with MARA would be to provide short term financing for Bumiputra corporations.

The Malaysian Industrial Development Finance Berhad (MIDF) has an active part in assisting and financing operations within Malaysia. It is indicated that future projects of sound financial projections and good management would also be considered by this organisation for a source of long term capital requirements.

Recently, the Malaysian government has set up what is called the National Corporation (PERNAS). Indications so far are that this

organization is prepared to assist in long term financial credits for the establishment of local industry and could also be interested in equity participation on a share purchases basis.

There is a good possibility that the Malaysian government will establish a National Development Bank in the near future. The purpose of this new organization would be to assist in developing national industrial projects under the new economic policy.

With the growth of Malaysia as a whole, and the gaining of business expertise by the Bank Bumiputra, a policy of assisting in development projects through short term and medium term loans is developing. This source of funds could lean heavily in the future, as a source for operating or working capital under normal commercial banking facilities.

As an indication of the confidence being gained by banking institutions of Malaysia as a whole, there has developed over the last few years a trend of local banks to assist in financing of equipment purchases and working capital requirements.

Along with the local banking organization, there has been a trend of foreign banks from both Canada and United States to assist in financing of equipment purchases from various countries in cooperation with governmental export insurance policies as outlined previously.

Providing a project is financially viable and economically attractive, with sound management, indications are that financing can be made available through one of these many above resources.

8.3 FOREIGN AID

The preceding Section was primarily concerned with foreign finance of private enterprise. There are also, of course, possibilities of capital and technical assistance from foreign aid agencies, both multilateral and bilateral.

¹ United Nation Publication No. 67, 11.D.1.

8.3.1 Capital Assistance

The major sources of capital assistance to developing countries in Asia are the International Bank for Reconstruction and Development, the Asian Development Bank, and the United States Agency for International Development. The latter agency has not played any role in Malaysian development up to the present time. Among bilateral donors, the United Kingdom, Canada, Australia, and Japan have played significant roles.

Most agencies providing capital assistance, whether multilateral or bilateral, are reluctant to provide grants or loans in foreign exchange to cover local currency costs. In the case of bilateral donors, some portion of the grant or loan is normally tied to purchases in the donor country. These facts limit severely the amount of capital assistance that can be expected for a development programme such as that of Pahang Tenggara, since the bulk of capital requirements is in domestic currency. Rough estimates indicate that total capital costs to 1990 will be about \$2.25 billion. About half of this sum will be required in the agricultural sector, and that sector perhaps 25% of costs might be in foreign exchange. About 10% of the total will be to forestry projects and roads, where the foreign exchange content may be higher. Finally, about 40% of the total is needed for infrastructure, such as housing, schools, hospitals, etc. where the foreign exchange content is very small. Thus while there is room for significant amounts of capital assistance, it is clear that the great bulk of the finance must come from domestic or private foreign sources.

A strong trend among donor agencies in recent years has been a move from "project aid" to "programme aid". There is a wish to plan foreign aid more systematically by linking it to overall development programmes and assuming responsibility for particular sectors or regions in a continuing fashion on the part of each donor.

In the case of the World Bank, what is sought in general is "bankable projects within a sound development programme", although the Bank is moving more and more towards financing of projects in such fields as education, health, and the environment which are not directly "Bankable".

In the case of the Canadian International Development Agency, the same trend may be observed. For the past three years or so, CIDA has been trying to get away from market-baskets of unrelated individual aid projects (what former President Maurice Strong called "the mailorder house approach") to systematic long-range planning of Canadian aid in each country, related to the recipient government's own planning. The hope is to find each country one or two sectors, or one or two regions, where Canadian assistance can be concentrated in a programmed fashion over several years. In this way CIDA can acquire genuine expertise in particular sectors or regions in each country, selected according to the particular capacity Canada has for providing certain types of technical and capital assistance. This approach also enables the recipient country to do its own programming of foreign aid with some assurance of continuity of aid from particular donors. For example, in Tunisia, one of Canada's countries of concentration, CIDA has decided, at the request of the Tunisian government, to concentrate much of its growing aid programme in the Region of Kairouan. There is some likelihood that CIDA's rapidly growing programme in Algeria will be concentrated in the Algiers metropolitan region and in related urban centres. Malaysia is already a country of concentration for CIDA. A special effort in the region of Pahang Tenggara could have considerable attraction to CIDA.

8.3.2 Technical Assistance

In the course of developing the region the Pahang Tenggara Authority, the State of Pahang and the Government of Malaysia are likely to experience more difficulty in finding the high-level human resources needed than in finding the financial resources. The pace at which schools, hospitals, recreation facilities etc. must be provided will impose heavy demands on the available supplies of teachers, medical doctors, dentists, nurses, sports directors, etc. The Pahang Tenggara Authority itself—a "multi-billion dollar corporation"—will need a sizeable secretariat with widely varying skills in order to do its job well.

Individual development projects will also need special expertise. It is unlikely that all these human resources can be found locally without disrupting development in other parts of the country. The Authority and the two Governments should, therefore, avail themselves of opportunities provided by the various technical assistance programmes.

In the case of teachers and paramedical personnel, assistance could be obtained in the early years from CUSO and the Peace Corps. Particular kinds of high-levels expertise can be provided through bilateral technical co-operation programmes. The United Kingdom or the Netherlands, for example, both having experience in tropical agriculture as well as good educational and training systems, might provide assistance in the planning of the educational and training institutions. Canada has available expertise in geological and mineral surveys, in forestry, in city planning, in overall regional development planning, etc. Each donor country has certain fields of specialisation, where technical assistance is concerned, which can be matched with requirements in the final planning phase.

With respect to the UNDP, since the Specialized Agencies are organised on sectoral lines, the nature of the assistance available from each Agency is fairly clear; UNESCO for general education, ILO for manpower planning, WHO for public health, FAO for agriculture, UNIDO for industry, etc. However, there is an increasing trend towards Country Programming, with a larger role of the Office of the Resident Representative in co-ordinating aid through the United Nations family. The result is growing disinterest on the part of the United Nations family in diffuse, unrelated collections of technical assistance projects, and a growing insistence on seeing all aspects of UN assistance integrated into a tightly-knit programme of aid, closely tied to the overall development planning and programming of the recipient country.

9.0 **APPENDIX B**

9.0 INITIAL POTENTIAL FOR INDUSTRY IN THE REGION

A most important matter for the assessment of industrial opportunities is the nature and timing of the development which would occur in the region in the early stages, given that Pahang Tenggara is virtually empty to begin with and the opening up and settlement of it will be essentially a frontier type activity.

In these circumstances, the nature of activities will be predominantly developmental for at least the first 5 years, with emphasis on clearing and planting of land, construction of infrastructure, and initial settlement of people. The main urban centre that is visualized for the region is expected to have a population in 1975 that would still be under 15,000 and, although there will be a number of other centres, they will be predominantly rural-oriented to begin with.

Evidently, then, the region cannot be considered to have major advantages as a location for manufacturing activities; indeed, the converse will be more generally the case, at least until enough time has elapsed for sizeable numbers of people to settle in the area and provide a local market and labour force, and for the establishment of good internal and external communications.

Examination¹ of cost differences in manufacturing activities in the States of West Malaysia, on the basis of the Census of Manufacturing for 1968, revealed features of industrial activity in Pahang State in that year which may well be relevant to Pahang Tenggara in the next few years.

Manufacturing in Pahang is relatively underdeveloped and sawmilling is the major industrial activity; the result is a comparatively undeveloped labour market and high labour cost. For every one factory worker that is directly hired in Pahang, two are supplied by labour contractors, and the result is an average level of wages and salaries equal to that paid in Selangor and Negeri Sembilan. Consequently, it may be

concluded for Pahang Tenggara that the main problem will be the attraction of suitable people to the area and the provision of considerable settlement and training facilities to them. Although the associated costs would likely be treated as a public, developmental charge rather than being a part of the wage cost, it would seem that market-determined wage rates are more likely to be high rather than low.

Also, a good part of required materials will have to be brought into the region from outside, at least initially, and hence, will incur transport costs. Moreover, power will be diesel-generated until a connection is made in the north to the line which is to reach Kuantan by 1974, and power costs will also be high for some time.

The conclusion from this analysis was, therefore, that at least for the first five years and likely longer, manufacturing activity in Pahang Tenggara would be a high cost operation compared to other locations.

In light of this it seemed that initially industrial activities would be resource based as areas are cleared and planted; would be suppliers of building materials for the large volume of construction required in the area; and would begin to meet the needs of people who are being settled in the region. Subsequently, opportunities would likely develop for processing of diversified agricultural crops after the necessary agronomic and pilot plant testing had been done; would have a broader base, in terms of activities and people, for a wider range of secondary manufacturing; and might prove a suitable location for industries on a larger scale that would supply to markets outside the region.

In examining industry potential in terms of specific possibilities, activities were considered under 5 broad headings, as follows:

- construction
- resource processing
- people related
- linkages
- national industries.

¹ *Apparent Cost Differences in Manufacturing Activities in Different States of West Malaysia*, Working Paper No. 31, June 1971.

Industrial activities within each of these headings were evaluated in terms of the potential market available, availability of raw material, plant size, employment and incomes, and apparent profitability. These examinations suggested certain specific projects which are referred to below. In other cases, it was more appropriate to consider activities in groups since individual projects were too small to be considered separately.

9.1 CONSTRUCTION

The opening up and settlement of the region will occasion a large volume of construction activity and a substantial demand for construction materials. The construction programme will include the regional infrastructure network (roads, bridges, communications, etc.) housing both urban and rural; other works connected with settlement (town roads, water supply, etc.); regional institutions (health, education, administrative); and agricultural processing, manufacturing and commercial buildings. The population and types of settlement envisaged for the region result in a total estimated cost for the construction programme over the 20 years period of almost \$1,400 million, which is equivalent to some 120,000 man years of employment in total or between 4,000 and 7,000 jobs a year depending on the phasing of the programme. These figures indicate the great size of the construction effort that will be required. The magnitude of the programme suggests that special arrangements will need to be made by the Pahang Tenggara Development Authority to ensure that the resources of government departments and of large private construction companies be deployed most effectively. To begin with it appears likely that large parts of the initial construction will be done by contractors from outside the area using their skilled, mobile labour force and importing the required building materials into the region from outside it; use of expatriate contractors may also be necessary. However, there will be the opportunity to develop an indigenous construction industry within the region, and there will be an early opportunity for local manufacture of required building materials.¹

9.1.1 Sawn Timber

Estimates of sawn timber demand arising from a construction programme of the magnitude outlined above have been developed in several ways;

¹ *Construction Activity and the Potential for Building Materials Industries in Pahang Tenggara*, Working Paper No. 58, December 1971.

from a range of figures, 250,000 cubic feet has been taken as indicating the annual average demand (although this will, in practice, vary from year to year). To give another perspective, this is close to 10% of the sawmill output of the Bukit Ibam Complex proposed in Study Paper No. 9. It was contemplated then, however, that the forest complex at that location would be directed solely to export markets requiring high quality, top price products. The timber requirements of the area would therefore be mainly supplied by existing sawmilling operations on the fringes of the region.

9.1.2 Cement

It has not been possible to derive dollar or quantity figures for the cement component of the construction programme since the only data available is for a category called "cement, lime, mortar" which includes concrete poured in place for foundations to buildings or for bridge piers, girders and deck slabs, and aggregate of various types as well as the three materials named in the category title.

In any event, there appears to be no likelihood of a cement plant being located in the region. Examination of the mineral resources in the region as reported in Study Paper No. 7 indicates that there are no deposits of limestone in the area. The nearest location for limestone in volume is at Bukit Sagu, north west of Kuantan. Moreover, decisions regarding another cement plant in West Malaysia require to be taken in an overall national context, including the overall supply/demand balance and the possibility of a plant in East Malaysia which is now being supplied from West Malaysia. (It should be mentioned that substantial quantities of lime for agricultural purposes will be needed in Pahang Tenggara).

9.1.3 Stone

Large quantities of stone will be required in the construction programme as aggregate in concrete works and for road fill. The quarry at mile 38 between Lanjut and Bukit Ibam contains large unused reserves, is at a central location for much of the work that will be done and is next door to the northern urban centre. The costs and timing for reopening that quarry remain to be determined. Other sources of stone occur in the intrusives and volcanics throughout the area.

9.1.4 Other Building Materials

The potentials for manufacture of a number of other building materials have been assessed, and it has been concluded that there are good possibilities for a number of activities, including concrete products manufacture, clay products manufacture (subject to the finding of clay deposits reasonably close to major population centres and lines of communication), and asbestos-cement slabs and roofing, small iron foundries, and light metal working plants that will shape sheets, angles, etc. brought into the region.

It appears that a reasonable scale of operation for a number of such plants requires in the order of \$300,000 in capital, employs about 25 people, and provides average annual incomes at the present time of \$2,000 or so.

These activities are eminently suited to the urban centres contemplated for Pahang Tenggara. Individually, as projects they are small and thus hardly qualify for external financing. Measures will be needed to encourage entrepreneurs to set up such operations, including training, provision of factory buildings, assistance with financing, etc. These will be discussed more fully under a later heading of institutional arrangements.

9.2 RESOURCE PROCESSING

Certain major resource processing activities are being evaluated in combination with the growing and harvesting operations for the primary crops and will not be discussed here. These include the processing of timber into a full range of wood products in modern forest utilization complexes, the primary processing of rubber and oil palm, and the processing of sago and tapioca. Comments are provided, however, on the secondary processing of rubber products and palm oil products and of other diversified agricultural crops.

Malaysia already has a rubber products manufacturing industry producing tyres, tubes, and foam rubber and other products, and another large plant in these lines of activity will be built shortly. Further movement by Malaysia toward increased rubber products manufacture is hindered by the proliferation of makes and models in its domestic automotive industry and by the practice

of user countries manufacturing rubber products in their own plants from natural and synthetic rubber on the basis of intrinsic properties, enduses, and relative prices. While there will be need at some time in the future for more rubber products manufacturing capacity in Malaysia, and if Pahang Tenggara might appear to be a suitable location for such a plant because it would then be a major rubber producer, the decision on plant location would be taken in the light of cost and benefit considerations as they applied then and cannot now be speculated on. This general matter is discussed further later, under the heading national industries.

Similarly, increased manufacture in Malaysia of products from palm oil is limited by the practice of user countries undertaking their own formulations from the wide variety of fats and oils available. If it proves possible to upgrade palm oil in Malaysia by fractionation it is likely that this will be done initially in areas where palm oil processing plants now are, and only later—if at all—in Pahang Tenggara.

Regarding the proposed beef production unit or units in Pahang Tenggara, a centrally located slaughterhouse would be planned¹ to tie in with the main slaughterhouse and by-products plant contemplated for Kuantan by the Veterinary Division. Consideration has not been given to the further processing of beef into e.g. canned products since this is contemplated generally only after the slaughterhouse consolidation and by-product recovery programme is well under way, by which time experience will have been acquired that will be relevant to the Pahang Tenggara situation.

Accompanying the growing of fruit on an organized commercial basis in Pahang Tenggara,² there is the opportunity of processing fruit for local markets initially, with prospects of expansion to national and international markets after the necessary agronomic research and field trials to develop improved species and yields have been carried out. The contemplated plant would be a small one with an output capacity of 5 tons a day, but plants of this size are proven economic operations in other countries of South East Asia, yielding returns to capital of over 20% at current

¹ Appendix to Working Papers No. 25 and No. 32, October, 1971.

² *The Potential for Fruit Growing and Processing in Pahang Tenggara*, Working Paper No. 49, October 1971.

costs and prices. It may be that such results could not be achieved in Pahang Tenggara for the first few years because inferior local fruit varieties would be used and there would be a "learning period" for both labour and management. This should be accepted, however, as costs incurred in introducing diversified agriculture and new industrial activities to the region. After the results of crop research are available in 4-5 years, and if the decision was to proceed with fruit cultivation on a larger scale to supply wider markets, a number of such plants rather than a single larger plant would accord well with policy for industrial dispersal and local participation and should be considered.

9.3 PEOPLE RELATED ACTIVITIES AND LINKAGES

As people come into the region and settle, there will be increasing demand for non-durable consumption type products including food and drink, textiles, household furniture and equipment, footwear, etc. While supply of these is from large plants distributing to wide market areas, substantial activity in these lines is carried on in smaller centres also.

An attempt was made to derive the amount of industrial activity represented by the demand for such consumption-type non-durable goods from consumption spending patterns. Unfortunately the only information available on consumer expenditures (other than the aggregate, national accounts series) dates from 1957/58,¹ was a $\frac{1}{4}$ % sample designed to obtain weights for the consumer price index, and is thus inadequate both on grounds of age and coverage.

Accordingly, the approach was adopted of using the manufacturing threshold study mentioned in Section 2, to obtain an indication of the size and nature of industrial activity associated with the consumption requirements of people.

Linkage activities have been defined as those induced by the nature of the autonomous resource-based activities being carried on. The possibility of using the Malaysian input-output table² to derive these relationships was explored. However,

the data is old and acknowledged to be imperfect in coverage, and the underlying technical coefficients are unlikely to be stable in an economy like Malaysia's where the range of activities is narrow but at the same time is changing quite rapidly.

Hence, reliance was again placed on the information provided by the manufacturing threshold study, although it was recognized that these data would require adaptation in accord with whether the autonomous activity was traditional, like rubber or oil palm growing, or a diversified crop, like cattle or fruit which would require a greater variety of inputs in the form of fertilizers, hand tools, small pumps for irrigation, machinery repairs and parts fabrication etc.

As was suggested in the introduction to this section, it is anticipated that the pattern of activities in Pahang Tenggara will be comparatively simple from a manufacturing point of view in the first five years. It is expected that 2 urban centres with a total population of 35,000 or so will have been established by then; it is likely that products will be imported into the region to a major extent in this period and local manufacturing will just be beginning to get off the ground. The threshold data indicate that full time employment in manufacturing activities will be quite small (apart, it should be mentioned, from employment in resource processing) and would be of the order of 100 or so. By the end of the Third Malaysia Plan period, two major population centres could have sizes of 40,000 and 30,000 people; manufacturing employment in them (apart from resource processing) could be 1,000 and 350 respectively.

In the same way as was mentioned for construction products most of these manufacturing operations will be comparatively small, at least to begin with; only later may there develop the opportunity to establish larger units directed toward wider markets. What will be required initially will be the training, provision for facilities and availability of financing arrangements already mentioned; these are being discussed separately under institutional arrangement.

One other people-related activity can be mentioned at this point although it is not a manufacturing operation. The potential for Inland

¹ Household Budget Survey, 1957/58, Department of Statistics.

² West Malaysia Inter-Industry Accounts, 1956, Department of Statistics.

Fishing in the region has been assessed¹ and it has been concluded that there is opportunity for this activity particularly in more remote areas and near to major centres for supply when marine fish are scarce during the monsoon period. In general, however, it is expected that consumption will be mainly of marine fish because of the proximity of the region to the sea. It is recommended that the programmes of the Fisheries Division for encouraging inland fishing should be made fully available in Pahang Tenggara, including training and posting of fisheries assistants for the region, provision of advice and assistance by DID, training of settlers in fish pond operation, and financial assistance through, perhaps, the Agricultural Bank.

9.4 NATIONAL INDUSTRIES

National industries is the term being used to describe those lines of activity where the market and the efficient scale of plant is such as to support only a few such plants in the country. The term embraces a variety of lines of activity, including certain consumption goods like beverages and textiles, light assembly operations like electronic components, and heavy metal or capital goods industries. Included also are "footloose" industries that might be attracted by particularly favourable production, locational, or market circumstances.

The requirement for such industries will grow with growth in the Malaysian population and economy and there will hopefully be opportunity for export to other countries in the South East Asian region at least.

The basic matter regarding such industries in Pahang Tenggara is the disadvantages that they might incur in the region compared to other locations, the effect of these on their prospects for success (particularly if exports are contemplated), and the compensating measures that might be justified in light of other social and economic objectives.

Assessment at this level of detail would be premature in view of the time required for the region to develop to the point with respect to labour force, communications etc., where such activities could be contemplated. It would be

¹ *The Potential for Inland Fishing in Pahang Tenggara*, Working Paper No. 48, October 1971.

possible to speculate on the magnitude of future cost differences between the region and elsewhere in West Malaysia, on the type of such industries that would be more suited to Pahang Tenggara because of its particular circumstances, and on the incentives that might have to be provided to realize benefits in terms of employment, incomes, etc. Similarly attention might be given to the possibility of locating import substitution industries in the region.

Given the uncertainties and the length of time before the basis for such activities can be foreseen, it does not appear worthwhile to devote major effort to these matters. Instead the emphasis should be placed on the measures needed to establish a sound urban, industrial and training structure which will later permit such wider objectives and industries to be realized.

9.5 INSTITUTIONAL ARRANGEMENTS

Reference has been made several times to the need for special institutional arrangements to assist the establishment of industry in Pahang Tenggara. The national economic policy outlined in the Second Malaysia Plan and discussed in Section 1 of this report places major emphasis on the institutions and agencies needed to accomplish the objectives of Malay participation in the industrial and commercial sectors and of development and dispersal of small scale industries. The need will be particularly great in Pahang Tenggara since virtually everything connected with its development will have to be created almost from scratch.

Earlier comments have suggested that special measures will be required in the areas of industrial sites and buildings, financing, and training for both labour and management. These are of course only part—but, it is thought, a very significant part—of a host of factors and circumstances that are pertinent to the development of small-scale and dispersed industry.¹ The

¹ *Modern Small Industry for Developing Countries*, Staley and Morse, 1965.

South East Asia in the 1970s, the Asian Development Bank, 1970.

Study of Small Scale Industries in Malaysia, Munjal, Federal Industrial Development Authority, November 1969.

manner in which these special measures and services are provided is also most important for their success.

The Second Malaysia Plan nominated a number of agencies and organizations with functions in the area of industrial and commercial development. These included MARA, PERNAS, the Urban Development Authority, Malaysian Industrial Development Finance, State Economic Development Corporations, the Federal Industrial Development Authority, the National Institute of Scientific and Industrial Research, the National Productivity Council, and the Standards Institute of Malaysia. Other agencies whose activities are relevant to industrial

development in small centres include the Bank Bumiputra and the Agricultural Bank.

In view of the significance of industrial activities in an urban setting to the development of Pahang Tenggara, the numerous factors that are pertinent to such activities, and the large numbers of agencies with functions regarding them, it would appear most desirable that the Pahang Tenggara Development Authority specify at an early date the measures to be adopted for assisting the development of industrial activity in the region and the agencies responsible for implementing these measures. This subject is discussed in the supporting report "Organization and Implementation of Development in Pahang Tenggara".