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# SIXTH MALAYSIA PLAN 1991-1995

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ACTING DIRECTOR GENERAL, MALAYSIA  
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*Perpustakaan Negara  
Malaysia*



# **RUKUNEGARA**

## **DECLARATION**

OUR NATION, MALAYSIA, being dedicated

to achieving a greater unity of all her peoples;

to maintaining a democratic way of life;

to creating a just society in which the wealth of the nation shall be equitably shared;

to ensuring a liberal approach to her rich and diverse cultural traditions;

to building a progressive society which shall be oriented to modern science and technology;

WE, her peoples, pledge our united efforts to attain these ends guided by these principles:

**Belief in God**

**Loyalty to King and Country**

**Upholding the Constitution**

**Rule of Law**

**Good Behaviour and Morality**



PRIME MINISTER  
MALAYSIA

## Foreword

The Sixth Malaysia Plan, 1991-95, is the first phase in the implementation of the Second Outline Perspective Plan (OPP2), 1991-2000, which embodies the National Development Policy (NDP). The main thrust of the Sixth Malaysia Plan is to sustain the growth momentum and manage it successfully so as to achieve the objective of balanced development as enunciated in the NDP.

Managing success means finding solutions to issues which have emerged as a result of the rapid growth of the economy. The fundamental issues that are dealt with in the Sixth Plan are related to the challenge of sustaining the growth process which the country has been enjoying since the rapid recovery following the recession in 1985-86. Due to the rapid growth generated by high levels of private sector activity and the rapid expansion of manufacturing for exports, the requirements for higher quality labour and better infrastructure to cope with the needs of a modern economy have become more urgent. In addition, there are also higher expectations from our increasingly affluent society not only for wider access to public services but also for better standards of such services. With modernisation and urbanisation, these expectations will surely increase further in the future.

The development programmes in the Sixth Plan are aimed at meeting these requirements as expeditiously as possible through much higher levels of public sector expenditure in the transport, communications, energy, education and health sectors. Although the resource prospects in the next few years indicate that the country's export earnings and Government revenue can sustain the proposed investments, it is essential to ensure that these expenditures are kept within prudent limits so as not to allow the external and public sector deficits to go beyond the levels projected in the Plan. Careful management of the budget, both on the expenditure as well as on the revenue side, will continue to be important for successful economic management in the nineties.

In the recent past, the strategy of private sector-led growth had pushed us to a higher level of economic success. As a continuation of this approach, this Plan has entrusted a much bigger role for the private sector to generate growth. The private sector is also expected to play an active role in the restructuring of society by contributing to the objective of growth with equity. The private sector must remain strong and dynamic to meet the increasingly competitive environment. On the part of the Government, it will continue with its policy of productive partnership with the private sector in line with the Malaysia Incorporated concept.

The Sixth Plan places great emphasis on increasing productivity in the agriculture sector, expanding the base of our industrialisation and deepening the structure of production through strengthening linkages and accelerating science and technological development. In the process of development, the Sixth Plan also outlines the programmes for the protection of the environment and ecology so as to maintain the long term sustainability of the country's resources and development.

In our unrelenting drive for growth, we must not lose sight of the importance of the distributional aspects of development. As outlined in the Plan, our efforts to achieve growth with equity will continue. The focus of strategy in the restructuring of society will shift towards qualitative improvements in order to develop a more meaningful and more permanent participation of the Bumiputera in the industrial and commercial sectors of the economy. In this regard, the development of human resources will continue to be given greater emphasis, particularly for the lower income groups as this will bring about opportunities for them to move into the modern sectors of the economy in order to earn higher income.

Our economic policy and development are designed to bring about greater national unity and social cohesion. It will, undoubtedly, provide solid foundation in our quest for the continued success of the nation and in maintaining our self confidence and national pride. In this regard, Malaysians must continue to strive to build a united, just and caring society as well as a stable, progressive and prosperous nation. We must always be ready to put the good of the nation above self and sectarian interests. By so doing we will actually be serving ourselves in the long term. Self-interest may bring short term gain but in the long run the selfish citizen will suffer. If we succeed in doing this, our goal of making Malaysia a developed nation by the year 2020 will become a reality.

Finally, I would like to place on record my appreciation to those who were involved in the preparation of this Plan in particular the National Development Planning Committee. The Plan has benefited from the contributions of the various Government agencies and the private sector as well as international organisations. This Plan has also taken into consideration, to a large extent, the views of all Malaysians who have provided the Government with broader insights into the political, economic and social realities, and the aspirations and the needs of our multiracial society. I hope such a spirit of co-operation will continue and be further strengthened in the years ahead. I would like to call upon all Malaysians to extend their cooperation to make this Plan a success.



DR. MAHATHIR BIN MOHAMAD  
Prime Minister, Malaysia

Kuala Lumpur  
10 July 1991

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## **Chapter I**

# **Policy Objectives and Framework**



## CHAPTER I

# Policy Objectives and Framework

### I. INTRODUCTION

1.01 The Sixth Malaysia Plan, covering the period 1991-95, is the first phase in the implementation of the Second Outline Perspective Plan (OPP2), 1991-2000. The OPP2, which embodies the National Development Policy (NDP), sets the broad objectives, strategies and targets that will guide the development of the nation in the nineties. The Sixth Plan elaborates the strategies as well as the programmes and projects designed to achieve the objectives of NDP.

1.02 With the launching of the Sixth Plan, Malaysia now stands poised for another period of sustained social and economic development in the new decade of the nineties. Since independence in 1957, the country has achieved remarkable progress in transforming the economy and raising the standard of living of the people through a series of five-year development plans. These remarkable achievements have been most evident during the last twenty years under the New Economic Policy (NEP), when the national development programmes were considerably expanded to undertake the ambitious tasks of eradicating poverty and restructuring society so as to eliminate the identification of race with economic function. The overall progress in achieving the objectives of NEP, as shown by the reduction in income inequalities and the advancement made by Bumiputera in the modern sectors of the economy, has strengthened national unity in our multi-racial society and provided the nation with a much higher level of social and political stability compared with the situation in 1970. This stability, together with the confidence it generates on the future prospects for the country, provides a strong foundation for the development of the economy and the continued prosperity of the people.

1.03 To be sure, there will always be challenges and uncertainties facing the economy but with internal political and social stability and the

willingness to implement policies which enable the economy to adjust and adapt to the changes around it, Malaysia has shown that it has the capacity to minimize the impact of adverse developments on the country's growth prospects. This capacity of the economy to respond to policies can be clearly seen from the recent experience during 1985-86 when the country went through the worst recession in its post-independence history. Yet, with determined efforts to introduce structural adjustments towards liberalization and deregulation, the economy turned around rapidly from 1987 onwards to record unprecedented growth rates. As a result, the performance of the economy for the 1986-90 period, exceeded the Fifth Plan targets, thus enabling it to play an important role in achieving the objectives of NEP.

1.04 The main thrust of the Sixth Plan is to sustain the growth momentum and manage it successfully so as to achieve a more balanced development of the economy. The emphasis on 'balanced development' is based on the recognition that while there has been progress in economic growth and distribution, the quality of the growth process needs to be improved to make it more broad-based. The strategy for balanced development will, therefore, encompass policies to diversify the industrial base, enhance human resource development, promote technological upgrading and reduce structural imbalances among sectors and regions in the country. These strategies will strengthen the linkages in the economy and bring about a more integrated process of growth and development so as to enable it to contribute more effectively towards achieving the objective of NDP.

## II. NATIONAL DEVELOPMENT POLICY

1.05 The objective of NDP is to attain *balanced development* in order to create a more united and just society. NDP which emphasizes *growth with equity* will enable all Malaysians to participate in the mainstream of economic activities, thereby ensuring political stability and national unity. Building upon the ongoing thrust of NEP in eradicating poverty and restructuring society, NDP will encompass the following critical aspects:

- *striking an optimum balance between the goals of economic growth and equity;*
- *ensuring a balanced development of the major sectors of the economy so as to increase their mutual complementarities to optimize growth;*
- *reducing and ultimately eliminating the social and economic inequalities and imbalances in the country to promote a fair and more equitable sharing of the benefits of economic growth by all Malaysians;*

- *promoting and strengthening national integration by reducing the wide disparities in economic development between states and between urban and rural areas in the country;*
- *developing a progressive society in which all citizens enjoy greater material welfare, while simultaneously imbued with positive social and spiritual values, and an increased sense of national pride and consciousness;*
- *promoting human resource development including creating a productive and disciplined labour force and developing the necessary skills to meet the challenges in industrial development through a culture of merit and excellence without jeopardizing the restructuring objectives;*
- *making science and technology an integral component of socio-economic planning and development, which entails building competence in strategic and knowledge-based technologies, and promoting a science and technology culture in the process of building a modern industrial economy; and*
- *ensuring that in the pursuit of economic development, adequate attention will be given to the protection of the environment and ecology so as to maintain the long-term sustainability of the country's development.*

1.06 The goals of balanced development enunciated above are based on the following considerations. *Firstly*, the principle of growth with equity is fundamental to ensure the realization of a fair and equitable distribution of national wealth. *Secondly*, a balanced societal development is conducive to the maintenance of social and political stability. *Thirdly*, the nurturing and moulding of a Malaysian society with high moral values and ethics as well as positive attitudes are fundamental towards the creation of a responsible, resilient, progressive and caring society. *Fourthly*, prudent management of natural resources and the ecology as well as preservation of natural beauty and clean environment are important to improve the quality of life for the present as well as future generations. The balanced development of the economy is essential to ensure stable growth, minimize social conflicts, promote racial harmony and enhance national unity.

1.07 NDP will rely more on the private sector to be responsive and proactive in the attainment of the nation's socio-economic objectives. This role entrusted upon the sector will require a greater sharing of the social responsibility in managing growth that can generate sufficient opportunities for equitable distribution of benefits among all Malaysians. The public sector will support these efforts by focussing on further improving the environment for growth and the provision of adequate social and physical infrastructures.

### III. REVIEW OF DEVELOPMENT PERFORMANCE

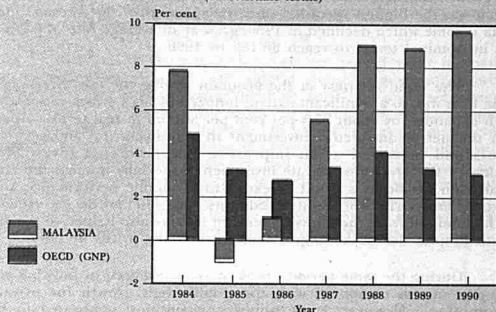
1.08 During the Fifth Plan period, the economy experienced extreme variations in its growth performance, ranging from the most severe recession at the beginning of the Plan to the boom conditions during the last three years. The world economy, which continued to experience sustained growth, has facilitated the expansion of output and trade as well as investment and capital flows. Aside from strong growth in the industrialized countries, the period also witnessed rapidly increasing domestic demand in the Asian Newly Industrialized Economies (NIEs). These developments have provided a favourable climate for the expansion of the Malaysian economy. As the economy experienced rapid economic growth, signs of overheating such as higher inflation rates, tighter labour market conditions, bottlenecks in certain infrastructural facilities as well as high capacity utilization in most industries became evident.

#### Macro-economic Progress

1.09 The economic performance over the Fifth Plan period had been commendable. Overall, the Gross Domestic Product (GDP) in real terms grew by 6.7 per cent per annum compared with the Fifth Plan target of 5.0 per cent. This remarkable performance was due to the successful implementation of adjustment measures undertaken since 1983 to consolidate the public sector and reduce its budgetary deficits. In addition, the liberal trade and investment policies introduced at the height of 1985-86 recession had significantly improved business confidence and increased private investment. These factors, combined with the improvement in the external environment, had brought about a speedy recovery from the recession.

1.10 The recession at the beginning of the Fifth Plan period was the result of both external and internal factors. There was an across-the-board decline in commodity prices and a weaker demand for the country's manufactured products. The terms of trade deteriorated by 4.5 per cent in 1985 and a further 14.9 per cent in 1986, resulting in a severe balance of payments problem. However, the impact of the terms of trade decline was offset by rising commodity export volumes, particularly in petroleum, palm oil and cocoa. Other factors which exacerbated the situation were the high value of the ringgit, which resulted partly from the strong inflows of official capital generated by external borrowing, and falling profitability of the tradeable sector. During the recession, there was a virtual collapse of private investment, both domestic and foreign. As a result, GDP registered a negative growth of 1.1 per cent in 1985 and improved only marginally to 1.2 per cent in 1986, as shown in *Chart 1-1*.

CHART 1-1  
GROSS DOMESTIC PRODUCT, 1984-90  
(in constant terms)



1.11 The adjustment measures undertaken by the Government since 1983 to consolidate public finances through budgetary control were continued even during the recession by avoiding counter-cyclical policy to stimulate the economy. The growth of public sector operating and development expenditures was restrained in order not to exacerbate the external debt situation. In addition, the Government undertook several administrative and institutional reforms designed to upgrade the efficiency of the public sector and facilitate private sector activities. A key element of this consolidation process was the speeding up of the privatization efforts as well as the reduced involvement of the public sector in productive activities that compete directly with the private sector. In addition, an extensive programme of liberalization and deregulation was implemented to encourage private investment as well as strengthen international competitiveness.

1.12 These adjustments, aided by improvements in the external environment, led to the rapid recovery in 1987. External demand picked up briskly, leading to improvement in commodity prices as well as

significant increases in demand for manufactures, particularly for semi-conductors and textiles. The decline in the ringgit's nominal exchange rate and the low interest rates further facilitated the recovery process. The growth registered during 1988-90 which averaged 9.1 per cent per annum was the highest recorded since independence. As a result, per capita income which declined in 1986, grew at an average rate of 6.1 per cent in nominal terms to reach \$6,180 by 1990.

1.13 The rapid recovery of the economy during the last three years of the Plan was, to a significant extent, induced by high *private investment*, which expanded by about 27.5 per cent per annum in real terms. Apart from the petroleum sector, investment in manufacturing and services sectors had increased at an impressive rate. Foreign investment dominated the growth of private investment, especially towards the end of the Plan period as a result of excellent economic performance and improved long term profitability conditions. Likewise, *private consumption* which benefited from the improvements in income also helped to sustain growth despite the weakening of some commodity prices in 1989.

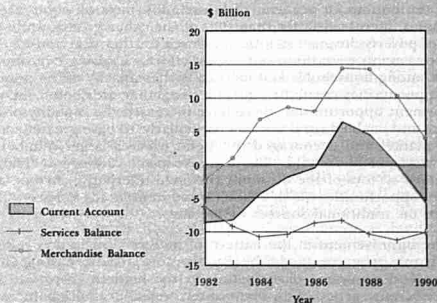
1.14 During the same period, *public consumption* grew by only 5.8 per cent per annum compared with the double-digit growth for private consumption. However, while public consumption continued to be restrained, development spending on projects which was shelved during the recession was stepped up to accommodate the economic turnaround. As a result, *public investment* grew by 15.1 per cent per annum during 1988-90 compared with the negative growth of 17 per cent recorded in 1987. The higher level of public investment was needed to ease constraints and bottlenecks in certain sectors of the economy, especially in infrastructural facilities, arising from the rapid recovery. This, however, did not constitute a deliberate expansionary stance of the Government.

1.15 The rapid growth of merchandise exports since 1987 led to improvements in the *trade balance*, as shown in *Chart 1-2*. The overall favourable position of the current account balance experienced in 1987-88 was, however, short-lived as a result of sharp increases in imports during the last three years of the Plan. As growth in imports outpaced the growth in exports and as the services balance continued to deteriorate, the record surplus of \$6.6 billion or 8.9 per cent of Gross National Product (GNP) in the current account achieved in 1987 was rapidly eroded to a deficit of \$5.2 billion or 4.8 per cent of GNP in 1990. During the Fifth Plan period, the growth of merchandise imports averaged 21 per cent per annum, accounted mainly by imports of intermediate and capital goods. This, however, constituted productive

spending which would create additional capacities that contribute to output growth and exports in the future. The *services account* remained weak and the deficit worsened as a result of the increasingly high rate of factor payments associated with interest payments and repatriation of dividends and profits, apart from growing expenditure on shipping, insurance and overseas education.

1.16 With regard to *price development*, the overall price increase as measured by changes in the GDP deflator, showed a moderate growth of 1.3 per cent per annum during the Plan period. Consumer prices, as reflected by the Consumer Price Index (CPI), which registered a marginal change in 1986-87, however, increased to 2.8 per cent per annum between 1988-90, as a result of increased economic activities following the recovery. The high rate of growth and full capacity utilization in the economy led to pressure on prices in 1990. The overall growth in CPI during the Plan period at 2.0 per cent per annum was, however low, reflecting conscious efforts by the Government to control inflation through its monetary, fiscal and administrative measures.

CHART 1-2  
BALANCE OF PAYMENTS, 1982-90



1.17 On the *employment* side, the growth trends reflected the business cycle as experienced during the Fifth Plan period. Despite rigidities in the labour market which made it more costly for employers to retrench workers, the number of retrenchment was high during the recession. This, coupled with the slower job creation, led to a rise in the unemployment rate from 5.8 per cent in 1984 to a peak of 8.3 per cent in 1986. Nevertheless, about one million new jobs were created throughout the Plan period, representing an increase of about 26 per cent over the preceding Plan period. More than a third of this was in the manufacturing sector which accounted for 19.5 per cent of total employment in 1990 compared with 15 per cent in 1985, while the services sector, including government services, accounted for almost half of the new jobs created. As a result of these developments, the unemployment rate declined to 6.0 per cent in 1990. However, the unemployed is defined to include those who are not actively looking for jobs and if this category of unemployed is excluded from the estimate, then the unemployment rate is even lower. The rapid decline in the rate of unemployment led to the tightening of the labour market which resulted in labour shortages and upward pressure on wages.

#### **Distributional Achievements**

1.18 The implementation of policies and strategies aimed at equitable income distribution coupled with the rapid growth of the economy, especially during the second half of the Plan period, have brought about significant improvements in the pattern of income distribution. The income of the bottom 40 per cent of households, most of whom are in the rural areas, increased faster than that of the other groups while the incidence of poverty dropped significantly, even for the rural households. These improvements were the result of past efforts in raising educational attainment among households and increasing the capacity of the poor to seize the opportunities created by growth. Together with better income and employment opportunities, these have increased the mobility of the labour force and enabled rural workers particularly, to have greater access to the job market and encouraged the trend towards larger number of income earners per household. The increase in the rate of job creation in the modern sectors of the economy provided alternative income and employment opportunities which enabled rural households to lessen their dependence on traditional sources of income.

1.19 The improvement in the pattern of income distribution reflects the significant progress made by Bumiputera in increasing their employment and economic participation in the modern sectors of the economy. The emergence of an increasingly well-educated labour force and a new business-oriented Bumiputera group and their growing



participation in modern economic activities, have enabled Bumiputera's share of income in the higher brackets of the income distribution to improve.

1.20 The overall mean household income grew by 2.7 per cent per annum during the period. The bottom 40 per cent of households of all ethnic communities improved their income share from 12.8 per cent to 14.5 per cent in the Peninsula, 12.8 per cent to 13.6 per cent in Sabah and 12 per cent to 14.4 per cent in Sarawak. These are reflected by improvements in the Gini coefficient from 0.480 to 0.445 for the Peninsula, 0.491 to 0.459 for Sabah and 0.498 to 0.448 for Sarawak. In terms of inter-ethnic income differences, the ratio of mean income for Bumiputera compared with that of Chinese in the Peninsula improved from 56.7 per cent in 1985 to 58.8 per cent in 1990. At the same time, the ratio of the mean income of Indians to Chinese also improved from 72.8 per cent to 75.9 per cent. In addition, the ratio of rural household income to that of urban household increased from 53.5 per cent to 58.3 per cent, indicating the narrowing of income differentials between rural and urban households. Although the socio-economic positions of all communities have improved, the position of certain groups within the Bumiputera community, such as *Orang Asli* and the indigenous groups in Sabah and Sarawak, and the Indians within the non-Bumiputera community have lagged behind.

1.21 The mean household income of all states improved during the period. Marked improvements were experienced, particularly by the less-developed states of Kedah and Kelantan which registered annual increases of 4.5 per cent and 3.0 per cent, respectively, largely due to the sizeable increase in rural household incomes. These increases compared favourably with the overall annual increase in the mean income. The developed state of Wilayah Persekutuan Kuala Lumpur, however, experienced a slower growth of household incomes, registering an annual rate of only 1.8 per cent.

1.22 During the Fifth Plan period, all states benefited from growth although some states benefited more than others. The progress achieved was reflected by changes in the per capita GDP of each state. The low income states of Kedah, Kelantan and Perak as well as Terengganu experienced rapid growth during the Fifth Plan period. The growth for Wilayah Persekutuan Kuala Lumpur slowed down as land availability further constrained industrial expansion, while Selangor and Pulau Pinang grew at 8.8 per cent and 7.5 per cent respectively, due to continued preference of private investors to locate their plants in these states on account of their superior physical and economic infrastructures. The middle-income and resource-rich states of Sabah and Sarawak grew

at 6.7 per cent and 5.0 per cent, respectively, while the other middle-income states of Melaka, Negeri Sembilan, Pahang and Perlis grew satisfactorily. Johor, because of its proximity to Singapore, benefited from the spillover of economic activities from Singapore and grew at a high rate of 7.3 per cent per annum during the period.

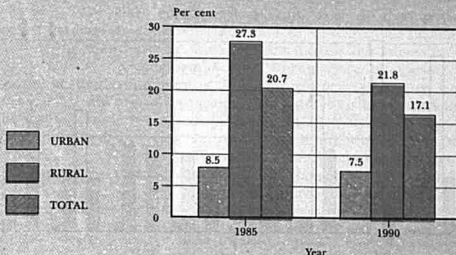
1.23 During the Fifth Plan period, even though the less-developed states generally performed well, regional disparities among states, continued to exist. This was due partly to the differences in the availability of adequate physical and social infrastructures among states which have affected the attractiveness of states to investors. Private investors continued to prefer to locate their industries in the Klang Valley, Pulau Pinang and Johor which have better infrastructural facilities and easier access to ports and airports.

1.24 The achievements in poverty eradication showed that the overall incidence of poverty declined from 20.7 per cent in 1985 to 17.1 per cent in 1990, as shown in *Chart 1-3*, resulting in a reduction of about 30,000 households from poverty. In the Peninsula, the overall incidence of poverty declined from 18.4 per cent to 15 per cent. The incidence of poverty in Sarawak declined from 31.9 per cent to 21 per cent while that of Sabah, however, increased slightly from 33.1 per cent to 34.3 per cent. The slight increase for Sabah was partly due to the inclusion of temporary immigrants in the estimation of poor households. Overall, the continued provision of physical and social amenities had improved the quality of life of the poor.

1.25 Of the remaining 619,400 poor households in 1990, about 143,100 households were the hard-core poor. Most of these households were located in the remote traditional *kampung* and settlements, in plantations and areas formerly known as the new villages as well as in some urban areas. Generally, these households have only limited access to basic services and amenities such as well-equipped schools, suitably trained teachers and more conducive environment for learning.

1.26 Progress in attaining the objective of restructuring of society in terms of employment balance among ethnic groups was affected during the early years of the Plan by the slower growth of the economy and limited employment opportunities. However, following the economic recovery and the rapid expansion of investment activities, further progress was achieved. Of the total 996,400 new jobs generated during the period, Bumiputera gained as much as 60 per cent compared with Chinese, 32 per cent and Indians, 7.0 per cent. Most of the additional employment for Bumiputera originated in the manufacturing, agriculture and commercial sectors. In terms of occupational categories, the majority of Bumiputera workforce was still in the lower-paid job

CHART 1-3  
INCIDENCE OF POVERTY, 1985-90



categories. However, their share in certain higher-paying professional occupations such as engineers, accountants and architects increased from 22.2 per cent to 29 per cent. *Chart 1-4* shows the position of Bumiputera compared with the Chinese and Indians in the various categories of professional occupations in 1990. In the case of Indians, their share in some of the professions has not shown much improvement.

1.27 In the restructuring of the corporate sector, the share of Bumiputera, including trust agencies, accounted for 20.3 per cent of the total paid-up equity capital in the corporate sector in 1990, as shown in *Chart 1-5*. The non-Bumiputera held a total of 46.2 per cent, with the Chinese and Indians having 44.9 per cent and 1.0 per cent, respectively, while the foreigners, 25.1 per cent and nominee interests, 8.4 per cent. The ownership of Bumiputera individuals as direct investors, however, was only 8.2 per cent if the interests of trust agencies and related institutions were excluded. The economic recession resulted in the slow growth of Bumiputera participation in the corporate sector during the period. Notwithstanding the recessionary impact and despite various forms of assistance given by the Government, Bumiputera still lacked the corporate control and financial resources as well as management expertise in the sector.

CHART 1-4  
REGISTERED PROFESSIONALS  
BY ETHNIC GROUP, 1990

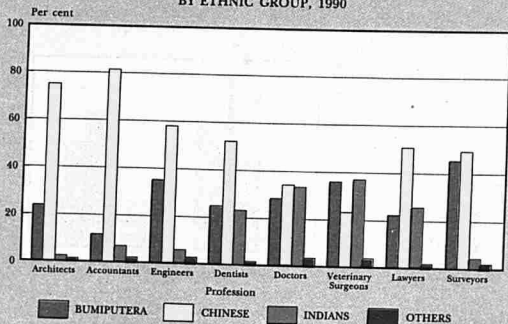
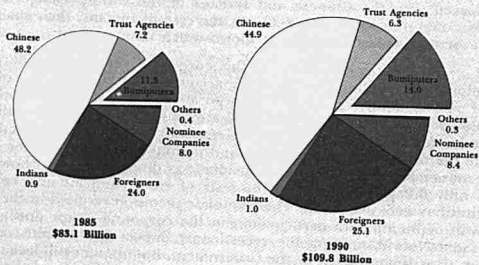


CHART 1-5  
OWNERSHIP OF SHARE  
CAPITAL BY ETHNIC GROUP, 1985-90  
(per cent)



1.28 During the Fifth Plan period, despite progress achieved in the implementation of the Bumiputera Commercial and Industrial Community (BCIC), the overall impact in terms of creating a viable participation of Bumiputera in the modern sectors of the economy remained limited. The major factors that contributed to the low performance were the small and narrow base of their business enterprises, inadequate experience and lack of management capabilities. In addition, the slowdown in the economy during the recession years affected adversely the performance of Bumiputera businesses, thus indicating that the development of BCIC has not been placed on a viable basis. As part of the overall programme to assist their businesses to turn around, the Government created special funds, such as the Entrepreneur Rehabilitation Fund and New Entrepreneur Fund, during the period. Furthermore, for the small-scale traders, the maximum loan ceilings offered by agencies such as *Majlis Amanah Rakyat* (MARA) and Credit Guarantee Corporation (CGC) were also increased. Despite the wide range of programmes and services to assist Bumiputera entrepreneurs, these programmes have not been well-coordinated to ensure their full success. Notwithstanding this, the limited success of Bumiputera was also partly due to their attitude and their inability to take full advantage of the opportunities made available to them.

#### IV. DEVELOPMENT FRAMEWORK FOR THE SIXTH PLAN

1.29 The overall prospect for the Sixth Plan is expected to be favourable, largely on account of increasing internal strength and resilience of the economy as reflected by its high rate of savings, improving factor productivity and greater competitiveness. The continued price and exchange rate stability coupled with the strengthening of the financial infrastructure as well as improvements in the quality of human resources will be important factors contributing to the increasing strength of the economy.

1.30 While the medium-term prospects for the Malaysian economy will continue to depend on the performance of the major industrial countries and the maintenance of an open and liberal trading regime, domestic policies will aim at positioning the economy to fully tap the opportunities for growth. The emphasis will be on managing the success already achieved and enhancing the growth momentum to bring about a better distribution of income opportunities and further improvements in the quality of life in line with NDP.

## International Economic Outlook

1.31 The medium-term prospects for sustained growth in the world economy will be influenced by current international efforts to arrest the negative trends in the fiscal, monetary and trade fields. The persistence of the twin deficits in the United States and the prospects for a further worsening of its current account balance will have an upward pressure on real interest rates. However, the political developments in the Middle East after the Gulf War and economic reforms in Eastern Europe as well as the disarmament process currently underway between the superpowers, could release defence-related spending for other productive activities and thus expedite the stabilization efforts of the United States and other countries facing similar budgetary strains.

1.32 Developments on the trade front will give the greatest cause for concern. *Firstly*, the differences in the rate of productivity growth among the leading industrial countries and between industrial countries and the NIEs could lead to further rise in trade protectionism. *Secondly*, the trend towards bilateralism and regionalism, particularly among the major industrial countries, could adversely affect the open multilateral character of the global trading environment. *Thirdly*, an inconclusive end to the Uruguay Round of Multilateral Trade Negotiations is likely to increase protectionism and slow down the growth in world trade. These trends will adversely affect the growth prospects of both the developed and developing countries, more so the developing countries.

1.33 Most countries have, however, undertaken policy reforms to stabilize and restructure their economies by relying more on the private sector and market forces to direct the allocation of resources. The recovery in business profits and investment as well as labour productivity indicate the improvement in the efficiency of the world economy. In addition, the greater flexibility with which governments of all countries manage their economies could assist in reducing the destabilizing trends.

1.34 Given this mixed scenario, the world economy in the medium term is expected to grow at 3.3 per cent per annum. Growth in industrialized countries is expected to remain relatively robust at around 3 per cent per annum, while inflation is expected to be around 4 per cent. The economies of the East Asia region will continue to remain strong, particularly NIEs which have shown their ability to adjust successfully to adverse changes in the world economic environment. The Association of Southeast Asian Nations (ASEAN) will continue to benefit from inflows of direct foreign investment in the medium term. The

export-led growth strategies adopted by these countries, have helped to liberalize their economies and increase their internal strength to face adverse international economic developments.

### **The Malaysian Economy**

1.35 The medium-term prospects for the Malaysian economy are expected to be better than the progress achieved during the Fifth Plan period. On the external front, with the end of the Gulf War, the world economy is poised to gather momentum for further growth, with lower inflation and better outlook for the industrialized countries. While these factors will contribute to the expansion of the Malaysian economy, the nation's overall growth will be sustained largely by increases in domestic demand, particularly from private investment. Future policies, therefore, will aim at maintaining stable macro-economic environment as well as more efficient and supportive administrative and regulatory measures in order to enhance the nation's international competitiveness. As the Malaysian economy becomes more integrated with the world economies, there is a need to strengthen its internal resilience so as to minimize the impact of adverse external economic conditions and enhance its international competitiveness. Likewise, future policies will have to take into account the strengths and weaknesses existing in some sectors of the economy. During the Sixth Plan period, the Government will continue to implement structural adjustments, through further industrial restructuring, technological improvements and human resource development.

#### *Growth Prospects*

1.36 The Malaysian economy is expected to grow at an average rate of 7.5 per cent per annum in real terms over the Sixth Plan, largely from the rapid expansion of domestic activities, as shown in *Table 1-1*. The external contribution to growth will be greater than the preceding period with exports exceeding imports. GNP in nominal terms is expected to be about \$205,000 million by year 1995, almost double the current level, while the per capita income is expected to reach about \$10,200.

1.37 In terms of sources of growth, an increasing contribution will come from higher efficiency and productivity of labour and capital. In the past, the bulk of growth was accounted for by additions in factor inputs and rents from natural resources. The contribution of the *third factor*, from technological improvements, entrepreneurship and the quality of labour and capital was relatively low compared with other countries in a similar stage of development. This implies that the physical

TABLE 1-1  
GROSS NATIONAL PRODUCT BY EXPENDITURE CATEGORY, 1985-95  
(in current and 1978 prices in italics)

Expenditure Category	\$ million			Average Annual Growth Rate (%)			Contribution to Growth (%)		Share to GNP (%)		
	1985	1990	1995	Target 5MP	Achieved 5MP	Target 6MP	5MP	6MP	1985	1990	1995
Consumption	52,127	76,882	131,420	5.2	8.1	11.3	5.5	7.3	72.5	70.0	64.2
Private	38,659	51,392	70,080	3.6	5.9	6.4	3.9	4.1	73.1	67.7	64.2
Public	40,283	61,587	107,210	5.2	8.9	11.7	4.7	6.1	56.0	56.1	52.4
	29,242	39,923	54,450	3.5	6.4	6.4	3.3	3.2	55.3	52.6	49.8
Investment	11,844	15,295	24,210	5.4	5.2	9.6	0.8	1.2	16.5	13.9	11.8
	9,417	11,469	15,630	4.1	4.0	6.4	0.6	0.9	17.8	15.1	14.4
Private	23,124	38,803	71,400	4.5	10.9	13.0	3.5	4.4	32.2	35.4	34.8
Public	17,888	25,904	36,200	2.8	7.7	7.0	2.4	2.3	33.9	34.2	33.0
	12,270	26,112	51,880	8.6	16.3	14.7	3.1	3.5	17.1	23.8	25.3
	9,492	17,432	26,300	7.0	12.9	8.6	2.4	2.0	18.0	23.0	24.0
Change in Stocks	10,854	12,691	19,520	-0.4	3.2	9.0	0.4	0.9	15.1	11.6	9.5
	8,396	8,472	9,900	-1.0	0.2	3.0	0.0	0.3	15.9	11.2	5.0
	-1,757	-288	-90				0.3	0.0	-2.4	-0.3	0.0
	-1,262	-189	-50				0.3	0.0	-2.4	-0.2	0.0
Exports of Goods and Non-factor Services	42,537	90,149	156,120	3.2	16.2	11.6	10.5	8.9	59.1	82.1	76.2
	31,875	62,896	83,840	4.8	14.6	6.4	9.4	5.0	60.3	82.9	78.6
Imports of Goods and Non-factor Services	38,561	90,863	146,140	3.7	18.7	10.0	11.6	7.7	53.6	82.8	71.4
	30,067	60,900	78,450	2.2	15.2	5.2	9.3	3.8	56.9	80.2	71.8
Gross Domestic Product at Purchasers' Value	77,470	114,683	212,710	5.9	8.2	13.2	8.2	13.2	107.7	104.4	103.8
	57,093	79,103	113,620	5.0	6.7	7.5	6.7	7.5	108.1	104.3	104.0
Net Factor Payments	-5,508	-4,831	-7,890						-7.7	-4.4	-3.8
	-4,255	-3,238	-4,380						-8.1	-4.3	-4.0
Gross National Product at Purchasers' Value	71,962	109,852	204,820	5.0	8.8	13.3			100.0	100.0	100.0
	52,838	75,865	109,240	5.1	7.5	7.6			100.0	100.0	100.0



stock of capital in the country would have produced higher growth if capital and labour were more efficiently used. In the light of this, efforts are being made towards improving *factor productivity* through greater human resource development as well as increasing the application of science and technology (S&T) and research and development (R&D). Apart from these, improvements in infrastructural and institutional developments are also expected to contribute to output growth.

### X Sectoral Output

1.38 Output growth during the Sixth Plan period will be led by the expansion in the secondary and tertiary sectors. The manufacturing and construction sectors are targeted to grow rapidly at an average rate of 11.5 per cent and 8.0 per cent per annum, respectively, as shown in Table 1-2. The *manufacturing sector* is expected to account for 32.4 per cent of total GDP by 1995, sustaining its position as the largest sector in the economy during the period. With respect to the *construction sector*, despite its anticipated rapid growth, its share in total GDP will improve only marginally.

1.39 The *agriculture sector* will grow moderately at 3.5 per cent per annum, largely from improved productivity and diversification into horticulture and other marketable crops. Its growth will be constrained by measures taken to control the exploitation of the forest resources to a more sustainable level with greater emphasis placed on downstream processing. Consequently, its share in the economy is expected to decline from 18.7 per cent in 1990 to 15.5 per cent in 1995.

1.40 The *mining sector* is projected to grow marginally at 1.5 per cent per annum, reflecting mainly policies to conserve petroleum resources to sustain output over a longer period. Increasing production of natural gas and ongoing efforts to explore and exploit other mineral resources will account for the bulk of the increase in output of this sector.

1.41 The *services sector* as a whole, is expected to grow at a higher rate of 8.0 per cent compared with 5.7 per cent during the Fifth Plan period. Within this sector, the government services are expected to grow at 4.3 per cent per annum. While this rate of growth is slightly higher than the rate of increase of 4.0 per cent during the Fifth Plan, it is significantly lower than the 7.5 per cent growth registered during the First Outline Perspective Plan (OPP1), 1971-90 period. This reflects the continuing efforts to consolidate Government's role in the economy while maintaining a higher level of services in support of private sector growth. The other services subsectors such as electricity, gas and water; transport,

TABLE 1-2  
GROSS DOMESTIC PRODUCT BY INDUSTRY  
OF ORIGIN, 1985-95

Sector	\$ million in 1978 prices			Average Annual Growth Rate (%)			Share to GDP (%)		
	1985	1990	1995	Target 5MP	Achieved 5MP	Target 6MP	1985	1990	1995
Agriculture & Forestry	11,854	14,829	17,580	2.6	4.6	3.5	20.8	18.7	15.5
Mining & Quarrying	5,958	7,688	8,280	3.1	5.2	1.5	10.4	9.7	7.3
Manufacturing	11,263	21,381	36,860	6.4	13.7	11.5	19.7	27.0	32.4
Construction	2,738	2,788	4,100	5.6	0.4	8.0	4.8	3.5	3.6
Electricity, Gas & Water	948	1,511	2,430	8.9	9.8	10.0	1.7	1.9	2.1
Transport, Storage & Communications	3,630	5,489	9,030	7.6	8.6	10.5	6.4	6.9	8.0
Wholesale & Retail Trade Hotels & Restaurants	6,911	8,700	13,410	6.3	4.7	9.0	12.1	11.0	11.8
Finance, Real Estate & Business Services	5,121	7,650	12,070	6.8	8.4	9.5	9.0	9.7	10.6
Government Services	6,957	8,459	10,440	4.0	4.0	4.3	12.2	10.7	9.2
Other Services	1,301	1,656	2,430	4.7	4.9	8.0	2.3	2.1	2.1
(-) Imputed Bank Service Charges	1,834	4,020	7,280	5.8	17.0	12.5	3.2	5.1	6.4
(+) Import Duties	2,246	2,972	4,270	1.6	5.8	7.5	3.9	3.8	3.8
<b>Gross Domestic Product at Purchasers' Value</b>	<b>57,093</b>	<b>79,103</b>	<b>113,620</b>	<b>5.0</b>	<b>6.7</b>	<b>7.5</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>Adjusted for Import Duties less Imputed Bank Service Charges</i>									
PRIMARY SECTOR	17,942	22,223	25,190	2.6	4.4	2.5	31.4	28.1	22.3
SECONDARY SECTOR	14,102	23,853	39,900	6.1	11.1	10.8	24.7	30.2	35.0
TERTIARY SECTOR	25,049	33,027	48,530	5.8	5.7	8.0	43.9	41.7	42.7

storage and communications; and finance, real estate and business services, are expected to grow rapidly, ranging from 8.0 per cent to 10.5 per cent per annum.

### *Aggregate Demand*

1.42 The rapid expansion of the economy during the Sixth Plan will originate largely from domestic demand in response to anticipated favourable external environment, especially during the second half of the Plan period. Total investment in real terms is expected to grow at 7.0 per cent per annum, as shown in *Table 1-1*. At this rate of growth, investment as a proportion to GNP in nominal terms, will average 34.7 per cent, higher than the level of 29.6 per cent achieved during the Fifth Plan period.

1.43 *Private investment*, which is expected to grow at 8.6 per cent per annum, will account for the bulk of total investment. Its ratio to GNP is projected to average 24 per cent, higher than the 18.6 per cent achieved over the Fifth Plan period. *Public investment*, on the other hand, is expected to grow moderately at 3.0 per cent per annum, compared with 0.2 per cent during the Fifth Plan. The higher growth in public investment during the Sixth Plan will be largely for the expansion of infrastructural facilities designed to remove bottlenecks and constraints in the provision of such facilities and to support larger private investment. Notwithstanding this increase, its ratio to GNP will decline from 11.2 per cent in 1990 to 9.0 per cent in 1995, in line with the Government's policy objective of consolidating further the size of the public sector in the economy.

1.44 *Consumption expenditure* is expected to grow at 6.4 per cent per annum, reflecting improvements in the welfare and standard of living of Malaysians. The expected rate of expansion in consumption is, however, lower than the rate of growth of output, indicating an increasing trend towards greater *propensity to save* among Malaysians.

1.45 With regard to the *external demand*, the export of goods and non-factor services is expected to grow at a rate of 6.4 per cent per annum, while that of imports of goods and non-factor services will be slower at 5.2 per cent per annum. The increase in exports reflects the country's competitiveness and the drive for exports into existing and new markets. The slower growth in imports will be on account of the growing ability of domestic production to meet the demand for consumption, intermediate and to some extent, investment goods, as shown in *Table 1-3*.

TABLE 1-3  
MERCHANDISE TRADE, 1985-95  
(\$ million)

Goods	1985	Share (%)	1990	Share (%)	1995	Share (%)	Average Annual Growth Rate (%)	
							5MP	6MP
E X P O R T S								
Agriculture <sup>1</sup>	7,373	19.4	7,993	10.0	12,180	8.6	1.6	8.8
Forestry <sup>2</sup>	3,908	10.3	7,106	8.9	6,190	4.4	12.7	-2.7
Mining <sup>3</sup>	12,646	33.3	13,767	17.3	9,940	7.0	1.7	-6.3
Manufactures	12,471	32.7	48,047	60.4	105,830	75.0	31.0	17.0
Other Exports	1,620	4.3	2,635	3.3	7,020	5.0	10.2	21.7
Total	38,017	100.0	79,548	100.0	141,160	100.0	15.9	12.2
I M P O R T S								
Consumption Goods	6,392	21.0	17,328	21.9	21,510	16.5	22.1	4.4
Investment Goods	9,497	31.2	28,088	35.5	54,230	41.6	24.2	14.0
Intermediate Goods	14,245	46.8	32,836	41.5	53,190	40.8	18.2	10.0
Imports for Re-export	304	1.0	870	1.1	1,430	1.1	23.4	10.5
Total	30,438	100.0	79,122	100.0	130,360	100.0	21.1	10.5

Notes:

<sup>1</sup> Comprises rubber, palm oil, pepper and cocoa.

<sup>2</sup> Comprises sawlogs and sawn timber.

<sup>3</sup> Comprises crude petroleum, LNG and tin.

1.46 During the Sixth Plan period, the outlook for agricultural exports will be mixed. While the export volume of palm oil and cocoa will increase moderately, the export of sawlogs will experience significant decline, as shown in Table 1-4. In addition, the export volume of rubber will decline marginally. The decline in export volume of sawlogs and rubber will be in response to Government's policy to encourage further downstream processing. In the case of palm oil, its export volume is expected to increase at relatively slower rate of 3.4 per cent compared with 12 per cent achieved in the Fifth Plan on account of the slower growth in output.

**TABLE 1-4**  
**COMMODITY PRODUCTION AND EXPORTS, 1985-95**

Commodity	1985	1990	1995	Average Annual Growth Rate (%)	
				3MP	6MP
AGRICULTURE					
Palm Oil					
Production ('000 tonnes)	4,133	6,095	7,600	8.1	4.5
Export ('000 tonnes)	3,214	5,655	6,700	12.0	3.4
Unit Value (\$/tonne)	1,229	778	1,080	-8.7	6.8
Value (\$ million)	3,951	4,399	7,236	2.2	10.5
Rubber					
Production ('000 tonnes)	1,470	1,291	1,300	-2.6	0.1
Export ('000 tonnes)	1,497	1,322	1,210	-2.5	-1.8
Unit Value (sen/kg)	192	229	300	3.6	5.5
Value (\$ million)	2,872	3,028	3,630	1.1	3.7
Sawlogs					
Production ('000 cu.m)	30,957	41,000	29,000	5.8	-6.7
Export ('000 cu.m)	19,630	20,355	7,500	0.7	-18.0
Unit Value (\$/cu.m)	141	199	289	7.1	7.8
Value (\$ million)	2,771	4,041	2,168	7.8	-11.7
Sawn Timber					
Production ('000 cu.m)	5,550	8,900	9,100	9.9	0.4
Export ('000 cu.m)	2,780	5,223	4,900	13.4	-1.3
Unit Value (\$/cu.m)	409	587	820	7.5	7.0
Value (\$ million)	1,137	3,065	4,018	21.9	5.6
Cocoa					
Production ('000 tonnes)	108	262	340	19.4	5.3
Export ('000 tonnes)	82	163	247	14.8	8.7
Unit Value (\$/kg)	5.0	2.8	4.3	-11.3	9.3
Value (\$ million)	410	448	1,062	1.8	18.8
MINING					
Crude Petroleum					
Production (barrels/day)	446,388	622,500	629,800	6.9	0.2
Export (barrels/day)	348,000	460,400	373,000	5.8	-4.0
Unit Value (\$/tonne)	521	481	349	-1.6	-6.0
Price (US\$/barrel)	27.6	23.3	17.0	-3.3	-6.0
Value (\$ million)	8,698	10,637	6,249	4.1	-10.0
LNG					
Production ('000 tonnes)	4,600	6,700	11,400	7.8	11.2
Export ('000 tonnes)	4,389	6,637	11,200	8.6	11.0
Unit Value (\$/tonne)	524	365	265	-7.0	-6.0
Value (\$ million)	2,300	2,228	2,964	-0.6	6.0
Tin					
Production ('000 tonnes)	37	29	21	-5.0	-6.0
Export ('000 tonnes)	57	53	45	-1.7	-3.0
Unit Value (\$/kg)	29	17	16	-9.8	-1.0
Value (\$ million)	1,648	902	729	-11.4	-4.2
MANUFACTURES (\$ million)	12,471	48,047	105,830	31.0	17.0
OTHER EXPORTS (\$ million)	1,760	2,753	7,274	9.4	21.5
GROSS EXPORTS (\$ million)	38,017	79,548	141,160	15.9	12.2

1.47 The export of crude petroleum will decline by about 4.0 per cent per annum as a result of greater domestic downstream processing, while production will remain at an average level of 630,000 barrels per day during the Sixth Plan. During the period, petroleum prices are expected to be lower than the Organization of Petroleum Exporting Countries (OPEC) reference price of US\$21 per barrel. In contrast, export of Liquefied Natural Gas (LNG) is projected to grow faster by 11 per cent compared with 8.6 per cent during the Fifth Plan, as capacity at the Bintulu LNG facilities is further expanded.

1.48 The export of manufactures will continue to expand significantly at 17 per cent per annum during the Sixth Plan period. The leading subsectors will be electrical machinery and apparatus, industrial and other chemicals, non-metallic mineral products, wood and wood products, textiles and clothing and transport equipment. Total export earnings from this sector will more than double from \$48 billion in 1990 to about \$106 billion in 1995.

### *Terms of Trade*

1.49 The terms of trade is expected to improve slightly during the Sixth Plan period, with the increases in the price of exports envisaged to exceed that of imports. The export prices are expected to increase by 4.9 per cent per annum against the import prices of 4.5 per cent. With the manufactured products contributing 75 per cent of total merchandise export earnings in 1995 compared with 60.4 per cent in 1990, the expected favourable export prices for these products will account for the improved export earnings during the Plan period. In line with these trends, GDP in terms of real purchasing power is projected to increase by 7.8 per cent per annum, slightly higher than the rate of growth of output.

### *Price Development*

1.50 Malaysia has been successful in maintaining continued price stability. During the Sixth Plan period, the rate of inflation is expected to remain low. However, the rapid expansion of investment and consumption at the onset of the Plan period can lead the economy to operate close to full capacity, thus resulting in bottlenecks and shortages in certain key sectors. These developments, if allowed to remain unchecked could lead to the building up of inflationary pressures in the economy. To circumvent the adverse implication of price increases, measures will be taken to ease supply bottlenecks by liberalizing imports and increasing domestic production as well as controlling price increases of essential goods and services and encouraging wage restraint. At the

same time, the level of public investment and the money supply will be closely monitored to prevent further build-up of inflationary pressures. In addition, appropriate measures will be instituted to moderate the pressure on prices. Apart from monitoring prices and regular enforcement checks, measures will be undertaken to continuously educate the public on issues relating to their rights and privileges as consumers through the mass media.

### *Resource Balance*

1.51 Overall, the resource position for the Sixth Plan period will be strong. Gross national savings, which is already high by international standards, is projected to increase to 34.1 per cent of GNP over the Sixth Plan period, exceeding the level of 31 per cent achieved in the previous Plan, reflecting the country's ability to mobilize domestic resources. However, gross investment for the Sixth Plan period is expected to expand to 34.9 per cent of GNP, thus creating a resource gap of 0.8 per cent of GNP, as shown in *Table 1-5*. This gap will be met by inflows of foreign capital. The strategy will be to manage these resources more efficiently by channelling them into productive investment.

TABLE 1-5  
RESOURCE BALANCE, 1985-95  
(per cent of GNP)

Sector	1985	1990	1995	Cumulative	
				5MP	6MP
<i>Public Sector</i>					
Savings	13.6	11.4	7.5	9.1	8.9
Investment	13.9	11.6	9.5	11.1	10.6
Resource Gap	-0.3	-0.2	-2.0	-2.0	-1.7
<i>Private Sector</i>					
Savings	14.0	18.9	28.4	21.9	25.2
Investment	15.8	23.5	25.3	18.7	24.3
Resource Gap	-1.8	-4.6	3.1	3.2	0.9
<i>Total</i>					
Savings	27.6	30.3	35.9	31.0	34.1
Investment	29.7	35.1	34.8	29.8	34.9
Resource Gap	-2.1	-4.8	1.1	1.2	-0.8

1.52 The public sector resource balance will continue to be in deficit during the Sixth Plan period with a gap of 1.7 per cent of GNP. On the other hand, the private sector resource balance will show a surplus of 0.9 per cent of GNP. Private savings, which is about 25.2 per cent of GNP, will continue to emanate mostly from households rather than private corporations.

#### *Balance of Payments*

1.53 Over the Sixth Plan period, merchandise exports are projected to grow faster than imports to register a surplus of around 6.0 per cent of GNP, as shown in *Table 1-6*. The *services balance*, however, will continue to show a large deficit of around 7.0 per cent of GNP, resulting in a current account deficit of 0.8 per cent of GNP over the period. The current account is expected to remain in deficit for the first half of the Sixth Plan period because of rising imports. However, in the second half of the Plan, the current account will be in surplus as a result of improvements in the merchandise account which more than offset the deficit in the services account. These improvements which are expected to come from favourable export performance as well as measures to reduce the large deficit in the *services account*, will not be sufficient to offset the substantial accumulated deficit over the first half of the period.

1.54 To contain the deficit at a manageable level, measures will be undertaken to promote exports more vigorously as well as to reduce imports, particularly consumption and intermediate goods through encouraging greater local production. In addition, continued efforts will be made to reduce the large deficit in the services account by further developing tourism, shipping and insurance industries. At the same time, the Government will continue to encourage direct foreign investment, including reinvestment, to sustain the high inflows of corporate capital in order to maintain a healthy capital account position. The increases in the flow of income from Malaysian investments abroad in response to recent incentives provided to them will also assist in improving the overall balance.

#### *Labour Force and Employment*

1.55 The population of Malaysia is projected to grow at 2.4 per cent per annum to reach 20.26 million by 1995, lower than the growth rate of 2.5 per cent during the Fifth Plan period, as shown in *Table 1-7*. Peninsular Malaysia will register a slower population growth of 2.3 per cent per annum, compared with 3.1 per cent for Sabah and 2.5 per cent for Sarawak.



TABLE 1-6  
BALANCE OF PAYMENTS, 1985-95  
(\$ million)

Item	1985		1990		1995		5MP		6MP	
		% of GNP		% of GNP		% of GNP		% of GNP		% of GNP
Merchandise Account	8,883	12.3	4,267	3.9	14,250	7.0	52,434	12.1	47,900	6.0
Exports	37,576	52.2	78,348	71.3	139,780	68.2	279,905	64.6	561,940	69.8
Imports	28,693	39.9	74,081	67.4	125,530	61.3	227,471	52.5	514,040	64.0
Services Account	-10,391	-14.4	-9,812	-8.9	-12,150	-6.0	-48,415	-11.2	-55,470	-7.0
of which:										
Freight & Insurance	-1,852	-2.6	-3,739	-3.4	-5,460	-2.7	-11,395	-2.6	-23,070	-3.0
Other Transportation	64	0.1	188	0.2	590	0.3	363	0.1	2,060	0.3
Travel	-1,332	-1.9	471	0.4	820	0.4	-5,080	-1.2	2,560	0.3
Investment Income	-5,434	-7.6	-4,831	-4.4	-7,890	-3.8	-24,374	-5.6	-34,310	-4.3
Government Transactions	-31	-0.0	-311	-0.3	-30	-0.0	-1,181	-0.3	-770	-0.1
Other Services	-1,806	-2.5	-1,590	-1.4	-200	-0.1	-6,748	-1.6	-1,950	-0.2
Transfers	-14	-0.0	300	0.3	210	0.1	1,347	0.3	1,050	0.1
Current Account	-1,522	-2.1	-5,245	-4.8	2,300	1.0	5,366	1.2	-6,530	-0.8
Capital Account										
Official Long-term Capital	2,392	3.3	-2,258	-2.1						
Corporate Investment	1,725	2.4	8,000	7.3						
Central Bank Reserves	12,457	17.3	27,026	24.6						
Months of Retained Imports	5.2		4.1							

1.56 During the Sixth Plan period, the labour force is projected to grow at a slower rate of 2.9 per cent compared with 3.1 per cent during the previous Plan period, as shown in *Chart 1-6*. The slower rate of growth is mainly on account of the slower growth of the population in the 15-24 age group as a result of past declines in fertility. The overall labour force participation rate (LFPR) is, however, expected to increase from 66.5 per cent in 1990 to 67.3 per cent in 1995, largely reflecting the increase in female LFPR from 47.3 per cent to 48.6 per cent during the period.

1.57 The employment situation will remain favourable, with employment projected to grow at 3.2 per cent per annum to reach 7.8 million in 1995, an increase of 1.1 million new jobs. With labour supply

TABLE 1-7  
POPULATION, LABOUR FORCE AND EMPLOYMENT,  
1985-95

	1985		1990		1995		Increase ('000)		Average Annual Growth Rate (%)	
							5MP	6MP	5MP	6MP
Population ('000)	15,864.0		18,010.2		20,262.7		2,146.2	2,252.5	2.5	2.4
Labour Force ('000)	6,039.1		7,046.5		8,114.0		1,007.4	1,067.5	3.1	2.9
Unemployment ('000)	414.5		425.5		361.7					
Unemployment Rate <sup>1</sup> (%)	6.9		6.0		4.5					
Sector	('000)		('000)		('000)		New Jobs ('000)		Average Annual Growth Rate (%)	
		(%)		(%)		(%)	5MP	6MP	5MP	6MP
Agriculture & Forestry	1,759.6	31.3	1,837.6	27.8	1,821.9	23.5	78.0	-15.7	0.9	-0.2
Mining & Quarrying	44.4	0.8	39.1	0.6	40.7	0.5	-5.3	1.6	-2.5	0.8
Manufacturing	855.4	15.2	1,290.2	19.5	1,699.1	21.9	434.8	408.9	8.6	5.7
Construction	429.4	7.6	426.9	6.4	547.5	7.1	-2.5	120.6	-0.1	5.1
Non-Government Services <sup>2</sup>	1,716.3	30.5	2,177.0	32.9	2,770.9	35.7	460.7	593.9	4.9	4.9
Government Services	819.5	14.6	850.2	12.8	872.2	11.3	30.7	22.0	0.7	0.5
Employment	5,624.6	100.0	6,621.0	100.0	7,752.3	100.0	996.4	1,131.3	3.3	3.2

Notes:

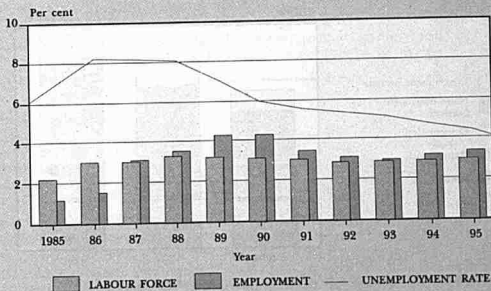
<sup>1</sup> Estimates of unemployment in Malaysia follow the internationally accepted definition of unemployment and include all persons in the labour force who, during the reference period, were without any work although available for employment. The estimates cover those who were not actively looking for work and they accounted for about half of the total number of unemployed.

<sup>2</sup> Includes electricity, gas and water; transport, storage and communications; wholesale and retail trade, hotels and restaurants; finance, insurance, real estate and business services and other services.

anticipated to increase by 2.9 per cent per annum, the unemployment rate will decline from 6.0 per cent in 1990 to about 4.5 per cent by 1995 which is nearer to the full employment level. Overall, there will be adequate supply of young and trainable labour force in the country. However, the rapid expansion of industries at particular locations will place pressure on local labour markets. With the tightening of the labour market, there will be pressure on wages to increase. In order to safeguard Malaysia's international competitiveness, wage increases will have to be related to productivity growth. To this end, the Government will formulate a system of wage adjustment which relates wage movements to productivity changes. The changes that will be effected will be in the best interests of both workers and employers.

1.58 As a measure to ease the tightening of the labour market, the Government will also undertake programmes to equip female workers with more marketable skills. Such measures will not only optimize their employment potential, but also enhance their career prospects in line with the expansion of employment opportunities and the structural changes in the economy.

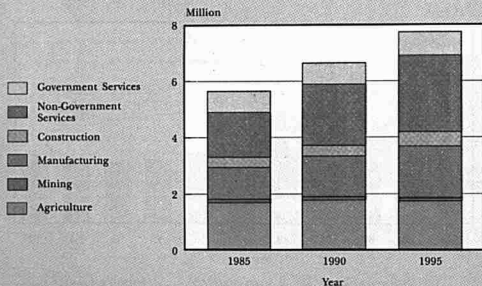
CHART 1-6  
GROWTH OF LABOUR FORCE AND EMPLOYMENT  
AND UNEMPLOYMENT RATE, 1985-95



1.59 The increasing adoption of modern manufacturing technologies and production processes to increase productivity will place greater demand on the availability of skilled labour to complement capital-intensive operations. In response to present and in anticipation of future manpower requirements, the Government has prepared a comprehensive programme of policy reforms as contained in the Report of the Cabinet Committee on Training. These reforms are aimed at making the skill delivery system more responsive to the market and technological demand as well as encourage greater public-private sector collaboration and a greater role by the private sector in training. This will ensure that education and training institutions will be able to produce both the quantity and quality of output required for future growth and development.

1.60 Job generation during the Sixth Plan period is expected to change in line with the structural shifts in the economy, as shown in *Chart 1-7*. Increasingly, more jobs will be found in the services sector, particularly in non-government services, as the public sector will continue to refrain from creating more jobs. As the economy becomes more industrialized and broad-based, more employment will be created in the

CHART 1-7  
EMPLOYMENT BY SECTOR, 1985-95



services, manufacturing and construction sectors, while the employment contribution of the primary sector will decline. The services sector, excluding government services, is expected to generate 593,900 new jobs or 52.5 per cent of new job creation. Employment in the manufacturing sector is estimated to grow at 5.7 per cent per annum to create an additional 408,900 jobs. This rate of growth is lower than in the previous period as a result of the slight deceleration in the growth of the sector as well as shifts to greater use of automation.

1.61 In line with the structural shift in employment pattern towards the modern sectors of the economy, improved techniques of production, as well as measures to improve efficiency and skill levels, the overall labour productivity as measured by value added per worker is expected to increase from \$11,950 in 1990 to \$14,660 in 1995. The most significant increase in productivity is envisaged for the manufacturing sector, rising from \$16,570 to \$21,690 during the period.

### **Framework for Distributional Objectives**

1.62 Efforts at achieving the distributional objectives in the Sixth Plan will pay particular attention to the qualitative aspects in dealing with the remaining problems of poverty and economic imbalances among ethnic groups. These problems are no longer as serious as they were 20 years ago. Therefore, the focus will now shift towards selective implementation of programmes and projects in the effort to eradicate poverty, irrespective of race, and restructure society. Thus, while poverty eradication programmes will remain an important aspect of the development strategy, the emphasis will be on targeting the programmes for the hard-core poor. Similarly, in the restructuring of society, priority will be given to the development of BCIC, where in terms of achievement, it has been the least successful.

#### *Poverty Alleviation*

1.63 Further improvements will be made in the alleviation of poverty with the incidence of poverty as a whole projected to decline from 17.1 per cent in 1990 to 11.1 per cent in 1995, as shown in *Table 1-8*. This will entail a reduction of about 133,900 poor households from the present level of 619,400. In terms of stratum, this will involve a decrease of about 129,100 poor households in the rural areas and about 4,800 in the urban areas. For the Peninsula, the incidence of poverty is targeted to be reduced to 9.1 per cent from 15 per cent, or a reduction in the number of poor households by 119,400. For Sabah, the incidence of poverty is expected to decline to 25.6 per cent from 34.3 per cent, involving a

TABLE 1-8

INCIDENCE OF POVERTY AND NUMBER OF POOR HOUSEHOLDS,  
1985-95

		1985 <sup>1</sup>			1990 <sup>1</sup>			1995		
		Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
<b>Peninsular Malaysia</b>										
Incidence of Poverty	(%)	18.4	8.2	24.7	15.0	7.3	19.3	9.1	4.1	14.1
Number of Poor Households	('000)	483.3	81.3	402.0	448.9	77.5	371.4	329.5	73.3	256.2
Incidence of Hard-core Poverty	(%)	6.3	2.4	8.7	3.6	1.4	4.8	1.7	0.6	2.8
Number of Hard-core Poor	('000)	165.6	23.8	141.8	107.3	14.9	92.4	61.3	10.6	50.7
<b>Total Households</b>	<b>('000)</b>	<b>2,621.1</b>	<b>991.7</b>	<b>1,629.4</b>	<b>2,986.4</b>	<b>1,062.2</b>	<b>1,924.2</b>	<b>3,627.9</b>	<b>1,804.9</b>	<b>1,823.0</b>
<b>Sabah</b>										
Incidence of Poverty	(%)	33.1	14.3	38.6	34.3	14.7	39.1	25.6	8.5	33.0
Number of Poor Households	('000)	76.0	7.5	68.5	96.6	8.5	91.1	91.1	9.1	82.0
Incidence of Hard-core Poverty	(%)	9.7	2.9	11.7	8.5	1.7	10.1	5.5	1.3	7.2
Number of Hard-core Poor	('000)	22.3	1.5	20.8	24.7	1.0	23.7	19.4	1.4	18.0
<b>Total Households</b>	<b>('000)</b>	<b>229.8</b>	<b>52.4</b>	<b>177.4</b>	<b>290.8</b>	<b>57.7</b>	<b>233.1</b>	<b>356.0</b>	<b>107.3</b>	<b>248.7</b>
<b>Sarawak</b>										
Incidence of Poverty	(%)	31.9	8.2	37.3	21.0	4.9	24.7	16.0	2.1	20.1
Number of Poor Households	('000)	90.1	4.2	85.9	70.9	3.1	67.8	64.9	1.9	63.0
Incidence of Hard-core Poverty	(%)	10.0	1.7	11.9	3.3	0.6	3.9	2.0	0.3	2.5
Number of Hard-core Poor	('000)	28.2	0.9	27.3	11.1	0.4	10.7	8.1	0.3	7.8
<b>Total Households</b>	<b>('000)</b>	<b>282.4</b>	<b>51.2</b>	<b>231.2</b>	<b>337.4</b>	<b>62.8</b>	<b>274.6</b>	<b>405.3</b>	<b>91.4</b>	<b>313.9</b>
<b>Malaysia</b>										
Incidence of Poverty	(%)	20.7	8.5	27.3	17.1	7.5	21.8	11.1	4.2	16.8
Number of Poor Households	('000)	649.4	93.0	556.4	619.4	89.1	530.3	485.5	84.3	401.2
Incidence of Hard-core Poverty	(%)	6.9	2.4	9.3	4.0	1.4	5.2	2.0	0.6	3.2
Number of Hard-core Poor	('000)	216.1	26.2	89.9	143.1	16.3	126.8	88.8	12.3	76.5
<b>Total Households</b>	<b>('000)</b>	<b>3,133.3</b>	<b>1,095.3</b>	<b>2,038.0</b>	<b>3,614.6</b>	<b>1,182.7</b>	<b>2,431.9</b>	<b>4,389.2</b>	<b>2,003.6</b>	<b>2,385.6</b>

Sources: Household Income Surveys, 1984 and 1989, and EPU estimates.

Note: <sup>1</sup> Figures for 1985 and 1990 are based on the surveys conducted in 1984 and 1989, respectively.

reduction of about 5,500 poor households, while in Sarawak, the incidence of poverty is expected to decline to 16 per cent, a reduction of about 6,000 poor households. With these improvements, the incidence of hard-core poverty will also decline from 4.0 per cent to 2.0 per cent, resulting in the reduction in their number of households from 143,100 to 88,800. Along with this, the quality of life of the poor, especially the hard-core poor, will also be improved through the provision of basic needs and other social amenities. A major factor contributing to the improvement in the poverty situation will be the greater opportunities that will be available for the poor, both in the rural and urban areas, to increase their incomes and their standard of living, arising from the continued strong growth of the national economy. The Government will provide the necessary support facilities, in particular, to the hard-core poor in order to encourage them to be self-reliant.

1.64 Apart from focussing on the poorest segment of the population, the Plan will also pay attention to the potential problems associated with relative poverty. Towards this end, emphasis will be given to the lower income segment of the population, especially those who constitute the bottom 40 per cent of the households. The main concern in this effort will be to ensure that the lower income households, who are no longer absolutely poor, will not experience a deteriorating socio-economic position and that their mean income relative to that of the higher income households will continue to improve.

### *Restructuring of Society*

1.65 With respect to the restructuring of society, further progress will be made in restructuring employment such that the pattern of employment among the ethnic groups in the country will reflect their composition in the population. The share of Bumiputera, particularly in the higher-paying professional occupations, is projected to increase from 29 per cent to 32.3 per cent during the period, as shown in *Table 1-9*. The breakdown of these professional occupations in 1990 is shown in *Table 1-10*. Bumiputera representation in the modern sectors, especially in manufacturing and non-government services sectors, will be further enhanced as a result of increased supply of educated and skilled Bumiputera manpower as well as higher demand for such personnel, as shown in *Table 1-11*. Bumiputera will be given opportunities to enable them to participate in skilled occupations in the private sector where there will be a greater demand for such manpower. Particular emphasis will be given to improve the quality of manpower among Bumiputera through the development of specialized technical and communicative as well as marketable skills.

TABLE 1-9

EMPLOYMENT BY OCCUPATION AND ETHNIC GROUP, 1985-95  
( '000)

Occupation	1985					1990					1995				
	Bumi-putera	Chinese	Indians	Others	Total	Bumi-putera	Chinese	Indians	Others	Total	Bumi-putera	Chinese	Indians	Others	Total
Professional/Technical <sup>1</sup>	248.2	130.2	36.7	6.6	421.7	350.4	178.6	44.8	7.0	580.8	451.9	220.3	53.4	6.6	732.2
(%)	58.8	30.9	8.7	1.6	100.0	60.3	30.8	7.7	1.2	100.0	61.7	30.1	7.3	0.9	100.0
Registered Professional <sup>2</sup>	6.3	17.4	3.9	0.8	28.4	11.8	22.6	5.4	0.8	40.6	19.5	31.8	8.3	0.7	60.3
(%)	22.2	61.2	13.9	2.7	100.0	29.0	55.9	13.2	1.9	100.0	32.3	52.8	13.7	1.2	100.0
Teachers and Nurses	108.9	49.0	10.8	0.9	169.6	148.7	54.9	13.7	1.2	218.5	196.4	61.3	17.1	1.5	276.3
(%)	64.2	28.9	6.4	0.5	100.0	68.1	25.1	6.3	0.5	100.0	71.1	22.2	6.2	0.5	100.0
Administrative and Managerial	44.9	74.2	6.6	3.3	129.0	54.1	95.3	8.6	4.4	162.4	75.1	126.5	11.8	6.1	219.5
(%)	34.8	57.5	5.1	2.6	100.0	33.3	58.7	5.3	2.7	100.0	34.2	57.6	5.4	2.8	100.0
Clerical	295.8	206.8	41.6	3.0	547.2	354.7	238.1	50.5	2.6	645.9	426.4	280.0	58.2	2.5	767.1
(%)	54.1	37.8	7.6	0.5	100.0	54.9	36.9	7.8	0.4	100.0	55.6	36.5	7.6	0.3	100.0
Sales	207.9	371.0	42.7	4.7	626.3	274.2	429.8	49.7	7.6	761.3	382.2	518.5	61.3	11.9	973.9
(%)	33.2	59.2	6.8	0.8	100.0	36.0	56.5	6.5	1.0	100.0	39.2	53.2	6.3	1.2	100.0
Service	395.6	178.7	64.6	3.3	642.2	473.9	207.7	81.8	6.9	770.3	595.3	238.2	101.2	3.0	937.7
(%)	61.6	27.8	10.1	0.5	100.0	61.5	27.0	10.6	0.9	100.0	63.5	25.4	10.8	0.3	100.0
Agricultural	1,306.7	261.6	140.9	11.7	1,720.9	1,431.1	295.1	131.4	14.9	1,872.5	1,403.4	295.4	132.7	15.1	1,846.6
(%)	75.9	15.2	8.2	0.7	100.0	76.4	15.8	7.0	0.8	100.0	76.0	16.0	7.2	0.8	100.0
Production	726.8	642.2	161.5	6.8	1,537.3	887.0	737.6	195.9	7.3	1,827.8	1,130.6	882.9	252.3	9.5	2,275.3
(%)	47.3	41.8	10.5	0.4	100.0	48.5	40.4	10.7	0.4	100.0	49.7	38.8	11.1	0.4	100.0
<b>Total</b>	<b>3,225.9</b>	<b>1,864.7</b>	<b>494.6</b>	<b>39.4</b>	<b>5,624.6</b>	<b>3,825.4</b>	<b>2,182.2</b>	<b>562.7</b>	<b>50.7</b>	<b>6,621.0</b>	<b>4,464.9</b>	<b>2,561.8</b>	<b>670.9</b>	<b>54.7</b>	<b>7,732.3</b>
(%)	57.3	33.2	8.8	0.7	100.0	57.8	32.9	8.5	0.8	100.0	57.6	33.0	8.6	0.7	100.0

Notes:

<sup>1</sup> Refers to the standard definition as provided in the Dictionary of Occupations which includes not only the fully professional and technically qualified workers but also the sub-professional and sub-technical categories such as Draughtsmen, Laboratory Assistants as well as Teachers and Nurses.

<sup>2</sup> Refers to members registered with eight professional bodies, i.e. Architects, Engineers, Surveyors, Doctors, Dental Surgeons, Veterinarians, Accountants and Lawyers.



TABLE 1-10  
REGISTERED PROFESSIONALS BY ETHNIC GROUP, 1990

Profession	Bumiputera	(%)	Chinese	(%)	Indians	(%)	Others	(%)	Total	(%)
Architects	231	2.0	728	3.2	12	0.2	8	1.1	979	2.4
(%)	23.6		74.4		1.2		0.8		100.0	
Accountants	627	5.3	4,524	20.0	346	6.5	77	10.3	5,574	13.8
(%)	11.2		81.2		6.2		1.4		100.0	
Engineers	7,018	59.7	11,741	51.9	1,065	19.9	342	45.6	20,166	49.8
(%)	34.8		58.2		5.3		1.7		100.0	
Dentists	406	3.5	847	3.7	396	7.4	21	2.8	1,670	4.1
(%)	24.3		50.7		23.7		1.3		100.0	
Doctors	1,951	16.6	2,430	10.7	2,410	44.9	216	28.8	7,007	17.3
(%)	27.8		34.7		34.4		3.1		100.0	
Veterinary Surgeons	242	2.1	160	0.7	250	4.7	23	3.1	675	1.7
(%)	35.9		23.7		37.0		3.4		100.0	
Lawyers	705	6.0	1,575	7.0	836	15.6	37	4.9	3,153	7.8
(%)	22.4		50.0		26.5		1.2		100.0	
Surveyors	573	4.9	636	2.8	48	0.9	26	3.5	1,283	3.2
(%)	44.7		49.6		3.7		2.0		100.0	
<b>Total</b>	<b>11,753</b>	<b>100.0</b>	<b>22,641</b>	<b>100.0</b>	<b>5,363</b>	<b>100.0</b>	<b>750</b>	<b>100.0</b>	<b>40,507</b>	<b>100.0</b>
(%)	29.0		55.9		13.2		1.9		100.0	

Source: Professional associations and institutions, covering both the public and private sectors.

1.66 The restructuring of employment will also take into account the need for higher participation of non-Bumiputera in the sectors in which they are now underrepresented. Accordingly, a better representation of the non-Bumiputera in the public sector appointments, such as in the middle and senior levels of the civil services, will improve the ethnic structure of employment in the sector. However, Bumiputera are underrepresented in the higher levels of occupations in the private sector. Thus, while the employment of the non-Bumiputera is expected to increase over the 1990 level in the middle and senior appointments in the civil services, the private sector will have to absorb correspondingly a larger number of Bumiputera in the professional, managerial and executive levels to improve the ethnic structure of employment in the sector.

TABLE 1-11

EMPLOYMENT BY SECTOR AND ETHNIC GROUP, 1985-95  
( '000)

Sector	1985					1990					1995				
	Bumi-putera	Chinese	Indians	Others	Total	Bumi-putera	Chinese	Indians	Others	Total	Bumi-putera	Chinese	Indians	Others	Total
Agriculture & Forestry (%)	1,318.9	283.3	145.5	12.0	1,759.6	1,404.6	295.1	122.8	15.1	1,837.6	1,386.5	299.6	121.0	14.8	1,821.9
Mining & Quarrying (%)	75.0	16.1	8.3	0.7	100.0	76.4	16.1	6.7	0.8	100.0	76.1	16.5	6.6	0.8	100.0
Manufacturing (%)	23.0	14.7	5.7	1.0	44.4	19.1	15.2	4.2	0.6	39.1	21.0	15.9	3.2	0.6	40.7
Construction (%)	51.9	33.1	12.8	2.2	100.0	48.8	38.9	10.8	1.5	100.0	51.6	39.1	7.8	1.5	100.0
Electricity, Gas & Water (%)	385.8	370.6	93.9	5.1	855.4	649.4	475.6	157.3	7.9	1,290.2	915.0	564.8	210.8	8.5	1,699.1
Transport, Storage & Communications (%)	45.1	43.3	11.0	0.6	100.0	50.3	36.9	12.2	0.6	100.0	53.9	33.2	12.4	0.5	100.0
Wholesale & Retail Trade, Hotels & Restaurants (%)	181.3	219.4	25.2	3.5	429.4	183.8	212.9	26.4	3.8	426.9	242.2	266.5	33.6	5.2	547.5
Finance, Insurance, Real Estate & Business Services (%)	42.2	51.1	5.9	0.8	100.0	43.0	49.9	6.2	0.9	100.0	44.2	48.8	6.1	0.9	100.0
Government Services (%)	30.7	6.1	6.6	0.1	43.5	32.1	5.9	7.6	0.3	45.9	33.5	6.1	8.1	0.1	47.8
Other Services (%)	70.7	13.9	15.1	0.3	100.0	69.8	12.9	16.6	0.7	100.0	70.1	12.8	16.9	0.2	100.0
Total (%)	125.9	84.1	32.8	1.5	244.3	154.5	92.6	36.2	2.1	285.4	191.1	106.6	46.4	1.3	345.4
Labour Force (%)	51.5	34.4	13.4	0.6	100.0	54.1	32.4	12.8	0.7	100.0	55.3	30.9	13.4	0.4	100.0
Unemployment (%)	331.6	513.3	65.5	6.9	917.3	475.3	668.8	85.2	10.1	1,239.4	661.3	831.0	105.3	14.5	1,612.1
Unemployment Rate (%)	36.1	56.0	7.1	0.8	100.0	38.2	54.1	6.9	0.8	100.0	41.1	51.5	6.5	0.9	100.0
Labour Force (%)	84.6	93.4	19.2	1.7	198.9	95.2	109.6	23.8	2.7	231.3	115.6	126.5	28.4	2.7	273.2
Unemployment (%)	42.5	46.9	9.7	0.9	100.0	41.1	47.4	10.3	1.2	100.0	42.3	46.3	10.4	1.0	100.0
Unemployment Rate (%)	538.8	202.7	72.6	5.5	819.5	560.3	214.8	69.3	5.8	850.2	568.7	222.4	76.5	4.6	872.2
Labour Force (%)	65.7	24.7	8.9	0.7	100.0	65.9	25.3	8.2	0.6	100.0	65.2	25.5	8.8	0.5	100.0
Unemployment (%)	205.3	77.2	27.7	2.1	312.3	251.1	91.7	29.9	2.3	375.0	330.0	122.4	37.6	2.4	492.4
Unemployment Rate (%)	65.7	24.7	8.9	0.7	100.0	66.9	24.5	8.0	0.6	100.0	67.0	24.9	7.6	0.5	100.0
Labour Force (%)	3,225.9	1,864.7	494.6	39.4	5,624.6	3,825.4	2,182.2	562.7	50.7	6,621.0	4,464.9	2,561.8	670.9	54.7	7,752.3
Unemployment (%)	57.3	33.2	8.8	0.7	100.0	57.8	32.9	8.5	0.8	100.0	57.6	33.0	8.6	0.7	100.0
Labour Force (%)	3,480.0	1,987.3	530.4	41.4	6,039.1	4,093.0	2,304.3	595.9	53.3	7,046.5	4,714.2	2,645.2	697.8	56.8	8,114.0
Unemployment (%)	57.6	32.9	8.8	0.7	100.0	58.0	32.7	8.5	0.8	100.0	58.1	32.6	8.6	0.7	100.0
Unemployment Rate (%)	254.1	122.6	35.8	2.0	414.5	267.6	122.1	33.2	2.6	425.5	249.3	83.4	26.9	2.1	561.7
Unemployment Rate (%)	61.3	29.6	8.6	0.5	100.0	62.9	28.7	7.8	0.6	100.0	68.9	23.1	7.4	0.6	100.0
Unemployment Rate (%)	7.3	6.2	6.7	4.8	6.9	6.5	5.3	5.6	4.9	6.0	5.3	3.2	3.9	3.7	4.5

1.67 In the restructuring of the corporate sector, the target of at least 30 per cent Bumiputera participation will continue to guide the formulation of strategies and programmes during the period. However, the Government recognizes that the achievement of this target needs to be given time as it involves the mobilization of a large amount of savings among Bumiputera and requires the availability of Bumiputera entrepreneurs to effectively participate in the modern sectors of the economy. Therefore, under NDP no specific time frame has been set for the attainment of the equity restructuring target of at least 30 per cent. Under the Sixth Plan, greater attention will be given towards nurturing a higher quality of leadership, professional, technical, managerial and entrepreneurial skills to enable Bumiputera to manage their wealth effectively in order to lay the foundation for further creation of wealth on a sustainable basis.

1.68 The trust agencies are no longer expected to take up significantly the new equity generated, mainly due to resource constraints among the agencies as well as the reduction in direct financial assistance to these agencies from the Government. Consequently, Bumiputera enterprises and individuals as a group will be expected to take up most of the new equity reserved for Bumiputera.

1.69 In order to ensure effective and active participation of Bumiputera in the sector, greater emphasis will be given to their ability to sustain their assets which they have accumulated over the past years. Therefore, attention will be given towards expanding their expertise and capability in the management of wealth. At the same time, assistance will be provided for the development of Bumiputera small companies and businesses to enable them to benefit from the growing opportunities in the corporate sector.

### **Framework for Regional Balance**

1.70 By the end of the Sixth Plan period, Selangor, Wilayah Persekutuan Kuala Lumpur and Terengganu will continue to be the states with the highest per capita GDP, as shown in *Table 1-12*. Despite land constraints in the Klang Valley, both Wilayah Persekutuan Kuala Lumpur and Selangor will continue to gain from expanding private sector activities, with Wilayah Persekutuan Kuala Lumpur as the major services centre and Selangor, the major industrial state. Their respective predominance as the leading services and industrial centres will remain as private investors and entrepreneurs continue to prefer locating their businesses and plants in these states.

TABLE 1-12

**PER CAPITA GROSS DOMESTIC PRODUCT AND MEAN MONTHLY  
HOUSEHOLD INCOME BY STATE**

	1985	Ratio to National Average	1990	Ratio to National Average	1995	Ratio to National Average
	(\$)		(\$)		(\$)	
<i>1. Per Capita GDP (in 1978 prices)</i>						
Malaysia	3,599		4,392		5,607	
Johor	3,170	0.88	3,983	0.91	5,661	1.01
Kedah	2,092	0.58	2,600	0.59	3,447	0.61
Kelantan	1,426	0.40	1,739	0.40	2,207	0.39
Melaka	2,775	0.77	3,587	0.82	4,784	0.85
Negeri Sembilan	3,111	0.86	3,824	0.87	4,958	0.88
Pahang	2,677	0.74	3,278	0.75	4,222	0.75
Perak	2,760	0.77	3,357	0.76	4,330	0.77
Perlis	2,470	0.69	2,973	0.68	3,700	0.66
Pulau Pinang	3,780	1.05	4,934	1.12	6,304	1.12
Sabah	3,845	1.07	4,500	1.02	5,195	0.93
Sarawak	3,452	0.96	3,883	0.88	4,920	0.88
Selangor	5,185	1.44	6,558	1.49	8,454	1.51
Terengganu	5,901	1.64	7,124	1.62	7,804	1.39
Wilayah Persekutuan Kuala Lumpur	6,768	1.88	7,608	1.73	9,495	1.69
<i>2. Mean Monthly Household Income</i>						
	1985	Ratio to National Average	1990	Ratio to National Average		
	(\$)		(\$)			
Malaysia	1,098		1,254			
Johor	1,065	0.97	1,220	0.97		
Kedah	690	0.63	860	0.69		
Kelantan	625	0.57	726	0.58		
Melaka	1,040	0.95	1,190	0.95		
Negeri Sembilan	1,039	0.95	1,162	0.93		
Pahang	960	0.87	1,092	0.87		
Perak	883	0.80	1,067	0.85		
Perlis	692	0.63	852	0.68		
Pulau Pinang	1,183	1.08	1,375	1.10		
Sabah	1,212	1.10	1,358	1.08		
Sarawak	1,033	0.94	1,199	0.96		
Selangor	1,590	1.45	1,790	1.43		
Terengganu	756	0.69	905	0.72		
Wilayah Persekutuan Kuala Lumpur	1,920	1.75	2,102	1.68		

1.71 The middle-income state of Johor is expected to grow at a faster rate compared with the national average during the period. The ratio of per capita GDP of Johor to the national average is expected to increase from 0.91 in 1990 to 1.01 in 1995. This improvement is due to the rapid industrial development in the state. Besides benefiting from Singapore due to its close proximity, the state is expected to benefit further from the developments in the growth triangle comprising South Johor, Batam Island and Singapore. The completion of the second crossing, linking Johor with Singapore, the development of a second port and the relocation of industries from Singapore will further accelerate the pace of development of Johor. At the same time, Melaka, Negeri Sembilan and Perak will continue to benefit from spillover developments in the Klang Valley as Wilayah Persekutuan Kuala Lumpur and Selangor are slowly experiencing congestion. In addition, plans are being prepared to utilize the vast stretches of ex-mining land in Perak and to develop the potential of North Perak for agro-tourism development. The States of Sabah and Sarawak, which largely depend on the primary sector, namely, agriculture and mining, particularly petroleum, are expected to grow at a rate of 6.2 per cent and 7.5 per cent, respectively. However, an increase in petroleum and gas-related activities will boost the growth of the manufacturing sector in these two states. The sector is expected to grow at 13.7 per cent per annum in Sabah and 15.7 per cent in Sarawak, more than the national average of 11.5 per cent. The high growth of the manufacturing sector is due to the expansion in downstream activities related to the petroleum and gas industry.

1.72 The position of the lesser developed state of Kedah is also expected to improve. The state is expected to grow at 8.0 per cent per annum as a result of the rapid growth of manufacturing industries, particularly those located in the Kulim-Sungai Petani areas, and the spillover of industries from Pulau Pinang. In addition, with the designation of Kulim as one of the areas earmarked for the development of high-tech industries under the strategy of industrial specialization by location, the state is expected to experience further growth. The relative positions of Perlis and Kelantan are expected to remain unchanged with agriculture being the major contributor. However, there is potential for the development of commercial agriculture and horticulture in south-west Kelantan, especially in the higher elevated lands to spur the growth of the agriculture sector in the state.

1.73 Generally, the economic base of all states continue to change progressively from being dependent on the primary sector to one relying more on the modern secondary and tertiary sectors. For example, the contribution of the secondary sector to GDP of Kelantan will increase

from 14.4 per cent in 1990 to 17.9 per cent in 1995, from 21.8 per cent to 30.2 per cent of GDP in Kedah, and from 17.2 per cent to 23.7 per cent of GDP in Pahang. The contribution of the primary sector to GDP of these states will decline correspondingly.

## V. DEVELOPMENT STRATEGIES FOR THE SIXTH PLAN

### Macro-economic Strategies

1.74 In the effort to improve Malaysia's growth prospects in a rapidly changing world economy, greater focus will be given to macro-economic strategies to meet the challenges ahead as well as strengthen the nation's productive capacity and competitiveness in the international market. During the Sixth Plan period, productivity growth will be an important determinant of output expansion in the economy so as to enable the country to face the challenges of rapid technological developments and the changing global economic environment. Further, with natural resources becoming more scarce and with growing concerns on environmental degradation, there is need to ensure the efficient utilization of resources for sustainable development.

1.75 The strategy for achieving growth will be, *firstly*, to improve the efficiency and competitiveness of the economy and encourage the private sector to continue playing a leading role in the expansion of the economy. The private sector thrives best under stable macro-economic conditions. Therefore, the Government will ensure that its management of the economy will continue to create the conditions which are conducive for the growth of private investment and the development of private sector initiatives and entrepreneurship. Towards this end, fiscal and monetary policies will be directed towards maintaining stable prices, favourable exchange rates and a healthy balance of payments position.

1.76 *Secondly*, as a healthy public sector financial position is essential for strengthening the environment for growth and maintaining financial and economic stability in the country, the measures which have been undertaken to consolidate the public sector and reduce its direct participation in the economy will be continued. In addition, steps will be taken to strengthen further the revenue position of the Federal Government, reduce unproductive expenditures and accelerate the implementation of the privatization programme in order to enable the public sector to be financially strong. This will enable it to have the resources to implement the priority programmes in infrastructure and human resource development and provide the social services for meeting the distributional objectives under NDP.

1.77 *Thirdly*, the Government will maintain and further liberalize the procedures and rules to improve further the investment climate. In this regard, the Government will continue with the existing liberal policy on equity requirements for foreign investors in the manufacturing and tourism sectors. Steps will also be taken to improve further the administrative procedures and regulations at the Federal, state and local authority levels to assist in the efficient implementation of private sector projects. Although the existing regulatory authorities such as the Ministry of International Trade and Industry, Foreign Investment Committee (FIC) and the Capital Issues Committee (CIC) will continue to function in implementing the objectives of restructuring equity ownership and the employment pattern in the private sector, procedures will be rationalized further to ensure that these are consistent with the overriding policy of encouraging private sector growth and foreign investment in the country.

1.78 *Fourthly*, efforts will be continued to accelerate the process of industrial development. To remain internationally competitive, Malaysia will have to change the structure of its industry towards more technologically sophisticated and better quality products that are integrated with the markets of the developed countries. This will require policy changes to encourage technological upgrading, diversify the industrial base, promote industrial restructuring and modernization, especially among small- and medium-scale industries (SMIs) and to raise the standards of manufacturing towards higher levels of innovation and know-how in production, design and marketing. For this purpose, the Sixth Plan will allocate more resources to the development of S&T, R&D, human resource development and industrial restructuring programmes. In particular, the quality of education and training will be improved to meet the increasing demand for skilled manpower and to raise efficiency and productivity of the labour force. The development of the transport and communications system will be accelerated to cope with the emerging problems of congestion and bottlenecks resulting from the unprecedented growth in the major industrial areas.

1.79 *Fifthly*, greater efforts will be made to strengthen the development of the financial and capital markets so as to facilitate domestic savings to be more efficiently mobilized and channelled towards the productive sectors of the economy, in particular the manufacturing sector. In this connection, an important area of reform is to enable the high level of savings mobilized by the social security organizations to be made more easily accessible to companies and institutions to meet their requirements for long-term funds.

## Sectoral Strategies

1.80 Sectoral strategies will focus on further diversifying the economic base and promoting the growth of value-added activities, as well as finding new avenues of development. These efforts to further transform the structure of production will strengthen the resilience of the economy. While the agriculture sector will remain an important part of the economy, the main thrust towards growth and structural change will come from the manufacturing sector. The services sector will expand and play an important role as the economy becomes more industrialized. Apart from promoting the development of the domestic services sector, greater efforts will be directed towards exporting services with a view to reducing the large deficits in the services account of the balance of payments.

1.81 The development of the *agriculture sector* is constrained by the scarcity of suitable land for cultivation, shortage of labour and increasing cost of production. While suitable land is still abundant in Sabah and Sarawak, the infrastructural support for agriculture will be improved over time. In addition, there is also an urgent need to conserve and develop forestry and inshore fishery resources. In the light of these constraints, the strategy will thus focus on efforts to further improve the productivity of existing cultivable areas, via land consolidation and estatization of smallholdings, wider application of R&D and labour saving devices as well as broader extension services and efficient marketing system. Thus, rural infrastructure will be improved to facilitate vertical integration of the sector for higher value-added products and to create new opportunities for rural industrialization as well as increase the mobility of the rural community into modern activities.

1.82 While forest and timber production is making significant contributions to economic growth, greater emphasis will be given to forest conservation to maintain environmental stability and ecological balance. The rate of logging will be reduced to ensure sustainable forest management in line with the National Forest Policy. At the same time continued efforts in rehabilitation and redevelopment of logged-over areas will enable the continued stable supply of timber to meet the needs of downstream processing into higher value-added timber products. In this way, production and protection will be harmonized so that the sound management and preservation of the forest will help advance economic growth while ensuring protection for the land, climate, habitat and ecology of the country.

1.83 The *mining sector* will continue to be dominated by petroleum and gas. With regard to petroleum, the emphasis will be to maintain a sustainable rate of exploitation. Natural gas, for which known reserves



are plentiful, will be a major contributor to the growth of the mining sector during the Sixth Plan. In addition, a national policy on mining is being formulated to develop the country's potential in the extraction of non-alluvial mineral deposits and in the development of mineral-based industrial activities.

1.84 The primary strategy for promoting the growth of the *manufacturing sector* is to widen and diversify its base as well as to establish greater linkages with the traditional subsectors. Emphasis will continue to be placed on accelerating the growth of export-oriented industries while at the same time developing the intermediate and capital goods industry as well as restructuring and modernizing existing industries. Certain identified subsectors of the industry, especially those that have enjoyed tariff protection for a long period, will be rationalized to improve their efficiency and competitiveness. Greater efforts will also be made to enhance linkages between the larger and foreign-owned concerns with the domestically-owned SMIs.

1.85 The *services sector* as a whole will be developed so that it will provide adequate support to the expansion of the other sectors. Such efforts include not only the upgrading and modernization of existing service subsectors but also the development of modern, higher value-added and more sophisticated services, particularly in the financial subsector and in professional and consultancy services. In addition, efforts will be made to accelerate the development of the travel, tourism and leisure industries, the shipping industry, private post-secondary education as well as specialized health care in order to save and at the same time, earn foreign exchange. The development of these industries will assist in the reduction of the deficit in the services account of the balance of payments.

### Distributional Strategies

1.86 Greater integration between growth and sectoral strategies will be pursued to ensure that distributional strategies take into account the importance of maintaining balanced ethnic participation and regional development. In the implementation of the strategies and programmes for poverty alleviation and restructuring of society, efforts will be made to minimize leakages and ensure benefits reach the targeted beneficiaries. This will be undertaken through further improvements to the delivery systems as well as a greater emphasis on human resource development.

### *Hard-core Poverty*

1.87 With regard to the hard-core poor, a new package of programmes called the 'Development Programmes For the Poorest' will be implemented with an allocation of about \$600 million, tailored to meet the specific needs of the poorest. The new package has been designed based on the experiences gained in the initial implementation of the programme during 1989-90 as well as on relevant surveys and analyses which have been made on the delivery system and its impact on the poorest. The package will include programmes which emphasize food and nutritional requirements for the undernourished children, provision of decent shelter and other assistance in kind. It also provides assistance to school-going children in the form of minor scholarships, text books, hostel accommodation and supplementary food programmes. In order to provide better incomes, economic projects such as planting of cash crops and rearing of livestock will be encouraged among active members of the households. Furthermore, the package also provides basic infrastructural facilities such as roads, water and electricity, as well as health and medical care.

1.88 To facilitate the implementation of this programme, the registry of the poorest households is being updated to identify the beneficiaries. Apart from income, the registry will take into account other information such as housing conditions, accessibility to basic amenities, and educational and health status of family members in the selection of the hard-core poor into the programme. A coordinating committee has also been established in order to expedite programme coordination as well as ensure that sufficient resources are made available to all the relevant agencies. In addition, a more effective procedure will be developed to ensure better feedback in terms of the impact of the various programmes on the target beneficiaries. At the district level, District Officers will be given more support facilities to implement the programme.

1.89 An important approach in the drive to eradicate poverty will be the creation of the right environment for the poor to utilize their own economic potential in order to develop a self-reliant community. In line with this, the Government will continue to support the efforts of non-governmental organizations and other private initiatives, such as the credit scheme by *Amanah Ikhtiar Malaysia* (AIM) designed to provide income-earning opportunities for the poor. As part of the support, the Government will provide a loan of \$20 million to AIM during the Plan period.

1.90 Apart from eradicating hard-core poverty, existing strategies for improving the standard of living of the poor households irrespective of race will be continued. The expansion in the economy will create new employment and income opportunities for the poor. In addition, public sector programmes under the Plan will also benefit these households. In the agriculture sector, the Integrated Agricultural Development Programme (IADP), land consolidation and rehabilitation as well as agricultural support services will continue to have positive impact on poor households, especially through improvements in productivity, commercialization of farm activities as well as marketing. Furthermore, activities which generate non-farm incomes will be encouraged among farmers as part of the overall strategy to generate additional income in the rural sector.

1.91 Programmes which are aimed at expanding the educational and health facilities for the rural population will benefit the poor families. In the case of education, residential schools in the rural areas will be further expanded to benefit rural pupils who need a more conducive environment for learning. In terms of health facilities, increased allocation will be provided through the upgrading of rural health services for the benefit of low-income families. Supporting all these programmes will be the expansion of infrastructural facilities and amenities, especially electricity and water supply.

1.92 Villages, including those which were previously known as *new villages*, and which had been hampered by the lack of land resources will be given opportunities, wherever feasible, to expand their area to avoid overcrowding and enhance employment generating opportunities. Similarly, in the estate sector, the Government will implement specific strategies to improve housing, health, educational and social conditions in the sector to enhance the quality of life of the estate population. While employers have a responsibility to provide some of these facilities, in those areas where large capital outlay is involved with regard to the connecting of piped water from public mains and the electricity supply and the provision of other basic amenities, the Government will provide assistance to estate employers by bringing these facilities to the fringes of the estate to enable the estate to draw from these supplies. The Government will also undertake to provide and improve educational, health and other related facilities in estates. As regards the workers' house ownership scheme, the Government will undertake administrative and other measures to facilitate estate management to respond more favourably to the implementation of more of such schemes.

### *Relative Poverty*

1.93 Greater efforts will be made to reduce relative poverty both between and within groups. During the Sixth Plan, apart from creating opportunities for the low-income group, continuous efforts will be made to further improve their skills and productivity in order to reduce income gaps, especially between the top 20 per cent and the bottom 40 per cent.

1.94 Several programmes will be implemented during the Sixth Plan to address this problem. *Firstly*, problems of uneconomic-sized holdings as well as idle land will be dealt with more vigorously through better land utilization on a commercial basis. *Secondly*, more efforts and resources will be directed at developing and strengthening economic and commercial linkages through programmes such as the establishment of rural industries and the provision of modern services to the rural sector. *Thirdly*, policies that promote a faster growth of value-added activities in agriculture will be implemented as part of the overall effort to modernize the rural sector, towards greater industrial and commercial development. *Fourthly*, policies and programmes will continue to be implemented to increase income and employment opportunities as well as social amenities and services in the urban areas, especially for the urban poor.

### *Bumiputera Commercial and Industrial Community*

1.95 Consistent with the policy to create a viable and competitive BCIC, the Government will continue to assist existing as well as potential Bumiputera entrepreneurs and businessmen to establish themselves in the commercial and industrial sectors. Towards this end, a special fund has been created by *Yayasan Pelaburan Bumiputera* with an initial amount of \$200 million.

1.96 The role of public enterprises and trust agencies will be consolidated and made more effective under the Sixth Plan. A major strategy will be to allow the agencies to have greater freedom and authority with respect to corporate and business decision-making to enable them to plan and implement programmes more effectively. These agencies are expected to play a stronger consultative role for Bumiputera entrepreneurs and businesses to enable them to become more competitive. In this regard, particular attention will be given towards encouraging Bumiputera to venture into technology-based activities with the agencies providing appropriate assistance under the umbrella concept.

1.97 The Government on its part will continue to make available the necessary institutional and financial resources to further support the

development of BCIC. The support, however, will be designed and managed to encourage only the more enterprising individuals and businesses in order to promote viable Bumiputera interests and increase their presence in the economy. The Government will set up an appropriate mechanism to monitor the performances of the beneficiaries. Steps will be undertaken to ensure that the private sector will also contribute to these arrangements.

1.98 The role and contribution of small Bumiputera enterprises and traders will also be given focus under the Plan. In this regard, financial assistance, training programmes and other related projects will be geared towards assisting potential enterprises to establish themselves, especially in wholesale and retail businesses which are located in core business areas of cities and towns.

1.99 Another important measure that will be implemented during the Plan period is the development of a complementary and effective linkage between the role of Bumiputera commercial and industrial associations with that of the government institutions and trust agencies. The linkage will enable greater coordination of commercial activities, strengthening of data base for entrepreneurs, providing advisory roles and developing potential for more strategic participation by Bumiputera in the modern sectors of the economy.

### *Management and Employment Restructuring*

1.100 Building upon past achievements, the strategies under the Plan will be to support the efforts to accelerate the supply of Bumiputera professional, managerial, technical and skilled manpower as a prerequisite to further meeting the objective of employment restructuring. Towards this end, the Plan will give particular attention to the participation of Bumiputera in various occupations at managerial and supervisory levels.

1.101 The Government, on its part, will ensure that while the overall thrust for restructuring the employment pattern continues under the Plan, special emphasis will be given to improve the quality of manpower in line with the acceleration of industrial and technological growth in the country. Necessary conditions that arise from this will be the upgrading of existing educational and training facilities available in the country, especially in the rural areas. The system of award of scholarship and loan assistance will be reoriented towards job and skill requirements of the labour market. As a complementary measure, more effective criteria will also be designed for better choice of candidates.

1.102 In line with the policy of private sector-led growth, the private sector is expected to play a more active role in employment restructuring by providing greater job opportunities to Bumiputera, especially at the skilled, professional and managerial levels. To facilitate a greater absorption of Bumiputera, the private sector is expected to take positive steps to provide opportunities for skill upgrading through the provision of training, retraining and attachment programmes in collaboration with the public sector.

1.103 Concurrent with this, the Government will also emphasize the restructuring of employment in sectors in which the non-Bumiputera are presently underrepresented, in particular in modern agriculture and at all levels of government services. However, this will have to be undertaken in tandem with greater absorption of Bumiputera at the higher levels and categories of occupations in the private sector.

1.104 Appropriate measures will be undertaken by the Government to assist the private sector attain employment restructuring. These include encouraging smaller companies to expand and create more employment opportunities as well as implementing appropriate arrangements on a cooperative basis with the private sector to allow its managerial personnel to have the right exposure to business and commercial practices.

1.105 In view of the contribution by public enterprises to the creation of viable Bumiputera managerial skills and entrepreneurs, these agencies are expected to pursue their role more vigorously. As they diversify their activities into new commercial and industrial activities on a joint-venture basis, the agencies will further create opportunities to increase the supply of Bumiputera manpower.

#### *Ownership, Control and Participation in the Corporate Sector*

1.106 During the Sixth Plan period, the rapid growth in the corporate sector will create better opportunities for balanced participation of all ethnic groups. While this will allow the non-Bumiputera to take advantage of the opportunities created, Bumiputera and other lagging communities will continue to require support from the Government. This implies that greater efforts will be made to harness more Bumiputera resources to be channelled for productive investments. This will be undertaken, among others, through more vigorous programmes to mobilize and manage Bumiputera resources. In this connection, a study will be undertaken to examine the feasibility of mobilizing the *zakat*, *wakaf* and other *Baitulmal* funds with a view to increasing further Bumiputera participation in the corporate sector.

1.107 Bumiputera trust agencies and other relevant public enterprises are expected to be more innovative in creating new assets, especially in the industrial and services sectors. *Permodalan Nasional Berhad* (PNB), as a leading institution for Bumiputera investors will further diversify its resources and undertake new investment programmes on a joint-venture basis directly with potential Bumiputera investors and entrepreneurs. Its role in managing the *Amanah Saham Nasional* (ASN) Scheme, together with the newly constituted *Amanah Saham Bumiputera* (ASB), will continue to enhance the capability of Bumiputera community in acquiring corporate assets. Apart from PNB and other trust agencies, particular attention will be given to other institutions such as *Lembaga Urusan dan Tabung Haji*, Police Cooperative and *Lembaga Tabung Angkatan Tentera*. These institutions will also have to participate in corporate restructuring activities as they accumulate substantial Bumiputera savings.

1.108 A number of complementary measures will be formulated to strengthen the ownership and participation of Bumiputera during the Plan period. The privatization programme will be implemented to contribute towards increasing Bumiputera equity and their participation in the management of the privatized ventures. Special measures will be instituted to ensure that Bumiputera interests who are given the opportunities to benefit from privatization programmes will continue to remain the major beneficiaries of the privatized ventures. At the same time, opportunities will also be provided to non-Bumiputera to participate in the privatized projects. In addition, the restructuring of companies in the corporate sector will be undertaken in a liberal manner based on the merits of each case and taking into account the importance of majority ownership to foreign and local investors. Greater focus will be given towards encouraging wider participation of Bumiputera-controlled enterprises in sectors where their corporate interests have been particularly low.

1.109 As the Government is concerned with the dilution of Bumiputera ownership and control in the corporate sector, the procedures with regard to ownership and divestment of reserved shares by Bumiputera will be streamlined in order to ensure that the benefits derived will be consistent with their long-term interests. The Government will also introduce appropriate measures to encourage the establishment of genuine joint-ventures between Bumiputera and non-Bumiputera or foreigners. For this purpose, the existing rules and conditions pertaining to the qualification of Bumiputera companies to benefit from business opportunities that are available within the government sector will be reviewed in line with this objective.

## **Regional Development Strategies**

1.110 An important dimension of balanced development is to reduce the disparities in social and economic development across regions and states in Malaysia and to bring the standard of living and quality of life of the lesser developed states at par with the richer states. During the Sixth Plan period, efforts will continue to be directed at diversifying the economic base of the lesser developed states and expanding their social, economic and physical infrastructures with a view to enhancing development in these states and increase their attractiveness to private investors. Further, the availability of better infrastructural facilities will contribute to the expansion of industries and commercial agriculture and facilitate labour mobility across states.

1.111 In order to speed up the process of development on a more integrated and coordinated basis as well as to further disperse industrial development, the Government will implement the strategy of developing industrial specialization by location. This will induce a more balanced development of industries as well as promote a more organized industrial structure. The Government has identified six such specialized zones for specific industry groups. To facilitate the implementation of the strategy, other necessary complementary programmes will be planned accordingly. These include the development of industrial estates by the private sector.

1.112 The Government is presently formulating the National Urbanization Policy (NUP) to provide the basic framework for a more organized urbanization process and well-integrated rural-urban development linkages. Malaysians are increasingly concentrating their attention on a few fast-growing towns in search of better employment and income opportunities as well as for attractions of urban life. Besides the possibility of Kuala Lumpur becoming a primate city, overconcentration of development in Kuala Lumpur and a few towns like George Town and Johor Bahru will create undesirable consequences like urban congestion, increased transportation costs, squatters and other social problems. NUP is to assist the Government to improve the plans of urban development and avoid such undesirable external diseconomies.

1.113 To ensure sustainable development and maintenance of environmentally sound economic development, the Government is formulating the National Conservation Strategy. Even though Malaysia has rich and diverse natural resources like timber, petroleum and gas, the development of states now dependent on these resources is not sustainable if these resources are not optimally exploited. Apart from



efforts to reforest or replenish these resources, conservation measures will continue to be undertaken. Emphasis will also be given to develop greater value-added and downstream activities for these resources. Malaysia has played a major role in articulating the need to pay due attention to environmental considerations in world forum as demonstrated by the Langkawi Declaration on the Environment.

1.114 The Government will continue to exploit other potential to enhance economic growth and promote balanced regional development. In this connection, the efforts of Johor to cooperate with both Indonesia and Singapore within the context of the triangle of growth in the south is in line with this development strategy. With the second crossing linking Johor with Singapore, the development of a second port and a new growth centre in south-west Johor, the state is expected to become the growth centre in the southern part of Peninsular Malaysia. In order to accelerate the development of the States of Sabah and Sarawak, the creation of Labuan as an international offshore financial centre will generate the growth momentum to spearhead their development. Under the Langkawi Development Authority, the island of Langkawi will be progressively planned as a major tourist and recreational island resort both for locals and foreigners. The Government will ensure that the island is developed with good ecology and clean environment by preserving, as far as possible, its natural beauty and attraction. The Government is also formulating specific strategies and programmes to develop the areas bordering Thailand to accelerate development in the northern part of Peninsular Malaysia.

### **Human Resource Development**

1.115 Human resources are a critical factor which need to be fully developed if the nation is to succeed in its quest for economic and social development. Human resource development not only helps to increase factor productivity, but will bring about better distribution of income and assist in achieving the restructuring objective of NDP. An effective human resource-led development strategy will be increasingly important as the manufacturing and the services sectors, which will be the main engine of growth in the Sixth Plan, become more information and knowledge-based. An accelerated growth of these sectors will be attainable mainly through increased knowledge and skills. The quality of the labour force, in terms of its ingenuity and innovativeness and capacity to absorb and adapt technology as well as in terms of motivation to compete, will need to be further enhanced.

1.116 Human resource development strategies over the Sixth Plan will thus encompass the following objectives. *Firstly*, labour productivity will be enhanced to meet the requirements of the nineties and beyond, while opportunities for holding more rewarding jobs with higher skill content and prospects will be developed in line with increasing aspirations of the workforce. *Secondly*, the efficiency of the labour markets will be improved and labour mobility increased to avoid skill mismatches, localized shortages and other effects of labour market rigidities. *Thirdly*, the quality of education will be improved and access to educational and training opportunities to all sections of society will be improved so as to contribute towards meeting the manpower needs and the goals of employment restructuring. *Fourthly*, a better system of wage adjustment which relates wage movements to productivity changes will be formulated. The system which will be in the best interest of employers and workers will provide more incentives to employers to operate at higher employment levels. At the same time, the system will also result in less labour retrenchments during periods of economic downturn.

1.117 The Government, through its education and training programmes, will continue to upgrade efforts to provide educated and trainable workforce with skills, usable across sectors and industries. The private sector will be encouraged to play a more active role in training and skill development. For this purpose, the private sector will be allowed to use government facilities during periods when such facilities are available, to carry out their own training programmes to meet their specific needs. As a longer term measure, the private sector through their trade associations, will be encouraged to set up industry-specific training centres to meet the needs of their particular industries. In addition, in order to provide increased accessibility to higher education, especially in professional and managerial disciplines, twinning arrangements between reputable foreign and locally established private training and higher education institutions will continue to be encouraged.

1.118 Specific measures will be taken to improve the efficiency of the labour market and thus reduce mismatches between demand for and supply of labour. There will be closer monitoring of the labour situation with the view to identifying current shortages, future demand and new skill requirements as well as coordinating training efforts.

1.119 Greater efforts will be made to further improve labour mobility, thus facilitating the matching of demand and supply. Such measures include efforts by the Manpower Department to upgrade its role in counselling, career guidance and placement as well as the development of private employment agencies. Other measures include the

encouragement of employers to provide social amenities, living quarters and transport for employees to attract workers into areas where localized labour shortages occur.

1.120 Aside from the physical and intellectual qualities of human resources, the possession of positive values shared among all Malaysians is equally important. As Malaysia moves from an agricultural to a predominantly industrial-based economy, there must be simultaneous move towards fostering a new set of values. At the workplace, Malaysians will be encouraged to cultivate a greater degree of industrial discipline and enhance the pursuit of excellence and develop other positive attributes such as honesty, integrity, diligence, dedication, cooperation, dynamism and creativity. Thus, human resource development efforts will need to reinforce Malaysia's cultural heritage for tolerance, justice and unity and promote nation building in an era of rapid industrialization. A strong sense of belonging, loyalty and love for the country will continuously be fostered. The sum total of these efforts to inculcate these values will contribute significantly towards the realization of a fully developed nation by the year 2020.

### **Enlarging the Science and Technology Base**

1.121 The source of growth in the future is expected to be generated more significantly from productivity growth and factor efficiency. This is to be achieved through strengthening the S&T base and R&D capabilities. In the rapidly changing world economy, the country's position in international trade depends on its competitiveness and technological progress.

1.122 With regard to R&D, it is recognized that at present Malaysia has achieved a satisfactory level of competence in R&D in agriculture. Many of the nation's agricultural research institutions are already well established. The main focus over the Sixth Plan will, therefore, be the development of R&D capability in the industrial sector. The public sector will contribute to this development by upgrading the capability of existing public sector R&D institutions, particularly those concentrating on industrial development. There will also be closer interaction between such institutions with the private sector to improve the relevance of the research undertaken and to facilitate the adoption and commercialization of new research findings. Other important efforts include the upgrading of the research capabilities of local universities and the establishment of a science and technology park to provide facilities for industrial R&D. The private sector is expected to play a more active role in industrial R&D.

1.123 The Government's S&T Policy will help to provide an environment that is conducive to innovation and application of technology. Apart from further increases in S&T investments, attention will also be focussed on S&T education as well as the development of high-level S&T manpower.

## **VI. CONCLUSION**

1.124 Despite the uncertainties in the external environment, the overall prospect for the Malaysian economy over the next five years is promising. The strategies instituted under the Sixth Plan will pave the way towards creating a nation characterized by greater resilience and dynamism, relying more on private sector initiative, and where the fruits of development will be shared by all Malaysians. While recognizing the need for greater involvement of the private sector to propel the economy to higher and sustainable growth, the public sector's role in achieving these results will still be important. Thus, appropriate public sector programmes will be put onstream in support of this role.

## **Chapter II**

# **Public Sector Programme And Its Financing**

## CHAPTER II

# Public Sector Programme And Its Financing

### I. INTRODUCTION

2.01 The public sector programme will be directed towards supporting the expansion of the economy as well as meeting the distributional objectives of the National Development Policy (NDP). Its investments in infrastructure, education and health will be expanded to support industrial development and improve transport, communications and training facilities especially in the fast growing industrial areas as well as to meet the increasing demands for higher levels of social services in the country. The programmes for eradicating poverty and restructuring society will continue. However, as many of the basic needs have largely been met through past efforts, the emphasis will now shift towards raising the quality of the services in both the urban and rural areas and improving the accessibility of these services in the less-developed states, including Sabah and Sarawak.

2.02 With the economy experiencing a severe recession at the onset of the Fifth Malaysia Plan, the public sector reduced its development expenditure to a more manageable level compatible with its resource availability. This was effected through the downward revision of the development expenditure which necessitated the reordering of priorities of its programmes and projects. However, with the recovery of the economy towards the second half of the Fifth Plan, public sector programmes were selectively reinstated. The bulk of the increase was largely directed towards programmes and projects to facilitate the growth of the economy, particularly the provision of the necessary infrastructural support for greater private sector expansion.

2.03 The financial position of the public sector has improved considerably, enabling additional resources to be allocated for development in the Sixth Malaysia Plan. Although the resource allocation is higher in absolute terms compared with the Fifth Plan, the ratio of development expenditure in relation to the Gross National Product (GNP) is lower, reflecting the on-going efforts to consolidate the public sector and reduce its direct participation in the productive sectors of the economy. The emphasis will be towards the attainment of a more efficient management of the public sector programme and its finances. Towards this end, measures will be undertaken to strengthen and widen its revenue base, enhance tax buoyancy, control public debt as well as accelerate the implementation of privatization programmes. It is essential to strengthen the public sector revenue position so as to enable the development programmes to be implemented within the context of financial and economic stability and ensure that the budgetary deficits and external borrowings continue to be maintained at the present low levels.

## II. PROGRESS, 1986-90

2.04 The public sector consists of the Federal, state and local governments as well as statutory authorities and Non-Financial Public Enterprises (NFPEs). As shown in *Table 2-1*, a total of 50 NFPEs have been included in the definition of public sector. These are large enterprises which have more than 50 per cent government equity share and annual turnover of more than \$50 million. The list of NFPEs will be modified from time to time to take account of changes in equity ownership, revenue and privatization.

2.05 During the Fifth Plan, the overall public sector development expenditure amounted to \$61,850 million compared with a revised allocation of \$64,590 million as shown in *Table 2-2*. Of this amount, the Federal Government expenditure, amounted to \$35,300 million or 57.1 per cent of total overall public sector expenditure, followed by NFPEs at \$17,700 million or 28.6 per cent and State Governments \$8,850 million or 14.3 per cent.

**TABLE 2-1**  
**COMPOSITION OF THE PUBLIC SECTOR**

**General Government**

Federal Government  
15 State Governments  
Local Governments  
Statutory Authorities (excluding those listed under NFPEs)

**Non-Financial Public Enterprises <sup>1</sup>**

Antara Steel Mills Sendirian Berhad.<sup>2</sup>  
Cement Industries (Sabah) Sendirian Berhad.  
Cement Manufacturers (Sarawak) Sendirian Berhad.  
FELDA Oil Products Sendirian Berhad.  
FIMA Metal Box Holdings Sendirian Berhad.<sup>3</sup>  
Golden Hope Plantations Berhad.<sup>3</sup>  
Heavy Industries Corporation of Malaysia Berhad.(HICOM)  
Kedah Cement Sendirian Berhad.  
Keretapi Tanah Melayu.(KTM)  
Kontena Nasional Sendirian Berhad.  
Kumpulan FIMA Berhad.  
Kumpulan Guthrie Sendirian Berhad.<sup>3</sup>  
Lembaga Elektrik Sabah.  
Lembaga Pelabuhan Bintulu.  
Lembaga Pelabuhan Johor.  
Lembaga Pelabuhan Kelang.  
Lembaga Pelabuhan Kuching.  
Lembaga Pelabuhan Sabah.  
Malaysian Airline System Berhad.(MAS)<sup>1</sup>  
Malaysia International Shipping Corporation Berhad.(MISC)<sup>1</sup>  
Malaysia LNG Sendirian Berhad.  
Malaysia Rubber Development Corporation Berhad.(MARDEC)  
Malaysia Shipyard and Engineering Sendirian Berhad.(MSE)  
Penang Port Commission.  
Penang Shipbuilding Corporation Sendirian Berhad.  
Perak Hanjoong Sendirian Berhad.  
Perbadanan Kilang FELDA.  
Perbadanan Nasional Shipping Line Berhad.(PNSL)  
Perbadanan Niaga FELDA.  
Perbadanan Pengangkutan dan Perusahaan Tabung Haji.  
Pernas Edar Sendirian Berhad.  
Pernas International Hotels & Properties Berhad.<sup>3</sup>  
Pernas NEC Telecommunications Sendirian Berhad.  
Pernas Trading Sendirian Berhad.  
Perusahaan Otomobil Nasional Sendirian Berhad.(PROTON)  
Perwaja Terengganu Sendirian Berhad.  
Petroliam Nasional Berhad.(PETRONAS)  
Petronas Carigali Sendirian Berhad.  
Petronas Dagangan Sendirian Berhad.  
Petronas Penapisan Sendirian Berhad.  
Sabah Energy Corporation.  
Sabah Forest Industries.  
Sabah Gas Industries Sendirian Berhad.  
Sabah Shipyard Sendirian Berhad.  
Sarawak Electricity Supply Corporation.(SESCO)  
Sebor (Sabah) Sendirian Berhad.  
Telekom Malaysia Berhad<sup>1</sup>  
Tenaga Nasional Berhad<sup>1</sup>  
The Road Railer Services Berhad.  
Urban Development Authority.(UDA)

**Notes:**

<sup>1</sup> From original 56, the new list excludes 6 agencies which had been privatised during 1988-90 period. These agencies were Ford Concessionaries Sdn. Bhd, Pemas Sime Darby Trading Sdn. Bhd, Cement Industries Malaysia Bhd.(CIMA), Gula Padang Terap Sdn. Bhd., Malaysian Helicopter Sdn. Bhd. and Koko Malaysia Sdn. Bhd.

<sup>2</sup> Privatised through listing on the KLSE with government still owning majority share.

<sup>3</sup> Formerly known as Harrisons Malaysian Plantations Berhad.



TABLE 2-2  
PUBLIC SECTOR DEVELOPMENT ALLOCATION AND EXPENDITURE  
(\$ million)

	5MP					6MP	
	Original Allocation	Mid-term Review	Revised Allocation	Expenditure	Expenditure (%)	Allocation	(%)
a. Federal Government	40,075	32,862	37,290	35,300	57.1	55,000	52.9
<i>Own Sources<sup>1</sup></i>							
b. State Governments	5,000	8,000	9,600	8,850	14.3	12,000	11.5
c. Statutory Bodies & Local Governments	0	250	0	0	0	2,000	1.9
d. NFPEs	28,925	16,400	17,700 <sup>2</sup>	17,700 <sup>2</sup>	28.6	35,000 <sup>2</sup>	33.7
<b>Total</b>	<b>74,000</b>	<b>57,512</b>	<b>64,590</b>	<b>61,850</b>	<b>100.0</b>	<b>104,000</b>	<b>100.0</b>

Notes:

<sup>1</sup> Allocation and expenditure for State Governments, NFPEs, Statutory Bodies and Local Governments reflect the utilisation of their own sources.

<sup>2</sup> Based on Government equity in companies.

2.06 The Federal Government spent about 95 per cent of its revised allocation over the five year period. In spite of this, the Federal Government experienced shortfalls in the early part of the Fifth Plan. This was mainly due to problems in planning and implementation arising from the reordering of programme priorities as a result of the recession. Problems also arose from contractors' inability to complete projects on time. In the light of these, various administrative measures were undertaken to ensure that allocations provided were fully spent so as to reduce the overall shortfall. The shortfalls enabled the Government to reallocate funds to finance new programmes and projects through inter-sectoral transfer of funds and *virements*.

### *Development Expenditure by Sector*

2.07 The development allocation and estimated expenditure of the Federal Government by sector are shown in *Table 2-3*. Economic and social programmes accounted for a major share of development expenditure followed by security and administrative programmes. Of the total Federal Government expenditure of \$35,300 million, the economic sector accounted for 64.8 per cent, social sector 24.8 per cent, security 7.2 per cent and general administration 3.2 per cent.

2.08 In the economic sector, agriculture and rural development programmes accounted for \$7,325 million or 20.8 per cent of the total expenditure while the expenditure in the commerce and industry subsectors amounted to \$3,981 million or 11.3 per cent of the total expenditure. Programmes and projects undertaken in these two subsectors were mainly for rural development as well as poverty eradication and restructuring of society. In the agriculture and rural development subsector, the expenditure was mainly on new land development programmes, *in-situ* development through various Integrated Agricultural Development Programmes (IADPs), replanting, rehabilitation and the provision of infrastructure, drainage and irrigation as well as support services such as credit, marketing, research, extension and incentives for the commercialization of agriculture. In the commerce and industry sub-sector, substantial expenditure was incurred to strengthen the commercial and industrial base. Financial assistance was provided to selected public enterprises in order to improve their efficiency and upgrade technology. Other major programmes included special assistance to develop small- and medium-scale industries (SMIs), export credit to encourage exports and the provision for training and consultancy services to upgrade skills and expertise.

2.09 The expenditure for the transport, communications, energy and water resources subsectors which continued to provide the foundation for the development of the economy was \$11,200 million or 31.7 per cent of the total development expenditure. The transport and communications subsector spent about 92 per cent of the allocation during the Fifth Plan to provide and upgrade various facilities and services in the ports, airports, roads, railways and telecommunications to meet the increasing demands arising from the expansion of the economy. In the energy and water resources subsector, among the programmes implemented were electricity and water supply, sewerage, urban drainage facilities and flood mitigation programmes which contributed to the general improvement of socio-economic conditions and the quality of life.

TABLE 2-3  
FEDERAL GOVERNMENT DEVELOPMENT ALLOCATION  
AND EXPENDITURE BY SECTOR, 1986-95  
(\$ million)

Sector	Federal Government				
	5MP			6MP	
	Revised Allocation	Expenditure	(%)	Allocation	(%)
<b>I. Economic</b>	<b>24,048</b>	<b>22,886</b>	<b>64.8</b>	<b>31,236</b>	<b>56.8</b>
<i>Agriculture &amp; Rural Development</i>	7,427	7,325	20.8	9,019	16.4
<i>Mineral Resources Development</i>	43	43	0.1	53	0.1
<i>Commerce &amp; Industry</i>	3,981	3,981	11.3	5,752	10.5
<i>Transport</i>	7,393	6,823	19.3	10,759	19.6
<i>Communication</i>	815	792	2.2	73	0.1
<i>Energy</i>	947	918	2.6	979	1.8
<i>Water Resources</i>	2,954	2,667	7.6	3,773	6.9
<i>Feasibility Study</i>	74	52	0.1	228	0.4
<i>Research and Development</i>	414	285	0.8	600	1.1
<b>II. Social</b>	<b>9,046</b>	<b>8,764</b>	<b>24.8</b>	<b>13,468</b>	<b>24.5</b>
<i>Education and Training</i>	5,812	5,700	16.1	8,501	15.5
<i>Health &amp; Population</i>	981	931	2.6	2,253	4.1
<i>Information &amp; Broadcasting</i>	33	20	0.1	128	0.2
<i>Housing</i>	1,452	1,452 <sup>1</sup>	4.1	803	1.5
<i>Culture Youth &amp; Sports</i>	171	131	0.4	341	0.6
<i>Local Town Council, Welf. Services</i>	319	291	0.8	798	1.5
<i>Village &amp; Community Development</i>	275	237	0.7	441	0.8
<i>Purchase of Land</i>	3	2	0.0	203	0.4
<b>III. Security</b>	<b>2,955</b>	<b>2,527</b>	<b>7.2</b>	<b>8,408</b>	<b>15.3</b>
<i>Defence Services</i>	1,858	1,497	4.2	6,000	10.9
<i>Internal Security</i>	1,097	1,030	2.9	2,408	4.4
<b>IV. Administration</b>	<b>1,241</b>	<b>1,123</b>	<b>3.2</b>	<b>1,888</b>	<b>3.4</b>
<i>General Services</i>	1,045	944	2.7	1,657	3.0
<i>Upgrading and Renovation</i>	196	179	0.5	231	0.4
<b>Total</b>	<b>37,290</b>	<b>35,300</b>	<b>100.0</b>	<b>55,000</b>	<b>100.0</b>

Note:

<sup>1</sup> Include housing loan programme for the public sector employee.

2.10 The social sector, comprising education and training, health, housing and other social services accounted for \$8,764 million or 24.8 per cent of the total expenditure. In the education and training subsector, emphasis was given towards expanding facilities, improving quality of education as well as strengthening its delivery systems. In the health subsector, emphasis was given to the upgrading and renovation of existing health facilities as well as the construction of nucleus hospitals and the National Heart Institute.

2.11 The expenditure for the security sector amounted to \$2,527 million or 7.2 per cent of the total expenditure. During the period under review, the capability of armed forces and police was improved to safeguard the security of the nation. Greater priority was focussed on the provision of adequate and suitable accommodation both for the armed forces and police, especially for lower ranking personnel stationed in major towns. Apart from acquiring modern armaments and equipments, better training facilities were also provided.

*Development Expenditure for Poverty Eradication  
and Restructuring of Society*

2.12 During the Fifth Plan, a sum of \$13,660 million was spent for various programmes directed at further improving the poverty situation in the country as well as the standard of living of the rural population. Of the total expenditure, about \$392 million was specifically tailored to meet the needs of the hard-core poverty groups through the Development Programmes for the Poorest. The major expenditure components of the programme were for the provision of subsidized housing and educational assistance as well as the implementation of income-generating projects. For meeting the objectives of restructuring society, about \$2,712 million was spent mainly for education and training, the development of Bumiputera commercial enterprises and the provision of business premises for new entrepreneurs.

*Development Expenditure by State*

2.13 The developed States of Selangor and Wilayah Persekutuan spent a total of \$4,128 million or 11.7 per cent of the total development expenditure of the Federal Government, as shown in Table 2-4. Although the amount constituted a sizeable proportion of total expenditure, it was primarily to underwrite NFPEs projects such as the National Automobile Industry (PROTON) located in Shah Alam, Selangor and the Sabah Gas Industries project in Labuan.

2.14 The lesser developed States of Kedah, Kelantan and Perlis continued to receive priority. As such, a total of \$4,424 million or 12.6 per cent of the total Federal development expenditure was spent on various programmes and projects in the three states, the bulk of which was for rural development. The implementation of programmes and projects such as IADPs in Lembah Kedah, Kemasin Semerak in Kelantan and in Perlis as well as the padi fertilizer subsidy and other supportive agricultural programmes have enabled productivity and output increases in the agriculture sector in these states.

TABLE 2-4  
FEDERAL GOVERNMENT DEVELOPMENT ALLOCATION  
AND EXPENDITURE BY STATE  
(\$ million)

State	5MP				6MP	
	Revised Allocation	(%)	Expenditure	(%)	Allocation	(%)
Johor	2,658	7.1	2,479	7.0	3,794	6.9
Kedah	2,363	6.3	2,255	6.4	2,826	5.1
Kelantan	1,933	5.2	1,795	5.1	2,064	3.8
Melaka	378	1.0	338	1.0	924	1.7
Negeri Sembilan	911	2.4	779	2.2	1,548	2.8
Pahang	2,496	6.7	2,103	6.0	2,837	5.2
Perak	2,054	5.5	1,870	5.3	2,563	4.7
Perlis	421	1.1	374	1.1	505	0.9
Pulau Pinang	725	1.9	678	1.9	1,548	2.8
Sabah	2,253	6.0	2,083	5.9	2,307	4.2
Sarawak	1,946	5.2	1,839	5.2	3,209	5.8
Selangor	2,288	6.1	2,024	5.7	4,295	7.8
Terengganu	2,063	5.5	2,014	5.7	2,729	5.0
Wilayah Persekutuan	2,228	6.0	2,104	6.0	4,608	8.4
Multi-State <sup>1</sup>	12,566	33.7	12,565	35.6	19,243	35.0
<b>Total</b>	<b>37,290</b>	<b>100.0</b>	<b>35,300</b>	<b>100.0</b>	<b>55,000</b>	<b>100.0</b>

Note:

<sup>1</sup> Multi-state projects are those whose beneficiaries are nation-wide and whose locations cannot be determined.

2.15 In the States of Sabah and Sarawak, greater emphasis was given to the provision and expansion of basic infrastructure as well as to promote agricultural development. A total of \$3,922 million was expended in Sabah and Sarawak for related projects. Major infrastructural and agricultural projects included the construction of the Miri-Bintulu, Sibul-Ulu Batang, Mukah-Bintulu, and Kuching-Sibu roads as well as the Limbang/Semarahan Valley and Kalaka Saribas Agriculture Projects in Sarawak and a similar project in Sabah. Such projects contributed to the diversification and strengthening of agricultural growth in these states.

2.16 The middle-income States such as Johor and Pahang similarly received a sizeable proportion of the Federal allocation. About 13 per cent was spent during the Fifth Plan period, particularly towards improving agricultural productivity. IADP Johor Barat II utilized a total of \$1,150 million, while that of Pahang Barat spent more than \$400 million of the development allocation. Federal Government expenditure for the other middle-income States of Melaka, Pulau Pinang and Negeri Sembilan was fairly small, amounting to about \$1,795 million or 5.1 per cent of the total Federal Government expenditure. The expenditure for these states was lower as their basic infrastructure had already been developed.

2.17 About \$12,565 million or 35.6 per cent was expended on multi-state projects which benefited people across states. Of this, \$1,650 million was for the Malaysian Highway Authority, \$1,000 million for housing loans fund for government employees, \$784 million for *Majlis Amanah Rakyat* (MARA) scholarships and loans, \$765 million for multi-state telecommunications services and \$718 million for rural water supply.

#### *Current Expenditure*

2.18 The current expenditure of the Federal Government increased at a slower rate of 5.8 per cent per annum during the Fifth Plan period, as shown in Table 2-5. This slower growth was in line with the need to keep expenditure growth within manageable limits, especially in the light of emerging resource constraints following the 1985-86 recession. The expenditure on emoluments which accounted for 36 per cent of total current expenditure, however, increased by 5.6 per cent per annum due to annual salary increments as well as some salary adjustments for civil servants. Although the external debt was substantially reduced through prepayments, the share of debt service charges to current expenditure

remained high at about 26 per cent in 1990 due to the accumulation of domestic debt in place of external borrowing. Other measures taken in line with financial prudence involved the curtailment of expenditure on supplies and services as well as transfers to Government agencies. However, the cutback in current expenditures was selective so as not to adversely affect the operational efficiency and productivity of the public services.

TABLE 2-5  
FEDERAL GOVERNMENT EXPENDITURE AND FINANCING, 1985-95  
(\$ million)

Item	1985	% of GNP	1990	% of GNP	1995	% of GNP	Cumulative		Average Annual Growth Rate (%)	
							5MP	6MP	5MP	6MP
Total Revenue	21,114	29.3	28,997	26.4	40,740	20.0	113,898	182,300	6.6	7.0
Direct Taxes	9,259	12.9	10,394	9.4	13,850	6.8	40,816	62,750	2.3	6.0
Indirect Taxes	7,441	10.3	10,814	9.8	16,970	8.3	38,929	71,140	7.8	9.4
Non-Tax Revenue	3,975	5.5	6,506	6.0	9,160	4.5	30,116	44,750	10.4	7.0
Non-Revenue Receipts	439	0.6	1,283	1.2	760	0.4	4,037	3,660	23.9	-10.0
Current Expenditure	20,066	27.8	26,597	24.2	37,640	18.4	113,501	174,440	5.8	7.2
Development Expenditure	7,142	9.9	10,074	9.3	13,430	6.6	35,301	55,000	7.1	6.0
Repayment <sup>1</sup>	386	0.5	2,456	2.3	500	0.2	6,877	2,500	44.8	-27.3
Overall Deficit (As % of GNP)	5,708	7.9	5,218	4.8	9,830	4.8	28,027	44,640	-1.8	13.5
							6.5	5.5		
<i>Sources of Financing:</i>										
Net Foreign Borrowing <sup>2</sup>	956		(864)				(6,087)			
Net Domestic Borrowing	3,591		3,798				27,734			
Change in Assets	1,149		2,284				6,269			
Special Receipts	12		0				111			

Notes:

<sup>1</sup> loan repayments by State and Local Governments, Statutory Authorities and NFPEs.

<sup>2</sup> ( ) indicates net repayment

## *Sources of Revenue*

2.19 Federal Government revenue registered a moderate growth of 6.6 per cent per annum, amounting to \$28,997 million in 1990, as shown in Table 2-6. In spite of the higher economic growth during the second half of the Fifth Plan period, revenue as a percentage of GNP declined from 29.3 per cent in 1985 to 26.4 per cent in 1990. The overall tax buoyancy also deteriorated from 1.0 during the Fourth Plan period to 0.6 during the Fifth Plan period. The lower revenue mobilized was due to increases in tax exemption, allowances and incentives given to the private sector to promote investment as well as lower petroleum and commodity prices. Nevertheless, the contribution of petroleum to Federal Government revenue continued to be substantial, accounting for about 32 per cent of total revenue.

2.20 The Fifth Plan period witnessed changing revenue structure as shown by the declining share of tax to total revenue from 79.1 per cent in 1985 to 73.1 per cent in 1990. Revenue from *direct taxes* declined due to the lower corporate and petroleum profits, particularly during the first half of the Plan period. Taking the Plan period as a whole, the share of direct taxes to total revenue fell from 43.9 per cent in 1985 to 35.8 per cent in 1990. Company income taxes almost stagnated due to the dampening effects following the recession and lower commodity prices experienced during the early part of the Fifth Plan as well as the tax concessions and incentives given to the private sector since 1986 which eroded the corporate income taxes base. In contrast, individual income taxes increased by 8.8 per cent per annum during the Fifth Plan period, largely as a result of greater tax efforts as well as the intensification of tax enforcement. As the economy expanded rapidly in the second half of the Plan period, revenue from direct taxes improved significantly, from \$6,467 million in 1987 to \$10,394 million in 1990.

2.21 *Indirect taxes* which grew by 7.8 per cent annually during the Fifth Plan period, contributed significantly to Federal Government revenue. Its share in total revenue increased from 35.2 per cent in 1985 to 37.3 per cent in 1990. The increase was mainly due to improvements in revenue from import duties, surtax, excise duties and sales tax. Higher imports, together with stronger consumer spending and improvements in the administration of sales tax, had contributed significantly to increases in indirect taxes. Consequently, the contribution of indirect taxes to total revenue had overtaken that of direct taxes.



TABLE 2-6

FEDERAL GOVERNMENT REVENUE, 1985-95  
(\$ million)

Source	1985 (%)	1990 (%)	1995 (%)	Cumulative		Average Annual Growth Rate (%)				
				5MP	6MP	5MP	6MP			
DIRECT TAXES	9,259	43.9	10,394	35.8	13,850	34.0	40,816	62,750	2.3	6.0
Income Taxes	8,799	41.7	9,675	33.3	12,680	31.0	38,507	57,890	1.9	5.6
Company	3,920	18.6	4,124	14.2	6,280	15.4	16,901	27,150	1.0	8.8
Individual	1,749	8.3	2,667	9.2	3,680	9.0	10,062	15,850	8.8	6.7
Petroleum	3,130	14.8	2,884	9.9	2,720	6.6	11,544	14,890	-1.6	-1.2
Other Direct Taxes	460	2.2	719	2.5	1,170	3.0	2,309	4,860	9.3	10.2
INDIRECT TAXES	7,441	35.2	10,814	37.3	16,970	41.6	38,929	71,140	7.8	9.4
Export Duties	1,839	8.7	1,968	6.8	1,360	3.4	7,359	7,740	1.4	-7.0
Petroleum	1,639	7.8	1,910	6.6	1,190	3.0	6,737	7,130	3.1	-9.0
Others	200	0.9	58	0.2	170	0.4	622	610	-21.9	24.0
Import Duties & Surtax	2,518	11.9	3,428	11.8	5,650	13.8	12,733	23,480	6.4	10.5
Excise Duties	1,376	6.5	2,267	7.8	4,190	10.3	8,455	16,530	10.5	13.0
Sales and Services Tax	1,341	6.4	2,562	8.8	4,830	11.8	8,302	19,630	13.8	13.5
Other Indirect Tax	367	1.7	589	2.1	940	2.3	2,080	3,760	9.9	9.8
NON-TAX REVENUE	3,975	18.8	6,506	22.5	9,160	22.4	30,116	44,750	10.4	7.0
Petroleum <sup>1</sup>	1,549	7.3	2,927	10.2	3,760	9.2	12,194	18,800	13.6	5.0
Income from Divestment	-	-	-	-	1,000	2.4	1,988	5,000	-	-
Other Non-Tax Revenue <sup>2</sup>	2,426	11.5	3,579	12.3	4,400	10.8	15,934	20,950	8.1	4.2
NON REVENUE RECEIPTS	439	2.1	1,283	4.4	760	2.0	4,037	3,660	23.9	-10.0
TOTAL	21,114	100.0	28,997	100.0	40,740	100.0	113,898	182,300	6.6	7.0

## Notes:

<sup>1</sup> Includes petroleum dividend and royalties on petroleum & gas.<sup>2</sup> Includes items such as government commercial undertakings, interest and returns on investment, licences and services fees, licenses and permits, profit from Bank Negara Malaysia and road tax.

2.22 Likewise, total *non-tax revenue* and *non-revenue receipts* increased substantially, reflecting mainly higher dividend and royalty payments from petroleum and gas as well as receipts from sale of Government equity under its privatization programme. These sources of revenue have to a large extent helped to offset the slower growth of revenue from other sources.

#### *Sources of Borrowings*

2.23 During the Fifth Plan period, the cumulative surplus in the current account of Federal Government was only \$397 million, as a result of the large deficit experienced during 1986-87 period. However, following the slower growth in operating expenditure and the improvement in revenue as a result of rapid economic recovery during the second half of the Plan period, the current account improved steadily during 1990. Moreover, with the sharp cutback in Federal Government development expenditure, especially during 1987-88 period, the overall deficit as a percentage of GNP declined substantially from 11.2 per cent in 1986 to 4.8 per cent in 1990, as shown in *Table 2-5*. However, during the Plan period, the overall deficit was maintained at a sustainable level of 6.5 per cent in line with the objectives of maintaining prudence and macro-economic stability as well as ensuring adequate resources for the private sector.

2.24 In financing the Federal Government deficit, greater reliance was placed on non-inflationary domestic sources to take advantage of the high liquidity position in the domestic market. Of the total domestic borrowing of \$34,160 million, about \$8,900 million or 26 per cent was for external debt prepayments. The Employees Provident Fund (EPF) continued to be the main source, accounting for some 56 per cent of the Federal Government net domestic borrowing.

2.25 During the Fifth Plan period, gross *external borrowing* of the Federal Government amounted to \$9,750 million. However, as a result of repayment and prepayments, amounting to \$15,835 million, there was a cumulative net repayment on external borrowing of \$6,087 million. Consequently, the total outstanding external debt of the Federal Government which stood at \$28,310 million at the end of 1986 declined substantially to \$24,668 million in 1990. In terms of sources of external borrowing, the outstanding amount of market loans declined slightly from \$16,300 million at the end of 1985 to \$16,182 million in 1990. The decline in market borrowing during the Fifth Plan period was to minimize the impact of large variations in exchange and interest rates in the major

lending countries. To a large extent, this has improved the level and cost of servicing the external debt. The outstanding amount of project loans from both multilateral and bilateral sources rose from \$5,683 million in 1985 to \$8,067 million in 1990, thereby increasing its share in total outstanding loans from 24.6 per cent in 1985 to 32.7 per cent in 1990.

2.26 Significant progress was made in increasing the operating surplus of NFPEs, with the cumulative surplus amounting to \$20,796 million or almost 53 per cent of the public sector current surplus, as shown in *Table 2-7*. The current surplus of NFPEs, which deteriorated markedly from \$5,649 million in 1985 to \$2,825 million in 1986 recovered to reach \$5,334 million in 1990. This was due to the rapid recovery in the economy as well as improvements in the financial and overall management of NFPEs. A substantial proportion of the surplus was accounted for by a few NFPEs, notably *Petroleum Nasional Berhad* (PETRONAS), *Tenaga Nasional Berhad* and *Telekom Malaysia Berhad*.

2.27 Development expenditure of NFPEs during the Fifth Plan period fell from \$6,186 million in 1985 to \$4,995 million in 1990. This reduction was in line with the Government's efforts to improve its overall fiscal deficit through smaller grants and loans to NFPEs as well as to reduce the public sector debt burden. NFPEs gross external borrowing was substantially reduced while repayments, including prepayments, increased resulting in a net repayment of \$5,844 million during the Fifth Plan. As a result, their total external debt declined substantially from \$15,030 million in 1986 to \$11,846 million in 1990.

2.28 With revenue exceeding current expenditure, the savings of the public sector as a whole improved considerably during the Fifth Plan period. In terms of the overall deficit, there was significant improvement due to the large reduction in development expenditure, particularly during the 1986-88 period, following the recession. The public sector overall deficit as a percentage of GNP declined substantially from 9.8 per cent in 1986 to 3.3 per cent in 1990. The total outstanding public sector external debt which peaked at \$44,767 million in 1987 declined to \$36,514 million in 1990, while the debt service ratio fell from 15.8 per cent in 1985 to 7.2 per cent in 1990. This reflected the cautious fiscal policy of the Government to ensure macro-economic stability and improve internal strength and resilience to withstand the adverse external environment.

TABLE 2-7

CONSOLIDATED PUBLIC SECTOR EXPENDITURE AND FINANCING, 1985-95  
( \$ million )

Item	1985	% of GNP	1990	% of GNP	1995	% of GNP	Cumulative		Average Annual Growth Rate (%)	
							5MP	6MP	5MP	6MP
General Government <sup>1</sup>										
Revenue	26,289	36.5	36,149	32.9	49,590	24.2	146,525	222,940	6.6	6.5
Operating Expenditure	22,136	30.7	28,909	26.3	38,760	19.0	127,719	180,030	5.5	6.0
Current Surplus/Deficit	4,153	5.8	7,240	6.6	10,830	5.2	18,806	42,910	11.8	8.4
NFPEs Current Surplus	5,649	7.8	5,334	4.9	5,770	2.8	20,796	28,900	-1.1	1.6
Public Sector Current Surplus	9,802	13.6	12,574	11.5	16,600	8.0	39,602	71,810	5.1	5.7
Development Expenditure	13,038	18.1	16,237	14.8	24,790	12.0	57,719	104,000	4.5	8.8
General Government	6,852	9.5	11,242	10.3	16,310	8.0	37,566	66,170	10.4	7.7
NFPEs <sup>2</sup>	6,186	8.6	4,995	4.5	8,480	4.0	20,153	37,830	-4.2	11.2
Public Sector Overall Deficit (As % of GNP)	3,236	4.5	3,663	3.3	8,190	4.0	18,117	32,190		
							4.2	4.0		
Sources of Financing										
Net Foreign Borrowing <sup>3</sup>	1,667		(1,934)				(10,912)			
Net Domestic Borrowing	3,747		3,563				26,104			
Change in Assets & Special Receipts <sup>4</sup>	(2,178)		2,034				2,925			

## Notes:

<sup>1</sup> General government comprises of Federal Government, state governments, statutory authorities and local governments

<sup>2</sup> Includes capital transfers & net borrowing from Federal Government.

<sup>3</sup> ( ) Indicates net repayments.

<sup>4</sup> ( ) Indicates build up in assets; + draw down in assets.

## *Privatization*

2.29 In line with the Government's policy of reducing the size of the public sector and improving its efficiency and productivity as well as to meet the restructuring objective, several privatization programmes were undertaken during the Fifth Plan. These included partial or total divestment of several Government companies, corporatization of selected government departments, leasing of several government facilities to the private sector, management of government-owned installations by private sector management contract and construction of new projects through *Build-Operate* (BO) or *Build-Operate-Transfer* (BOT) arrangements and through *management-buy-outs* of existing Government companies or facilities. The major companies privatized during the Fifth Plan period are shown in *Table 2-8*. This programme involved capital divestment of more than \$2,000 million, a reduction of 54,000 employees and a saving of more than \$400 million per year in emoluments. In addition, the Government saved some \$5,000 million in terms of capital expenditure through the implementation of the BOT concept for projects, such as the North-South Highway and Labuan water supply. This programme released additional resources to improve further the financial position of the Government.

## *Technical Assistance*

2.30 The total quantum of technical assistance received from both multilateral and bilateral sources during the period amounted to \$531 million. Of this, 75 per cent originated from bilateral sources which were channelled to training, feasibility studies, provision of experts, consultants, volunteers and equipment in the education, agriculture and industrial sectors.

2.31 While Malaysia continued to receive technical assistance, it also extended technical assistance on a modest scale to other developing countries under the Malaysian Technical Cooperation Programme (MTCP). MTCP which symbolises Malaysia's willingness to share its development experience with other developing countries was extended to 46 countries during the Fifth Plan. During the period, the total amount of technical assistance provided to these countries under the MTCP was \$29 million. The emphasis of MTCP is on the development of human resources through training and the sharing of Malaysian experience and expertise in the development process.

TABLE 2-8

## MAJOR ENTITIES PRIVATIZED, 1986-90

(I) Divestment	Year
Klang Container Terminal	1986
Malaysian International Shipping Corporation Berhad (MISC)	1986
Syarikat Gula Padang Terap Sendirian Berhad	1989
Cement Manufacturers Sarawak Berhad	1989
Cement Industries of Malaysia Berhad (CIMA)	1990
Edaran Otomobil Nasional Berhad (EON)	1990
Telekom Malaysia Berhad	1990
Holiday Villages Sendirian Berhad	1990
Pernas International Hotels and Properties Berhad	1990
Peremba Berhad	1990
Kumpulan FIMA Berhad	1990
Penanti Quarry, Pulau Pinang	1990
Kuala Dipang Quarry, Perak	1990
Sungai Long Quarry, Selangor	1990
(II) Corporatization	
Tenaga Nasional Berhad	1990
(III) BO/BOT	
Labuan Water Supply Project	1987
Kuala Lumpur Interchange	1987
North-South Highway	1988
Ipoh Water Supply	1989
Larut-Matang Water Supply	1989
(IV) Management Contract	
Semenyih Dam	1987
Marketing of Airtime, Radio Malaysia	1987
RISDA Marketing Activities	1987
Maintenance of Tube wells, Labuan	1988
(V) Lease	
Klang Container Terminal	1986

### III. PROGRAMMES AND FINANCING, 1991-95

2.32 Efforts to consolidate the public sector will continue to be pursued in the Sixth Plan. Towards this end, fiscal and monetary measures will focus on greater prudence in the management of resources to ensure sustainable development. In addition, the Government will further improve its efficiency and provide the necessary economic and social infrastructures to facilitate the dynamic growth of the private sector to spearhead the economy.

2.33 In consonance with this objective, public sector expenditure as a proportion of GNP will be reduced further. In absolute terms, however, the allocation for the Sixth Plan will be increased by 60 per cent over the Fifth Plan revised allocation in order to complete the implementation of a large number of projects which were started during the Fifth Plan. Many of these projects were affected by the expenditure cutbacks during the recession in 1985-86 and by the re-scheduling of project implementation. Another reason for the increase under the Sixth Plan is the significant allocation for the defence sector, mainly for the modernization and upgrading of the armed forces. Increased fundings will be provided in the Sixth Plan for the expansion of physical and social infrastructures to support the growth process and to enable the economy to absorb the rapid increases in private investment taking place in the country. The high priority projects will be the expansion of the transport and communication systems, the upgrading of human resources through improvements in education, training and health, and the development of science and technology. The programmes for poverty eradication and restructuring of society consistent with NDP will continue to be given priority in the allocation of resources. However, the increases will not be substantial as most of the basic needs in the rural areas, especially in Peninsular Malaysia, have already been largely met through past investments made on rural roads, water supply, electricity, agriculture and land development. The allocation for Sabah and Sarawak will be substantially increased in view of the lower coverage of these facilities in the states.

2.34 To ensure the full implementation of programmes and projects during the Sixth Plan, emphasis will be given to programmes and projects which are readily implementable, namely, those programmes and projects in which feasibility studies, soil tests and surveys have been completed. In addition, continued efforts will be made to improve the implementation capability of agencies and strengthen their expertise in project identification and implementation.

### *Development Allocation*

2.35 The total public sector development allocation for the Sixth Plan will amount to \$104,000 million, as shown in *Table 2-2*. While this level of allocation is higher than previous Five Year Plans, it is lower in terms of its ratio to GNP, as shown in *Table 2-9*.

2.36 The total Federal Government development allocation will amount to \$55,000 million, of which \$18,966 million or 34 per cent will be required for continuation projects. The details of allocation by state governments, statutory bodies, local governments and NFPEs, as shown in *Table 2-2*, only reflect their own sources of funding. Apart from this, they will also receive transfers from the Federal Government for their development expenditure.

### *Development Allocation By Sector*

2.37 During the Sixth Plan period, the economic sector will be given the largest allocation amounting to \$31,236 million, as shown in *Table 2-3*. However, its share in total allocation will decline from 65.2 per cent in the Fifth Plan to 56.8 per cent in the Sixth Plan, reflecting generally the reduced presence of the Government in the productive activities of the economy where the private sector can perform a larger role. Furthermore, Federal Government financing will no longer be required for agencies which have been privatized.

2.38 Within the economic sector, agriculture and rural development will be allocated \$9,019 million or 16.4 per cent of the Federal Government allocation. The thrust of the sector's programmes will be towards improving efficiency, increase productivity as well as revitalizing the sector, so as to maximize income and eradicate poverty among the rural community. In terms of priority, *in-situ* development involving land consolidation, rehabilitation, replanting, drainage, irrigation and flood mitigation will be given the largest allocation of \$4,117 million or 46 per cent of the sector's total allocation. The *in-situ* thrust to modernize and commercialize smallholder agriculture becomes all the more important in the light of the scarcity of suitable new land in Peninsular Malaysia and the constraints of high-cost development and availability of settlers in Sabah and Sarawak. As such, revitalizing existing cultivated or abandoned areas for fuller utilization of resources for agricultural production will be emphasized.



TABLE 2-9

DEVELOPMENT ALLOCATION AND EXPENDITURE  
OF PUBLIC SECTOR BY FIVE YEAR PLAN PERIOD  
(\$ million)

Plan	Current Prices				GDP Growth Rate
	Original Allocation	Revised Allocation	Actual Expenditure	Percentage of GNP	
2MP, 1971-75	7,250	11,457	9,901	11.2	12.7
3MP, 1976-80	18,555	37,651	27,804	14.6	19.0
4MP, 1981-85	42,830	80,331	78,643	24.1	7.8
5MP, 1986-90	74,000	64,590	61,850	14.3	8.2
6MP, 1991-95	104,000	—	—	13.0	13.2

Plan	Constant 1978 Prices				GDP Growth Rate
	Original Allocation	Revised Allocation	Actual Expenditure	Percentage of GNP	
2MP, 1971-75	10,398	16,432	14,200	10.7	6.6
3MP, 1976-80	18,039	36,604	27,031	14.4	8.5
4MP, 1981-85	33,453	62,744	61,426	24.4	5.1
5MP, 1986-90	53,017	46,275	44,312	13.9	6.7
6MP, 1991-95	58,165	—	—	12.3	7.5

2.39 Due to constraints in the availability of new land and the growing depletion of forestry and inshore fishery resources, land and regional development will be given a lower allocation of \$2,383 million compared with \$2,946 million in the Fifth Plan. During the Sixth Plan period, the Federal Land Development Authority (FELDA) will concentrate all its effort on replanting programmes rather than opening up new land. Emphasis will thus be on revitalization and conservation measures as well as productivity improvements through research and development (R&D) and effective farm management that minimize unit costs, reduce losses and increase net yield.

2.40 The allocation for commerce and industry will amount to \$5,752 million or 10.5 per cent of the total Federal Government allocation, mainly to provide infrastructural support to expand and strengthen the industrial and commercial base of the economy. Of this, \$3,187 million will be allocated for industrial development, out of which \$291 million will be for the development of industrial estates. A sum of \$560 million will be allocated for S&T infrastructure, \$534 million for tourism and \$658 million for export promotion, training and consultancy services, business premises as well as for strengthening and modernizing business administration and services. In addition, \$661 million will be provided to financial institutions for programmes such as venture capital, SMIs, and export credits.

2.41 The transport and communications sector will be allocated a sum of \$10,832 million or 19.7 per cent of the total Federal Government allocation, in line with the objective to provide better infrastructure networks to meet the increased demand for infrastructural facilities. Of this allocation \$7,585 million will be for the expansion and upgrading of roads, including a sum of \$1,286 million for rural roads outside the Regional Development Authority areas. In addition, \$1,368 million will be allocated for the Malayan Railway, mainly for the purchase of rolling stocks, construction of double tracking system and modernization of the signalling and communications system. The development and improvement of new and existing airports will amount to \$997 million, of which \$176 million will be allocated for upgrading and improving the Subang International Airport while the development of ports will amount to \$758 million. With the privatization of the Telecommunications Department, no allocation will be provided to expand its facilities. However, a sum of \$73 million will be provided to meet the requirements of the regulatory functions of the Telecommunications Department as well as for the purchase of capital equipment for the Meteorological Department.

2.42 The energy and water resources subsectors will be allocated a sum of \$4,752 million. Priority will be given to the development and improvement of water supply schemes which will be provided a sum of \$2,854 million. This includes an allocation of \$1,048 million for the rural water supply programme which involves the installation of reticulation systems in rural areas. The allocation also includes the construction of dams to conserve water resources as well as meet inter-state and inter-basin water transfers. To further improve the quality of water and the environment, some \$551 million will be allocated for the development of sewerage facilities. A new financing system for sewerage projects is being considered in order to assist local authorities to expand these facilities.

2.43 In the energy sector, the bulk of the proposed development expenditure of PETRONAS and the electricity authorities will be financed from their internal funds. However, the Federal Government will allocate a sum of \$979 million to this sector, of which \$765 million will be for rural electrification. The rural electrification programme will enable the attainment of 100 per cent coverage for Peninsular Malaysia, 73 per cent for Sabah and 77 per cent for Sarawak, by the end of the Plan period. PETRONAS will spend about \$10,800 million for projects in the petroleum and gas sector. Investment allocations for major projects will include \$4,260 million for refinery projects in Melaka, \$1,650 million for the expansion of the LNG plant in Bintulu and \$1,480 million for petrochemical projects. *Tenaga Nasional Berhad* will spend about \$11,000 million during the Sixth Plan, mainly for power generation, transmission and distribution networks.

2.44 R&D activities in the public sector will be further enhanced and integrated in national development. Priority will be given to technology adaptation, innovation and utilization in line with industrial and export requirements. Efforts will be made to reorient research to meet the requirements of the market. Greater emphasis will be accorded to raising the technology content, efficiency and productivity of Malaysian industries and services. Towards this end, an increased allocation of \$600 million will be provided under the Sixth Plan. In line with the Government's aim to at least double the national R&D expenditure as a percentage of GNP by the year 2000 from the current level, incentives such as direct matching grants, soft loans and preferential credit allocations will be provided. The private sector will also be expected to be more aggressive and adopt a more positive attitude towards R&D. Fiscal and financial incentives as well as provision of the techno-infrastructure to stimulate R&D activities in private industry will be instituted.

2.45 An allocation of \$13,468 million or almost a quarter of the total Federal Government allocation will be provided for the social sector in line with the objective to further improve the quality of life and general well-being of the society. Of this amount, education and training programmes will receive \$8,501 million to meet the requirement of human resource development. With the increasing demand for education and training at all levels, measures will continue to be undertaken to rationalize and strengthen the existing education and training delivery system with a view to upgrading the quality, promoting greater equity and accessibility to education and training as well as catering to the needs of developing a competitive national economy. In this respect, efforts will be geared towards maximizing the utilization of existing education and

training facilities, upgrading and improving the school curriculum and teacher training. Emphasis will also be given to vocational and technical training and higher education. Vocational and technical education as well as public sector training institutions will be upgraded to increase the supply of skilled and technical manpower to meet the rapid industrialization of the economy. Continuous efforts will be made to rationalize the higher education system in order to produce the manpower required by industry. In this respect, research and post-graduate programmes in institutions of higher learning will be strengthened in collaboration with industry.

2.46 Programmes for health will be provided with an allocation of \$2,253 million, mainly for the implementation of twelve nucleus hospitals, the upgrading of the rural health services and the construction of the new cardiothoracic centre. The quality of health services will be further improved through wider coverage of pathological and radiology services. With respect to housing, a sum of \$803 million will be allocated, mainly for low-cost housing programmes.

2.47 During the Sixth Plan, a sum of \$109 million will be provided for continuation and new projects for the judicial services. New high courts will be built in Kuala Terengganu, Melaka and Shah Alam, while 15 new magistrate courts will be built throughout the country. The provision of new court rooms and upgrading of existing facilities are also necessary due to the unprecedented increase in the number of cases to be resolved by the courts. It is envisaged that with the completion of these projects, the present backlog of criminal, civil and remand cases will eventually be reduced.

2.48 The security sector will be allocated a sum of \$8,408 million or 15.3 per cent of the total Federal Government allocation, of which \$6,000 million is for the armed forces. This amount is substantially higher than that allocated for in the Fifth Plan, mainly to meet the commitment under the Memorandum of Understanding signed with the United Kingdom for purchases of military hardwares and construction of related infrastructure. The allocation includes other programmes, such as procurement of equipment amounting to \$678 million and construction of camps and family quarters amounting to \$871 million. An allocation of \$2,408 million will be set aside for internal security of which \$2,131 million will be for the Royal Malaysian Police, including a sum of \$615 million for housing projects for police personnel. The balance will be mainly for programmes to expand the facilities of the Immigration and Prison Departments as well as for Dadah Rehabilitation Programmes.

*Development Allocation for Poverty Eradication  
and Restructuring of Society*

2.49 The Government will continue to implement key programmes for eradicating poverty and restructuring of society in line with the priorities emphasized under NDP. The allocations for further improving the income levels and quality of life of the rural population will continue to be given as reflected in the sectoral allocations. In addition, an amount of \$600 million including \$260 million from the operating expenditure will be allocated for the purpose of further implementing development programmes specifically for the hard-core poor. This will include the provision of \$20 million to *Amanah Ikhtiar Malaysia* to expand its lending activities at zero interest rates to the hard-core poor. Other major components under this programme will include expenditures directed at increasing the accessibility of the poorest households to proper housing, health and education facilities as well as for income-generating activities.

2.50 Continued emphasis will be given to provide the rural population with the necessary facilities to upgrade their education and skills, thereby increasing their access to and participation in modern sector activities. The provision of wider opportunities and improved facilities will thus help reduce the disparity in the quality of education and training between urban and rural areas, and among the different segments of society. The private sector will also be expected to play an important role in training and producing skilled manpower to meet the demand of a changing industrial environment.

2.51 For programmes under the restructuring of society, a total of \$3,000 million will be allocated to support the development of a viable Bumiputera Commercial and Industrial Community. The major components of the allocation include \$1,800 million for education and training as well as entrepreneurial development programmes and \$600 million for development of commercial enterprises and business premises. These funds will be channelled through institutions such as MARA, *Bank Pembangunan Malaysia*, State Economic Development Corporation (SEDCs) and Urban Development Authority (UDA) to assist the Bumiputera community to participate in the modern commercial and industrial sectors of the economy.

### *Development Allocation by State*

2.52 The Federal development allocation by states during the Sixth Plan is shown in *Table 2-4*. The allocations take into account the relative socio-economic position of the states, their development potentials, their comparative resource advantages as well as their implementation capacity.

2.53 Besides Wilayah Persekutuan, Selangor will continue to receive a relatively larger proportion of 7.8 per cent of the Sixth Plan allocation, amounting to \$4,295 million. Among the major projects for Wilayah Persekutuan Kuala Lumpur will be the upgrading and expansion of facilities in *Universiti Malaya* as well as the construction of a teaching hospital in *Universiti Kebangsaan Malaysia* and the National Heart Institute. A large allocation is provided for the development of Labuan as an international off-shore financial centre. The bulk of the allocation for Selangor will be for expanding the facilities in *Universiti Pertanian Malaysia*, *Universiti Kebangsaan Malaysia*, *Universiti Islam Antarabangsa* and Subang International Airport. These projects will not only benefit the people of Selangor but also those from other states.

2.54 The middle income States of Johor, Pahang and Perak will collectively receive 16.8 per cent of the total allocation. The other middle income States of Melaka, Negeri Sembilan and Pulau Pinang will receive 7.3 per cent of the total allocation. The comparatively higher proportion of allocation given to Johor, Pahang and Perak will be for major agricultural and infrastructural development projects such as IADPs Johor Barat Phase II and Pahang Barat and the construction of Kuala Kangsar-Grik and Ipoh-Lumut roads.

2.55 The lesser developed States of Perlis, Kedah and Kelantan will be allocated \$5,395 million or 9.8 per cent of the Sixth Plan allocation. Major projects include the completion of the *Universiti Utara Malaysia* campus, the implementation of IADPs Lembah Kedah and Kemasin-Semerak and the flood mitigation project in Kelantan.

2.56 Sabah and Sarawak together will receive \$5,516 million or 10 per cent of the total Federal development allocation. A large proportion of this will be for the implementation of the necessary infrastructural projects to enhance accessibility to social services and further develop the economy of these states. These projects include the Beaufort-Sindumin road, Sandakan-Lahat Datu and the Tamparuli-Ranau highway in Sabah and the Kuching-Sibu road, the Kuching-Bau-Lundu road and the new Penrissen-Batu Kawa-Petra Jaya road in Sarawak.

### *Current Expenditure*

2.57 The current expenditure of the Federal Government for the Sixth Plan period is expected to increase by 7.2 per cent per annum, as shown in *Table 2-5*. This is on account of the growing expenditure for emoluments, pension and gratuities as well as supplies and services. The expenditure on supplies and services is projected to increase by 12 per cent per annum compared with 2.6 per cent in the previous Plan. The increase is to meet increasing operational and maintenance requirements as a result of the expansion in physical and social infrastructures undertaken by the public sector as well as to raise operational efficiency of government departments.

### *Sources of Revenue*

2.58 In view of a steady deterioration in tax buoyancy experienced over the years to below 1.0 for virtually all categories of taxes during the Fifth Plan period, greater efforts will be undertaken to mobilize additional revenue. In addition to further improvements to tax collection efforts, an appraisal of the tax and incentive system will be undertaken with a view to increasing revenue and reducing the erosion of the tax base by the provision of incentives. Total revenue of the Federal Government is anticipated to increase by 7.0 per cent per annum during the Sixth Plan period, which is higher than that in the Fifth Plan, as shown in *Table 2-6*. The share of tax revenue to total revenue is projected to increase from 73.1 per cent in 1990 to about 76 per cent in 1995. In contrast, the slower growth of *non-tax revenue* will result in its share declining from 26.9 per cent to about 24 per cent during the same period.

2.59 Revenue from *direct taxes* is expected to grow moderately by 6.0 per cent per annum while its share will decline from 35.8 per cent of total revenue in 1990 to 34 per cent in 1995. The projected increase will largely originate from company income taxes, consistent with the rapid growth of the economy. At the same time, income tax payments from individuals are expected to grow moderately by 6.7 per cent per annum. Revenue from *indirect taxes* will continue to increase, reflecting further improvements in tax collections and administration, particularly from consumption-based taxes due to increasing consumption of domestically produced goods and services. Revenue from this source is expected to increase by 9.4 per cent per annum during the Sixth Plan period compared with 7.8 per cent per annum during the previous Plan, further

increasing its share to 41.6 per cent in 1995 from 37.3 per cent in 1990. Income derived from divestment as a result of the privatization of Government agencies is expected to be substantial. The contribution of petroleum tax and non-tax revenue to total revenue is expected to decline as petroleum production is expected to stagnate at current levels. However, it will still continue to account for about a quarter of the total revenue of the Federal Government.

### *Sources of Financing*

2.60 The financing of development expenditure will rely less on foreign borrowing and more on the surplus from the current account and from domestic borrowing. The current surplus of the Federal Government is projected to be about \$7,860 million during the Sixth Plan period. However, given the Federal Government development expenditure at \$55,000 million, the overall deficit will amount to \$44,640 million, as shown in *Table 2-5*. While this level will remain high, the overall Federal deficit as a percentage of GNP will be reduced from 6.5 per cent during the Fifth Plan period to 5.5 per cent in the Sixth Plan. Although the deficit can be financed from domestic borrowing, the Government will continue to raise external loans, especially project loans, from foreign multilateral institutions and bilateral sources whenever necessary and on favourable and attractive terms.

2.61 With the continued efforts of the Government to improve the efficiency of NFPEs, their operating surplus is expected to amount to \$28,900 million in the Sixth Plan period compared with \$20,796 million in the previous Plan. PETRONAS, *Tenaga Nasional Berhad* and *Telekom Malaysia Berhad* will continue to account for the major surpluses of NFPEs. Their surpluses remain as part of the public sector resources and as such they are still significant in terms of providing financing for the public sector programmes.

2.62 Taking into account the current surpluses of the Federal, state, statutory authorities and local governments as well as NFPEs, the overall public sector current surplus is projected to amount to \$71,810 million, almost double that in the previous Plan period, as shown in *Table 2-7*. The substantial increase is on account of the higher surplus of NFPEs. With a development allocation of \$104,000 million for the public sector, its overall deficit will increase to \$32,190 million in the Sixth Plan period compared with \$18,117 million in the Fifth Plan. In terms of percentage of GNP, the ratio is expected to decline from 4.2 per cent to 4.0 per cent during the same period.



### *Privatization*

2.63 While considerable progress has been made in the implementation of the privatization programme, the Government will accelerate further the pace of privatization during the Sixth Plan. Towards this objective, a Privatization Master Plan has been prepared to provide guidelines for the orderly and more effective implementation of the policy. On the basis of this Master Plan, the Government will formulate a series of short-term Privatization Action Plans, detailing the entities to be privatized and which will be made available to the public. Another important aspect that will be given attention will be the strengthening of the regulatory framework to govern the privatized entities, especially those having monopolistic position. A study has been commissioned to help the Government in establishing an appropriate regulatory framework to ensure that public interest will be protected in terms of price and quality as well as efficiency and availability of services.

2.64 The acceleration of the privatization programme will place new demand on the equity and debt market. In order to avoid the crowding-out of the private sector for funds for other purposes, a number of capital market reforms are being considered to further promote investment particularly by small shareholders, employees and the Bumiputera. These reforms will not only cater to the needs of the privatization programme but simultaneously promote further the development of the domestic capital market.

### *Technical Assistance*

2.65 The technical assistance programme will continue to focus on human resource development which includes not only the acquisition of technical experts to meet the shortage of manpower for undertaking specialized functions or tasks but also to enhance the Government's institutional capability through training and transfer of technology to local personnel. Efforts will, therefore, be taken to secure technical assistance from all possible sources through the matching of Malaysia's needs with the capacities of the donor countries. At the same time, Malaysia's technical assistance to other developing countries through MTCP will be continued to promote regional and South-South cooperation. The thrust of MTCP will also focus on human resource development. The Programme is expected to expand its coverage to include other developing countries in Latin America.

#### IV. CONCLUSION

2.66 Public sector development expenditure will complement the leading role to be played by the private sector. It will focus on the implementation of existing and new programmes and projects to achieve the growth and distributional objectives of NDP. Programmes and projects aimed at improving the physical and social infrastructures as well as the enhancement of technology and human resource development will be given greater emphasis. Although resources will not be a major constraint in the Sixth Plan, the Government will continue to be prudent in its financial management.

## **Chapter III**

# **Agricultural Development**

## CHAPTER III

# Agricultural Development

### I. INTRODUCTION

3.01 The performance of the agriculture sector during the Fifth Malaysia Plan period was crucial to the nation's economic development. Revitalizing the sector along the lines promulgated by the National Agriculture Policy (NAP), 1984 was important to ensure a diversified and balanced development of the overall economy. The sector has contributed significantly to the expansion of the Gross Domestic Product (GDP), employment and export earnings as well as improvements in rural development, particularly towards poverty eradication and preservation of the ecological system and environment. In 1990, the sector contributed more than a quarter of total export earnings, one fifth of GDP and nearly one third of total employment.

3.02 The decade of the nineties will present greater challenges in the development of the agriculture sector. The rapid growth in the manufacturing and services sectors and the rising importance of agro-based industries will require complementary growth in agriculture to ensure a reliable and sufficient supply of agricultural inputs to these sectors. In order to preserve the ecological balance and ensure continuing contribution of agriculture in the future, appropriate policies will be required to promote sustainable development and improvements in income for those remaining in the agriculture sector. The growth in agriculture will have to come from a more commercial approach that emphasizes efficient utilization of resources. Such an approach will have to be based on private sector initiatives rather than through large-scale involvement of the public sector.

### II. PROGRESS, 1986-90

3.03 During the Fifth Plan period, the agriculture sector grew by 4.6 per cent per annum, higher than 3.1 per cent growth attained during the

Fourth Malaysia Plan period. This achievement was significant given the difficult years during the period, marked by fluctuating commodity prices, rising protectionism from developed countries as well as the emergence of production constraints, particularly due to the scarcity of labour and increasing pressure on wages.

### Commodity Performance

3.04 Most agricultural commodities recorded significant increases in production during the Fifth Plan period, as shown in *Table 3-1*. The main sources of growth came from cocoa, palm oil, timber, fisheries and livestock. However, the production of padi, coconut and rubber declined.

#### *Major Commodities*

3.05 The output of crude *palm oil* rose at an annual rate of 8.1 per cent to reach 6.1 million tonnes in 1990 while its value added increased by 7.9 per cent per annum to \$5,300 million, enhancing its position as the single largest contributor to total value added in the agriculture sector. The total hectareage devoted to oil palm increased to 2.0 million hectares, surpassing that of rubber by 1990, as shown in *Table 3-2*. The increase was achieved through new land openings by public sector agencies as well as the planting and conversion of rubber areas into oil palm by the private sector. Estates accounted for 47 per cent of the total area, while the organized and unorganized smallholders accounted for the balance of 45 and 8 per cent, respectively. During the Fifth Plan, the exports of palm oil rose by 12 per cent per annum to 5.7 million tonnes in 1990 while export earnings amounted to \$4,400 million. The bulk of the exports was in the form of processed palm oil. As a result, Malaysia remained as the world's largest producer and exporter of palm oil in 1990.

3.06 The production of *rubber* declined by 2.6 per cent per annum to 1.3 million tonnes in 1990, following sharp decline in prices from the high levels reached in the mid-years of the Fifth Plan. The decline was also due to the reduction in hectareage by 1.5 per cent per annum to 1.8 million hectares. The decline, however, was partly offset by increases in productivity from the continued adoption of high-yielding clones and better agronomic practices. The decline in prices and income consequently led to the neglect of smallholdings, while estates experienced difficulty in attracting workers. Production by estates

TABLE 3-1  
PRODUCTION OF AGRICULTURAL COMMODITIES, 1985-95  
(<sup>1</sup>000 tonnes)

Items	1985	1986	1987	1988	1989	1990	1995	Average Annual Growth Rate (%)		
								5MP		6MP
								Target	Achieved	
Rubber	1,470	1,539	1,579	1,662	1,422	1,291	1,300	0.8	-2.6	0.1
Crude Palm Oil	4,133	4,544	4,533	5,030	6,055	6,095	7,600	6.7	8.1	4.5
Palm Kernel	1,212	1,336	1,311	1,413	1,794	1,845	2,190	n.a	8.8	3.5
Sawlogs <sup>1</sup>	30,956	29,869	36,149	37,728	39,709	41,000	29,000	-2.0	5.8	-6.7
Sawn Timber <sup>1</sup>	5,550	5,424	6,222	6,684	8,322	8,900	9,100	-0.9	9.9	0.4
Cocoa	108	132	191	225	250	262	339	11.5	19.4	5.3
Padi	1,953	1,745	1,697	1,786	1,640	1,590	1,671	n.a	-4.0	1.0
Pepper	19	15	14	19	27	29	36	5.6	8.7	4.4
Pineapple	153	144	150	164	168	173	248	n.a	2.6	7.5
Tobacco	9	14	11	7	13	10	13	—	1.6	5.0
Fruits <sup>2</sup>	852	887	1,046	1,078	1,118	1,165	1,584	—	6.4	6.3
Vegetables <sup>2</sup>	184	239	232	229	226	224	256	—	4.0	2.8
Coconut <sup>3</sup>	1,826	1,374	1,590	1,579	1,568	1,557	1,572	—	-3.1	0.2
Fisheries										
Marine	575	562	859	826	822	830	984	n.a	7.6	3.5
Aquaculture	51	51	45	46	68	75	113	n.a	7.9	8.4
Livestock										
Beef	17	16	16	18	18	18	21	n.a	1.9	3.2
Mutton	0.6	0.6	0.5	0.5	0.6	0.7	1	n.a	1.9	7.8
Poultry	251	279	310	335	344	368	560	n.a	7.9	8.8
Eggs <sup>3</sup>	3,395	3,618	3,819	4,255	4,394	4,718	5,645	n.a	6.8	3.7
Pork	164	162	181	192	202	211	287	n.a	5.1	6.3
Milk <sup>4</sup>	24	27	28	29	31	34	68	n.a	7.4	14.8

Notes:

<sup>1</sup> Measured in thousand cubic metres

<sup>2</sup> Refers to Peninsular Malaysia

<sup>3</sup> Measured in million units

<sup>4</sup> Measured in million litres

n.a Not Available

TABLE 3-2  
AGRICULTURAL LAND USE, 1985-95  
( Hectares )

Items	1985	1990	1995	Average Annual Growth Rate (%)		
				5MP		6MP
				Target	Achieved	
Rubber	1,948,700	1,810,800	1,750,000	-0.5	-1.5	-0.7
Oil Palm	1,482,399	1,984,167	2,165,912	3.7	6.0	1.8
Cocoa	303,879	420,000	452,459	5.9	6.7	1.5
Padi	649,325	664,000	645,749	n.a	0.4	-0.6
Coconut	334,054	331,496	327,606	n.a	-0.2	-0.2
Pepper	5,243	9,400	10,050	n.a	12.4	1.3
Pineapple	10,007	9,000	12,000	n.a	-2.1	5.9
Vegetables	14,546	14,692	19,400	n.a	0.2	5.7
Fruits <sup>1</sup>	119,024	162,085	246,019	—	6.4	8.7
Tobacco	16,180	10,168	13,000	n.a	-8.9	5.0
Others	69,026	65,046	74,139	—	-1.2	2.7
<b>Total</b>	<b>4,952,383</b>	<b>5,480,854</b>	<b>5,716,334</b>		<b>2.0</b>	<b>0.8</b>

Notes:

<sup>1</sup> Peninsular Malaysia

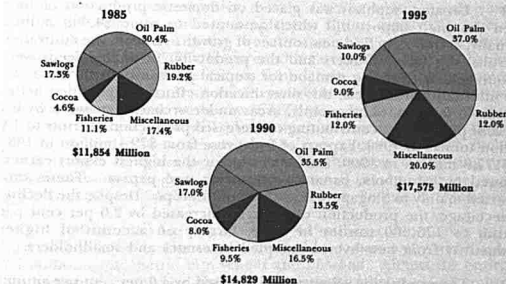
n.a Not Available

stagnated, despite an increase in yield, as hectareage declined due to continued conversion into oil palm. The bulk of rubber was exported in unprocessed or semi-processed forms, while domestic processing by rubber-based industries amounted to only 181,000 tonnes in 1990. While the level of domestic processing was low, it increased significantly by 21 per cent per annum during the Fifth Plan period.

3.07 *Cocoa* production registered the highest rate of growth despite the large decline in prices of dry cocoa from \$4.19 per kilogram in 1986 to \$2.51 per kilogram in 1990. Its value added increased substantially by 16.8 per cent per annum during the Fifth Plan, constituting about

eight per cent of the total agriculture value added in 1990, as shown in Chart 3-1. Production increased by 19.4 per cent to 262,000 tonnes in 1990, placing Malaysia as the fourth largest producer in the world. Export earnings amounted to \$448 million in 1990. The emphasis given to the quality of exports led to the introduction of the Standard Malaysian Cocoa grading by the Federal Agricultural Marketing Authority (FAMA) to establish a niche in the international market for Malaysian cocoa. The rapid increase in output was mainly derived from productivity improvements, with yields increasing from 659 kilograms per hectare in 1985 to 1,052 kilograms per hectare in 1990 for dry cocoa beans. Plantations, mainly in Sabah, constituted 55 per cent of the total hectareage, while the smallholdings, largely in Peninsular Malaysia, comprised about 45 per cent, involving inter-cropping with coconut. The establishment of the Malaysian Cocoa Board (MCB) in 1989 marked the growing importance given to cocoa production in the agricultural development of the country.

CHART 3-1  
AGRICULTURE VALUE ADDED, 1985-95  
(in 1978 prices)





### *Other Crops*

3.08 The performance of other crops was mixed. *Padi* continued to be adversely affected by low returns, shortage of labour, poor management and occasional droughts in the non-granary areas of northern Peninsular Malaysia. Consequently, total padi production declined from 2.0 million tonnes in 1985 to 1.6 million tonnes in 1990. In addition, the quality of output deteriorated due to the lack of incentive pricing under the existing controlled price structure. As an *ad hoc* measure, the coupon subsidy was raised by 50 per cent in July 1990. Strong *pepper* prices in the early years of the Fifth Plan and the provision of assistance encouraged greater planting of pepper which led to a higher output in the latter half of the Plan period. Production remained strong despite the steep decline in prices from over \$11,000 per tonne during 1986-87 to less than half of that in 1990. Planted areas were confined to Sarawak and several areas in Johor. *Coconut* production declined by 3.1 per cent per annum during 1986-90, as a result of low prices and low productivity due to old trees. Planted hectareage, mostly inter-cropped with cocoa, stagnated at around 332,000 hectares. To offset poor demand, the sale of young coconuts was promoted. The annual production of *tobacco* during the Fifth Plan fluctuated between 7,300-13,000 tonnes, in line with the production quota of the National Tobacco Board (NTB). As areas under tobacco declined by 8.9 per cent per annum, the increase in production came from yield improvements. The main problems encountered were the shortage of suitable land and rising costs of production.

3.09 Greater emphasis was placed on domestic production of food given the high import bill which amounted to some \$4,000 million annually, as well as to find new sources of growth. As such, the cultivation of fruits, vegetables, flowers and the production of animal feeds were encouraged. With strong demand for tropical *fruits* in both the domestic and international markets, this diversification effort also provided better returns to farmers. Subsequently, areas under orchard expanded by 6.4 per cent per annum, contributing to increased production of fruits to 1.2 million tonnes in 1990. Exports of fruits rose from \$72.1 million in 1985 to \$177.8 million in 1990. *Durian* was by far the highest export earner, followed by carambola, banana, watermelon and papaya. These were exported mainly to Singapore, East Asia and Europe. Despite the decline in hectareage, the production of *pineapple* increased by 2.6 per cent per annum to 173,000 tonnes in 1990, largely on account of higher productivity from new hybrids adopted by estates and smallholders.

3.10 The production of *vegetables* increased by 4.0 per cent per annum to 224,000 tonnes in 1990. The increase in production came from the

greater intensity of cultivation rather than increases in hectareage. However, Malaysia is still a net importer of vegetables, with imports amounting to \$257.5 million compared with an export value of \$70 million in 1990.

### *Forestry Products and Management*

3.11 The annual felling rate of *logs* increased by 5.8 per cent annually during the Fifth Plan to 41 million cubic metres in 1990 inspite of the conscious policy to sustain yield levels. Sabah and Sarawak contributed 73.2 per cent of the total production, with Sarawak accounting for 50 per cent or 20.5 million cubic metres. The output from Peninsular Malaysia also rose to 11 million cubic metres while that of Sabah fell to 9.5 million cubic metres with the decline in productive forest areas. The high overall rate of logging reflected the preference to export sawlogs rather than domestic downstream processing as state governments rely heavily on log royalty as their major source of revenue. Consequently, sawlog exports from Sabah and Sarawak remained high at 20.3 million cubic metres in 1990. The major markets were Japan, Taiwan and Korea.

3.12 In line with efforts to regenerate forests under the National Forestry Policy, 959,800 hectares of forest in Peninsular Malaysia were silviculturally treated during the Fifth Plan. At the same time, the annual coupe was reduced from 216,000 hectares in 1985 to 189,000 hectares in 1990. The Compensatory Forest Plantation Project further replanted 35,200 hectares of degraded forests in seven states in Peninsular Malaysia with fast-growing timber species, namely, *Gmelina arborea*, *Acacia mangium* and *Paraserianthes falcataria* to supplement future supply of timber. In Sabah, initial efforts to arrest the unsustainable logging rate included reafforesting about 27,700 hectares with fast-growing species through a joint-venture between the Sabah Foundation and a private company. Another 13,000 hectares of *Acacia mangium* were planted by the Sabah Forestry Development Authority (SAFODA). In Sarawak, even though forestry resources were still plentiful, initial measures were taken to reforest degraded areas affected by shifting cultivation, which included 4,000 hectares of *Acacia mangium*. Rattan cultivation, comprising mainly *Calamus manan* or manau and *Calamus caesi* or sega species, totalled 7,500 hectares in Sabah and 3,100 hectares in Peninsular Malaysia.

3.13 Of the total log production of 41 million cubic metres in 1990, 20.6 million cubic metres were converted into *sawn timber* while another 7.7 million cubic metres into veneer and plywood. Almost the entire log production in Peninsular Malaysia was domestically processed compared with 32 per cent each in Sabah and Sarawak. Rubber wood increasingly

contributed to wood supply. Of the total sawn timber production of 8.9 million cubic metres, 5.2 million cubic metres were exported and the balance was for domestic construction industry and downstream processing into moulding, joinery and furniture products.

### *Fisheries Output and Programmes*

3.14 *Fisheries* production increased by 7.6 per cent for marine landings and 7.9 per cent for aquaculture. Deep-sea fishing and aquaculture contributed largely to the increase in production as a result of the promotional efforts under the Promotion of Investment Act (PIA), 1986. Landings from deep-sea fishing rose to 100,000 tonnes in 1990 from 18,300 tonnes in 1985 while the number of freshwater ponds rose to 20,900 from 18,600. At the same time, 125 artificial reefs to propagate fish concentration were established as part of the overall programme to conserve and enhance inshore resources.

3.15 The emphasis on support services included the establishment of the National Prawn Production and Research Centre in Pulau Sayak and the upgrading of the management production system of prawn rearing at the Gelang Patah Research Centre. The Malaysian Fisheries Development Authority (LKIM) and Department of Fisheries (DOF) undertook measures to modernize the sector. Credit facilities were provided for the building of large and well-equipped modern boats as well as for inshore fishermen to own boats. A greater involvement by fishermen associations in the marketing of fish and fish products was emphasized to promote private sector participation. The number of fishermen was estimated at 89,000 in 1990, a decline from the peak of 116,500 in the early eighties due to outmigration and the preference of fishermen to become farmers.

### *Livestock Development*

3.16 Total *livestock* value added increased by 6.1 per cent per annum during the Fifth Plan to \$606 million, with the non-ruminants being the major contributor to growth. *Mutton* production increased by 1.9 per cent per annum, partly the result of efforts to integrate sheep rearing in farming activities, particularly by large private sector oil palm plantations, the Federal Land Development Authority (FELDA) and Rubber Industry Smallholders Development Authority (RISDA). The production of beef grew by only 1.9 per cent per annum. A total of 19,500 cattle and buffaloes was distributed to 6,600 farmers under the Small-scale Rearing

Credit Scheme of the Department of Veterinary Services (DVS), while another 2,800 dairy cattle were distributed to 1,200 farmers under the dairy programme. During the same period, 25,500 goats and sheep were loaned to 1,300 farmers under the *pawah* scheme. The integration of ruminant animals with permanent crops in plantations continued to progress, involving an estimated 60,000 cattle. However, efforts at intensive feedlotting was negated by rising cost of inputs, particularly of palm kernel cake in the mid-years of the Fifth Plan. At the same time, the availability of cheaper imported beef under the countertrade arrangement with India confined the higher priced Malaysian beef to the middle-price market. The slow progress in generating indigenous breeds and breeding stocks also constrained the growth of beef and mutton production. To overcome this, DVS established nine Rearing Farm Centres for cattle and six for goats.

3.17 *Poultry* and *pork* were the main sources of increase of livestock output, rising by 7.9 per cent and 5.1 per cent per annum to reach 368,000 tonnes and 211,000 tonnes in 1990, respectively. Malaysia continued to be fully self-sufficient in these industries and was able to export its surplus to Singapore and nearby Asian markets. The widespread and uncontrolled small-scale rearing of pigs have given rise to issues of environmental pollution and religious sensitivity. Consequently, policies were instituted to restrict its expansion to certain designated areas.

3.18 The production of *eggs*, for which Malaysia is already self-sufficient, increased by 6.8 per cent annually to reach 4,700 million units in 1990. The production of *milk* was also higher at 34 million litres, increasing annually by 7.4 per cent. However, Malaysia is still not self-sufficient in milk production, accounting for only 10 per cent of national requirements. Under the dairy programme, 39 new Milk Collection Centres (MCCs) were established while others were consolidated with a view to be more cost-effective.

### Land Development Programmes and Support Services

3.19 Land development programmes, both new and *in-situ*, have contributed significantly to increases in output and improvements in income of the agriculture sector. However, several constraints have emerged with respect to the availability of land, labour and rising cost of inputs during the period. While new land development accounted for the largest in terms of public sector development allocation, the *in-situ* approach constituted the main thrust of agricultural development programmes under the Fifth Plan.

### *In-situ Development*

3.20 The *in-situ* thrust to redevelop existing villages and farms through the provision of infrastructure and replanting facilities as well as greater commercial orientation was aimed at raising the productivity of existing farms. A major *in-situ* component was the *Integrated Agricultural Development Programme* (IADP) which was designed to provide an integrated package of infrastructural and support facilities. This included the provision of drainage and irrigation systems, flood control, farm roads as well as agricultural support services to existing areas. Fifteen IADPs were implemented under the Fifth Plan, of which all the infrastructural components were completed for eight. These completed projects covered 3.5 million hectares of land and benefited 273,900 farm families. The project management units will continue to operate and maintain these projects in order to ensure that maximum benefits will be obtained from the heavy investment that has been ploughed in. The total expenditure on IADPs amounted to \$1,020 million during the Fifth Plan, with *drainage and irrigation* infrastructure constituting about three-quarters of the expenditure.

3.21 Another major *in-situ* programme is *replanting*. The strong contribution to output and income growth by rubber, oil palm and commercial crops were made possible by effective replanting programmes continually pursued in the past. As shown in *Table 3-3*, RISDA replanted around 140,000 hectares of land in Peninsular Malaysia, involving 80,000 smallholders. The focus was on group replanting and mini estates to realize economies of scale in terms of production, maintenance and marketing. About 40,000 hectares were developed as mini estates. The Sabah Rubber Fund Board (SRFB) replanted 3,500 hectares of rubber, benefiting 5,000 smallholders. Another 3,600 hectares of pineapple were replanted by the Malaysian Pineapple Industry Board (MPIB), involving 2,700 farmers.

3.22 Programmes for the *consolidation and rehabilitation* of idle and uneconomic farms were aimed at increasing productivity through economic size operation, adoption of modern technology and the provision of improved infrastructural facilities. The Federal Land Consolidation and Rehabilitation Authority (FELCRA) under the Fifth Plan rehabilitated 117,800 hectares of land, surpassing its target of 110,000 hectares. This included the rehabilitation of 38,600 hectares of idle land since 1984. Of this, 69.8 per cent were planted with oil palm, 16.2 per cent with rubber and 7.4 per cent with cocoa and other crops. Programmes under the Sarawak Land Consolidation and Rehabilitation Authority (SALCRA) were mainly for oil palm, cocoa, rubber and tea, while the Sarawak Department of Agriculture (SDOA) rehabilitated an

TABLE 3-3

REPLANTING, LAND CONSOLIDATION AND REHABILITATION  
PROGRAMMES OF PUBLIC AGENCIES, 1986-95  
(hectares)

Agency	5MP Target	Area Involved	Types of Crop						5MP Achievement %	6MP
			Rubber	Oil Palm	Padi	Cocoa	Pineapple	Others		
Replanting										
RISDA <sup>1</sup>	161,878	140,000	94,200	30,800	—	—	—	15,000	86	200,000
FELDA <sup>2</sup>	20,000	23,049	10,882	12,167	—	—	—	—	115	62,200
SRFB <sup>3</sup>	3,300	3,500	3,500	—	—	—	—	—	106	3,000
SDOA <sup>4</sup>	—	—	—	—	—	—	—	—	—	8,500
MPIB <sup>5</sup>	4,049	3,603	—	—	—	—	3,603	—	89	6,477
Sub-total	189,227	170,152	108,582	42,967	—	—	3,603	15,000	90	280,177
Land Consolidation and Rehabilitation										
FELCRA <sup>6</sup>	110,000	117,800	19,041	82,213	7,810	5,924	—	2,822	107	150,000
SALCRA <sup>7</sup>	14,051	9,850	2,500	4,000	—	3,000	—	350	70	8,500
MOA <sup>8</sup>	14,000	13,452	—	1,271	10,551	706	—	924	96	25,000
SDOA <sup>4</sup>	—	10,000	—	—	—	—	—	10,000	—	—
Sub-total	138,051	151,102	21,541	87,484	18,361	9,630	—	14,096	109	183,500
Total	327,278	321,254	130,123	130,451	18,361	9,630	3,603	29,096	98	463,677

## Notes:

- <sup>1</sup> Rubber Industry Smallholders Development Authority
- <sup>2</sup> Federal Land Development Authority
- <sup>3</sup> Sabah Rubber Fund Board
- <sup>4</sup> Sarawak Department of Agriculture
- <sup>5</sup> Malaysian Pineapple Industry Board
- <sup>6</sup> Federal Land Consolidation and Rehabilitation Authority
- <sup>7</sup> Sarawak Land Consolidation and Rehabilitation Authority
- <sup>8</sup> Ministry of Agriculture

area of 10,000 hectares with fruits, vegetables and cash crops. A total of 15,500 hectares of coconut was inter-cropped with cocoa and coffee under the Coconut Replanting and Rehabilitation Project, which ended in 1988. In addition, about 7,800 hectares of abandoned padi land were rehabilitated partly through group farming management or as padi estates run by private companies.

### *New Land Development*

3.23 New land development by public sector agencies exceeded the Fifth Plan target, as shown in *Table 3-4*. FELDA developed 49.7 per cent of the total 353,300 hectares, of which 88.3 per cent were planted with oil palm, 5.9 per cent with rubber and 1.3 per cent with cocoa. State land development agencies developed the balance of 45.3 per cent or 160,000 hectares. Under this programme, 26,100 families were resettled, bringing the total to 119,300 settler families comprising 715,800 people by the end of 1990. The average development cost of resettling a family was \$40,500 for oil palm schemes and \$57,400 for rubber schemes. The settlers' incomes from palm oil were severely affected by price decline in the early years of the Fifth Plan, but recovered during 1987-89. The average net monthly income of FELDA settlers ranged from \$410 to \$720 and from \$380 to \$870 under rubber and oil palm schemes, respectively.

TABLE 3-4  
NEW LAND DEVELOPMENT, 1986-95  
( Hectares )

Agency/Programmes	5MP		6MP
	Target	Achieved	
FELDA <sup>1</sup>	175,500	175,745	—
State Programmes	93,700	160,000	4,012 <sup>2</sup>
Joint-ventures/private sector	17,500	17,551	158,696 <sup>3</sup>
<b>Total</b>	<b>286,700</b>	<b>353,296</b>	<b>162,708</b>

Notes:

<sup>1</sup> During the Sixth Plan, no new land development will be undertaken by FELDA.

<sup>2</sup> Refers only to development in areas under the Sarawak Land Development Board and Ladang Rakyat of the Perak State Agriculture Development Corporation.

<sup>3</sup> Refers to land development in areas under Regional Development Authorities and state agencies on a commercial basis.

3.24 The development of new land by the private sector was confined mainly to areas under the Regional Development Authorities (RDAs). Of the 17,550 hectares of new land developed in RDA areas, 98 per cent were by the private sector and the balance, on a joint-venture basis. The main objective of the RDA's land development is to improve the living standard of the people through the creation of economic opportunities via the provision of physical and social infrastructures and coordinated support services to the people. The development programmes of the Pahang Tenggara Regional Development Authority (DARA), Jengka Regional Development Authority (JENGKA), Johor Tenggara Regional Development Authority (KEJORA), South Kelantan Regional Development Authority (KESEDAR) and Terengganu Tengah Regional Development Authority (KETENGAH) were on new land development for agricultural purposes. The Kedah Regional Development Authority (KEDA) and Penang Regional Development Authority (PERDA) placed emphasis on *in-situ* development, with the latter focussing on the development of small-scale industries. The progress made by the RDAs under the Fifth Plan was mainly in agriculture, while township and industrial development lagged behind, except in the case of KEJORA.

#### *Support Services*

3.25 The adequate provision of support services was one of the key factors contributing to the expansion of the agriculture sector under the Fifth Plan. The attainment of a higher level of productivity is highly dependent upon human resource capability to adopt better farm management methods and new technologies. In this regard, the provision of *training and extension services* was extended by the Department of Agriculture (DOA), DOF, DVS, FAMA, FELDA, FELCRA, Farmers Organization Authority (FOA), LKIM, RISDA and SDOA, benefiting about 572,800 farmers.

3.26 Adequate *credit and incentives* were also provided to facilitate the growth of the agriculture sector. The greater financing requirements were met partly through an increase in loans, largely from the banking system, estimated at \$9,900 million by 1990. The bulk of the loans was for the cultivation of oil palm, cocoa as well as forestry activities. The smallholder subsector obtained its financing mainly from the Centralized Agriculture Credit Scheme (SPKP) under *Bank Pertanian Malaysia* (BPM). The SPKP loans which totalled \$78 million, benefited 6,700 farmers and fishermen. The Development of Sarawak Smallholders Agriculture (DESSA) scheme, launched in 1988 to assist poor smallholders, disbursed another \$8 million. BPM also provided interest-free loans to the hard-core poor to venture into viable agricultural projects, with each loan not



exceeding \$5,000. A total of 28 loans was approved under this scheme for the cultivation of crops and sheep rearing. The small farmers also had access to credit facilities provided by *Amanah Ikhtiar Malaysia* (AIM).

3.27 The provision of various forms of *incentives* for crop production such as padi, rubber, pepper, sago, fruits and livestock rearing amounted to \$525.3 million and benefited 611,800 farm families, as indicated in *Table 3-5*. The padi subsector was supported by the guaranteed minimum price programme, amounting to \$1,193 million during the Fifth Plan. About \$27.0 million were spent by DOA for the provision of seeds and seedlings to smallholders. The inclusion of non-traditional agricultural activities in the PIA, 1986 provided a boost for private sector involvement, particularly in horticulture, forestry, fisheries, livestock and floriculture.

3.28 The farmers' involvement in direct *marketing* was promoted with the creation of 132 farmers markets by FAMA with the participation of 4,900 farmers, and 37 *segaria* stalls as outlets for fresh milk. FAMA, in close collaboration with private companies, successfully pursued the international marketing of Malaysian fruits namely, papaya and carambola to East Asia, Europe and Middle East markets. The emphasis on the quality of exports led to an increase in the volume of graded cocoa from 20,900 tonnes in 1986 to 36,200 tonnes in 1990 and that of pepper from 15,000 tonnes to 25,500 tonnes. In order to strengthen the fisheries marketing system, LKJM established seven fisheries complexes equipped with freezer and ice facilities. The fish auction system was also launched to maximize returns to fishermen. To improve the marketability of agricultural output, further *processing* of agriculture produce was promoted. Public sector agencies such as the Malaysian Rubber Development Corporation (MARDEC), FELDA, National Padi and Rice Authority (LPN) and Food Industries of Malaysia were involved with the processing of agricultural produce to enhance value added. FOAs were also involved in broadening the income base of farmers by gradually extending its scope of operation into off-farm activities in consonance with the policy of rural industrialization.

3.29 The public sector programmes on *research and development* (R&D) further contributed to the growth of agriculture by developing improved technologies at the production as well as consumption levels for commercial crops and foodcrops. The relevant institutions, including cess-funded research agencies, received 49 per cent of the total R&D allocation. The emphasis of R&D had been on improving productivity, securing new sources and achieving sustainability in the growth of the agriculture sector.

TABLE 3-5  
AGRICULTURAL PRODUCTION INCENTIVES, 1986-95  
( \$ million )

Types of Incentive According to Crop	5MP			Number of Beneficiaries	6MP Allocation \$
	Allocation \$	Expenditure \$	%		
1. Padi Fertilizer	396.8	396.8	100	424,195	400.0
2. Rubber (chemical and fertilizer, cover crops, stimulant, rainshield, and bulk processing centers) <sup>1</sup>	93.4	74.9	80	140,000	60.6
3. Pepper (post, cutting and fertilizer)	16.5	15.8	96	42,500	25.0
4. Sago (transporting channel and planting materials)	7.0	6.9	99	4,000	8.6
5. Fruits and crops production (planting materials and certified seedling for padi)	27.4	27.0	99	n.a	46.7
6. Livestock ( <i>paawah</i> schemes) <sup>2</sup>	3.5	3.9	110	1,116	14.0
<b>Total</b>	<b>544.6</b>	<b>525.3</b>	<b>96</b>	<b>611,811</b>	<b>554.9</b>

Notes:

<sup>1</sup> Provided by RISDA

<sup>2</sup> Refers to Department of Veterinary Services in Peninsular Malaysia

n.a Not Available

### III. PROSPECTS, 1991-95

#### Growth, Constraints and Policy Issues

3.30 The agriculture sector is targeted to grow at an average rate of 3.5 per cent per annum during the Sixth Malaysia Plan compared with 4.6 per cent attained in the Fifth Plan period. The achievement of this target will be dependent on external demand for the major commodities such as oil palm, rubber, cocoa and timber as well as efficiency and productivity improvements. Efforts will be made to resolve constraints in the sector such as labour as well as create and develop greater linkages between the agriculture and other sectors in the economy.

3.31 Priority will be given to further reorientate the smallholding sector towards greater commercial operation to realize economies of scale and be internationally competitive over the long run. A major policy concern will be to ensure that agriculture remains competitive in the international market and, therefore, only economically viable new crops will be explored to their potential. For products that are currently not competitive, R&D will be emphasized towards enhancing their competitiveness.

3.32 As the growth of agriculture will continue to be affected by the availability of labour, productivity increases will be emphasized so that wage differentials in favour of the urban industrialized sector will be reduced to attract domestic labour to agriculture. While continuous efforts by the Government to develop and modernize rural areas will assist in retaining labour force in the smallholders subsector, the private sector will have to support these efforts through the upgrading of facilities to improve the living standards of workers in the plantation sector. These will ease labour shortages in the agriculture sector. Unless this is forthcoming, the realization of agricultural output on a competitive basis will require the importation of low-cost labour from abroad. For the longer term, R&D efforts will be focussed on increasing productivity through higher-yielding varieties, producing tree height amenable to labour and increasing the mechanization of production, especially in planting, fertilizer application, harvesting and handling of output. At the same time, a more effective management system will be designed so that the agriculture sector will be cost competitive and able to sustain its presence in the world market.

3.33 Overcoming the constraints faced by the agriculture sector will also require a change of emphasis in the strategies promulgated by NAP. The low returns to agriculture were due to structural constraints affecting the efficient operation of holdings, leakages in the delivery of support programmes and relative price changes, arising from protective industrial policies that favour other sectors of the economy. Policies will be formulated to increase the dynamism of the sector, largely through raising productivity and returns to agricultural activities. Given the constraint in terms of availability of potential new agricultural land, except in Sabah and Sarawak, focus will be placed on *in-situ* development through consolidation and utilization of the land base in a more dynamic, efficient and income maximizing manner.

3.34 Concern for the environment and the issue of sustainability of growth will necessitate efforts to sustain the level of forestry extraction. It will also require protecting fisheries resources in the inshore zones from indiscriminate trawlings.

3.35 The growth prospects of the agriculture sector will increasingly rely not only on increasing the primary level of production but also on downstream processing and marketing of agricultural produce. Policies and strategies towards the development and promotion of the agro-based industry will be further strengthened with the objective of transforming the agriculture sector towards greater commercial orientation. The focus will be towards ensuring that the local supply of raw materials will be reliable and sufficient, maximizing the uses of raw materials, extending the range of products, including import substitution, as well as developing new product lines through effective R&D activities and promoting and developing large-scale integrated agro-based projects.

3.36 The commercial approach of NAP will place a greater requirement on the supply of trained personnel, management skills as well as organizational support. While the public sector will continue to provide such facilities, the contribution of the private sector will have to be enhanced, especially by private plantation companies, preferably through contract-related farming as well as by farmers cooperatives and fishermen associations. Through human resource and institutional development, farmers and fishermen's organizations will also enhance their roles in commercial ventures and increase their market shares.

3.37 Under PIA, 1986 and Income Tax Act, 1967 the Government has provided various forms of incentives to those intending to establish or participate in agricultural activities. In addition to these, special rebate schemes for rubber and additional incentives for wood-based industries were introduced. During the Sixth Plan, the Government will further formulate supportive policies to strengthen existing incentives through the provision of the necessary infrastructure, selective support financing for adoption of new technology, market pricing policies that reward quality output and efforts as well as the provision of extension services, R&D and training. The Sixth Plan will constitute a watershed in agricultural development. In contrast to the previous Plans when agricultural development was largely public-sector driven, the emphasis will be on the important role of the private sector in revitalizing the agriculture sector.

#### **Prospects for Agricultural Commodities, Forestry, Fisheries and Livestock**

3.38 Oil palm, rubber and cocoa will continue to be the mainstay of agriculture. At the same time, new sources of growth will be sought from land-intensive cultivation of high value food crops, particularly fruits and vegetables, floriculture, fisheries and livestock. The emphasis on

achieving self-sufficiency in food production will be pursued. The production of fish, meat, fruits and vegetables will, therefore, be promoted in the Sixth Plan.

#### *Continued Growth of the Major Commodities*

3.39 The output of *palm oil* is projected to expand moderately at an annual rate of 4.5 per cent to reach 7.6 million tonnes in 1995, in response to the expected recovery in price, slower pace of new land development and marginal conversion of idle rubber and abandoned land under the *in-situ* development programmes. The expansion of new hectareage will be concentrated in Sabah and Sarawak given the shortage of suitable land in Peninsular Malaysia. The replanting of oil palm by estates and FELDA schemes will be continued during the period, while a replanting financing facility will be arranged for the unorganized smallholding subsector. During the period, the area under oil palm will grow at a slower rate of 1.8 per cent annually from 2.0 million hectares in 1990 to 2.2 million hectares in 1995. The growth in palm oil production will come from increases in average yield, through maturity of new clones and better agronomic practices in the estates and the organized smallholder subsector. Demand for palm oil will remain high inspite of increased competition and the share of palm oil in the oils and fats market will continue to rise on account of its competitive price and technical versatility. The challenge for Malaysian palm oil will be to maintain its cost competitiveness in the face of rising scarcity of labour.

3.40 The area under *rubber* is expected to level off at 1.8 million hectares. The conversion of rubber areas into oil palm that occurred during the past two decades will decelerate as rates of return between the two crops tend to equalize and the benefit of having a balanced crop portfolio becomes increasingly important for farm income stability. Further, rubber prices are expected to be remunerative during the Plan period with the anticipated strong demand by developed economies and a deficit of 30,000 tonnes annually in the world natural rubber supply. This expectation will encourage the private sector to partially reinvest in the rubber industry. Despite the anticipated decline in rubber hectareage, production is expected to increase marginally at the rate of 0.1 per cent per annum to reach around 1.3 million tonnes in 1995 on account of increases in yield from high-yielding clones, better agronomic practices and the adoption of more effective tapping techniques. A phased programme of replanting and the consolidation and rehabilitation of smallholdings with high-yielding clones will be undertaken by RISDA.

3.41 An excess supply of about 1.3 million tonnes of *cocoa* is expected to prevail in the international market in the early years of the Sixth Plan. Export unit values of cocoa beans are expected to hover above the cost of production, in the range of \$3.00 to \$4.30 per kilogram. Cocoa prices are not expected to remain high. As such, profits will have to be realized through cost reductions and increases in productivity. Cocoa production will grow at a slower rate of 5.3 per cent compared with 19.4 per cent under the Fifth Plan, to reach 339,000 tonnes in 1995 from 262,000 tonnes in 1990. These increases will be from higher hectarage as well as yield. The area under cocoa will increase by 1.5 per cent per annum to reach 452,500 hectares in 1995 and will be undertaken mainly by the more efficient estate sector, largely in Sabah.

3.42 The export of cocoa is projected to expand annually by 8.7 per cent from 163,000 tonnes in 1990 to 247,000 tonnes in 1995. With progress in downstream processing, domestic grinding of cocoa will absorb about 110,000 tonnes in 1995. The accessibility of Malaysian cocoa in the international market will need to be expanded in order to strengthen its position. The Standard Malaysian Cocoa grading will be further pursued to establish a reputable quality product in the international market.

#### *Other Crops - Greater Role for Horticulture*

3.43 The performance of minor crops will be mixed. The traditional food crops of rice and coconut will grow marginally while that of horticulture and other annual commercial crops will register strong growth. Horticulture will feature significantly in the Sixth Plan as a new source of growth in the agriculture sector.

3.44 *Padi* production in the present eight granary areas will continue while padi areas outside the granary will be converted gradually into other crops to provide better returns to farmers. The cultivated area for padi will, therefore, decline slightly at an annual rate of 0.6 per cent to 645,700 hectares in 1995. Padi yield, however, is expected to improve by 1.0 per cent per annum. Consequently, its production will increase from 1.59 million tonnes in 1990 to 1.67 million tonnes in 1995. Group farming will continue to be promoted to reap economies of scale in production and optimize farm returns. The fertilizer support programme will be continued but a comprehensive review of the padi price structure will be undertaken to create better incentives for farmers to produce high quality padi.

3.45 The production of *pepper* is forecast to grow at a slower rate of 4.4 per cent annually compared with 8.7 per cent under the Fifth Plan, to reach 36,000 tonnes in 1995 in response to expected lower prices of between \$5.00 to \$7.00 per kilogram. Pepper cultivation, which is highly labour-intensive, will be concentrated in Sarawak, with almost all its production catering for the export market.

3.46 *Pineapple* production is targeted to increase by 7.5 per cent per annum from 173,300 tonnes in 1990 to 248,300 tonnes in 1995. Growth will come both from increased hectareage and yield improvement from new hybrids and better cultivation techniques. Pineapple cultivation will remain viable, particularly when integrated with downstream processing or livestock rearing that used pineapple byproducts as feed meals. The total cultivated area is projected to increase from 9,000 hectares in 1990 to 12,000 hectares in 1995, a growth of 5.9 per cent per annum. An aggressive promotional drive will be pursued during the Sixth Plan to strengthen and expand the Malaysian canned pineapple market. Extension services will aim at ensuring improvements in yield and quality of pineapple, especially under nucleus and mini-estate farming. The consolidation of smallholdings into bigger and more economic working areas will be pursued to improve the incomes of farmers.

3.47 The production of *tobacco*, which will continue to be subjected to production quotas set by NTB, is forecast to increase at an annual rate of 5.0 per cent from 10,000 tonnes in 1990 to 13,000 tonnes in 1995. The quality of the Malaysian flue-cured virginia tobacco will continue to be improved under MARDI's R&D programmes as a strategy to secure a higher blending rate for Malaysian tobacco.

3.48 Greater competition from other oils in the world market will confine the cultivation of *coconut* to meet domestic requirements, both for fresh and young coconut, and as a shade crop for cocoa cultivation. Coconut hectareage will decline marginally by 0.2 per cent per annum. However, production is expected to increase to 1,570 million coconuts in 1995 through improvement in yield from the adoption of the high-yielding *Mawa* variety. As part of marketing strategy, R&D will focus on diversifying the end use of coconut.

3.49 The promotion of other crops including agro-forestry, especially on idle land and non-granary areas, will be undertaken wherever viable during the Sixth Plan. *Sago* production in Sarawak will continue to be supported to meet domestic and export demand for food and industrial use.

3.50 As the growth of major commercial crops is likely to face serious constraints arising from limited availability of new land and markets, the source of growth for the agriculture sector in the Sixth Plan will be from the development of land-intensive high-value horticultural crops, especially fruits, vegetables and flowers. The contribution to value added growth from horticulture is thus, targeted to increase by 13.6 per cent per annum during the Sixth Plan, the highest compared with other crops.

3.51 With the utilization of idle land and some non-granary areas for alternative crop production, the area of *fruit* cultivation will expand by 8.7 per cent per annum from 162,100 hectares in 1990 to 246,000 hectares in 1995. Subsequently, the production of fruits is estimated to increase annually by 6.3 per cent to 1.58 million tonnes in 1995. Its development will concentrate on fruits with export potential such as carambola, Eksotika papaya, guava, *durian*, *rambutan* and *ciku*. The perishability and preservation of the quality of fruits are the main problems that will require R&D efforts to focus on an integrated package of technology for planting, harvesting, handling and transporting the fruits to export destinations. The high cost of air freight will preclude the adoption of air shipment on a large scale. As such, there is a need to strengthen R&D in post-harvest handling technology in sea transportation. Malaysian fruits will also need to overcome rigid specification requirements of importing countries.

3.52 The prospects for vegetable production are bright given the expected rising demand from population expansion. Vegetables as a cash crop also provide faster returns to investment. The production of vegetables is projected to increase from 224,000 tonnes in 1990 to 256,000 tonnes in 1995, an increase of 2.8 per cent annually. The main constraints, however, will be the availability of suitable land and labour. *In-situ* land, highlands as well as ex-mining land will be exploited for vegetable growing. To reap the opportunities offered by the international *flower* market, the production of flowers such as orchids, chrysanthemum and roses is expected to increase. Measures will be undertaken to address the problems of transportation to overseas market to ensure speedy delivery and quality of products.

#### *Sustainable Management of Forestry Resources*

3.53 The growth of the forestry sector in terms of value added is projected to decline by 6.7 per cent annually. The production of *sawlogs* will decline from 41 million cubic metres in 1990 to 29 million cubic metres in 1995. Production in Peninsular Malaysia will decline from 11 million cubic metres in 1990 to 8.5 million cubic metres in 1995. For



Sabah, with forestry resources becoming increasingly scarce, a more rapid decline is expected, from 9.5 million cubic metres in 1990 to 4.5 million cubic metres in 1995 compared with an average annual production of over 10 million cubic metres in the last two decades. The major source of sawlogs will continue to come from Sarawak with an estimated output of 16 million cubic metres in 1995 compared with the peak of 18.2 million cubic metres in 1989. It is crucial that the nation's forestry resources be strictly managed on a sustained yield basis in the Plan period and beyond, to ensure its continued contribution to the growth of the agriculture sector.

3.54 In line with the National Forestry Policy, intensive rehabilitation and reforestation of degraded forests will be implemented with emphasis on silvicultural treatment and compensatory forest plantation programmes. About 393,100 hectares of forest in Peninsular Malaysia will be enriched under the silvicultural treatment programme, while the compensatory forest plantation programme, which started in 1984, will reafforest another 42,000 hectares of cut-over degraded land in the seven states of Johor, Kelantan, Negeri Sembilan, Pahang, Perak, Selangor and Terengganu. This programme will partly compensate for the projected timber shortage in the nineties in order to meet future increases in domestic requirements. In Kedah and Perlis, about 750 hectares of forest plantation will be established with high quality timber such as *Tectona grandis*. Continuing R&D on the cultivation, processing, and end-use of rattan is expected to result in an increase in its hectareage from 3,300 hectares in the Fifth Plan to 5,400 hectares in the Sixth Plan. A multi-objective plantation development programme, combining the planting of rubber trees for latex as well as for rubber wood and rattan cultivation or sheep rearing under rubber trees, will be promoted. Furthermore, cultivation of rattan and bamboo will be promoted on a commercial basis to provide the raw materials required for the development of the agro-based industries. In Sabah, about 200,000 hectares of forest will be enriched and silviculturally treated. The establishment of large-scale commercial forest plantations with fast-growing species as well as high value indigeneous species will be accelerated. The programme on reforestation of scattered wasteland which was started in the Third Plan, will be continued in the Sixth Plan. About 250,000 hectares of forest plantation will be established and 7,000 hectares of wasteland will be reforested. In Sarawak, about 20,000 hectares of forest plantation will be established under reforestation projects and 37,000 hectares of mixed dipterocarp forest will be silviculturally treated. However, these efforts to reafforest are relatively small in relation to the size of the forestry sector. It is, therefore, important that the rate of felling and deforestation be contained at sustained yield management levels for the compensatory measures to be adequate.

3.55 To ensure smooth adjustment of the industry into alternative higher value-added activities via downstream processing of the logs produced, the availability of logs for domestic processing will be maintained at around 19.1 million cubic metres during the Sixth Plan period or 61.9 per cent of total sawlog production. As a result, the anticipated decline in log production will lead to lower log exports from 20.4 million cubic metres in 1990 to 7.5 million cubic metres in 1995. Given that Peninsular Malaysia will face a shortage of supply of timber for its construction and downstream requirements, it will be necessary to reduce exports of logs from Sabah and Sarawak to meet the requirements in Peninsular Malaysia.

3.56 The production of *sawn timber* will be maintained at an annual level of 9.1 million cubic metres during the Plan period to ensure the adequate availability of logs for domestic processing requirements. Domestic usage of *sawn timber* for downstream processing is likely to increase from 3.9 million cubic metres in 1990 to 4.2 million cubic metres in 1995 while exports will take up the balance of 4.9 million cubic metres. The task ahead is to ensure the availability of supply of the various types of timber on a continuing and sustained basis to meet the needs of the moulding and furniture industries as well as the construction industry. In view of the need to streamline the overall development of the forestry sector, a nation-wide review will be undertaken in the Sixth Plan to provide a comprehensive assessment of available forestry resources, the efficacy of sustained yield management, institutional strengths and weaknesses as well as the problems and issues faced by the forestry sector.

#### *Fisheries Growth from the Deepsea and Aquaculture*

3.57 The potential of the fishing industry is bright given the strong demand, heavy support investments and keen private sector interests in deep-sea fishing and brackish-water fish culture. Fisheries value added is, therefore, projected to grow at a higher rate of 7.6 per cent per annum in the Sixth Plan compared with the 1.3 per cent per annum under the Fifth Plan. Due to the depletion of inshore resources, the future development of the fisheries sector will stress on deep-sea fishing and aquaculture in fresh and brackish water. The production of marine fish will, however, be affected by offshore catches that will grow at a slower rate of 3.5 per cent annually, to 984,000 tonnes in 1995, despite the expansion of deep-sea fishing activities. Meanwhile, aquaculture production is projected to grow at a higher rate of 8.4 per cent annually to reach 113,000 tonnes in 1995. The attainment of this production

target will necessitate the expansion of areas for aquaculture activities and will require state government support, effective extension and R&D programmes.

3.58 Programmes to conserve and enrich the inshore fish resources will be continued through the development of artificial reefs and the creation of marine parks. These fish aggregating and propagating devices will ensure continuous reproduction of fish. The efforts at promoting deep-sea fishing will concentrate on broadening its network with proper management and the provision of good support services, particularly infrastructure, which will enable its vast resources to be tapped. Dissemination of information on research findings and the viability of deep-sea fishing will be done through DOF training centres. The provision of infrastructure, such as landing centres for deep-sea fishing boats of 40 gross tonnage and above, will be implemented to facilitate the development of the industry. Most of these centres will be equipped with boat repairing facilities.

3.59 An efficient marketing and distribution system for fish will be set up to increase the incomes of fishermen and entrepreneurs and meet the requirements of consumers. Training will be provided in fish handling, storage, reduction of post-harvest losses and improvement of market network. Aquaculture will be commercialized to meet domestic and international demand. The rearing of aquarium fish, which offers a good potential for export earnings by the private sector, will also be encouraged. Downstream processing activities will be supported by R&D at MARDI to increase fisheries value added. The private sector will be encouraged to participate actively in these efforts.

#### *Livestock Development*

3.60 Total livestock value added is projected to increase at an annual rate of 7.7 per cent in the Sixth Plan, slightly higher than the 6.1 per cent growth in the Fifth Plan period. This is on account of an expected higher annual growth of 8.8 per cent in the largest subsector, *poultry*. High input and marketing costs to oversea markets will, however, constrain the expansion of the poultry industry which is highly dependent on imported feedmeals. Given that it will be more costly to produce the inputs domestically, the development of the animal feed industries will directly affect the viability of the livestock sector. The domestic production of animal feedmeals will continue to be experimented to achieve an economic scale of operation in commodities such as maize, tapioca and soya bean. Similar prospects are faced by the non-ruminant *pork* subsector which is expected to grow by 6.3 per cent annually. The

production of pork will be mainly to satisfy domestic consumption. Appropriate rearing areas will be identified to regulate its growth. The heavy pollution generated by this subsector and its impingement on religious sensitivity will mean that this subsector will not be a promoted industry, except for the domestic market. As such, the import tariff protection accorded to this subsector will be gradually reduced during the Sixth Plan.

3.61 The ruminant subsectors will record significant progress during the Sixth Plan period. The production of *beef* is projected to rise at an annual rate of 3.2 per cent, spurred mainly by rising demand. Imported beef, largely from India, will continue to cater for the lower rung of the market which constitutes nearly 60 per cent of the total demand, while, domestic beef will be targeted for the middle and upper market segment. The policy to encourage growth of the domestic beef industry will be to reduce gradually the importation of cheap beef until the requirements can be met from domestic supply.

3.62 The production of *mutton* will grow at an annual rate of 7.8 per cent during the Sixth Plan period, after declining marginally by 2.1 per cent during the last couple of decades. Significant inroad is expected to be made through increasing the integration of sheep rearing in agricultural projects by FELDA, FELCRA and RISDA as well as by private plantation companies during the Sixth Plan period. Currently about 60,000 heads of ruminants are being reared under this concept. The sheep and mutton programme will be geared towards achieving a total population of one million heads by the year 2000. This will be undertaken largely through domestic rearing and supplemented by imported breeds. Under the male breed programme, at least 20,000 heads of sheep will be bred by DVS in its six sheep farms to produce sufficient breeds. Mutton supply from domestic sources is projected to rise from 700 tonnes in 1990 to 1,000 tonnes in 1995.

3.63 In an effort to raise hygienic standard of slaughtering and to control environmental pollution, an additional 16 abattoirs will be established for ruminants. At the same time, steps to concentrate the pig industry in areas designated by state governments as pig farming areas will be pursued to effectively contain the growth of the industry. Quarantine and diagnostic facilities will be improved.

3.64 The production of *eggs* will rise at a slower annual rate of 3.7 per cent to 5,600 million units in 1995 compared with the high growth of 6.8 per cent during the Fifth Plan period. Market saturation and cost constraints will account for the slower growth. The supply of *milk* from domestic sources, on the other hand, will rise annually by an estimated

14.8 per cent, higher than the 7.4 per cent growth under the Fifth Plan, in response to rising demand and higher prices that are anticipated with the withdrawal of production subsidies in the European Economic Community. Consequently, production will increase from 34 million litres in 1990 to 68 million litres in 1995. Improving the efficiency and quality of fresh milk production will be the focus of the milk programme which will involve further consolidation of MCCs.

3.65 As a step to diversify further the sources of meat, a comprehensive programme to promote and develop the rabbit industry will be undertaken. Under this programme, 80,500 female breeds and 16,100 male breeds will be distributed to 3,400 farmers during the Sixth Plan period. As a start, DVS will import 1,000 male rabbit breeds and 5,000 female rabbit breeds in 1991. The rabbit industry is estimated to contribute 10,500 tonnes of meat annually.

### **Reorientation of the Agriculture Sector Programmes**

3.66 The thrust of public sector involvement in the agriculture sector in the nineties will be oriented towards *in-situ* development rather than new land development, in view of the scarcity of suitable land and the high cost of developing new land in marginal areas of Peninsular Malaysia, Sabah and Sarawak. The development of land that does not involve settlers, especially in land-abundant States of Sabah and Sarawak, will be proposed for development by the private sector with Government facilitating it through the provision of infrastructural facilities. A lack of agricultural workers and the rise in cost of labour will require future progress of the sector to be secured increasingly through productivity improvements by moving towards a more optimal land-labour ratio and through R&D that aim at reducing production costs and maximizing returns.

3.67 The realization of the growth potential in agriculture is highly dependent on the provision of adequate supporting infrastructural facilities. The inadequacy of essential farm infrastructure such as farm roads, drainage and irrigation, storage, grading and marketing network facilities will discourage farmers from producing food items with marketable surplus. The need for adequate infrastructure to support the growth of the fisheries industry is also pressing. To minimize post-harvest spoilage, improved associated infrastructure such as fish landing jetties, ice making plants and slipways will be necessary. Similarly, access roads and power supply are needed to expand the fast growing aquaculture industry, especially in areas of Johor, Sabah and Sarawak. The provision of these infrastructure will induce the private sector to expand its participation in the sector.

### *Emphasis on In-situ Development*

3.68 The *in-situ* approach will constitute the thrust of agricultural development strategies under the Sixth Plan for a more cost-effective option and wider distribution of benefits. The *in-situ* thrust will concentrate on existing farm lands and villages to upgrade the necessary infrastructure facilities, organize production and provide extension services to farmers on the appropriate technology to be adopted. This approach will provide for more effective implementation of projects in the sector.

3.69 The construction of infrastructural facilities in the seven on-going IADPs will be completed under the Sixth Plan. These include the IADPs in Perlis, Pulau Pinang, Pahang Barat, Johor Barat II, Kalaka Saribas, Samarahan and Semerak involving the development of 1.62 million hectares of agricultural land for the benefits of 135,500 farm families. Three new IADPs, the Terengganu Utara, Pahang Barat II, and Tumboh Block together with two mini IADPs, namely Selama and Hilir Perak will also be implemented. The five IADPs will benefit 37,300 farm families. The mini IADP concept will constitute the future thrust of this strategy in developing remote and scattered *in-situ* agricultural areas.

3.70 The institutional and human development aspects will constitute crucial components in all IADPs' organizational and extension efforts to inculcate a sense of dynamism and self-reliance among farmers in bringing them into the threshold of commercial agriculture. At the same time, environmental issues will be carefully addressed to achieve sustainable development and ecological balance.

3.71 *Irrigation* facilities for padi planting will be upgraded in the eight granary areas, covering about 211,400 hectares. Areas outside the granaries will be provided with suitable *drainage* facilities to enable the cultivation of more lucrative crops. Agricultural land with acid sulphate problems and ex-mining areas will be rehabilitated in phases through the provision of controlled drainage and suitable soil rehabilitation techniques. In order to overcome the problem of water shortage, medium-size dams will be built where feasible. At the same time, efficiency in farm water management will be further enhanced through irrigation extension and research into more effective methods of water conservation, including those of water recycling and water storage. The implementation of flood protection programmes in a number of states, including Kelantan, will protect agricultural and other areas from damages arising from floods. The anti-coastal erosion programme will protect critical areas along 1,300 kilometres of a total 4,800 kilometres coast line from wave inflicted damages.

3.72 The *replanting* of oil palm and rubber trees will continue to be undertaken during the Sixth Plan. RISDA's target will be to replant about 200,000 hectares of non-productive rubber areas, mainly with high-yielding rubber. This programme is expected to benefit about 80,000 families. RISDA will concentrate its replanting activities in the poorer states of Kedah, Kelantan, Perlis and Terengganu. Off-farm activities, such as sheep rearing under rubber trees and epiculture, will be promoted to broaden the income base of smallholders. FELDA will also replant about 35,000 hectares of oil palm and 27,200 hectares of rubber, involving 17,000 settlers. Unorganized oil palm smallholders, whose holdings constitute eight per cent of the total oil palm area and who have no replanting funds, will be provided with two financing arrangements to replant their oil palm. The first option is for the smallholders to participate in the consolidation and rehabilitation scheme of FELCRA. Alternatively, the smallholders can participate in the Area Farmers Organization to entitle them for a replanting loan facility from BPM.

3.73 The smallholders in Sabah and Sarawak will be encouraged to participate in the replanting programme through the provision of replanting grants. SRFB and the Rubber Replanting Unit of SDOA are expected to replant 7,500 hectares and 2,500 hectares of rubber, respectively, benefiting 3,600 smallholders.

3.74 Pineapple replanting by MPIB will cover 6,500 hectares which will benefit 4,100 smallholders. FELCRA will contribute to the supply of pineapples for processing into canned pineapples through the estatization approach by involving 100 smallholders in the replanting of 80 hectares of pineapple. Pineapple clones such as *Mas Merah* and *Gandul* which have proven to be successful in estates, will be adopted.

3.75 The *consolidation and rehabilitation* of idle padi or non-padi land will be given greater emphasis by FELCRA. An estimated 150,000 hectares of idle land equivalent to the areas developed in the Fifth Plan will be rehabilitated with oil palm, rubber and other crops based on the percentage ratio of 40:40:20, respectively. These constitute 40 per cent of the idle land identified for growing permanent crops. About half of the targeted areas to be rehabilitated will be located in Kedah, Kelantan, Pahang and Terengganu. In line with *Hala Cara Baru* approach, FELCRA's programmes will include infrastructural components for urbanization, rural industrialization and agricultural modernization. The aim is to facilitate the creation of off-farm job opportunities for underemployed farmers to improve their livelihood.

### *Slower New Land Development*

3.76 As the availability of suitable new land becomes more scarce and ecological and environmental reasons demand the preservation of the remaining forest land, the pace of new land development will be further reduced under the Sixth Plan. In addition, the average cost of resettling a family in FELDA schemes will continue to rise, partly due to the marginal type of land left to be developed. The average cost of resettling a family had increased from \$49,700 in 1986 to \$55,000 in 1990 compared with only \$26,500 in 1976. Thus, except for continuation projects, no new additional land will be developed by FELDA. In the future, new land development will be undertaken by the private sector. While focus will be placed on the formation of plantation companies, FELDA will continue to manage its existing land schemes under the individual ownership system to ensure continued growth and production. The continuation projects will be completed under the settlers' land ownership system, while under the plantation companies, land scheme will be managed as an estate company with the beneficiaries contributing labour and owning equity in lieu of land ownership. This new management concept will be implemented in all FELDA schemes which have yet to recruit settlers. Sabah will continue with the individual ownership system and Sarawak with the share system. The activities of plantation management under the equity ownership system will be implemented in 222 FELDA schemes, covering a total area of 300,000 hectares in the Peninsula.

3.77 The activities of FELDA in new land development will be complemented by the RDAs, State Agriculture Development Corporations (SADCs) and State Economic Development Corporations (SEDCs). Under the Sixth Plan, the private sector is expected to play the major role in the development of land in RDA areas, totalling 21,600 hectares with crops other than oil palm. In addition, 2,000 hectares will be developed on a joint-venture basis between RDAs and the private sector. The prospect of agricultural development in RDA areas is dependent on the available stock of land awaiting state approval. DARA has an area of 21,700 hectares, KEJORA 12,100 hectares, KETENGAH 22,500 hectares and KESEDAR 35,500 hectares which have not been allocated. In addition, DARA and KETENGAH have 16,700 and 21,200 hectares of land, respectively that have been allocated, half of which will be developed on a commercial basis under the Sixth Plan. The development of food crop plantations will be integrated with agro-based industries, in line with the rural industrialization policy. SADCs and SEDCs will develop 1,100 hectares and 135,000 hectares, respectively. In Sabah, about 7,000 hectares will be developed by the Sabah Land Development Board and SRFB.



### *Support Services to Facilitate Agricultural Development*

3.78 The progress of agricultural development will be facilitated by the adequate provision of supporting services, involving human development, financing facilities, incentives, marketing network and R&D. These services will be included under the various support programmes for agriculture.

3.79 The future thrust on estatization of agricultural projects will call for adequate provision of *training and extension services*, which will require qualified extension workers, knowledgeable in the application of modern technology and farm management techniques. For this purpose, extension workers will have to be retrained and equipped with the required tools and technological know-how. Towards this end, DOA will also train the target group involving about 240,000 farmers, including women, while FAMA is expected to train 65,500 farmers, marketing agents and potential entrepreneurs. DOF will conduct its training programme on engine maintenance, sailing, processing and handling of sea products to about 15,000 fishermen. RISDA plans to train 235,000 smallholders in replanting, processing, marketing and farm maintenance. Three new RISDA training centres will be constructed. FELCRA will train 72,700 people, including its own personnel, and establish two additional training centres at Tebing Tinggi and Seberang Perak under the Sixth Plan. About 180,400 farmers will be trained under FOA's training programmes in agricultural entrepreneurship, farm management and leadership as well as in on-farm and off-farm technical skills. These programmes will assist farmers in diversifying into off-farm activities to supplement their income from other sources.

3.80 The adoption of a commercial approach by agricultural producers, particularly smallholders, will raise the demand for *credit*. The banking sector is expected to continue to provide the largest source of funds, particularly to the plantations. For the smallholders involved in cash-crop farming, livestock rearing, deep-sea fishing and aquaculture, BPM will continue to be the main source of funding. Loans disbursed by BPM will be based on the economic viability of projects and closely monitored to ensure success and repayments by borrowers. Lendings to the smallholders under the DESSA scheme in Sarawak and under the AIM scheme in Peninsular Malaysia are expected to increase significantly following the progress achieved in the Fifth Plan, while a greater number of the hard-core poor are expected to benefit from BPM's interest-free loan facility. The expanded AIM scheme will be mainly financed by the Government.

3.81 The thrust on market-oriented production will be backed by adequate *marketing* networks and programmes to realize better returns and improve the net incomes of farmers. To widen the marketing network under the Sixth Plan, 150 new farmers' markets will be created. FAMA will encourage the more established participants to ultimately manage the market with minimum supervision. Consultations with state and local governments will be pursued for the establishment of wholesale markets under FAMA's auspices, while a second wholesale market will be established in Kedah. FAMA will also strengthen its marketing information system to promote the international marketing of Malaysian fruits, vegetables and cut flowers. With respect to the marketing of rubber and palm oil, cooperation between FELCRA, FELDA, RISDA and MARDEC will rationalize the utilization of marketing and processing facilities, to achieve maximum returns for the benefit of smallholders. The task of marketing will be gradually passed on to the farmers themselves through the smallholder cooperatives, such as National Rubber Smallholder Cooperative and National Farmers Organization, as the main strategy for increasing private sector participation. The MCB will concentrate on improving the acceptance of Malaysian cocoa in existing market segments as well as in new potential markets. The LKIM, similarly, is expected to establish more marketing channels to assist the sale of fish by fishermen organizations at both the wholesale and retail levels.

3.82 The focus on increasing agricultural productivity and the promotion of a commercial approach to production will require continuing *R&D* in agriculture. Emphasis will be placed on high-yielding production materials, breeds, improved agronomic practices, mechanization and the development of technological innovations to widen end-use consumption. The mainstay of R&D will be to ensure the applicability of research findings and to shorten the time lag involved in the transfer of technology to the smallholders and other beneficiaries. Commercialization of research will feature prominently in the nineties as private companies are encouraged to participate in adopting the findings of the respective agricultural R&D institutions. Towards this end, the Government will consider the setting up of venture capital funds within the research institutions to enable them to provide equity financing for entering into commercial production on a joint-venture basis with the private sector.

3.83 The funding of agricultural R&D under the Sixth Plan will be made available under a special allocation in which agriculture is being allocated 47 per cent of the total. Palm Oil Research Institute of Malaysia

(PORIM) and Rubber Research Institute of Malaysia will constitute the additional agencies being included for funding by the Government. These agencies have until recently pursued their upstream and downstream research activities solely funded from the cess collection. However, the amount of cess collection has been fluctuating. On the other hand, the R&D demands placed on these agencies have continued to increase, particularly in downstream research besides maintaining the progress in upstream research on production. PORIM will also continue its research on consumption to counter the adverse campaigns overseas against palm oil. Adequate funding of these agencies will be necessary to sustain the leading position of Malaysian palm oil and rubber in the international market.

#### IV. ALLOCATION

3.84 With the shift in emphasis of strategies, the distribution of agriculture sector allocations will accordingly be aligned to meet the new thrust of policies. The breakdown by programmes is shown in Table 3-6. As new land development will be deemphasized, FELDA which in the past received the highest allocation, will be allocated about \$1,304 million. The emphasis on *in-situ* development as a more cost-effective strategy is backed by an increased percentage of the allocation for *in-situ* programmes, particularly IADPs, replanting and rehabilitation, drainage and irrigation and flood mitigation projects. Support services will continue to receive a fair share of the allocation to facilitate agricultural development. Similarly, forestry, fisheries and livestock programmes will be provided with a higher allocation compared with the Fifth Plan.

#### V. CONCLUSION

3.85 The continued growth of the agriculture sector is crucial for the development of the rural sector in line with the objectives to reduce rural poverty and establish linkages with the other sectors of the economy. While the achievement of the targeted growth rate of 3.5 per cent per annum is within the capacity of the agriculture sector, its realization will depend on the adoption of appropriate policy prescriptions and the provision of necessary support facilities. The slower growth of the traditional agricultural crops will necessitate the search for new sources of growth in the agriculture sector.

TABLE 3-6

DEVELOPMENT ALLOCATION FOR AGRICULTURE AND  
RURAL DEVELOPMENT PROGRAMMES, 1986-95

(\$ million)

Programme	5MP		6MP Allocation
	Allocation	Expenditure	
<b>In-situ Development</b>	<b>2,739.3</b>	<b>2,693.2</b>	<b>4,117.3</b>
Integrated Agricultural Development Projects	1,030.6	1,021.8	1,439.4
Drainage and Irrigation	202.3	200.3	463.3
Rural Flood Mitigation and Coastal Protection	82.6	77.2	347.3
Replanting	595.8	581.2	905.0
Rehabilitation	828.0	812.7	962.3
<b>Land and Regional Development</b>	<b>2,801.4</b>	<b>2,774.6</b>	<b>2,383.3</b>
New Land Development	2,129.7	2,117.5	1,315.5
Regional Development	671.7	657.1	1,064.5
<b>Forestry</b>	<b>125.2</b>	<b>120.8</b>	<b>198.6</b>
<b>Fishery</b>	<b>270.1</b>	<b>264.4</b>	<b>375.8</b>
<b>Livestock</b>	<b>136.8</b>	<b>130.9</b>	<b>271.1</b>
<b>Support Services</b>	<b>1,028.8</b>	<b>1,011.8</b>	<b>1,081.0</b>
Input Subsidies for Padi	396.8	396.8	398.0
Agricultural Credit, Processing and Marketing	597.5	586.1	540.9
Extension and Other Services	34.4	28.9	142.1
<b>Other Programmes of MOA</b>	<b>325.5</b>	<b>329.3</b>	<b>591.9</b>
<b>Total</b>	<b>7,427.0</b>	<b>7,325.0</b>	<b>9,019.0<sup>1</sup></b>

Note:

<sup>1</sup> Allocation for R&D will be catered under a separate fund of \$600 million of which the Agriculture Sector is allocated a sum of \$273.8 million.

3.86 In the light of scarcity of large plots of land, the NAP strategies will be reoriented to focus more on *in-situ* farm areas to raise land productivity and extend the benefits of agricultural development to a greater number of people. Growth of the agriculture sector in the Sixth Plan will depend crucially on a market orientation of policies to rejuvenate and commercialize the sector. In view of the implication on the requirements for management skills arising from this approach, which will be too costly for the public sector to shoulder, emphasis will, therefore, be given for a greater role by the private sector.

## **Chapter IV**

# **Industrial Development**



## CHAPTER IV

# Industrial Development

### I. INTRODUCTION

4.01 The expansion of the industrial sector has provided the main stimulus to the growth of the Malaysian economy. The continued implementation of policies and strategies aimed at a more broad-based, efficient and export-oriented manufacturing sector has led to the further strengthening of the sector's development. The underlying objective of these policies and strategies is to address the structural weaknesses in the sector with a view to ensuring further acceleration in its growth as well as promoting its greater linkages with other sectors of the economy.

4.02 During the Fifth Malaysia Plan period, the manufacturing sector expanded rapidly, making it the leading growth sector in the economy as well as the largest sector in terms of employment creation. The export of manufactured goods also continued to increase its share as the single largest foreign exchange earner for the nation. While strong export performance has provided the impetus to the rapid expansion of the sector, underlying this significant achievement was the policy adjustments undertaken by the Government towards simplifying administrative procedures and regulations to provide a more conducive environment for industrial development.

4.03 For the Sixth Malaysia Plan period, the continued acceleration in the growth of the manufacturing sector is envisaged to contribute significantly to the overall expansion of the economy. Towards this end, the Plan will seek to expedite the diversification of the industrial base, promote increased linkages through the development of small- and medium-scale industries (SMIs) as well as accelerate industrial restructuring and modernization of the lagging industries. These strategies are essential for further strengthening and widening the industrial base as well as gearing the sector towards the attainment of higher levels of efficiency and competitiveness.



## II. PROGRESS, 1986-90

### Government Policies to Promote Industrial Development

4.04 During the Fifth Plan period, the development of the sector was guided by the Industrial Master Plan (IMP), 1986-95. IMP provided a long-term indicative plan for the development of specific subsectors, policy measures and areas of special emphasis. Policy recommendations were implemented to enhance private investment and to develop a more focused policy reorientation. Twelve subsectors have been identified as priority subsectors, comprising seven resource-based industries and five non-resource-based industries to be developed over the ten year period. The resource-based industries were food processing, rubber, palm-oil, wood-based, chemical and petrochemical, non-ferrous metal products and non-metallic mineral products industries. The non-resource-based industries were the electrical and electronic, transport equipment, machinery and engineering products, ferrous metal and textiles and apparel industries. The key recommendations of IMP that have been implemented were, among others, the consolidation of the fiscal incentives to promote investment with major improvements made to induce reinvestments, linkages, exports and training. Emphasis was also given to support research and development (R&D). The list of products to be promoted was continuously reviewed and the programme for industrial rationalization and restructuring to enhance industrial efficiency and competitiveness was launched.

4.05 A notable outcome of the IMP implementation is the participation of the private sector in various dialogues with the public sector and in the task forces established for the development of the industrial subsectors identified by IMP. This has reinforced the mutual support necessary to achieve general consensus and cooperation for industrial development.

4.06 Various other measures were also undertaken to foster industrial development and provide a more conducive environment for investment. Significant changes were made to legislation to promote the growth of the manufacturing sector. Policies affecting the manufacturing sector were made more attractive and procedures were simplified to further minimize administrative bottlenecks. Amongst others, the introduction of the Promotion of Investments Act (PIA), 1986 and the amendments made to the Income Tax Act, 1967 provided liberal investment incentives to potential investors. The exemption order under the Industrial

Coordination Act (ICA), 1975 was liberalized to exempt manufacturing companies with shareholder's funds of less than \$2.5 million or 75 workers from being licensed. Measures were also undertaken to liberalize equity guidelines for foreign investment with a view to further enhancing its pivotal role in the expansion of the nation's investment activities.

4.07 Other factors which contributed to the rapid industrial expansion included the expansion of the domestic market and improved export competitiveness as well as the expansion of infrastructure. The cost of energy was also reduced since March 1989 with the provision of discounts in electricity rates for industries. In addition, the Government introduced special rebate schemes for the rubber and textiles subsectors and additional incentives for the wood-based industries.

### **Growth of Manufacturing Output**

4.08 Manufacturing output expanded significantly during the period. Value added in the sector registered a remarkable rate of growth of 13.9 per cent per annum, more than double the Plan target of 6.4 per cent per annum. With this rapid expansion, the sector contributed nearly half of the increase in the nation's GDP during the Plan period. Correspondingly, its share in GDP rose from 19.7 per cent in 1985 to 27 per cent in 1990, surpassing that of the agriculture sector since 1987. This development marked another milestone in the nation's transition towards an industrializing economy.

4.09 While the overall performance has been commendable, the development of the sector was still characterized by a narrow industrial base. As shown in *Table 4-1*, the two traditional subsectors of electrical and electronic and the textiles and apparel continued to account significantly for the increase in manufacturing production. These industries which constituted some one quarter of the sector's output and grew by 26.8 per cent per annum and 11.5 per cent per annum, respectively during the Plan period, provided the push for the sector's output expansion. Notwithstanding this, the period also witnessed the emergence of other sources of growth which provided the additional thrust to the sector's growth. Among the rapidly growing industries were rubber products, transport equipment, oils and fats, wood and cork products, non-metallic mineral products, industrial and other chemical products and iron and steel.

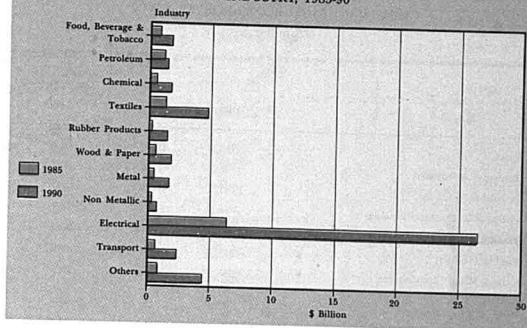
TABLE 4-1  
MANUFACTURING PRODUCTION INDEX, 1986-90  
(1985 = 100)

Industry	Production Index			Average Annual Growth Rate (%)
	Weights	1986	1990	5MP
Food Manufacturing	7.8	102.1	154.5	9.1
Oils & Fats	8.7	114.5	171.3	11.4
Beverages Industries	2.9	100.5	145.6	7.8
Tobacco Manufacturing	4.8	79.2	100.0	0.0
Textiles & Clothing	5.4	112.3	172.4	11.5
Wood & Cork Products (Excl. Furniture)	6.2	96.6	172.1	11.5
Industrial Chemicals & Other Chemicals	18.0	115.9	157.3	9.5
Petroleum Refineries	3.2	121.8	159.0	9.7
Rubber Remilling & Latex Processing	2.0	107.8	138.4	6.7
Rubber Products	3.9	117.9	361.2	29.3
Non-Metallic Mineral Products	6.9	84.2	140.8	7.1
Iron & Steel & Non-Ferrous Metal	4.4	85.1	154.3	9.1
Fabricated Metal Products	3.5	96.3	146.6	8.0
Electrical Machinery, Apparatus, Appliances & Supplies	17.3	141.9	327.4	26.8
Transport Equipment	5.0	73.3	194.3	14.2
<b>Total</b>	<b>100.0</b>	<b>109.4</b>	<b>191.8</b>	<b>13.9</b>

### Exports of Manufactured Goods

4.10 The expansion in exports provided the main impetus to the rapid growth of the manufacturing sector in the Fifth Plan. The export performance of the sector was impressive, increasing by 31 per cent per annum from \$12,471 million in 1985 to \$48,047 million in 1990. As a result of this strong performance, its share in total merchandise exports almost doubled from 32.8 per cent in 1985 to 60.4 per cent in 1990. The main contributors to this growth were the two non-resource-based export-oriented industries, namely, the electrical and electronic and the textiles subsectors, as shown in Table 4-2 and Chart 4-1. Together, they accounted for nearly two-thirds of the total manufactured exports in 1990. While the contributions of newly emerging industries to manufactured

CHART 4-1  
GROSS EXPORTS OF MANUFACTURED GOODS  
BY INDUSTRY, 1985-90



exports earnings was still small, they achieved very high rates of growth of some 31 to 64 per cent per annum during the period. These industries included the transport equipment, non-metallic, rubber, paper and paper products, optical and scientific equipment and manufacture of metal products. The export performance of the resource-based industries, namely, wood-based and non-metallic mineral also achieved rapid rates of growth of about 29.8 per cent and 38.7 per cent per annum, respectively.

### Employment

4.11 The rapid expansion in the manufacturing sector has enabled the sector to contribute significantly to employment creation during the Fifth Plan period. Employment in the sector expanded rapidly by 8.6 per cent per annum from 855,400 in 1985 to 1,290,200 in 1990. As a result, the sector became the largest contributor to employment creation in the economy, accounting for about 44 per cent or 434,800 of the new jobs created during the period. Bumiputera accounted for 60.6 per cent of total new employment in the manufacturing sector while the Chinese 24.2 per cent, Indians 14.6 per cent and others 0.6 per cent.

TABLE 4-2  
GROSS MANUFACTURED EXPORTS, 1985-90  
(\$ million)

Industry			Average Annual Growth Rate (%)
	1985	1990	5MP
Food	755.5	1,700.1	17.6
Beverages & Tobacco	25.5	95.4	30.2
Petroleum Products	1,041.3	1,286.2	4.3
Chemical & Chemical Products	610.2	1,891.8	25.4
Textiles, Clothing & Footwear	1,288.5	4,754.0	29.8
Rubber Products	113.1	1,356.5	64.4
Cork & Wood Manufactures (excluding furnitures)	365.2	1,346.8	29.8
Paper & Paper Products	71.4	421.5	42.6
Iron & Steel	135.3	613.2	35.3
Manufactures of Metal	221.3	967.3	34.3
Non-Metallic Mineral Products	150.3	770.9	38.7
Electrical Machinery Appliances & Parts	6,492.9	26,495.5	32.5
Transport & Transport Equipment	566.2	2,233.5	31.6
Optical & Scientific Equipment	226.4	1,056.3	36.1
Other Manufactures	407.8	3,058.1	49.6
<b>Total</b>	<b>12,470.8</b>	<b>48,047.1</b>	<b>31.0</b>

4.12 The subsectors which contributed significantly to employment creation in the manufacturing sector were the electrical and electronic machinery and appliances, transport equipment, non-electrical machinery, rubber, plastic, apparel, paper and wood industries. Employment in these subsectors grew rapidly to register annual growth rates of between 7 to 21 per cent, as shown in Table 4-3.

TABLE 4-3

**EMPLOYMENT GROWTH OF SELECTED<sup>1</sup> MANUFACTURING  
ESTABLISHMENTS, 1986-90**  
(As at end of year)

<i>Industry</i>	<i>1986<sup>2</sup></i>	<i>1990</i>	<i>Average Annual Growth Rate (%)</i>
Food Manufacturing	26,377	29,080	2.5
Beverages and Tobacco	6,882	5,901	-3.8
Textiles and Clothing	49,830	74,377	10.5
Wood and Cork Products (excl. Furniture)	18,846	32,366	14.5
Paper and Paper Products	17,166	22,572	7.1
Industrial Chemicals and Other Chemicals	13,548	14,784	2.2
Petroleum Refineries	1,318	1,456	2.5
Rubber Products	26,728	45,980	14.5
Plastic Products	10,716	22,431	20.3
Glass and Glass Products	2,099	2,942	8.8
Non-Metallic Mineral Products	13,052	15,276	4.0
Basic Metal Industries	6,876	9,122	7.3
Fabricated Metal Products,	13,813	18,157	7.1
Manufacture of Machinery Except Electrical	3,367	7,130	20.6
Electrical Machinery, Apparatus, Appliances and Supplies	70,915	148,189	20.2
Transport Equipment	7,717	15,246	18.6
<b>Total</b>	<b>289,250</b>	<b>465,009</b>	<b>12.6</b>

## Note:

<sup>1</sup> Based on Monthly Survey of Manufacturing Industries which covers about one-fifth of the total establishments

<sup>2</sup> Data for the years before 1986 by subsectors are not available at national level

4.13 The rapid expansion of the manufacturing sector has, however, led to labour shortages, especially along the West Coast of Peninsular Malaysia. Labour shortages were more apparent among the labour-intensive industries, especially textiles, wood-based and electronic. Besides the shortage of technicians and production workers, there were also shortages of workers with the appropriate experience. In response to this, efforts were made to increase the pool of trainable manpower and to address skill shortages through the expansion of training programmes in the public and private sectors.

4.14 The Report of the Cabinet Committee on Training has proposed a policy package aimed at reforming and revitalizing industrial training. The policy thrusts are directed at improving the responsiveness of public training to market demand, expanding the role of the private sector in training as well as strengthening the linkages between training and technological change. These policy reforms are expected to result in a more responsive and effective skill delivery system which will support dynamic and competitive industrial development.

### **Manufacturing Investment**

4.15 In consonance with the Government's policies and strategies to attract private investment, the growth in investment in the manufacturing sector accelerated significantly during the Plan period, with proposed capital investment in approved manufacturing projects expanding by almost five fold. In addition to increases in domestic investment, the period witnessed a remarkable increase in proposed foreign capital investment from about \$1,000 million in 1985 to more than \$18,000 million in 1990. Apart from efforts by the Government to enhance greater foreign direct investment, the nation has also benefited from the relocation of industries from the industrialized countries, notably Japan, South Korea and Taiwan as a result of rising costs of production and appreciation of currencies in these countries. Malaysia has, therefore, positioned itself favourably to take advantage of these opportunities.

4.16 During the period, the number of projects approved for industrial investment was 3,210 with a total proposed investment of \$58,575 million, as shown in *Table 4-4*. It is estimated that on average about 41 per cent of the projects approved will be in production or in the final stages of implementation by the end of the first year of approval while about 75 per cent of projects approved will ultimately be implemented. On the basis of this, of the total approved, the amount of manufacturing investment that was implemented was estimated to be \$43,931 million. Of this, some 42 per cent was direct foreign investment

TABLE 4-4

## APPROVED MANUFACTURING PROJECTS, 1985-90

Industry	Number of Approvals				Proposed Capital Investment (\$ million)				Potential Employment			
	1985	1990	5MP	%	1985	1990	5MP	%	1985	1990	5MP	%
Food Manufacturing	57	36	200	6.2	579	571	3,887	6.6	4,123	2,379	36,030	6.1
Beverages & Tobacco	5	3	16	0.5	29	39	89	0.2	392	53	1,913	0.3
Textiles & Textile Products	50	124	372	11.6	123	1,195	2,407	4.1	8,022	19,105	64,445	10.9
Leather & Leather Products	1	8	15	0.5	1	33	55	0.1	80	2,029	3,449	0.6
Wood & Wood Products	28	85	239	7.4	117	1,738	4,071	7.0	2,343	19,781	63,161	10.7
Furniture & Fixtures	7	47	114	3.6	23	189	469	0.8	660	6,878	19,375	3.3
Paper, Printing & Publishing	35	40	97	3.0	1,816	1,141	2,019	3.4	5,463	3,857	9,636	1.6
Chemicals & Chemical Products	39	45	141	4.4	195	3,026	5,768	9.8	1,503	3,662	10,633	1.8
Petroleum & Coal	11	3	14	0.4	24	3,409	6,908	11.8	275	1,119	1,924	0.3
Rubber Products	24	34	492	15.3	96	139	2,727	4.7	1,858	2,882	73,304	12.4
Plastic Products	42	49	140	4.4	105	536	1,808	3.1	1,714	4,236	13,215	2.2
Non-Metallic Mineral Products	84	53	133	4.1	533	494	1,571	2.7	4,878	6,430	16,277	2.8
Basic Metal Products	32	26	108	3.4	621	9,054	11,883	20.3	2,292	8,164	15,900	2.7
Fabricated Metal Products	53	52	156	4.9	268	538	1,728	2.9	2,156	4,089	15,919	2.7
Machinery Manufacturing	41	36	99	3.1	137	1,276	1,392	2.7	2,389	10,582	17,076	2.9
Electrical & Electronic Products	62	213	609	19.0	241	4,212	9,477	16.2	7,848	65,369	193,538	32.8
Transport Equipment	33	23	170	5.3	681	344	1,485	2.5	3,989	3,118	16,066	2.7
Scientific & Measuring Equipment	5	4	16	0.5	21	79	305	0.5	658	1,556	3,692	0.6
Miscellaneous	16	25	79	2.5	76	158	326	0.6	2,954	4,475	14,012	2.4
<b>Total</b>	<b>625</b>	<b>906</b>	<b>3,210</b>	<b>100.0</b>	<b>5,687</b>	<b>28,168</b>	<b>58,575</b>	<b>100.0</b>	<b>53,597</b>	<b>169,764</b>	<b>589,565</b>	<b>100.0</b>



and the balance, domestic investment. In terms of size of projects, 97.5 per cent of the projects implemented were below \$50 million and 51.2 per cent below \$2.5 million. Large projects with investment exceeding \$50 million constituted only 2.5 per cent. Of the total approved projects, 61 per cent were given Pioneer Status and Income Tax Incentives, as shown in *Table 4-5*.

4.17 Foreign investment in approved projects amounted to \$34,908 million, rising by 79 per cent per annum during the period. The main sources of foreign investment in these approved projects were Taiwan, Japan, Singapore, United Kingdom, United States, Indonesia and Hong Kong, which together constituted 77.9 per cent of the total proposed foreign investment, as shown in *Table 4-6*. A significant development during the period was the rapid increase in the inflow of foreign investment from Taiwan, superseding that of Japan. About one-third of the total proposed foreign investment came from Taiwan and a quarter from Japan.

TABLE 4-5  
APPROVED PROJECTS CLASSIFIED BY TYPE  
OF INCENTIVES, 1985-90

Incentive	Number of Approvals			Proposed Capital Investment (\$ million)		
	1985	1990	5MP	1985	1990	5MP
With Incentives	229	524	1,957	4,227	25,637	49,421
Pioneer Status	78	440	1,540	596	22,407	39,066
Investment Tax Allowance	143	84	415	3,540	3,230	10,354
Locational Incentives <sup>1</sup>	8	0	2	91	0	1
Without Tax Incentives	396	382	1,253	1,460	2,532	9,154
<b>Total</b>	<b>625</b>	<b>906</b>	<b>3,210</b>	<b>5,687</b>	<b>28,168</b>	<b>58,575</b>

Note: <sup>1</sup> The Locational Incentive was phased out with the promulgation of the PIA 1986

TABLE 4-6

TOTAL FOREIGN INVESTMENT IN APPROVED PROJECTS BY COUNTRY  
OF ORIGIN, 1985-90(Excluding Hotels and Tourist Complexes)  
(\$ million)

Country	1985	1990	5MP
Taiwan	32	6,339	9,583
Japan	264	4,213	8,936
Singapore	100	895	2,672
United Kingdom	27	867	1,954
United States Of America	112	567	1,640
Indonesia	13	1,083	1,214
Hong Kong	28	375	1,170
Iran	0	1,014	1,014
Others	383	2,276	6,706
<b>Total<sup>1</sup></b>	<b>959</b>	<b>17,629</b>	<b>34,908</b>

## Notes:

<sup>1</sup> Foreign investment = Foreign equity + Loan attributed to foreign interest<sup>2</sup><sup>2</sup> Loan attributed to foreign interest is apportioned from the total loan according to the percentage of the foreign share in the equity of each project.

4.18 With respect to types of industries, in terms of the number of approvals, the approved proposals were concentrated in six subsectors, namely electrical and electronic products, basic metal products, textiles and apparel, rubber products, wood products and food manufacturing. These six subsectors accounted for almost two-thirds of the total projects approved for the period. While the electrical and electronic and the textiles and textile products industries continued to be dominant, constituting 19 per cent and 11.6 per cent, respectively, of the total approved projects, there was greater visibility, in terms of the spread of new investment to resource-based industries, particularly the manufacture of rubber products. They accounted for some 15.3 per cent of the total projects approved during the period. However, in terms of value of

approved investment, there was a significant increase in the proposed capital investment for the basic metal products towards the end of the Plan period, representing huge and lumpy investment in the iron and steel sector. Similar trends were recorded also for chemicals and chemical products, petroleum and coal.

4.19 In terms of state distribution, the approved investment projects continued to be located along the western corridor of Peninsular Malaysia, especially in the States of Selangor, Johor and Pulau Pinang, as shown in *Table 4-7*. These states together, attracted slightly more than two-thirds of the total number of proposed projects with an investment proposal of \$26,408 million. Selangor had the highest proposed investment, followed by Terengganu, Johor and Sarawak.

4.20 To support the growth of investments in the manufacturing sector, the capital and money markets were strengthened. Loans granted by the banking system expanded rapidly, as shown in *Table 4-8*. Total outstanding loans to the manufacturing sector by the banking system and industrial development finance institutions grew by 15.8 per cent per annum to reach \$22,554 million by the end of 1990. In addition, several funds were established by the Government during the Fifth Plan for the provision of credit facilities to the SMIs, in particular, the ASEAN-Japan Development Fund (AJDF), Industrial Technical Assistance Fund (ITAF), Nursery Factory Scheme and the New Entrepreneur's Fund. The New Investment Fund (NIF), launched in 1985 to promote investments in new productive capacity at reasonable costs had been drawn down by the manufacturing sector with loans totalling \$985.3 million at the end of 1990. This amount represented 96.2 per cent of the total amount of \$1,024 million allocated to the manufacturing sector. Although the scheme had been terminated in 1988 when all funds had been allocated, Bank Negara continued to monitor the drawdowns and repayments of the approved NIF loans.

### III. PROSPECTS, 1991-95

4.21 The nation is entering a new phase in its industrial development. The thrust in the Sixth Plan will be to promote new sources of growth so as to strengthen and diversify the industrial base while maintaining the importance of the traditional sources of growth, namely, electronics, textiles and apparel. The new approach will emphasize the development of export-oriented, high value added, high technology industries with strong support from domestic R&D and the growth of domestic high technology industries. The objective of the industrial policy in the Sixth

TABLE 4-7  
APPROVED MANUFACTURING PROJECTS BY STATES, 1985-90

State	Number of Projects Approved			Proposed Capital Investment (\$ million)			Potential Employment		
	1985	1990	5MP	1985	1990	5MP	1985	1990	5MP
Selangor	175	237	946	1,449	4,851	14,018	15,789	36,058	134,923
Terengganu	12	5	36	389	10,748	11,090	1,450	7,255	20,156
Johor	102	204	760	828	2,090	7,799	7,450	28,413	115,259
Sarawak	46	44	120	168	1,061	5,459	3,093	11,857	38,605
Kedah	21	65	165	70	3,993	4,985	1,838	18,410	41,714
Pulau Pinang	66	132	432	346	1,867	4,591	8,184	24,952	90,580
Melaka	11	29	112	107	409	2,419	774	7,934	29,412
Pahang	19	18	70	315	517	2,265	1,025	3,616	20,919
Negeri Sembilan	26	36	101	158	1,308	1,898	1,971	7,724	16,972
Sabah	28	34	129	1,368	286	1,727	5,023	4,938	19,363
Perak	46	68	192	227	877	1,578	3,034	13,606	59,308
Wilayah Persekutuan Kuala Lumpur	48	29	107	123	138	583	2,145	2,535	12,566
Kelantan	15	3	25	24	19	102	688	2,018	6,559
Perlis	10	2	10	58	5	36	1,106	448	1,456
Wilayah Persekutuan Labuan	2	0	5	59	0	24	77	0	1,873
<b>Total</b>	<b>625</b>	<b>906</b>	<b>3,210</b>	<b>5,687</b>	<b>28,168</b>	<b>58,575</b>	<b>53,597</b>	<b>169,764</b>	<b>589,565</b>

TABLE 4-8

OUTSTANDING LOANS EXTENDED TO THE MANUFACTURING SECTOR  
BY MAJOR FINANCIAL INSTITUTIONS, 1985-90

(\$ million)

<i>Financial Institution</i>	<i>1985</i>	<i>1986</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>	<i>1990</i>	<i>5MP</i>
Banking System	10,053	10,430	10,479	13,062	16,319	21,528	71,819
Commercial Banks	8,583	8,965	9,087	11,174	14,058	18,742	62,025
Finance Companies	618	577	554	698	944	1,336	4,109
Merchant Banks	853	888	838	1,190	1,317	1,451	5,684
Development Finance Institutions	766	772	647	636	821	1,026	3,902
Sabah Development Bank	145	135	44	46	31	76	332
Malaysian Industrial Development Finance Berhad	377	334	296	266	287	346	1,529
Development Bank of Malaysia	118	164	165	183	249	302	1,063
Industrial Bank of Malaysia	88	104	112	116	238	291	861
Borneo Development Corporation Sdn. Bhd.	13	13	13	12	9	6	52
Malaysia Industrial Estates Sendirian Berhad	25	22	17	13	7	5	65
<b>Total</b>	<b>10,819</b>	<b>11,202</b>	<b>11,126</b>	<b>13,698</b>	<b>17,140</b>	<b>22,554</b>	<b>75,721</b>

Plan is to move towards capital-intensive and technologically sophisticated industries producing better quality and competitive products that are integrated with the markets of developed countries. Towards this end, the Government will emphasize measures to accelerate industrial restructuring, technological upgrading, human resource development and industrial linkages that will ensure greater and higher level of domestic value added contribution to growth. All these will provide the foundation towards the attainment of the status of an advanced industrialized nation by the year 2020.

4.22 Continued efforts will be made to promote manufacturing investments by providing a conducive investment environment, improved infrastructural facilities and support as well as favourable domestic policies towards private sector participation and investments. In addition, since the quality of the labour force is a critical determinant of competitiveness and productivity in the manufacturing sector, the Government will ensure that there will be an adequate supply of trainable and skilled labour, especially to meet the anticipated demand of the capital-intensive and high technology industries.

4.23 In the long run, industrial development will emphasize greater automation or other labour-saving production processes to reduce labour utilization. Relocation of industries to areas with the required resource endowment, especially in terms of the supply of labour will be encouraged and promoted during the Plan period. The Government will also provide financial assistance for the development of infrastructural facilities for the relocation of industries. In addition, the role of the Ministry of International Trade and Industry (MITI) will be strengthened to provide the added momentum and focus on policy formulation and planning to guide the industrial sector to higher levels of development.

#### **Sustaining the Momentum of Growth**

4.24 The manufacturing sector is targeted to grow by 11.5 per cent per annum during the Sixth Plan period, contributing 45.8 per cent of the increase in the total GDP. As a result of this expansion, the sector will account for almost one third of GDP by 1995. The growth of the sector will continue to be export led. Export of manufactures, projected to grow by about 16.7 per cent per annum, will continue to sustain the sector's growth momentum and is anticipated to account for more than 70 per cent of the nation's merchandise export earnings by 1995. While the two traditional subsectors, namely the electrical and electronic and textiles and apparel, will continue to sustain the contribution to growth, the contribution of new sources of growth, especially resource-based industries will be enhanced through greater downstream and higher value added activities. In addition, the contribution to growth of non-resource-based industries is also expected to increase with the promotion of activities beyond the assembly line operations, such as the greater production of components and parts.

4.25 Liberalization and deregulation of the industrial sector will continue to be undertaken to sustain the momentum of growth and to promote industrial investment. Steps will be taken by the Government to review and update the IMP targets and policy framework and other

industrial policies, especially with regard to tariff and non-tariff measures. These will be undertaken with a view to providing a greater focus for future industrial development.

### **Manufacturing Investment**

4.26 To facilitate the rapid expansion envisaged for the sector during the Sixth Plan period, the high growth momentum of manufacturing investment achieved during the previous Plan will be sustained. It is estimated that the amount of investment required to achieve the targeted growth rate for the sector in the Sixth Plan will be more than \$80,000 million, almost double the level of investment achieved during the Fifth Plan. Of this, \$33,000 million is expected to be from foreign investment and the balance from domestic investment. Investment in the manufacturing sector is expected to account for the largest share of private investment, representing some 40 per cent of total private investment during the Plan period. In the light of this high level of investment requirements, the Government will continue to ensure the existence of a conducive environment for investments and reinvestments. These investments will be channelled to quality projects which have higher value added output and wider linkages as well as high technology content.

### **Improving the Incentives and Other Assistance**

4.27 The provision of incentives for the manufacturing sector has been a factor contributing to the growth of private investment. Efforts will be made to monitor and assess the net benefits of granting the various investment incentives with a view to putting in place a more selective and effective system for the granting of incentives to promote efficiency, productivity and corporate restructuring as well as ensuring the attainment of an environmentally sustainable growth from the manufacturing sector. Incentives will also be aimed at enhancing self-reliance and the creation of competitive and efficient industries. The list of promoted products and activities will be reviewed so as to be more selective in the award of incentives, especially to the well established import-substituting industries. The package of incentives will be reassessed with the view to providing more emphasis on non-tax incentives which include, among others, the provision of better infrastructural and other support facilities.

4.28 The Government will also review the tariff structure with a view to creating a more effective and efficient system to promote industrial

efficiency and competitiveness. At the same time, the Government will continue to ensure that developments in the exchange rate will not adversely affect investments and exports. The Government will also strengthen the mobilization of financial and human resources and facilitate speedier movement of goods in the country to support the continued growth of the manufacturing sector.

### **Broadening and Deepening the Manufacturing Base**

4.29 Efforts will be made to further enhance the development of new sources of growth with a view to providing greater dynamism in an increasingly broad-based and integrated manufacturing sector. These sources will include the wood-based products, rubber-based products, oleochemicals, mineral-based and non-metallic mineral-based industries. In addition, capital and intermediate goods industries will be promoted. Emphasis will also be placed on product improvement in terms of quality and technology, through efforts towards the establishment of a strong scientific and technical infrastructure. In this respect, the recommendations of the Action Plan for Industrial Technology Development (APITD) which provide comprehensive guidelines for the development of short, medium and long-term strategies, will be implemented.

4.30 Among the strategies of the APITD are the intensification of industrial R&D with greater public sector resources channelled towards industrial research and the development of indigenous technological capacities as well as the development of adequate industrial manpower for R&D. The roles of existing R&D centres will be enhanced to be more industry-oriented and market driven in their activities. Increased funding for R&D will be given based on the priorities of the technology development programmes. This funding will be made available through direct matching grants, soft-loans and preferential credit allocations. The key areas designated for industrial technology development will be automated manufacturing, advanced materials, electronic technology, biotechnology and information technology. R&D will also emphasize the development of energy-saving technology and energy-efficient industries.

4.31 The Government's efforts will also be channelled towards the promotion of greater inter-industry and sectoral linkages and the promotion of downstream activities, especially in the resource-based industries. In this regard, the Government will encourage local firms to upgrade their product quality and support services so that industries



located in FTZ can source their inputs from local firms. This will increase the domestic share of value added in manufactured exports from FTZ. As a leading producer of several primary commodities, the nation has a comparative advantage as a supplier of raw-material inputs. To encourage greater downstream activities, a number of R&D institutions, specifically set-up for resource-based research, will provide the technical support in technological development and product testing. Another important area for increasing downstream linkages will be the promotion of greater local processing of raw materials and primary commodities. Efforts will also be made to develop the SMIs as an important part of the resource-based industries. In addition, the Government will introduce and encourage the growth of venture capital for the development of technology-based enterprises.

### **Enhancing and Sustaining the Competitiveness of Manufactured Exports**

4.32 The expansion of manufactured exports will be facilitated through the improvement of marketing and information networks, the promotion of new products and the penetration into new markets as well as the rationalization and modernization of inefficient industries. Improved technological capability is expected through greater R&D efforts. These efforts will contribute towards increased competitiveness of manufactured exports.

4.33 In order to ensure an efficient and competitive manufacturing sector, the Government's strategy is to restructure and modernize selected industrial subsectors in terms of improvement in capacity utilization, level of technology, cost competitiveness, productivity growth and export potential. The manufacturing sector will progress towards a higher level of sophistication in technology, product development and marketing to face rapid technological and economic changes in the international environment. The seven identified priority subsectors for the on-going restructuring and modernization programme are the textile, wood-based, machinery and engineering, steel rolling, shipbuilding and shiprepairing, automotive assembly and palm-oil processing. The strategies to sustain the development of these subsectors will include specific policy reorientation focusing on institutional and enterprise-level reforms. The textiles, wood-based and the machinery and engineering subsectors have been reviewed and their restructuring will be implemented during the Plan period. The Industrial Adjustment Fund (IAF), which was launched recently, with an initial amount of \$500 million will be utilized for this purpose.

4.34 As part of the efforts to enhance and improve international competitiveness of industries, greater emphasis will be given towards the production of sophisticated high quality and high value added products that can compete and be integrated with the markets of the developed countries. Efforts will be directed towards ensuring that exports will be able to compete internationally.

4.35 Apart from the expansion in capital investment and the buoyant international market, the growth in output of the manufacturing sector in the past has largely been attributed to competitive labour cost. However, this advantage is being eroded with increasing wage pressures and the emergence of competition from other low-wage developing countries. During the Sixth Plan, therefore, productivity growth will be stressed in order to sustain the competitive edge of the industrial sectors. Emphasis will be given to the provision of adequately skilled and more productive labour force. Wages will need to be directly related to the levels of productivity and returns to investment.

### **Development of SMIs**

4.36 The development of SMIs will contribute towards a more dynamic and competitive industrial sector through its supportive and complementary role. Its development and modernization will also spearhead efforts to broaden and deepen the structural base of the manufacturing sector. In addition, the setting up of an extensive network of modern ancillary firms will enable them to play a significant role in providing the feeder and technological linkages and ensure the successful development of the larger enterprises.

4.37 SMIs are generally dominated by domestic investors. Although constituting about 80 per cent of manufacturing establishments, they accounted for less than half of total investment and only one-third of value added in the manufacturing sector. Their small size coupled with inadequate capital, managerial, marketing and production capability as well as low utilization of modern technology, have resulted in the lack of inter-industry linkages, poor quality products and delays in delivery. This has inevitably necessitated the large firms either to expand their own production capacity without relying on subcontracts or to continue sourcing from abroad. In the light of this, the Sixth Plan will place greater emphasis on improving the capability of SMIs to supply the required production inputs of the larger enterprises and also to penetrate into export markets. This will reduce the development of mere assembly operations in favour of more integrated upstream and downstream activities with greater contribution to domestic value added. In this

respect, the Government has undertaken the development of special industrial sites for the relocation of SMIs, in particular the foundry and engineering and the timber-based industries. This will also contribute to the widening and deepening of the industrial base.

4.38 For a comprehensive and integrated development of SMIs, the Small Scale Division of MITI will be strengthened in order for it to play a greater role in the coordination, rationalization and promotion of SMIs. A study on SMIs will be carried out with a view to help formulate a comprehensive programme for the development of SMIs, especially in the area of technology and skills development in the selected priority subsectors. In addition, with greater coordination and rationalization of programmes and activities, the resources and expertise from both the public and private sectors will be mobilized more effectively for the development of SMIs.

4.39 The small-scale industries are engaged in a wide variety of economic activities, such as the production of foodstuff, furniture, handicraft, fabricated metal products, wood-based products, textiles and clothing. The medium-scale industries tend to concentrate more on the processing of beverages and tobacco, electrical and electronic products, chemical products, non-metallic mineral products and automotive parts and components. In order to enhance their contribution to value added, programmes will be undertaken to improve the investment efficiency and productivity of the SMIs. Both the public and private sectors will play a complementary role in promoting the development of SMIs. For the public sector, the *umbrella concept* will be adopted through which the Government's purchasing scheme will provide opportunities not only to the small-scale Bumiputera enterprises, but also to the small-scale non-Bumiputera enterprises. This scheme will only be meaningful if the non-Bumiputera companies, especially those in the manufacturing and construction sectors, source their inputs and supporting service requirements from the Bumiputera enterprises. In this manner, both the public and private sectors will simultaneously promote SMIs development which will be mutually beneficial to both Bumiputera and non-Bumiputera. The other programmes for the development of SMIs will include the development of international marketing network and expertise, upgrading of managerial and entrepreneurial know-how and the development of indigenous technology. Apart from this, efforts will be continued to expand the requisite infrastructure, create the environment to ensure the development of efficient and competitive SMIs able to withstand the rigours of the market, as well as ensure adequate supply of a greater pool of skilled and trainable labour force to support the growth of these industries.

4.40 The programme for the development of SMIs will focus particularly on the supportive industries producing parts and components; mould and die; testing and tool-making; and high quality castings, forgings and other basic components. Efforts to link SMIs with larger enterprises through subcontracting arrangements will be instituted, especially for the parts and components subsector and the provision of machining services. In addition, SMIs will also be developed to provide ancillary support for the downstream activities of the electronic subsector. For the mould and die subsector, the supportive role of SMIs will be emphasized, especially for the plastic and rubber processing industries, woodworking machinery, industrial pumps, materials processing industries such as metal plating and textile dyeing. The development of viable and internationally competitive industries such as mould and die, domestic parts and components and equipment industry is necessary not only to raise the share of local content in industrial production, but also to enable the subsequent development of the present assembly sector into a fully integrated manufacturing activity on an international competitive basis.

4.41 To provide land and infrastructural facilities for SMIs, a furniture complex in Olak Lempit, Selangor, has been established while other similar projects are in the pipeline for Perak, Negeri Sembilan, Sabah and Sarawak. Besides these, foundry and engineering complexes at suitable sites will be established for the relocation of SMIs presently located in congested urban centres. These complexes will provide common facilities and services to promote R&D activities and improve productivity and competitiveness. The States of Perak and Selangor have taken steps to allocate land for the relocation of foundry and engineering industries in Pengkalan Industrial Estate and Rasa, respectively. Specific industrial establishments have also set up similar engineering complexes to service their own requirements. These efforts will increase the local content of manufactured goods and create the necessary linkages in industrial expansion.

### **Heavy Industries**

4.42 The development of heavy industries will continue to be important in the effort to strengthen the foundation for industrial growth. In the light of this, the Government will undertake measures to ensure its orderly and sustainable development. The emphasis will be towards greater reliance on the private sector for the development of the heavy industries. The Government's role is essentially catalytic and supportive in nature and will not lead to unhealthy competition with the private sector. The Government, however, will continue to intervene in

areas where investments are lumpy, and which require long gestation period and where the private sector is reluctant to venture into. Such investments through public enterprises will be aimed at creating spin-off activities and linkages for industrial development, particularly in the downstream small- and medium-scale industries. As such, public enterprises will continue to play an important role in selected strategic and heavy industries, namely, the automotive, petrochemicals, iron and steel and cement industries. At the same time, the privatization of major public enterprises, where viable, will be continued.

### **Human Resource Development**

4.43 During the Sixth Plan, employment in the manufacturing sector will grow at 5.7 per cent per annum to reach 1.7 million by 1995. The sector is expected to generate about 408,900 jobs or about one-third of the total new employment in the economy. With the increasingly advanced technologies, which will be utilized in industry, about 4,200 engineers and 10,600 technicians are expected to be required by selected manufacturing subsectors. These selected subsectors constitute to only about half of the total manufacturing employment, thus, reflecting a high demand for engineers and technicians. As an example, from the estimated requirement of these selected subsectors for engineers and technicians about 2,500 engineers and 9,200 technicians will be needed only in the mechanical and the electrical and electronic fields. In addition, specialized skilled labour will also be required by the various industries that utilize electro-mechanical industrial machineries.

4.44 As local industries upgrade their technology and modernize their operations to remain competitive, there will be an increasing need for trained manpower that could take advantage of information-based manufacturing technologies as well as current managerial and organizational techniques adopted by industry worldwide. In recognition of these developments, training for technical and supervisory staff, particularly technicians as well as skilled workers at the production level will receive greater attention so that shortages of human skills will not pose a major bottleneck to the growth and modernization of industry.

4.45 With the increased demand for skills arising from rapid industrial growth, there is a crucial need to improve the current skill delivery system to enable it to respond more effectively to these demands. Greater involvement of the private sector in training and skills upgrading will be actively promoted in the organization and planning of courses offered in public sector training institutions and universities. Education and training institutions will be required to take steps to improve their course

designs, curricula and management so as to be more responsive to market needs. These institutions, where possible, will provide customized courses required by the private sector. The accreditation of skills will be reviewed and expanded to include higher-level skills as well as new and emerging skills.

4.46 To encourage the private sector to train their employees to meet the increasing skill requirements of the manufacturing sector, the double deduction incentive on approved training, which was introduced in 1987, has been reviewed. Its scope of eligibility has been expanded to include training related to productivity and quality control improvement and new manufacturing firms undertaking the training of craft, supervisory and technical skills. The review also included the extension of eligibility to all manufacturing firms for training conducted at approved training institutions. The Penang Skills Development Centre and MARA Vocational Institutes (IKMs) are the new additions to the approved list of training institutions.

4.47 The Government is also considering the introduction of a levy-grant scheme to encourage greater private sector involvement in training as recommended by the report of the Cabinet Committee on Training. A Human Resource Development Fund is being formulated which will lead to greater training initiative by the private sector. The scheme is expected to provide incentive grants to enterprises undertaking training of the workforce in basic, enterprise-based and new emerging skills as well as retraining for higher skills. Greater emphasis will be given to the training and development of skills which are in short supply and which will improve productivity and industrial competitiveness. It will initially cover only the manufacturing and the tourism sectors. In order to ensure that the scheme is private-sector driven, a statutory board comprising greater representation from the private sector is expected to be established to manage and administer this fund. This scheme will accelerate the development of a training culture in the private sector so that staff pinching and skill shortages will be minimized.

### **Spatial Development**

4.48 The geographical spread of new industries and the relocation of existing industries will continue to be determined by market forces. In this context, the Sixth Plan will place emphasis on the relocation of industries through the increased provision of transportation and other infrastructural support to less-developed states. In addition to the improvement of infrastructural facilities, measures will also be undertaken to reduce the costs of doing business in less-developed states through

encouraging greater labour mobility and providing improved social facilities. The spatial development of manufacturing industries will take into consideration the development of industrial estates in the less-developed regions and the development of specialized industrial zones for high-technology industries, especially for the electronic and ceramic subsectors. However, in the developed states and well established industrial areas, the Government will encourage the development of industrial estates by the private sector. In these developed areas, the Government will only provide the prerequisite infrastructural facilities to encourage private sector initiatives.

### **Development of Rural Industries**

4.49 The development of rural industries will continue to be an important vehicle towards increasing the living standards of the rural population. Their development will also provide opportunities for entrepreneurial resources of the rural Bumiputera community to interface with the modern manufacturing sector. During the Plan period, appropriate institutional arrangements and incentives will be provided to facilitate the implementation of a more broad-based programme with greater emphasis on higher employment opportunities and increased productivity.

4.50 The scope of rural industrialization programmes will also extend beyond the cottage and handicraft industries and will not be confined only to villages. These programmes will include the large and small-scale industries to be involved in industrial processing and business and commercial services. Towards this end, a number of *Rural Growth Centres* have been identified and selected pilot projects will be implemented.

4.51 In addition, other programmes being planned to assist the development of rural industries are the entrepreneur development, marketing, infrastructure and financial programmes. These programmes will aim at restructuring the rural industries to enable them to have better access to financial resources and credit facilities. Efforts will also be directed to improve marketing, supply of raw materials, productivity, technology, product design and management capabilities of these rural industries.

### **Bumiputera Participation**

4.52 The Government will continue its efforts to create a strong and viable Bumiputera Commercial and Industrial Community (BCIC). In order to nurture the entrepreneurial culture, greater equity participation by individual Bumiputera will be encouraged vis-a-vis the participation of

Bumiputera trust agencies. To enable the transfer of entrepreneurial skills to Bumiputera, joint-ventures will be encouraged between non-Bumiputera or foreign investors and Bumiputera individuals or trust agencies. Apart from this, programmes for the development of individual Bumiputera in business will be continued. Efforts will also be undertaken to increase their accessibility to technology and finance. A more integrated development programme through subsidiary companies will be implemented, whereby Bumiputera entrepreneurs will be exposed to practical business management and appropriate technology.

4.53 Efforts to disperse industries to the new rural growth centres and to relatively less-developed rural areas will create positive spin-offs to the predominantly Bumiputera rural population and further increase their participation in the manufacturing sector. It is envisaged that the development of rural industries will concentrate on the resource-based industries which include crafts, light engineering, ceramics, textiles, leather, wood-based and food-based industries. Other opportunities for rural industrial entrepreneurs will include subcontracting for the non-resource-based industries, such as the electrical and electronic subsectors and tourism-related industries.

4.54 Public enterprises and trust agencies will provide the lead role in nurturing BCIC and increasing Bumiputera corporate equity. They will be the catalyst for promoting Bumiputera involvement in the industrial and business sectors. Public enterprises will be expected to increase Bumiputera participation in all sectors, including the manufacturing sector through the *umbrella concept* which is designed to provide the linkages through product sourcing and marketing that are consolidated under one large company. Several large Bumiputera companies are already playing this role. In this regard, a performance evaluation system will be instituted to review in quantifiable terms the achievement of public enterprises in terms of their contribution in the creation of BCIC. The pattern of financial support and the involvement of the trust agencies will also be monitored in order to avoid crowding out of activities for other Bumiputera investors.

4.55 The restructuring of public enterprises is being undertaken with a view to enhancing their achievements. Their management will continue to be revamped to increase their efficiency and profitability. Appropriate adjustments will be made to simplify administrative procedures to ensure direct accountability of public enterprises. The privatization of suitable public enterprises is already being undertaken and will continue to be used as a vehicle to create greater opportunities for Bumiputera participation in industrial development.



4.56 The role of public enterprises in regional development is important in the light of the reluctance on the part of the private sector to invest in the rural and less-developed regions. Public enterprises which have been specifically established to promote more balanced regional development include the State Economic Development Corporations (SEDCs) and the Regional Development Authorities (RDAs). Their programmes in the Sixth Plan will give greater focus and emphasis to the creation of a more viable and efficient BCIC.

### **Support Facilities for the Manufacturing Sector**

4.57 In order to further promote the expansion of the manufacturing sector as well as ensure balanced spatial development, support and infrastructural facilities will be improved. This will include the development of industrial estates, improving energy and water supplies as well as transport and communication facilities and the provision of the necessary adjoining social and communal amenities to the workers in industrial areas. In addition, the establishment of specialized industrial estates with supporting R&D and testing facilities, training, toxic waste disposal and other services will also be undertaken to assist the development of ancillary industries. Programmes for the development of specialized industrial estates for high technology, plastic, foundry, engineering and wood-based industries and computer-related technologies will be launched in the Sixth Plan.

4.58 Transportation facilities will also be expanded to meet the needs of industry. The haulage capacity, including rail, ports and airport capacities, will be improved to avoid congestion as well as to reduce the cost of transportation. This is important to sustain Malaysia's competitiveness and comparative advantage in the region.

4.59 The services sector, which supports the development of the manufacturing sector, will be liberalized and deregulated to further promote its development. The rules and regulations governing the distributive trades will be minimized and its operating costs reduced. Other industrial services, which form the supporting industries for manufacturing such as packaging, design and quality control, will be developed with the support of the private sector.

4.60 Environmental concerns relating to the growth of the manufacturing sector will be given greater attention. Measures will be introduced to encourage existing as well as new industries to install their own pollution-control equipment and facilities with a view to minimizing the generation of toxic and hazardous wastes with the installation of

on-site or off-site storage facilities for their own waste. Industries have to ensure that sufficient land is acquired within or adjacent to their factories for the purposes of pollution control and waste treatment. Incentives for this effort will include the reduction of premium on land for such purposes. Apart from strict enforcement of environmental laws and regulations, a system of disincentives will also be introduced, particularly for those polluting industries encroaching on housing areas.

### **Promotion of the Malaysia Incorporated Concept**

4.61 Both the public and private sectors will play complementary roles in industrial development. Efforts to promote the Malaysia Incorporated Concept more effectively will include a more focused role of the private sector which will be synchronized with that of the public sector. Besides the existing mechanism of dialogues and Task Force meetings between the public and private sectors, other concrete measures will include the establishment of a consultative panel on trade and industry under MITI. There will also be greater coordinated efforts towards export promotion, training, joint R&D efforts and technological upgrading. The role and contribution of the private sector in spearheading the implementation of industrial development programmes will be further enhanced.

## **IV. ALLOCATION**

4.62 The Federal Government development allocation for industrial development during the Sixth Plan will amount to \$3,187 million, as shown in *Table 4-9*. The allocation is in line with the emphasis and strategies of the Government for industrial development in the Plan period. This allocation is aimed at providing the necessary physical, social and scientific infrastructural support to enhance the involvement of the private sector in industrial development.

4.63 The allocation for industrial estate development is aimed at the provision of infrastructure and the development of specialized industrial estates, especially for SMIs and high technology industries. The Government will also continue to support the development of industrial estates in the less-developed states through the provision of loans to SEDCs, grants for infrastructure and other facilities for new industrial estates. A total of 11,102 hectares of new industrial land is expected to be developed during the Sixth Plan. For rural industries, the allocation will be for programmes aimed at the development of industries in the rural areas which include training, development of handicrafts training

TABLE 4-9

**DEVELOPMENT ALLOCATION FOR INDUSTRIAL DEVELOPMENT,  
1986-95  
(\$ million)**

<i>Programme</i>	<i>5MP</i>		<i>6MP</i>
	<i>Allocation</i>	<i>Expenditure</i>	<i>Allocation</i>
Industrial Estates Development	127.7	127.1	291.4
<i>General Industrial Estate Development   in Less-Developed States/Regions (Loans)</i>	127.7	127.1	188.4
<i>Special Industrial Estate Development/   Hi-Tech (Loans)</i>	—	—	103.0
Development of Industrial Infrastructure	—	—	493.1
<i>General Infrastructure</i>	—	—	222.8
<i>SMI Development</i>	—	—	140.6
<i>Hi-tech Infrastructure Support</i>	—	—	129.7
Rural Industries	77.4	77.0	162.3
Training and Consultancy services	28.1	27.7	341.7
Investment in Heavy Industries	2,553.6	2,553.1	1,497.3
Programmes for Commercial and Industrial Development	25.0	25.0	235.0
Implementation of APITD	—	—	166.0
<b>Total</b>	<b>2,811.8</b>	<b>2,809.9</b>	<b>3,186.8</b>

centres, the provision of infrastructure for rural industries, promotions for rural products as well as grants and assistance for purchases of machinery for cottage industries. With respect to training and consultancy services, the allocation will be used to promote entrepreneurial development and to enhance the skills of the workforce, especially at the vocational and technical levels. The latter will be carried out in collaboration with the private sector through the establishment of Skill Development Centres in selected areas.

4.64 Allocation for investment in heavy industries consists of projects related to new investments and the expansion of existing plant capacity, especially in the steel industry in which the private sector investments are not forthcoming. These projects include those under HICOM and companies under the Minister of Finance Incorporated. These investments will be undertaken with a view to be divested by the Government in the future. With regard to BCIC, the allocation will be for projects that will promote Bumiputera participation in the commercial and industrial activities, especially in entrepreneurial development, managerial development, skill development and the provision of financial and technical support and services. There is also a special allocation which has been provided for the implementation of APITD in order to provide the required support for technology development. This will provide the essential foundation for the attainment of the status of a developed nation by the year 2020.

## V. CONCLUSION

4.65 Industrial development in the Sixth Plan will continue to be spearheaded by the manufacturing sector. This sector will continue to be the largest contributor to value added growth and export earnings as well as a major source of employment creation. The main thrust of industrial development will be to broaden, deepen and modernize the industrial structure through the development of export-oriented, high value added and high technology industries as well as the development of SMIs. This will also be supported by a strong human resource development programme. The private sector will play the pivotal role in the expansion of the manufacturing base and the upgrading of technological capabilities. The Government will provide a supportive role in terms of improving the infrastructural facilities and ensuring a conducive environment for investments and industrial development.



## **Chapter V**

# **Education And Training**



## **CHAPTER V**

# **Education And Training**

### **I. INTRODUCTION**

5.01 Human resource development will be a major thrust in the Sixth Malaysia Plan as the achievement of socio-economic objectives depends on the availability of educated, skilled and trainable labour force. Towards this end, education and training programmes will be further expanded and improved, not only to equip individuals with the appropriate knowledge and skills but also to produce responsible citizens with strong moral and ethical values. In addition, such programmes will help to develop a technically competent labour force that will enhance the competitiveness of the Malaysian economy.

5.02 High priority is given to education and training as it contributes significantly to the objectives of the National Development Policy (NDP), in particular to poverty eradication and restructuring of society. Providing greater access to education and training to those in the low-income group will increase their income and employment opportunities and contribute further to improvements in income distribution. The focus in the Sixth Plan will be to improve the quality of education and training as well as to achieve a more efficient delivery system so as to enable the low-income group and the under-served regions to have greater access to education and training.

### **II. PROGRESS, 1986-90**

#### **Education Programmes**

5.03 During the Fifth Malaysia Plan period, continued emphasis was given to programmes and projects to cater for the increasing demand for education. Facilities were expanded substantially to enable increases in



intake at all levels of education. This expansion was in line with the objective of increasing accessibility to education, particularly for those in the low-income group and the under-served areas.

5.04 Various measures were also undertaken to improve the quality of education and the delivery system. Among them was the implementation of the New Primary School Curriculum (KBSR) in 1983 which culminated in the Integrated Secondary School Curriculum (KBSM) in 1989. The main objective of the new curricula is to produce a balanced individual with the relevant knowledge and skills as well as with strong moral and ethical values.

5.05 The Fifth Plan period also saw the strengthening of vocational education through the restructuring of the curriculum for vocational schools in 1987. The main aim of the restructuring was to make vocational education more attractive to students and to produce better quality graduates. To consolidate all the reform efforts that had been taken towards strengthening the education system, a review of the Education Act, 1961 was started in 1989.

#### *Pre-school Education*

5.06 Pre-school education which was aimed at preparing the child for primary school, was provided by both the public and private sectors. The role of the Ministry of Education (MOE) was limited to the preparation of the curriculum and the registration of pre-school centres. Of the total number of 6,960 pre-school centres in 1990, about 5,360 or 77 per cent were run by Government agencies and statutory bodies. These centres accounted for about 57 per cent of the total enrolment. The number of children aged between four and five years enrolled in pre-schools increased by 10 per cent from 300,850 in 1985 to 331,520 in 1990, indicating the growing importance of pre-school education.

#### *Primary Education*

5.07 At the primary level, total enrolment in Government and Government-aided schools increased by 11.7 per cent from about 2.19 million in 1985 to about 2.45 million in 1990. Participation at this level

had reached 99 per cent of the relevant school-going population during the period, indicating that universal education was accessible to all. The survival rate in Government and Government-aided schools, that is, the percentage of students from the same cohort who managed to complete six years of primary schooling was about 96 per cent. This augured well for the human resource development of the country as it indicated that the vast majority of school-going children had the opportunity to complete primary education. *Table 5-1* shows the enrolment increases at various levels of education.

5.08 The increasing number of students entering primary schools had led to the need for more classrooms in the Fifth Plan period. This was made more acute with the implementation of KBSR which required smaller class size of 35 children per classroom for it to be really effective. Of the total demand for classrooms, about 10,020 or 45 per cent were built during the period. Rural-urban migration, however, had led to an increase in demand for classrooms in the urban areas. As such, shortages still existed and had resulted in overcrowding in the urban areas where the average class size was as high as 44 children per class. The overall shortage of classrooms had also resulted in about 11,230 or 16 per cent of primary classes to be held in the afternoon.

5.09 The thrust of KBSR is the acquisition of basic skills in reading, writing and arithmetic. Recognizing the importance of instilling interest in the science and technical subjects from young, the new curriculum also incorporated various subjects at the primary level such as Man and His Environment and Manipulative Skills.

5.10 The implementation of KBSR completed its full cycle with the first administration of the Primary School Achievement Test (UPSR) in 1988 for pupils in standard six of that year. UPSR as a national level evaluation measure was strengthened by a series of school-based assessment tests to enable teachers to identify pupils for remedial classes if they did not perform well. Effective remedial measures were, however, hampered by the large class size and the shortage of teachers trained in remedial education. The success and effectiveness of KBSR as compared to the former primary school curriculum had been satisfactory but the results of UPSR in 1988 showed that a large number of children, especially those from the rural schools, needed remedial teaching in subjects such as English and Mathematics.

TABLE 5-1  
STUDENT ENROLMENT IN LOCAL PUBLIC INSTITUTIONS,  
1985-95

Level of Education	1985		1990		1995		Increase (%)	
	number	(%)	number	(%)	number	(%)	5MP	6MP
<b>Pre-school</b>	<b>162,980</b>	<b>4.3</b>	<b>188,840</b>	<b>4.6</b>	<b>362,400</b>	<b>7.0</b>	<b>15.9</b>	<b>91.9</b>
Government	144,720		153,890		327,400			
Semi-Government	18,260		34,950		35,000			
<b>Primary</b>	<b>2,191,680</b>	<b>58.5</b>	<b>2,447,210</b>	<b>59.1</b>	<b>2,808,210</b>	<b>54.5</b>	<b>11.7</b>	<b>14.8</b>
Government <sup>1</sup> and Government-aided <sup>2</sup> Schools	2,191,680		2,447,210		2,808,210			
<b>Lower Secondary</b>	<b>922,210</b>	<b>24.6</b>	<b>943,920</b>	<b>22.8</b>	<b>1,126,450</b>	<b>21.9</b>	<b>2.4</b>	<b>19.3</b>
Government and Government-aided Schools	918,240		942,800		1,123,950			
MARA Junior Science Colleges	3,970		1,120		2,500			
<b>Upper Secondary</b>	<b>333,060</b>	<b>8.9</b>	<b>368,500</b>	<b>8.9</b>	<b>589,580</b>	<b>11.5</b>	<b>10.6</b>	<b>60.0</b>
Arts and Science								
Government and Government-aided Schools	309,620		331,290		529,600			
MARA Junior Science Colleges	2,960		6,050		7,800			
Kolej Tunku Abdul Rahman	140		120		n.a			
Technical and Vocational								
Government and Government-aided Schools	20,340		31,040		52,180			
<b>Post-secondary</b>	<b>52,390</b>	<b>1.4</b>	<b>75,140</b>	<b>1.8</b>	<b>82,460</b>	<b>1.6</b>	<b>43.4</b>	<b>9.7</b>
Government and Government-aided Schools	43,850		62,710		68,720			
Kolej Tunku Abdul Rahman	2,790		2,130		2,280			
Pre-diploma and Pre-university Courses <sup>3</sup>	5,280		9,010		9,360			
MARA Junior Science Colleges	470		1,290		2,100			
<b>Teacher Education</b>	<b>16,560</b>	<b>0.4</b>	<b>21,580</b>	<b>0.5</b>	<b>27,300</b>	<b>0.5</b>	<b>30.3</b>	<b>26.5</b>
Primary and Secondary	16,560		21,580		27,300			
<b>Certificate</b>	<b>6,880</b>	<b>0.2</b>	<b>9,180</b>	<b>0.2</b>	<b>18,290</b>	<b>0.4</b>	<b>33.4</b>	<b>99.2</b>
<b>Diploma</b>	<b>25,050</b>	<b>0.7</b>	<b>28,000</b>	<b>0.7</b>	<b>44,230</b>	<b>0.9</b>	<b>11.8</b>	<b>58.0</b>
<b>Degree<sup>4</sup></b>	<b>37,840</b>	<b>1.0</b>	<b>60,010</b>	<b>1.4</b>	<b>89,680</b>	<b>1.7</b>	<b>58.6</b>	<b>49.4</b>
<b>Total</b>	<b>3,748,650</b>	<b>100</b>	<b>4,142,380</b>	<b>100</b>	<b>5,148,600</b>	<b>100</b>	<b>10.5</b>	<b>24.3</b>

Notes:

<sup>1</sup> Fully assisted schools.

<sup>2</sup> Partially assisted schools.

<sup>3</sup> Preparatory courses conducted at Institut Teknologi MARA and all universities excluding Universiti Teknologi Malaysia and enrolment of foreign students at Universiti Islam Antarabangsa. Enrolment also includes preparatory and language courses for students pursuing diploma and degree level courses overseas.

<sup>4</sup> Includes enrolment in post-graduate courses and enrolment at Institut Teknologi MARA, Kolej Tunku Abdul Rahman and enrolment in off-campus courses of Universiti Sains Malaysia and Institut Teknologi MARA but excludes enrolment of foreign students at Universiti Islam Antarabangsa.

n.a Not available

## *Secondary Education*

5.11 Enrolment in the Government and Government-aided schools at the lower secondary level increased by 2.4 per cent from about 922,210 in 1985 to about 943,920 in 1990. At the upper secondary level, the enrolment increased by 10.6 per cent from about 333,060 to about 368,500. During the Fifth Plan period, about 12,960 classrooms were built to cater for the increased enrolment. The new classrooms, however, were not adequate to meet the increased demand, resulting in 32.8 per cent of the classes at the secondary level to be conducted in the afternoon. By accommodating double-session classrooms, the national average class size had been reduced to 33.4. However, pockets of large class size above the national average still occurred in the urban areas.

5.12 The transition rate between the primary and lower secondary levels in Government and Government-aided schools had remained constant at about 84 per cent during the period. However, not all students who did not enter Government or Government-aided secondary schools left the school system. Some enrolled themselves in private schools while some joined the Islamic religious secondary schools, managed by state governments or by private individuals or organizations.

5.13 The curriculum reform which started at the primary level was extended to the secondary level in 1989, starting with form one. A significant change included in KBSM was the greater emphasis given to business-related and pre-vocational subjects. At the lower secondary level, a new subject called 'Living Skills', incorporating business knowledge was introduced with the objective of exposing students to aspects of technology, commerce and entrepreneurship. However, the shortage of classrooms, coupled with the lack of other facilities such as workshops, and the shortage of teachers to meet the requirement of the class-teacher ratio of 1:1.5 under KBSM, were some of the constraints experienced during the first two years of its implementation.

5.14 Various measures to improve the overall performance and to increase the number of students in the science stream were continued. These included increasing the number of fully residential science schools and equipping science laboratories, especially in the rural schools. The examination results, however, showed that the overall performance of rural schools was lower than that of urban schools, especially in English, Science and Mathematics. This indicated that there still existed gaps in the quality of education between the urban and rural schools.

5.15 The Government also continued to implement measures to improve the quality of education for the poor. These included the rural hostel programme whereby free hostel accommodation was provided to the children of the poor. Two science secondary schools were also reserved for children of poor families who showed academic potential. Other programmes included the provision of free textbooks on loan, the supply of nutritious food and the provision of dental care through mobile dental clinics. More teachers with experience and specialist training were also deployed to schools in the rural areas.

### *Secondary Technical and Vocational Education*

5.16 The enrolment in technical schools was about 5,880 in 1990. In secondary vocational schools, enrolment increased by 64.4 per cent from about 15,300 in 1985 to about 25,160 in 1990. The enrolment in vocational schools in 1990 constituted about 7 per cent of the total upper secondary enrolment. The increased enrolment in vocational schools was accommodated by the increase in the number of vocational schools built during the period from 45 in 1986 to 57 in 1990 as well as the expansion of existing schools. In order to improve the effectiveness of vocational education, the curriculum in the secondary vocational schools was restructured, with the academic subjects being given more emphasis equivalent to that in the normal secondary schools. In 1988, the first batch of students in the academic stream sat for the new examination, *Sijil Pelajaran Malaysia Vokasional* (SPMV). SPMV was accorded the same status and recognition as the academic *Sijil Pelajaran Malaysia* (SPM) in terms of basic qualification for jobs in the public sector. It also enabled the students to pursue their education at the tertiary level.

5.17 The reformed vocational curriculum and examination resulted in an increase in intake of students with Grade A in *Sijil Rendah Pelajaran* (SRP), from about 57 per cent in 1985 to about 70 per cent in 1990. There was also a marked improvement in student performance in SPMV. The percentage of first graders, for example, increased by 61 per cent from 9 per cent of total passes in 1988 to 14 per cent in 1990.

5.18 Besides the two-year course leading to SPMV, students who were not academically inclined entered the skills stream after completing form four. In addition, the vocational schools also offered one-year courses in trade skills such as electrical and electronics, fitting and machining, welding, and motor mechanics. Students pursuing these trade skill

courses were required to sit for the basic level examination conducted by the National Vocational Training Council (NVTC).

### *Tertiary Education*

5.19 There were substantial increases in enrolment in tertiary education during the period. As shown in *Tables 5-2 and 5-3*, the enrolment in certificate, diploma and degree courses registered an increase of 33 per cent, 12 per cent and 59 per cent, respectively. The increases were made possible with the expansion of existing institutions and the completion of new ones. These included the five new polytechnics at Alor Setar, Batu Pahat, Kota Bharu, Kuching and Port Dickson, certain phases of the permanent campuses of *Universiti Teknologi Malaysia* (UTM) in Skudai and *Universiti Utara Malaysia* (UUM) in Sintok, the branch campuses of *Universiti Pertanian Malaysia* (UPM) in Bintulu, the medical school of *Universiti Sains Malaysia* (USM) in Kelantan and the engineering school in Perak.

5.20 During the period, about 89,700 graduates at the degree and diploma levels were produced by the local institutions. The percentage ratio of diploma to degree graduates was 41:59. As shown in *Tables 5-2 and 5-3*, the percentage ratio of output of arts to science/technical graduates at the degree level remained at about 53:47 while at the diploma level, the percentage ratio was about 50:50. Almost 50 per cent of the arts graduates at the degree and diploma levels were from the applied arts courses which included accountancy, business and law. At the certificate level, however, the percentage ratio of arts to science and technical graduates was 15:85.

5.21 A substantial number of Malaysians were also pursuing education overseas. It was estimated that in 1985 about 60,000 students were enrolled in overseas tertiary educational institutions, of whom about 43,200 were enrolled in degree level courses, 2,600 were at the diploma level, about 6,150 at the certificate level and about 8,050 at the primary and secondary school levels. In 1990, the total enrolment declined to about 52,000. The reduction in the number pursuing tertiary education abroad was the result of higher fees imposed by overseas institutions and the increasing number of local private institutions offering twinning programmes.

TABLE 5-2

**ENROLMENT AND OUTPUT FOR DEGREE COURSES  
FROM LOCAL PUBLIC INSTITUTIONS, 1985-95**

<i>Course</i>	<i>Enrolment</i>			<i>Increase (%)</i>		<i>Output</i>		<i>Increase (%)</i>
	<i>1985</i>	<i>1990</i>	<i>1995</i>	<i>5MP</i>	<i>6MP</i>	<i>5MP</i>	<i>6MP</i>	<i>6MP</i>
<b>Arts</b>	<b>20,350</b>	<b>34,660</b>	<b>51,410</b>	<b>70</b>	<b>48</b>	<b>27,780</b>	<b>50,250</b>	<b>81</b>
(%)	54	58	57			63	61	
Arts and Humanities <sup>1</sup>	10,350	18,920	27,480	83	45	14,580	25,630	76
Economics and Business <sup>2</sup>	9,290	13,450	20,840	45	55	12,170	21,390	76
Law	710	2,290	3,090	223	35	1,030	3,230	214
<b>Science</b>	<b>12,330</b>	<b>16,450</b>	<b>24,210</b>	<b>33</b>	<b>47</b>	<b>17,510</b>	<b>21,110</b>	<b>21</b>
(%)	33	27	27			33	25	
Medicine and Dentistry	2,210	3,100	3,700	40	19	2,280	3,190	40
Agriculture and Related Sciences <sup>3</sup>	1,150	1,460	3,140	27	115	1,730	2,130	23
Pure Sciences <sup>4</sup>	3,430	5,180	6,770	51	31	3,170	6,430	103
Others <sup>5</sup>	5,540	6,710	10,600	21	58	10,330	9,360	-9
<b>Technical</b>	<b>5,160</b>	<b>8,920</b>	<b>14,050</b>	<b>73</b>	<b>58</b>	<b>7,550</b>	<b>11,430</b>	<b>51</b>
(%)	14	15	16			14	14	
Engineering	4,050	7,490	11,270	85	50	5,360	9,210	72
Architecture and Town Planning	610	950	1,920	56	102	1,070	1,450	36
Surveying	310	300	590	-3	97	410	480	17
Others <sup>6</sup>	190	180	270	-5	50	710	290	-59
<b>Total</b>	<b>37,840</b>	<b>60,030</b>	<b>89,670</b>	<b>59</b>	<b>49</b>	<b>52,840</b>	<b>82,790</b>	<b>57</b>

## Notes:

<sup>1</sup> Includes Islamic studies, language, literature and Malay culture, social sciences, library science and art and design.

<sup>2</sup> Includes accountancy, business management, resource economics and agri-business.

<sup>3</sup> Includes home science technology, human development and veterinary sciences.

<sup>4</sup> Includes biology, chemistry, physics and mathematics.

<sup>5</sup> Includes pharmacy, applied sciences, environmental studies, food technology, science with education and computer science.

<sup>6</sup> Includes property management.

TABLE 5-3

**ENROLMENT AND OUTPUT FOR DIPLOMA AND CERTIFICATE  
COURSES FROM LOCAL PUBLIC INSTITUTIONS, 1985-95**

Course	Enrolment			Increase (%)		Output		Increase (%)
	1985	1990	1995	5MP	6MP	5MP	6MP	6MP
<b>DIPLOMA</b>								
Arts	12,830	14,920	20,620	16	38	18,450	29,970	62
(%)	51	53	47			50	53	
Arts and Humanities <sup>1</sup>	3,680	2,770	3,370	-25	22	11,020	4,390	-60
Economics and Business <sup>2</sup>	9,150	12,150	17,250	33	42	7,430	25,580	244
Science	5,440	4,750	8,860	-13	87	7,950	10,500	32
(%)	22	17	20			22	19	
Agriculture and Related Sciences	1,850	1,140	1,690	-38	48	2,920	2,810	-4
Others <sup>3</sup>	3,590	3,610	7,170	1	99	5,030	7,690	53
Technical	6,800	8,340	14,740	23	77	10,450	15,750	51
(%)	27	30	33			28	28	
Engineering <sup>4</sup>	4,870	5,780	11,540	19	100	7,730	10,100	31
Architecture and Town Planning	880	980	1,440	11	47	1,260	1,840	46
Surveying	550	610	720	11	18	830	2,200	165
Others <sup>5</sup>	500	970	1,040	94	7	630	1,610	156
Total	25,070	28,010	44,220	12	58	36,850	56,220	53
<b>CERTIFICATE</b>								
Arts	990	2,060	6,630	108	222	2,140	13,510	531
(%)	14	22	36			15	40	
Arts and Humanities	40	50	150	25	200	50	0	n.a
Economics and Business	950	2,010	6,480	112	222	2,090	13,510	546
Science	0	10	170	n.a	1,600	0	210	n.a
(%)	0	0	1			0	1	
Others	0	10	170	n.a	1,600	0	210	n.a
Technical	5,900	7,110	11,490	21	62	12,240	20,070	64
(%)	86	77	63			85	59	
Engineering	3,510	4,290	7,550	22	76	10,460	12,590	20
Architecture and Town Planning	1,900	2,300	3,200	21	39	1,460	6,240	327
Surveying	490	520	620	6	19	320	1,240	288
Others	0	0	120	0	n.a	0	0	0
Total	6,890	9,180	18,290	33	99	14,380	33,790	135

## Notes:

<sup>1</sup> Includes public administration, music, photography and secretarial studies.<sup>2</sup> Includes accountancy, banking, hotel management and catering.<sup>3</sup> Includes computer studies, applied sciences and mathematics.<sup>4</sup> Includes building technology, automotive technology and electronics.<sup>5</sup> Includes property management, material technology and valuation.

n.a Not applicable



### *Teacher Education*

5.22 The number of teacher training colleges increased from 24 in 1985 to 28 in 1990 with an annual intake of about 7,250 trainees. During the Fifth Plan period, the 28 teacher training colleges produced about 34,600 teachers for the primary level, about 7,700 college-trained teachers for the secondary level, and about 2,900 graduate teachers under the Post-graduate Teacher Education Programme (KPLI) for the upper secondary level.

5.23 KPLI was conducted at 11 teacher training colleges in 1990. This programme was to supplement the output of graduate teachers from local universities in line with the policy of having ultimately only university graduates as teachers in the secondary schools. During the period, the five local universities continued to train a total of about 1,800 graduate teachers, of whom about 780 were in science-related subjects, and about 990 in arts and humanities.

5.24 In 1990, there were about 120,000 teachers in the Government and Government-aided primary schools. Of this total, 13,855 were untrained teachers. The recruitment of untrained teachers was necessary because the output of trained teachers could not keep pace with the increase in enrolment as well as the implementation of the new class teacher ratio of 1:1.5. At the secondary level, there were about 72,500 teachers in 1990, an increase of 27.4 per cent from 56,900 in 1985. Of the total in 1990, about 38 per cent were graduates, compared with only about 29 per cent in 1985. Of the total number of teachers at the secondary level in 1990, about 3,400 or 4.7 per cent were untrained.

### *Private Sector Education*

5.25 During the Fifth Plan period, private educational institutions had emerged as important avenues to meet the increasing demand for higher education among Malaysians. The upsurge in demand for tertiary education and the rising cost of overseas tertiary education led to the increase of private educational institutions. The enrolment of students in these institutions at the degree, diploma and certificate levels more than doubled during the period, increasing from about 15,000 students in 1985 to about 35,600 students in 1990. Of the total enrolment in 1990, 14 per cent were registered for degree courses, while 46 per cent enrolled

for diploma programmes and the remaining 40 per cent for certificate courses. The courses offered by these institutions were mainly in the fields of accountancy, commerce, law, engineering and electronics, computer science and business management. Private institutions supplemented public sector efforts in providing opportunities for higher education.

5.26 At the secondary level, it was estimated that about 153,000 students were enrolled in private schools in 1990. This indicated that education had developed into a service industry which attracted private sector investment and helped to supplement Government's efforts in providing education at all levels.

## **Training Programmes**

### *Skill Training*

5.27 There was a considerable increase in the intake into public training institutions, indicating greater efforts made to produce more and better trained manpower to meet the industrial needs of the nation. During the Fifth Plan, about 111,000 trainees completed their training programmes at the skilled and semi-skilled levels, of which 58 per cent of the output were in engineering trades. *Table 5-4* shows the intake and output of skilled and semi-skilled manpower from local public institutions. During the period, existing training institutions were expanded. New institutions were also built, including five Industrial Training Institutes (ITIs), one Advanced Training Centre and 15 *Pusat Giat MARA*.

5.28 As more training programmes were developed by various institutions, there was a need to improve coordination as well as undertake measures to ensure that the curricula and trade standards meet the requirements of industry. To meet these needs more effectively, NVTC was set up in 1989 to replace the National Industrial Training and Trade Certification Board. NVTC which has representations from both the public and private sectors coordinates the planning and development of national vocational training and ensures that training programmes are in line with the industry's requirements. To date, the curricula and examination standards covering 53 trades at basic, intermediate and advanced levels had been prepared.

TABLE 5-4

**INTAKE AND OUTPUT OF SKILLED AND SEMI-SKILLED  
MANPOWER BY COURSE FROM LOCAL PUBLIC TRAINING  
INSTITUTIONS, 1985-95**

Course	Intake			Increase (%)		Output		Increase (%)
	1985	1990	1995	5MP	6MP	5MP	6MP	6MP
Engineering trades	12,550	19,810	25,920	58	31	64,040	132,760	121
Mechanical trades <sup>1</sup>	6,950	11,020	12,190	59	11	28,240	71,300	252
Electrical trades <sup>1</sup>	3,930	6,020	10,700	53	78	21,110	46,610	221
Civil engineering trades <sup>2</sup>	1,610	1,410	1,960	-12	39	13,440	13,030	97
Other engineering trades <sup>1</sup>	60	1,360	1,070	2,167	-21	1,250	1,820	146
Building trades <sup>3</sup>	2,460	4,180	7,260	70	74	12,850	16,750	130
Printing trades <sup>4</sup>	150	50	80	-77	167	170	550	324
Commerce	1,800	2,990	3,500	66	17	8,890	20,120	226
Agriculture	510	880	880	73	0	4,470	1,120	25
Home Science <sup>5</sup>	930	1,420	1,780	53	25	4,690	9,170	196
Others <sup>6</sup>	520	1,300	1,210	150	-7	11,190	6,500	58
Skill-upgrading	340	990	2,400	191	142	4,730	10,000	211
<b>Total</b>	<b>19,240</b>	<b>31,600</b>	<b>43,030</b>	<b>64</b>	<b>36</b>	<b>111,030</b>	<b>196,970</b>	<b>177</b>

## Notes:

<sup>1</sup> Includes general mechanics, general machining, tool and die making, motor vehicle mechanics, welding, sheet metal works, fabrication, marine engineering and manufacturing.

<sup>2</sup> Includes electrical installation and maintenance, radio and television servicing, refrigeration and air conditioning, electrical fitting and armature winding, and electronic engineering.

<sup>3</sup> Includes construction.

<sup>4</sup> Includes material technology and food processing technology.

<sup>5</sup> Includes carpentry and joinery, woodwork machining, bricklaying and plumbing.

<sup>6</sup> Includes hand composing, machine composing, offset printing, bookbinding and letterpress.

<sup>7</sup> Includes sewing, cooking and catering, cosmetology and hairdressing.

<sup>8</sup> Includes surveying, architectural draftsmanship, photography, laboratory science, dispensing optics, computer programming and information processing, confectionery and hotel catering, heavy plant operation, architecture and quantity surveying.

5.29 During the Fifth Plan period, efforts were intensified to increase the industry's involvement in training. Private sector participation in training was in various forms, such as representation in NVTC, the utilization of the Double Deduction Incentive Scheme for training and the Apprenticeship Scheme for the construction industry. However, the overall participation of the private sector in training was still inadequate to meet the demand for skilled manpower.

5.30 Several studies undertaken during the Fifth Plan period highlighted the Government's concern to improve the effectiveness of the existing skill training delivery system in supplying the required trained manpower. These studies included those on human resource development which identified issues and recommended measures to overcome them and the preparation of an action plan to implement these recommendations. The setting up of the Cabinet Committee on Training in 1990 also reflected the Government's efforts to improve the existing system. The recommendations of the Cabinet Committee and the various studies called for major structural changes to the existing training system as well as for greater private sector participation in the skill delivery system.

#### *Management and Entrepreneurial Training*

5.31 Strategies, programmes and projects formulated to achieve various objectives could only be met with success if planners, managers and implementors in the public sector are aware of their roles and functions and are equipped with the appropriate training in related areas. As such, in-service courses for planners and implementors at all levels were given due emphasis. About 112,000 personnel from the public sector had participated in in-service training courses conducted by the National Institute of Public Administration (INTAN) in the field of management and in areas specific to the requirement of the agencies. In addition, managerial personnel in the public sector were attached to foreign firms so as to gain experience in the corporate and business sectors. For the education service, *Institut Aminuddin Baki* provided in-service courses in education administration and management for headmasters and other key personnel.

5.32 The National Productivity Centre continued to provide courses in management and entrepreneurial development. The objective was to equip private sector personnel with the necessary skills in management and entrepreneurship and be able to participate successfully in the commercial and industrial sectors. Similarly, the Entrepreneur Development Programme in *Institut Teknologi MARA* (ITM) conducted similar courses for Bumiputera entrepreneurs.

### III. PROSPECTS, 1991-95

5.33 The education and training systems will be further expanded and strengthened to achieve its objective of ensuring that quality education and training is accessible to all Malaysians. The education and training systems will continue to be geared to mould individuals to become better Malaysians with the right attitude towards life and work, and to equip them with the knowledge and skills necessary to make Malaysia a developed nation by the year 2020.

#### Education Programmes

5.34 Education programmes under the Sixth Plan will be further expanded to provide greater accessibility and more equitable opportunities in order to achieve national unity and integration. Various programmes and projects that will enable the rural population and the poor to fully benefit from the educational process will be further emphasized. The quality of education and training will be improved and oriented towards meeting the needs of national development.

5.35 The use of *Bahasa Malaysia* as the medium of instruction at all levels of education will continue to be given priority and upgraded with improvements in its teaching and learning processes. Emphasis will be given towards improving communication and analytical skills as well as creativity in using the language. Similarly, the teaching and learning of other foreign languages and pupils' own language will be given emphasis. The teaching of English as a second language will be given greater importance in order to stem the decline in the standard of English. The Government will consider the possibility of making English as one of the compulsory subjects for a pass in examinations.

5.36 Co-curricular activities will also be given emphasis as these activities will enable children to practise what they have learnt in the classrooms. The schools will thus provide a conducive environment not only for the acquisition of basic knowledge but also character building.

#### *Pre-school Education*

5.37 During the Sixth Plan period, pre-school education will be expanded gradually to those areas not served by pre-school facilities. The Government aims to supplement existing pre-school facilities by having classes for children aged five as part of the Government primary schools

through a pre-school annex system. This is necessary as participation in well-organized pre-school facilities will give the opportunity for children from low-income families to have the same head start as others:

5.38 The implementation of this new programme by MOE will be undertaken in three phases. The first two phases will be implemented in areas where pre-school facilities are non-existent, while the third phase will be in areas where facilities are available but benefit only certain sections of the population. It is expected that by the end of 1995, the combined efforts of MOE, other Government agencies and the private sector will ensure that all children entering standard one in the primary schools would have had at least one year of pre-school education. To ensure the success of this programme, more specialist teachers for pre-school education will be trained.

#### *Primary Education*

5.39 It is estimated that the enrolment in Government and Government-aided primary schools will exceed 2.8 million pupils in 1995 as compared with about 2.45 million in 1990, an increase of about 14.8 per cent. To cater for the expected increase in enrolment and the additional demand for classrooms required by KBSR, about 12,200 new classrooms will be built.

5.40 Efforts will continue to be made to consolidate the curriculum reform which was started in 1983. More teachers for remedial instruction will be provided to the schools. In addition, new teacher trainees will be trained in remedial instruction methods so that in-class remedial teaching can be effectively carried out.

5.41 In order to ensure that the public institutions provide quality education, the period for completing the primary school syllabus is being reviewed so that it can be completed between five to seven years. Pupils at the primary level who are low achievers can take up to seven years to complete primary education. On the other hand, the best students will be able to complete primary education within the minimum five years.

5.42 The performance in important subjects, for example Mathematics and English, will be improved by ensuring that these subjects will be taught by specially trained teachers. The number of teachers trained in these subjects will, therefore, be increased.

## *Secondary Education*

5.43 By 1995, the enrolment at the lower secondary level in Government and Government-aided schools is expected to be about 1.13 million students, an increase of 19.3 per cent from 1990. The enrolment at the upper secondary level is also expected to increase to about 589,580 students or an increase of 60 per cent from the enrolment in 1990.

5.44 The Sixth Plan period will witness the completion of the first KBSM cycle, with the first batch of students taking SRP at the end of 1991 and SPM/SPMV at the end of 1993. These will be crucial years as the curriculum reform initiated in 1983 will be put to its first test in the final year of the new curricula. In addition, 1992 will witness the implementation of the upper secondary KBSM at the form four level. The main feature of KBSM is the replacement of the previous arts/science streaming of students by a more liberal arrangement. Besides the compulsory subjects taken by all students, each student can choose a minimum of two and a maximum of four elective subjects, from at least two out of three groups. Group I contains the humanities subjects, Group II the technical and vocational subjects while Group III contains the pure science subjects.

5.45 This new arrangement will provide the opportunity for students to be exposed to basic technical and vocational education at an early stage. This arrangement provides flexibility to students to choose the subjects of their choice and enables students who are not academically inclined to opt into the labour market earlier. The possession of some basic technical training will increase their acceptance into the skill labour market.

5.46 Another important feature of the upper secondary KBSM is the inclusion of History in the list of core subjects to be taken by every student. The History syllabus gives more emphasis to Malaysian history and to the nation building experienced by the country. This is aimed at making the education system more effective in fostering national unity.

5.47 Islamic religious instruction for Muslims and moral education for non-Muslims are also included in the list of core subjects. Besides fulfilling the requirements of the National Philosophy of Education which puts prime emphasis on the Belief in God, the subjects in the core group will also inculcate in the students, the positive values that are necessary for the creation of a successful and caring society.

5.48 Secondary education in the rural areas will also be expanded to provide more places for rural students with high academic potential. Four more fully residential schools will be built and equipped with facilities and manned by specially trained teachers. Residential facilities will also be provided, where appropriate, to students who perform well in the lower secondary schools in order to maintain their high standard of performance. Measures will also be undertaken to increase educational facilities for handicapped children. They will be encouraged to mix with the normal children by having facilities built alongside with the facilities for normal children. Special schools for the handicapped which incorporate vocational subjects will also be provided.

5.49 Efforts will be made to produce more reading materials, workbooks and teaching kits for primary and secondary students. This is essential to promote a strong reading culture as well as develop manipulative skills and scientific interests among school children at an early age.

5.50 A more organized sports development programme will be implemented in schools in order to further promote the development of sports. Several schools will be identified for various sports and talented students will be enrolled in such schools. In addition, qualified and competent coaches and trainers will be provided to ensure that proper training is given to develop the capabilities of these students to enable them to develop their sports talent as well as excel in their academic performance.

5.51 Parent-Teacher Associations (PTAs) have an important role to play in determining and organizing programmes in schools. PTAs will be encouraged to be more involved and committed in activities designed to improve and further strengthen the management of schools, especially in the rural areas.

#### *Secondary Vocational Education*

5.52 Facilities for vocational education will be expanded to enable increases in enrolment from about 25,160 in 1990 to about 46,980 in 1995. The enrolment in 1995 will be about 8 per cent of the total upper secondary enrolment compared with only 7 per cent in 1990. The increase in enrolment will be made possible with the construction of eight new vocational schools and the addition of vocational annexes to normal secondary schools.



5.53 The enrolment in the skills stream of the vocational schools will also be increased. Among the new courses to be introduced are those relating to the electronics and automotive industries, general machining, technical and mechanical drawing, and furniture making and designing.

5.54 Efforts towards introducing specialization in vocational schools will be intensified. This is to optimize the use of limited resources such as specialist teachers and equipment. The pooling of resources and expertise in specific areas will improve the performance of these institutions in producing the skilled manpower needed by the industries. Specialization of these institutions will be undertaken on a regional basis so as to correspond to the levels and types of industries developed in these areas.

5.55 The specialization of vocational schools according to industry location will also provide the advantage of industrial exposure to the students as it will facilitate practical training and attachment programmes with the industries. The close proximity of these institutions to industries will allow the students to have hands-on experience in these industries. These institutions will have the opportunity to publicize their programmes to industries which are the potential employers of the students. In this regard, there will be wider dissemination of information on the various vocational and industrial training programmes to the private sector.

### *Tertiary Education*

5.56 During the Sixth Plan, five new polytechnics will be built while the existing ones will be expanded. The polytechnics will offer more diploma level courses as well as new courses in the engineering fields, such as electronic communications, computer technology and textile engineering. ITM will open up new branch campuses in Kedah, Kelantan, Melaka, Negeri Sembilan, Perak and Pulau Pinang. *Universiti Islam Antarabangsa* (UIA) will have its permanent campus in Gombak while the feasibility study for its proposed medical complex in Kuantan will be completed. Other existing institutions will also be expanded to cater for increases in enrolment and new courses in various specialized areas. The expansion includes the construction of additional facilities for *Universiti Kebangsaan Malaysia* (UKM), the engineering and medical schools of USM, UTM campus in Skudai, UPM campuses in Serdang and Bintulu and the construction of a teaching hospital for UKM in Cheras as well as the completion of the permanent campus of UUM at Sintok. As the

establishment of new facilities is expected to incur high costs, these efforts will have to be complemented with other measures. The establishment of open university as a means to increase accessibility to tertiary education and reduce costs will also be studied.

5.57 With the completion of new facilities and expansion of existing facilities, the intake into tertiary level education will increase substantially. The intake into the certificate, diploma and degree level courses will increase by 38 per cent from about 28,000 in 1990 to about 38,700 in 1995. The largest intake will be in the applied arts, sciences, engineering and medical courses. This is in line with the need to increase the number of professionals to cope with the expansion of industrial and economic activities as well as the need to increase the research and development capabilities in the country.

5.58 In 1990, a total of 533 courses in various disciplines were offered at diploma, degree and post-graduate levels. During the Sixth Plan period, these courses will be reviewed and upgraded in line with new developments in science and technology and in relevant disciplines. Priority will be given to the expansion of courses in new engineering fields, such as systems engineering and process engineering. Although the expected increase in the output of arts courses is high, a large proportion of the output will be in the applied arts courses. This will satisfy the increasing demand for graduates in the fields of accountancy, business and finance to serve the modern services sector of the economy as well as cater for the requirement of teachers in the secondary schools.

5.59 The expansion of places at the certificate, diploma and degree levels has to be supported with the availability of high calibre teaching staff. Various programmes, such as short specialized courses, post-graduate programmes and attachments in industries and organizations will be undertaken to increase the number and upgrade the quality of the teaching staff.

5.60 Academic programmes at the post-graduate level will also be expanded, especially in the fields of applied arts and sciences and technology. The enrolment at post-graduate level is expected to increase by 69 per cent from about 3,500 in 1990 to about 5,900 in 1995.

5.61 Research and development (R&D) programmes in universities will continue to be given priority. In the Sixth Plan, a total of \$224 million will be allocated for this purpose. The universities will be encouraged to have joint research programmes with the private sector so

that the areas of research and their findings will be more relevant and commercially useful. To develop a competitive industrial economy, there is an urgent need to build competence in key technologies such as automated manufacturing, advanced materials, electronics, biotechnology and information technology. R&D programmes in these new and emerging technologies will be prioritized to ensure focus in areas which will yield high economic returns.

5.62 Sports development in tertiary institutions will also be strengthened by providing opportunities for talented students from the secondary schools to pursue their respective academic careers. Measures will be undertaken to design a flexible system to accommodate the needs of such students. This will enable a continuous development of talented and educated athletes.

#### *Teacher Education*

5.63 While incentives for teachers have been improved through the implementation of the two-tier service scheme and support facilities provided for those teaching in the rural areas, the overall teacher quality will be further improved through the provision of better basic training for new teachers. Towards this end, steps will be taken to ensure a better intake of trainees by tightening the selection criteria, providing improved training facilities and upgrading further the quality of instructors.

5.64 Steps will be taken to increase the number of graduate teachers in secondary schools to improve the performance of students. College-trained teachers currently teaching at the secondary level will be selected for degree courses in order to upgrade their skills. In addition, the KPLI programme will also be continued. In-service courses to upgrade teaching capabilities will also be continued at *Institut Aminuddin Baki*, the various teacher training colleges and at the education resource centres.

5.65 Five new teacher training colleges will be constructed during the Sixth Plan period, one of which will be specially for the training of vocational and technical teachers. Besides the building of new colleges, plans will be made to expand and upgrade some of the existing institutions to allow for increases in the intake of trainees. By 1995, it is expected that the enrolment in the teacher training colleges will be about 27,300 trainees, an increase of 26.5 per cent from 1990.

## **Training Programmes**

### *Skill Training*

5.66 As Malaysia continues to push forward its industrialization programme, more skilled and highly trained manpower, especially at the technician and craftsmen level, are needed. As such, during the Sixth Plan, the intake into public skill training institutions is expected to increase from 31,600 in 1990 to about 43,000 in 1995. This includes the increase in intake into the skills stream of the secondary vocational schools which will be made possible with the completion of eight new secondary vocational schools, the expansion of existing 29 vocational schools and other public training institutions such as the existing ITIs, MARA vocational institutes (IKM) and the construction of an ITI and an IKM.

5.67 During the Plan period, various measures will be undertaken to improve and increase the effectiveness of public training institutions as recommended by the various studies and the Cabinet Committee Report on Training. The Cabinet Committee Report recommended 13 broad policy directions, encompassing more than 50 policy measures. These measures, which are currently being studied and implemented, seek to improve the responsiveness of public training to market demand, expand the role of the private sector and strengthen the linkages between training and technological changes. To enable these institutions to react and adjust to changes in the types and levels of skills required by the industry, a more effective feedback mechanism and labour market monitoring system will be instituted. The education and training delivery system will also be improved to ensure that the graduates are equipped with the relevant skills demanded by the industry.

5.68 The quality of training will be improved through the review and revamping of the curriculum. Courses will also contain substantive elements of hands-on experience, more learning by doing and implementing practical projects. In addition, the concept of teaching factories will be integrated into the training systems. There will also be closer consultation and rapport with the private sector which will be encouraged to use the facilities in public training institutions through customized courses and leasing of these facilities. In this way, the public training institutions will not only be able to optimize the use of their existing facilities, but will also be able to gain from the experiences of the private sector. In order to bring about closer integration of training with private sector needs, the Cabinet Committee Report has recommended the corporatization and privatization of training

institutions. A schedule will be drawn-up to accelerate the corporatization and privatization of selected training institutions.

5.69 The Cabinet Committee Report emphasized the need to provide more attractive emoluments and conditions of service and incentives to vocational and technical instructors in order to attract and retain them. The expansion of private education will also impose additional demand for trainers and instructors. On its part, the Government will step up its efforts towards producing greater numbers of trainers and instructors through public sector training institutions. The private sector can assist in this process by collaborating with the Government or by venturing on its own to increase the supply of trainers and instructors. The private sector must ensure that trainers and instructors are well-trained to enhance the quality of education and training.

5.70 The transition from an agricultural to an industrial society involves the adoption of industrial values. While skill training provides the means of garnering new skills and enhancing efficient work practices, a fundamental requirement for an industrial workforce is proper work attitudes and positive values such as integrity, discipline, punctuality, loyalty to the company, diligence, dedication and hard work. It is the sum total of all these that help to raise quality and make the economy competitive.

5.71 Since the inculcation of values has its own gestation period, the development of these values and work culture will have to begin in schools and at the workplace. It is imperative, therefore, that our school system be geared to develop positive attitudes and values required for industrial development. The training of teachers, both existing and new entrants into the teaching profession, will have to be reoriented to meet these new challenges.

5.72 Training programmes to inculcate attitudinal changes and positive values among youths in the country will be implemented. These programmes will be undertaken by *Biro Tata Negara* and the intake into public training institutions will be required to undergo this special training programme. The main objective is to strengthen the mental, psychological and physical capabilities of the workforce so as to prepare them to meet the challenges of a competitive industrial environment.

5.73 A forward looking Malaysian society is vital to support and contribute to innovation, innovation and technological advancement. Malaysian workers must be increasingly able to face the challenges of

absorbing and adjusting to new technologies. In line with this, the Government will identify existing education and training institutions as well as research institutions that can be developed into centres of excellence that will spearhead the nation's efforts in R&D tailored to meet industrial needs. In order to allow better utilization of these facilities for training purposes, the Government will review the accreditation of skills to include skills in the new and emerging technologies. The Government will establish a National Information Technology Board to formulate policies as well as implement, coordinate and manage information technology activities.

### *Management and Entrepreneurial Training*

5.74 Expansion and modernization of the economy will require expertise as well as new approaches in the planning and management of resources on the part of the public sector. In order to be more responsive to the needs of the private sector for more efficient services, public sector personnel will be trained in new corporate and management skills. Programmes under the Malaysia Incorporated concept will be intensified. INTAN will undertake more training programmes at the managerial level, in such areas as crisis management, strategic planning, leadership and negotiation techniques.

5.75 The training of entrepreneurs will aim at making them more dynamic, innovative and market-oriented. The institutions undertaking this training will work closely with the private sector to design and implement these training programmes.

### **Non-formal Education and Training**

5.76 The development of human resource will have to be complemented by education and training from the non-formal sector. This is especially so when the coverage of the formal system is limited. Although Malaysia has a high literacy rate and students have the opportunity to receive at least nine years of basic education, those who drop out from the system have to be given due consideration. Thus, life-long or continuing education through non-formal means is becoming increasingly important in mobilizing human resources, especially the youth.

5.77 The delivery of non-formal education and training by various agencies will be reviewed and improved to render them more effective in achieving their objectives. Programmes by the various agencies will

be coordinated so that there will be an integrated approach. Similarly, the role of the mass media, especially radio and television, will be strengthened to make them more effective in delivering non-formal education and training programmes to the people.

5.78 The Government will provide more education and training facilities to meet the demand for life-long education. While the Government will continue to do this as part of its development efforts, the private sector will also be encouraged to contribute to non-formal education and training. In this regard, continuing education through distance learning programmes will be stepped up.

### **Computers in Education and Training**

5.79 The Government will pursue efforts to further develop programmes for computers in education (CIE) to lay a strong foundation for a computer literate society as well as to create a culture oriented towards knowledge and information. In this regard, computer education at both the primary and secondary schools will be further enhanced to facilitate the learning and acquisition of basic skills such as reading, writing and mathematics. The establishment of computer clubs in schools will be further encouraged, especially in rural schools. The private sector can assist in this by providing computer hardware and software for the CIE programmes.

5.80 At the same time, vocational and technical schools will introduce more computer-related courses, such as maintenance and repair of micro-computers, modern computer devices, and wiring and cabling of micro-computers. This is essential in view of the rapidly increasing demand for computer-related training among students as well as the need to keep abreast with the latest advancements in computer technology.

5.81 The institutions of higher learning will be encouraged to provide extension classes for computer education especially for those who wish to update and upgrade their computer knowledge. Companies in the private sector with in-house training facilities in computers will be encouraged to provide training and share their facilities with smaller companies.

## **Role of the Private Sector in Education and Training**

5.82 During the Sixth Plan, the Government will continue to encourage and facilitate the setting up of education and training institutions by the private sector. This is in line with the Government's efforts to encourage private sector participation in the overall economic development of the country.

5.83 The demand for education has resulted in the proliferation of private institutions offering pre-school to tertiary level education. The expansion of private sector education will be encouraged as this will supplement public sector efforts. Expansion of places at the tertiary level through twinning programmes and preparatory courses in the country will also reduce the outflow of foreign exchange and improve the services account in the balance of payments. A more effective monitoring of these institutions will be undertaken in order to ensure acceptable standards and quality.

5.84 Institutions of higher learning will continue to establish and maintain cooperation and linkages with the private sector not only in R&D activities but also in various academic programmes, such as the sponsorship of academic and research positions in universities, as well as providing opportunities for on-the-job training for university students. These linkages will ensure that graduates of higher learning institutions will meet the requirements of the industry.

5.85 Closer collaboration with the private sector will also be effected through the establishment of training institutions for specific industries such as wood-based, textiles and construction. Training programmes in these institutions as well as in other public institutions will be oriented to the requirements of industries. At the same time, the training of skills will have to be consistent and compatible with changing technological needs. The Government will establish the necessary joint public-private sector machinery at the various levels to bring about greater coordination and integration of training with the needs of the economy. The Government will also seek greater bilateral assistance from industrialized countries to establish institutions in advanced skill areas in the country such as production engineering and industrial electronics.

5.86 As a measure to ensure the active participation of the private sector in training skilled manpower, the Human Resource Development Fund will be established. Employers contributing to this Fund will be reimbursed for all training undertaken for their employees. The Fund



is a form of levy-grant scheme which will serve as an incentive for the industries to intensify their training programmes as well as upgrade the skills of their workers. The private sector will also be involved in a consultative manner with the Government in the planning and implementation of strategies and programmes in producing skilled manpower. They will also be encouraged to set up specialized training centres, similar to the Penang Development Training Centre, in selected industrial zones.

#### IV. ALLOCATION

5.87 The development allocation and estimated expenditure during the Fifth Plan period and the allocation for the Sixth Plan for education and training are shown in *Table 5-5*. The allocation for the Sixth Plan constitutes 15.4 per cent of the total public development allocation, representing an increase of 46 per cent over the Fifth Plan allocation. To cater for the increased enrolment and the emphasis on quality improvement at the primary and secondary levels, 52 per cent of the allocation will be provided to expand and improve facilities at these levels. This includes the expansion and improvement of facilities for vocational education and the training of teachers. At the tertiary level, the allocation will be for the expansion and improvement of facilities as well as sponsorship of students at the certificate, diploma and degree levels in the applied arts and sciences, engineering, technology and medicine. Under the training programmes, \$610 million will be provided for the expansion and improvement of formal industrial training and non-formal skill training facilities.

#### V. CONCLUSION

5.88 With the right approach to human resource development, Malaysia is poised to face the challenges of the nineties. The capacity and capability to train and retrain manpower will enable the nation to keep constantly abreast with the changing technological development. The priority given to education and training will make our human resources more efficient, resilient and disciplined. The private sector is also expected to play a more dynamic role in the provision of education and training facilities to meet the growing demand for qualified and skilled manpower. These efforts by both the public and private sectors will enable all Malaysians to play a more productive role in the development of the nation.

TABLE 5-5

**DEVELOPMENT ALLOCATION FOR EDUCATION  
AND TRAINING, 1986-95**  
(\$ million)

<i>Programme</i>	<i>5MP</i>		<i>6MP</i>
	<i>Allocation</i>	<i>Expenditure</i>	<i>Allocation</i>
<b>EDUCATION</b>	<b>5,457</b>	<b>5,382</b>	<b>7,724</b>
Pre-school	0	0	140
Primary Education	760	760	1,020
Government and Government-aided Schools	760	760	1,020
Secondary Education	1,558	1,543	2,003
Government and Government-aided Schools	1,041	1,026	1,472
MARA Junior Science Colleges	65	65	51
Technical and Vocational Schools	452	452	480
Higher Education	1,739	1,727	2,591
Polytechnics	234	228	296
Kolej Tunku Abdul Rahman	2	2	20
Institut Teknologi MARA	161	155	300
Universiti Malaya	80	80	326
Universiti Sains Malaysia	183	183	255
Universiti Kebangsaan Malaysia	53	53	325
Universiti Pertanian Malaysia	82	82	276
Universiti Teknologi Malaysia	372	372	324
Universiti Islam Antarabangsa	62	62	325
Universiti Utara Malaysia	511	511	144
Teacher Education	144	144	334
Other Educational Support Programmes	1,257	1,208	1,636
<b>TRAINING</b>	<b>355</b>	<b>318</b>	<b>777</b>
Industrial Training	330	299	580
Industrial Training Institutes	104	87	112
MARA Vocational Institutes	157	152	266
Youth Training Centres	54	44	27
Pusat Giat MARA	16	16	45
TVEIT <sup>1</sup> Development	0	0	30
Attitudinal Change	0	0	100
Non Formal Education and Training	0	0	30
Commercial Training	7	7	27
MARA Commercial Institutes	7	7	21
Youth Entrepreneurship Institute	0	0	6
Management Training	18	13	140
National Institute of Public Administration	12	7	130
Institut Aminuddin Baki	6	5	10
<b>Total</b>	<b>5,812</b>	<b>5,700</b>	<b>8,501</b>

Note: <sup>1</sup> Technical and Vocational Education and Industrial Training.

**Chapter VI**

**Science and Technology**

## CHAPTER VI

# Science and Technology

### I. INTRODUCTION

6.01 The development of science and technology (S&T) is essential for Malaysia's overall socio-economic advancement. The widespread application of S&T will provide more effective and sustainable means towards achieving a competitive, diversified and global-based economy in order to attain higher standards of living in the future. The Fifth Malaysia Plan provided the watershed in the development of S&T in the country. Considerable progress was made in the formulation and execution of S&T policy initiatives. The Fifth Plan, therefore, not only provided for the first time a comprehensive orientation in terms of size and management of research and development (R&D) expenditure as well as the volume of R&D activities, but also laid a stronger foundation for future S&T management and policy development.

6.02 For the Sixth Malaysia Plan, the goals of S&T policy will be to ensure continuous scientific and technological developments that will sustain high rates of economic growth, accelerate overall development and lay the foundation for the attainment of a scientific and technologically advanced industrial society by the year 2020. This is with the view to establishing a scientific and progressive society which is innovative, forward looking and will contribute to advances in S&T. In this context, the Government will continue to provide the basic infrastructure and conducive environment for S&T development. The private sector is expected to complement the Government's efforts and play a more effective role than in the past.

### II. PROGRESS, 1986-90

6.03 Despite the economic slowdown during the early part of the Fifth Plan, considerable achievements were made in terms of S&T development within the country. This was seen not only in terms of the size of R&D

expenditure and volume of R&D activities but also in S&T management and policy initiatives.

### **S&T Policy**

6.04 The S&T policy essentially supports national development strategy. It underscored the important role of technological change for development and the need to utilize foreign technology in combination with a gradual strengthening of domestic technological capability and capacity through the process of assimilation and innovation. The policy thrust was, in principle, based on the interfacing among the public and private sectors and the scientific and technological community. The strategies and programmes evolved were aimed at widening and improving the S&T base and ensuring the development of comparative advantage in the production of goods and services.

6.05 Towards the latter part of the Fifth Plan period, the Government launched the Action Plan for Industrial Technology Development (APITD), as a follow-up to the implementation of the Industrial Master Plan. The APITD essentially provides broad strategies and programmes for strengthening the scientific and technological capability through endogenous technological development with the acquisition of selective technology from abroad and developing the requisite human resources and infrastructure. It also addresses the need to emphasize the importance of basic sciences in the education system and build a society that is more appreciative of modern S&T.

### **S&T Management**

6.06 During the Fifth Plan period, a more centralized and co-ordinated management system for R&D and technology development was established. This approach was particularly relevant within the context of manpower and budgetary constraints and achieving efficient and effective S&T application and utilization. Towards this end, the implementation of the Intensification of Research in Priority Areas (IRPA) strategy and mechanism was initiated in early 1987 with the aim of ensuring selectivity and quality of R&D activities in the public sector. Four IRPA Panels were established to coordinate, assess and recommend R&D related activities in the areas of agriculture, industry, medical and selected strategic areas. The IRPA mechanism initiated the process of consultations and consensus among scientists, academicians, industrialists and researchers from the public and private sectors. In addition, the National Council for Scientific Research and Development (NCSRD) was reconstituted and a Cabinet Committee on S&T was established.

6.07 Several other measures to expand the institutional support structure for S&T were implemented. Apart from strengthening the existing R&D institutions and agencies covering a wide range of research areas, two new institutes, namely, the Malaysian Cocoa Board and the Remote Sensing Centre were established, to increase research activities in these two areas. As part of the measures to create a more conducive environment for private sector product innovation, the Government initiated measures to encourage greater involvement of industry in R&D activities. This included the promotion of collaborative efforts among the private sector, universities and research institutions as well as the provision of fiscal and financial incentives and the requisite infrastructure, such as the Technology Park Malaysia.

#### **Allocation for Direct R&D and Performance**

6.08 The budgetary allocation for direct R&D within public sector agencies during the Fifth Plan period was about \$414 million. This excluded related capital and operating expenditures. From the total allocation, about half was for agriculture, 34 per cent for industry and 17 per cent for other sectors.

6.09 National R&D expenditure for 1989 was estimated at 0.8 per cent of Gross National Product (GNP), more than 80 per cent of which was by the public sector. The share of the private sector in national R&D expenditure was far below the level expected. Although the national R&D expenditure as a proportion of GNP, and in particular the private sector's contribution is relatively small in comparison to the R&D expenditures of industrialized countries and the Newly Industrialized Economies (NIEs), there has been a general increase in R&D expenditure, particularly towards the latter part of the Fifth Plan. While it is premature to evaluate the impact and potential contribution of the research already undertaken, progress was made towards expanding R&D programmes and projects across research agencies and economic sectors.

#### *R&D in the Agriculture Sector*

6.10 R&D activities in the agriculture sector continued to be dominant given the long existence of a number of agro-based research institutions. Besides the continued support for increasing productivity in the major commodities, there was a significant shift to more downstream applications-oriented research in the processing of agricultural output and by-products. This approach included research into possible end use product development as well as potential commercialization and

marketing. The shift to downstream research was emphasized, especially in product development of wood-based and food processing industries. Similarly, research efforts in palm oil contributed to meeting consumer preferences, thus raising the demand for palm oil and palm oil products in the international fats and oils market. Research in the rubber sector further assisted in upgrading the technologies on yield improvements as well as product development of rubber, rubber wood and rubber wastes. Research in the fisheries sector concentrated on developing better techniques for breeding prawns and freshwater fish, many of which have been successfully applied. In the livestock sector, research activities were carried out primarily to control livestock diseases as well as improve animal breeding and nutrition.

6.11 Universities complemented the research efforts of the various agro-based R&D institutions. Areas of research included plant and animal biotechnology, agricultural mechanization, pest and disease management, and agro-waste management and utilization.

#### *R&D in the Industrial Sector*

6.12 In comparison to agriculture, R&D activities in the industrial sector had not received equal emphasis mainly due to the narrow base of the sector itself and due to technological and manpower constraints. Nevertheless, during the Fifth Plan, a greater number of R&D projects were undertaken, particularly in areas such as micro-electronics, information technology, automated manufacturing technology, nuclear technology and material sciences, with the objective of introducing and disseminating new ideas for product development.

6.13 In the field of industrial R&D, public sector institutions and the universities conducted basic and applied research not only in the conventional technologies but also in new areas of technology such as material sciences, artificial intelligence and information technology. Increasing emphasis was placed on developing technologies having potential applications in innovative high technology products, both for the local and export markets. In micro-electronics and information technology, promising R&D results have benefited the computers, telecommunications and software industry. In the area of manufacturing technology, significant progress was made in developing and utilizing a number of advanced technologies.

6.14 Advanced techniques for mould and die using computer-aided design (CAD) and computer-aided engineering (CAE) were developed and successfully applied. Low-cost small machineries for food processing

and production were designed and fabricated, particularly for small-and medium-scale industries (SMIs). In nuclear technology, the development of tracer technology using radioisotopes enhanced process and product development in a number of industries. In the area of material sciences, considerable progress was made in ceramic, metal and plastic technology development which benefited local industries.

#### *R&D in the Strategic Sector*

6.15 Areas of research covered under the strategic sector include the basic sciences, resource management, emerging and future technologies, techno-economics and the social sciences. Recognizing the importance of basic sciences in augmenting knowledge and developing new technologies, a significant proportion of resources was allocated for its development. In view of the emphasis on conserving natural resources and protecting the environment, increased funds were made available for programmes such as environmental impact assessments, disposal of solid and toxic wastes, as well as water, air and noise pollution. Significant results have emerged from research activities in specific areas such as liquid natural rubber, coastal and highway erosion, remote sensing and electro-optics. It is encouraging to note that certain findings by local scientists are ready for the applied or development stage.

#### *R&D in the Medical Sector*

6.16 During the Fifth Plan, R&D activities in the medical sector were significantly enhanced. The focus was on problem-oriented research directed at finding ways to fill gaps between knowledge and its applications in solving persistent health concerns. Notable success included the development of a new animal model for the testing of potential drugs against filariasis and the identification of microbial agents as alternatives to insecticides in the battle against the mosquito. In addition, new technologies, such as the rapid diagnostic kit for dengue fever, and the development and production of reagents for diagnosis of endocrine diseases were introduced. Various aspects of bio-medical sciences also received increased research allocations.

#### **Private Sector Participation in R&D and Technology Development**

6.17 Although up-to-date information on R&D expenditure as well as the extent of technology development in the private sector is not readily available, a R&D expenditure survey by the Government in 1990



indicated a low level of R&D expenditure and technological innovation among domestic firms. This general trend was further supported by the preliminary findings of a recent Federation of Malaysian Manufacturers (FMM) Manufacturing Survey, 1989/90. Among others, the survey highlighted extensive reliance by the private sector on foreign sources of technology, while in-house R&D activities were not significant. Domestic adaptations and modifications of externally-sourced technologies in the form of new and improved products and processes were not substantial. This is in contrast to the experiences of many NIEs when they were at Malaysia's current level of economic development.

6.18 Notwithstanding this general trend, the private sector contributed to the expansion of research activities and technological innovations in specific areas. Significant progress was made in telecommunications where extensive product diversification and innovation created prospects not only for the domestic market but more importantly for the export market. The plantation sector expanded its R&D activities, providing added emphasis to tissue culture, biotechnology, marketing and end-use research to generate increased downstream agro-based product development activities.

6.19 Given that private sector research and technology development is relatively low in the country, the Government launched the Industrial Technical Assistance Fund (ITAF) to provide matching grants to support product development and design schemes as well as quality and productivity improvement schemes, especially for the SMIs. This was in addition to available fiscal and financial incentives. Further, the country's first technology park was established to promote greater private sector participation in technology development and encourage new technology-based start-up companies.

## **Technology Imports**

6.20 In view of the country's small technology base, the utilization of imported technologies continued to play a significant role in accelerating industrial expansion during the Fifth Plan. The inflow of technology, as indicated by the number of contractual agreements approved by the Government, increased notably during the Fifth Plan period, as shown in *Tables 6-1 and 6-2*. However, this indicator is reflective of only those agreements required under the Industrial Coordination Act (ICA), 1975, or the Promotion of Investment Act (PIA), 1986, or when specifically required under any Foreign Investment Committee (FIC) rulings.

TABLE 6-1  
TECHNOLOGY IMPORTS BY TYPE OF AGREEMENT, 1985-90  
(number)

<i>Type of Agreement</i>	<i>1985</i>	<i>1986</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>	<i>1990<sup>1</sup></i>	<i>5MP</i>
1. Joint Venture	9	19	11	11	15	16	72
2. Technical Assistance	46	47	50	64	64	73	298
3. Know-how	5	3	3	3	13	11	33
4. Licences and Patents	14	27	22	37	35	15	136
5. Management	6	10	5	7	12	5	39
6. Services	1	1	1	2	12	5	21
7. Trade Mark	5	6	8	7	18	19	58
8. Turnkey and Engineering	0	1	0	1	1	1	4
9. Supply and Purchase	1	0	1	0	6	2	9
10. Sales, Marketing/Distribution	7	7	7	10	6	5	35
11. Others	2	2	2	8	16	4	32
<b>Total</b>	<b>96</b>	<b>123</b>	<b>110</b>	<b>150</b>	<b>198</b>	<b>156</b>	<b>737</b>

Note:

<sup>1</sup> There were less technology transfer agreements in 1990, though the number of approved manufacturing licences was substantial. This is because many of these projects are expected to come on stream only during the Sixth Plan years, and the relevant technology transfer agreements are expected to be submitted for approval much later.

6.21 While recognizing the need for technology imports to achieve rapid industrial growth, the Government initiated measures to ensure that there was more effective transfer from foreign technology suppliers with the view to further enhancing domestic technological capabilities. This included the formulation of new policy guidelines on royalty payments. The major thrust of the guidelines was to ensure that balanced mutual benefits were obtained both by the receiver and supplier of technology. In addition, steps were taken to strengthen the technical capability of the institutions involved in the processing, evaluation, selection and enforcement of technology transfer agreements.

TABLE 6-2

**TECHNOLOGY IMPORTS BY INDUSTRY GROUP, 1985-90**  
(number)

<i>Industry Group</i>	<i>1985</i>	<i>1986</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>	<i>1990<sup>1</sup></i>	<i>5MP</i>
1. Food	10	8	8	16	21	14	67
2. Textiles & Wearing Apparel	1	7	2	6	4	8	27
3. Leather & Leather Goods	0	0	0	1	0	1	2
4. Wood & Wood Products including Furnitures	0	4	1	0	0	6	11
5. Paper & Paper Products, Printing & Publishing	3	4	1	3	0	4	12
6. Chemical & Chemical Products including Pharmaceutical	16	15	18	29	27	24	113
7. Petroleum & Coal	0	0	0	6	2	0	8
8. Rubber & Rubber Products	4	13	8	22	18	8	69
9. Plastic & Plastic Products	0	4	0	2	6	5	17
10. Non-metallic Mineral Products	7	7	12	4	10	7	40
11. Basic Metal	1	1	2	0	6	4	13
12. Fabricated Metal Products	9	22	21	17	7	4	71
13. Manufacture of Machinery	0	0	0	0	7	6	13
14. Electrical & Electronic Products	20	12	29	37	40	41	159
15. Transport Equipment	20	15	4	1	15	18	53
16. Hotel and Tourism	4	4	1	2	6	3	16
17. Agriculture	0	0	1	1	7	0	9
18. Miscellaneous	1	7	2	3	22	3	37
<b>Total</b>	<b>96</b>	<b>123</b>	<b>110</b>	<b>150</b>	<b>198</b>	<b>156</b>	<b>737</b>

Note:

<sup>1</sup> See Table 6-1.

6.22 Despite various measures to facilitate technology transfer from abroad, technological innovation among Malaysian firms, particularly the SMIs, was still relatively low in many respects. Innovation activities were largely geared towards incremental improvements or marginal adaptations to meet local needs rather than the design and development of new products and processes. The lack of indigenous capacity and ability for technological development indicates the need to strengthen domestic consultancy, design and engineering capabilities.

### Scientific and Technological Manpower

6.23 In line with rapid technological changes anticipated in the economy, the capacity of the public education and training institutions was expanded to meet the increasing demand for high level and specialized skills, particularly engineers and technicians as well as R&D personnel. However, despite the high rate of expansion in the output of high- and middle-level S&T-related manpower from institutions of higher learning, the imbalance in the type and number of manpower produced and required by the nation continued to be a problem.

TABLE 6-3  
R&D MANPOWER IN PUBLIC AND  
PRIVATE SECTORS, 1989  
(number)

Qualification	Public	Private	Total
Ph.D	1,254	35	1,289
Masters	2,181	66	2,247
B.Sc	1,679	322	2,001
Sub-total	5,114	423	5,537
Others <sup>1</sup>	6,656	1,412	8,068
Total	11,770	1,835	13,605

Note:

<sup>1</sup> Includes sub-professionals, technicians and other supporting staff.

6.24 The findings of a R&D manpower survey conducted by the Government indicated that a total of 13,605 personnel, either full-or part-time, were involved in R&D activities in 1989, as shown in *Tables 6-3 and 6-4*. Of the total, 5,537 were research scientists and the rest were supporting staff. The public sector represented the largest source of R&D manpower in the country, a substantial portion of whom were engaged in agriculture research. A large proportion of the R&D personnel in the public sector were in basic or upstream research compared with that in applied or developmental research. This has contributed to the consequent low impact of R&D on industry. The R&D personnel in the private sector was too small to stimulate significant indigenous market-driven research.

TABLE 6-4  
R&D MANPOWER BY SPECIALIZATION AND QUALIFICATION, 1989  
(number)

Specialization	Ph.D		Masters		B.Sc		Total
	Public	Private	Public	Private	Public	Private	
Engineering <sup>1</sup>	142	7	486	18	585	115	1,353
Computer <sup>2</sup>	33	0	138	1	40	30	242
Medical <sup>3</sup>	87	0	134	0	112	0	333
Agriculture <sup>4</sup>	347	19	528	15	210	43	1,162
Basic <sup>5</sup>	491	9	484	32	482	134	1,632
Others	154	0	411	0	250	0	815
Sub-total	1,254	35	2,181	66	1,679	322	5,537
<b>Total</b>	<b>1,289</b>		<b>2,247</b>		<b>2,001</b>		

Notes:

- <sup>1</sup> Engineering proper, such as chemical, civil, mechanical, electrical engineering and specialized fields such as metallurgy and textile technology.
- <sup>2</sup> System analysis, information science, electronic data processing, computer programming and other allied subjects.
- <sup>3</sup> Anatomy, biochemistry, dentistry, microbiology, medicine, obstetrics, optometry, osteopathy, physiotherapy, public health and other allied subjects.
- <sup>4</sup> Agronomy, animal husbandry, fisheries, forestry, horticulture, veterinary medicine and other allied subjects.
- <sup>5</sup> Biology, botany, chemistry, entomology, geology, mathematics, meteorology, physical geography, physics, zoology and other allied subjects.

6.25 The ratio of research scientists to total population estimated to be around 400 per million population, was relatively low compared with Japan (6,500 per million), United Kingdom (3,200 per million), West Germany (3,000 per million) and South Korea (1,300 per million). Thus, by international standards, not only was the number of Malaysian R&D personnel small and concentrated in the public sector but its utilization for user-oriented research was also limited.

### **S&T Awareness, Promotion and Popularization**

6.26 Activities aimed at promoting better understanding of S&T and its role in national development were organized at various levels throughout the Fifth Plan period. National science essays and poetry competitions, science fiction writings, science quizzes, inventor competitions, computer software and graphic development competitions were promoted among school children as part of the annual National Science and Technology Week. The National Science Centre, currently on a temporary site, was established with the view to popularizing and promoting S&T. In addition, a planetarium was established in Kuching by the State Government, while the planetarium in Kuala Lumpur is under construction.

### **III. PROSPECTS, 1991-95**

6.27 The role of S&T in promoting growth as well as diversifying the development and trade base will continue to remain dominant during the Sixth Plan and beyond. Technology-oriented policy measures that will enable the nation to become more self-reliant and resilient to withstand greater challenges from the changing domestic and international economic environment will be emphasized. More intensive and concerted efforts, therefore, will be pursued towards the rapid expansion of S&T and its integration into national development. The Government will continually improve the requisite policy framework, infrastructure, incentives and supporting services. The benefits will have to be harnessed by the private sector and the society as a whole.

6.28 Indigenous technology development will be guided and fostered through activities that promote creativity, innovation and inventiveness, especially at all levels of education as well as in industry. In particular, the private sector is expected to accord priority to technology absorption, adaptation, innovation and exploitation in line with industrial and export requirements. Greater efforts will be given to reorientate upstream research to meet requirements of the market. While the domestic private

sector may not be in a position to spearhead extensive technology breakthroughs, it must nevertheless reorient itself to the changing environment. More specifically, greater emphasis will need to be accorded to raising the technology content, efficiency and productivity of Malaysian products and services to enable them to compete in international markets.

### **Policy Objectives and Strategies for S&T Development**

6.29 Policies and strategies for potential S&T applications and development will be those that contribute to long-term sustained economic growth and socio-cultural enrichment. In principle, the nation will support the development of scientific and technological activities that build on existing strengths and capabilities and have commercial and export potential. Extensive opportunities to increase the country's competitive position in world markets by improving productivity and developing innovative products and services will be explored.

6.30 While recognizing the need to strengthen basic research, an important policy thrust will be to emphasize applied and developmental research and innovation in areas that can contribute significantly to the country's industrial development and competitiveness. This will develop local capability in product design, engineering and innovation. Equally important will be developing competence in technologies essential to both the established industries as well as targeted new industries.

6.31 Given the rapid pace of technological advancement and structural change, greater focus will be on enhancing the use of domestic technological capacity and capabilities, as well as activating and sustaining the transfer of potential technologies into productive enterprises. Many of the research outputs by the public sector institutions are highly advanced and have potentials for commercialization. In this regard, policies will be geared towards fostering entrepreneurial technology-based ventures, encouraging greater interaction amongst research institutions, industry and Government enterprises as well as making public sector R&D more market-oriented. A strategy for the intensification of commercial exploitation of research and technology will be introduced.

6.32 In order to build up endogenous capability in S&T, the learning and teaching of basic sciences and the provision of technology-oriented instruction will be emphasized at the primary, secondary and tertiary levels of education. The thrust will, therefore, be on improving scientific and technological literacy so that more people will be attracted to careers

in S&T-related fields and universities continue to produce graduates and researchers of high calibre. It will also be necessary to make available selected educational programmes in applied technologies to those already in the labour force to enable retraining, upgrading and acquisition of new practical knowledge and skills. This is in line with the objective of developing an adaptable, well-informed and skilled workforce.

6.33 Another policy objective will be to encourage the wide diffusion and use of S&T to optimize the quality of life and ensure higher standards of living for the nation, while reducing adverse effects on the environment as well as cultures and lifestyles of the people. The Government research and educational institutions as well as industry and labour will play an important role in communicating and demonstrating the benefits of S&T to the general public so that support for related policies, programmes and initiatives will be forthcoming.

6.34 Apart from improving and strengthening public and private sector R&D organization and infrastructure, the S&T policy will strive to integrate private sector research activities within the national R&D framework. The private sector will be expected to be more aggressive and adopt a more positive attitude towards R&D, and set in place an efficient infrastructure to facilitate technology assimilation, diffusion and application. In line with this, industry will be encouraged to specialize in new and promising technologies in the form of niche strategies. The latter should be the focus of opportunities in an increasingly competitive global environment. Domestic firms, particularly the larger enterprises, will be encouraged to set up their own R&D systems. Special assistance programmes will be designed and packaged for SMIs to promote industrial innovation. Improved fiscal and financial incentives as well as the provision of techno-infrastructure will be instituted to stimulate R&D and technological innovation activities in the private sector, especially among technology-intensive SMIs.

6.35 Increased funding for R&D will be required to strengthen the manpower and infrastructural facilities, with particular emphasis on the development of priority-oriented technology. The Government will provide budgetary allocations, direct matching grants, soft loans and preferential credit to accelerate innovative activities in the public and private sectors. Simultaneously, the private sector will complement public sector efforts. This is in line with the Government's aim to at least double the national R&D expenditure as a percentage of GNP, by the year 2000 from the current level of around one per cent. Special efforts will be made to improve the private sector's contribution so that by the year 2000, its share in national R&D expenditure will be at least 40 per cent.



## **Programmes**

### *Diffusion and Applications of Advanced Technology*

6.36 Several measures will be undertaken to ensure widespread diffusion and application of updated and advanced technology, especially in areas that are becoming more technology and information intensive. In this regard, a major vehicle will be direct foreign investment, technology licensing and trade activities. The policy on foreign investment and technology licensing will be applied strategically to ensure that the required technology will be acquired while minimizing duplicative and low-level technology. In addition, the development of overcapacity or concentration in certain technologies will be monitored. Special attention will also be given to the creation of more effective joint-ventures and linkages between domestic and foreign enterprises to enhance local technological capability.

6.37 Domestic enterprises, particularly SMIs, are expected to respond more positively to various measures by the Government to upgrade the technology level of industry and, as a consequence, to create better opportunities for product and market development. The implementation of the ITAF, which provides matching grants to enhance product development as well as technical improvements and sophistication in industries, will be made more effective by the provision of supporting business and marketing advisory services and consultancies.

6.38 Within the above context, technical services provided by relevant Government institutions to private industry, such as consultancies, extension services, technical information and technical training in specific areas, will be further intensified. Where feasible, the Government will make available the required techno-infrastructure and facilities as well as discounted rates for utilities and land within specific areas such as within a high-technology industrial estate, foundry park, quality enhancement centres and existing institutions and agencies.

6.39 As an alternative to partial grant financial assistance, the Government is developing mechanisms to provide soft loans, venture capital and other forms of assistance to encourage private firms and individuals to undertake the commercialization and marketing of technology. Collaborative or joint private-public R&D ventures involving companies, public research institutions and universities will be encouraged. In this regard, the Government will consider measures to facilitate the transfer or secondment of scientists and researchers among public sector agencies, as well as between the public and private sectors.

6.40 In order to enhance R&D and technology development, international cooperation in selected S&T areas will be established, while at the same time fully utilizing the existing technical and economic cooperation arrangements. Attempts will be made to increase the exchange of technological information as well as undertake joint research and training in specific areas of S&T. This will include mutually beneficial activities such as, the exchange of technical information on fundamental and applied research as well as exchange of researchers, scientists and technologists in selected technologies.

#### *Increasing Quality and Design Competence*

6.41 The level of quality and design competence needs to be raised substantially in order to exploit the tremendous investment and export opportunities through greater product differentiation and sophistication arising from technology, quality and design variations. Domestic enterprises will have to adopt a more positive approach towards quality improvement and management as well as acquire competence in areas such as industrial, engineering and product design. Special emphasis must be placed on in-house and on-the-job training in quality and design skills.

6.42 The Government will implement quality and design enhancement programmes that are readily accessible to industries. In order to increase design awareness and competence, the product design centre at the Standards and Industrial Research Institute of Malaysia (SIRIM) will be upgraded to form the National Product Design Centre. The Centre will provide consultancy services to industries in product design, prototyping, and product development, with special emphasis on assisting SMLs. In line with the APITD proposal on the establishment of a number of quality enhancement centres to provide design and engineering support as well as other related advisory services, the Government will provide the initial basic infrastructure for such centres. The private sector will subsequently be expected to take over these centres. In addition, courses and training programmes in public sector educational institutions will be reoriented to meet increased demand for such knowledge and know-how.

#### *Education and Training in S&T*

6.43 Recognizing that the development of human resources will ultimately determine the extent and quality of technology advancement and enrichment, the Government will place high priority on improving and strengthening the overall education and training in S&T. The thrust

will be on building a society that is educated and trained in S&T which can participate actively in socio-economic transformation. This requires a more flexible training system to respond to the changing pattern of occupational skills and a relatively higher minimum threshold of competence for all young people.

6.44 A critical constraint to overcome will be the mismatch between the supply and demand of scientific and technological manpower, both in terms of quantity and quality. A substantial portion of the shortfall will be met by the intensification of education and training efforts abroad and within the country itself. The emphasis will be on expanding domestic education and training programmes in science, engineering and technology as well as the continual updating of the S&T curricula and skills development to incorporate appropriate application-based scientific and technological knowledge. In order to provide effective support for the acquisition of competence in the new and emerging technologies as well as for upgrading traditional and conventional technologies, the universities, research agencies and tertiary level institutions will take the lead to enhance education, research and training capabilities. Programmes leading to post-graduate diplomas, masters and doctorates will be augmented, especially in S&T-related fields.

6.45 The development of S&T manpower will be fundamental in raising the level of industrial competence and competitiveness. At the enterprise level, measures will be taken to encourage them to update their knowledge of recent developments and enhance their ability to apply new and improved technologies. The Human Resource Development Fund, to be launched by the Government, will aim at developing indigenous technological capability within manufacturing enterprises. Industrial firms will make a mandatory contribution to this Fund, which will be utilized to implement relevant technology-related training programmes at approved institutes.

#### *Support for the Science Base*

6.46 In the process of accelerating S&T development, support for strengthening the science base will be continued. Measures will be taken to emphasize the key disciplines in basic sciences, such as molecular biology and genetics as well as chemistry, physics and mathematics. In this respect, universities are expected to play a major role in expanding education and knowledge in these fields. Increased resources will be made available to the universities to strengthen their research and teaching capabilities through the provision of improved facilities and the upgrading of skills in selected areas.

6.47 Improvements and adjustments to the requisite curricula will be made to keep abreast with the expansion of knowledge, know-how and applications in the mathematical, scientific and technological fields. In this regard, research into the processes of teaching and learning of S&T, at both the basic and the higher level of application, will be supported. Universities are expected to maintain close linkages with other relevant institutions and industry, in order to achieve greater focus and relevancy of the teaching and learning of mathematics and the basic sciences.

#### *Enabling and Key Technologies*

6.48 The Government has announced long-range plans for a substantial expansion of resources in new and emerging technologies to ensure focus in areas which can yield the highest economic pay-offs. Five key technology areas have been identified for building competence and for exploitation to enhance innovativeness and to further develop niche areas for domestic industries.

6.49 *Automated Manufacturing Technology* (AMT) refers to the application of advanced techniques of management and technical methods and methodologies to enhance the quality, speed and flexibility of the manufacturing environment. AMT draws upon a wide range of technologies, notably information technology and control and software engineering. Examples include CAD, CAM and computerized numerical control (CNC), industrial robots, flexible manufacturing systems, process planning and control and expert systems. AMT is applied to varying degrees in some of the larger manufacturing enterprises in Malaysia, particularly those associated with multinational companies. Most indigenous manufacturing companies, however, have yet to derive the benefits of efficiency, productivity, quality and international competitiveness that AMT can offer.

6.50 *Advanced Materials* covers a wide range of materials, including plastics, metals, ceramics and composites of these materials, where recent technological progress has shifted radically the traditional perceptions of the roles that these materials can play. Thus, for example, new structural applications of plastics and ceramics are expected, the mechanical and chemical properties of metals are being enhanced through advances in metallurgy and fabrication methods and a whole new class of electro-ceramics are seen as the key to advances in electronics and micro-electronics. Malaysia possesses a resource advantage in plastics and in certain new materials such as rare earth elements, that will be utilized to make advances in this field.

6.51 *Biotechnology* has grown in importance as a key technology of the future through recent advances in molecular biology and genetic engineering. Applications are evident in diverse areas, such as agriculture, health, food and energy. This is a field where Malaysia has acquired competence and a moderately strong knowledge base and further development, including institutional strengthening, can be expected.

6.52 *Electronics* is widely recognized as the technology which has had far reaching impact on the global economy. A wide range of specialized areas of activity are encompassed, including the design and manufacture of components, techniques of design and assembly of systems and a wide range of sophisticated applications for industry and the consumer. Micro-electronics and digital technology are two of the key areas in this field. Malaysia has acquired a measure of competence in the narrow area of assembly of electronic devices and components through the manufacturing activities of multinational companies, but has yet to acquire the required capability in the more creative aspects of design and development of innovative products and services.

6.53 *Information Technology* (IT) in its broadest sense refers to all technological elements that enable the acquisition, storage, processing, transmission and presentation of information. The primary technologies involved are micro-electronics, computers, telecommunications and software technology. It has aptly been described as the foundation of the second industrial revolution and has been targeted by virtually all industrialized and industrializing economies as a strategic competitive technology for attaining efficiency and competitiveness in world trade. Malaysia, in common with the rest of the world, is currently experiencing considerable change as a result of the impact of IT, and has demonstrated abilities in certain areas of micro-computer technology and telecommunications, although as a whole it lags behind many NIEs in these areas.

6.54 In order to enhance capability and promote R&D in these selected priority areas, the institutions responsible will draw up prioritized research activities, strategic plans and awareness projects for implementation. In essence, more comprehensive and integrated development programmes will be designed. The emphasis will extend beyond the provision of physical infrastructure and financial support for R&D and innovation. Complementary measures will include the promotion of activities related to diffusion, commercialization and marketing with a view to upgrading the technology base and creating new growth and employment opportunities.

6.55 A fundamental pre-condition for the success of such a strategic approach is that it should involve the private sector. In this regard, the Government will create a conducive environment for fostering the growth of indigenous new technology-based firms. Special incentives to promote these firms will be introduced, including enabling grants to cover start-up costs as well as assistance in market search and in mobilizing venture capital. Other measures will include Government procurement policies that will give preference to domestic products such as computers and telecommunications, relaxation of regulations to permit collaboration among high technology-based firms and setting of technical standards which favour products of domestic firms.

#### *Commercialization of Research and Technology*

6.56 The APITD had recommended self-financing targets for research institutions of 30 per cent by 1995 and 60 per cent by the year 2000. On the part of R&D institutions, it is appropriate at this juncture to take on a more explicit commercial stance in order to achieve such targets and to enhance their potential contribution to development. This will be initiated by the rationalization and reorientation of their research activities with the view to creating synergy and synthesis with the market place.

6.57 In this context, the establishment of the appropriate institutional, legal and administrative framework for the systematic assimilation, adaptation and dissemination of promising technologies will be critical. A number of measures are being studied. Under consideration is the establishment of an intermediary agency that will facilitate the commercial exploitation of potential research and technology. Other options include the formation of a commercial arm within the institute or university for the purpose of bringing potential technology to the market, or the commercialization and marketing of potential research output through technology parks and innovation centres. A comprehensive system of contract research to generate greater interaction between research institutions and industry will also be considered. Such new approaches will facilitate sale of potential technology as well as lead to joint efforts with industry in downstream technologically feasible projects.

6.58 These new approaches will also induce technology ventures and entrepreneurship for commercializing and diffusing new technologies. As a consequence, spin-off activities such as consultancies, engineering, design and other related services will emerge. However, the infrastructure for initial downstream activities, such as up-scaling,

prototyping, financing and marketing will need to be developed. Due to the high risk, uncertainty and long gestation period of the commercialization process, the Government will consider establishing special funds within existing financial institutions or in new venture capital corporations which will advance funds to enterprising firms, consortia or individual entrepreneurs on concessionary terms.

### *Intellectual Property Policy for Commercialization*

6.59 In the efforts to commercialize potential technology and create new economic activities and job opportunities, an important aspect will be the formulation and design of an intellectual property policy and guidelines for universities and research institutions. This is part of the process of creating a favourable climate to nurture innovation, invention and the transition from laboratory to commercialization. This initiative will be geared primarily to serve public interest, promote creativity and innovation and diversify the industrial base. The policy and guidelines will provide institutions the flexibility to develop licence agreements, sponsored research contracts and related procedures that meet specific needs. Participating institutions will then need to devise intellectual property management programmes which will enable them to solicit research funds, share intellectual property rights with inventors, and play a major role in identifying and marketing intellectual property with commercial potential.

6.60 Overall, the supporting infrastructure for patents and the management of intellectual property rights also requires development. The existing administrative and enforcement machinery will be further improved to manage an increasingly sophisticated environment as more advanced technologies are developed and patented. In addition, a new range of advisory and consultancy services pertaining to intellectual property protection and the patent process, including related legal issues, patent search and translations, will be developed.

### *Role of Universities*

6.61 As part of the strategy to enlarge the technology base, the universities are expected to play a more important role in S&T and manpower development. In order to acquire and upgrade competence in the new technologies and generate innovations, universities will be provided with resources to enhance their teaching standards as well as research and training capabilities. Opportunities for post-graduate

education and training will also be increased in order to strengthen capabilities, especially in the R&D thrust areas and the science base supporting them.

6.62 Given the existence of broad based multi-disciplinary skills, the universities are in a position to contribute significantly to overall industrial development through product development and the commercialization of new ideas. While universities have some traditional forms of collaboration with industry, new forms of interactions will be established so that they will play a more symbiotic and effective role in technology exploitation and human resource development. New forms of linkages such as the teaching company scheme, incubator schemes, and joint industry-university post-graduate and extension programmes are under various stages of preparation.

#### *Increasing S&T Awareness*

6.63 The future thrust is for S&T awareness to permeate all facets of society. In order to enhance S&T awareness, the mass media and other informal means will be extensively utilized to complement measures already initiated at the school and tertiary levels to promote general and specific education in S&T.

6.64 The S&T Week will be expanded in order to encourage wider participation at the state and district levels and cover a broader spectrum of S&T-related issues. Measures will be instituted to increase the involvement of the private sector as well as S&T associations, societies and clubs in national technology-oriented activities. In order to enhance S&T awareness, a new Science Centre will be established to coordinate efforts to popularize S&T. Towards this end, the Government has received the support of the corporate sector which will contribute towards the design, fabrication or purchase of the exhibits for the Centre.

#### *S&T Intelligence and Information System*

6.65 An important pre-requisite in building linkages and consensus for an effective management and coordination of S&T policies and programmes will be the establishment of an efficient mechanism for information gathering and dissemination. For this purpose, a National Science and Technology Intelligence and Information System will be established to enhance the availability of information on S&T developments. Such a system will facilitate the rapid and effective



dissemination of information on S&T, assist in the coordination and monitoring of R&D programmes as well as collate information and data for the formulation of relevant S&T policies, strategies and programmes.

#### *Coordination and Management of S&T Policy*

6.66 As the country seeks to accelerate technological innovation for greater economic growth, productivity and competitiveness, there will be increased emphasis on the coordination of S&T policies. In this regard, the Government will undertake to minimize fragmentation in decision making and ensure the harmonization of activities among institutions and enterprises as well as across sectors. Better coordination of S&T policies and closer integration with economic and other policies will be essentially aimed at reducing institutional complexities and diversity of S&T systems as well as at synthesizing the needs of the academia, research institutions and the private sector.

#### *Priority Areas in R&D*

6.67 The Government will provide substantial expenditure to finance direct R&D, supplemented by the private sector. While Malaysia is not expected to be in the forefront of all advanced technologies, budgetary allocations and other forms of assistance will be directed towards selective target-oriented R&D programmes that are of strategic importance and offer the best development potentials. Major research programmes will also focus on the science base that supports emerging technologies, such as engineering, electro-optics, advanced materials, telecommunications, semi-conductor technology, computer systems and software, manufacturing systems, and medical, plant and animal biotechnology. Other important areas include environment, resource management, and non-conventional energy. The socio-cultural dimension of S&T will be given more emphasis. In this regard, the impact of technology development will be studied to minimize detrimental socio-cultural effects. Towards this end, an additional IRPA Panel on social science has been established. Its future agenda includes the formulation of a master plan for social science research.

### **IV. ALLOCATION**

6.68 The Federal Government development allocation and estimated expenditure for the period 1986-90 and the allocation for the period 1991-95 is shown in *Table 6-5*. The Government will increase direct R&D funding to research agencies and universities to about \$600 million, while

\$560 million will be provided for related physical infrastructural facilities and manpower development. The overall resource allocation is expected to reflect the balanced emphasis placed on basic and applied research and on industrial and agricultural R&D as well as socio-economic research.

6.69 Greater emphasis will be accorded to making R&D more relevant and effective, particularly within the context of increasing indigenous capability in downstream innovations. This will be done largely through the allocation of resources for R&D programmes and activities that will apply advances in technology to increase production, improve products and services and reduce adverse environmental impact. In particular, priority will be accorded to building up competence in industrial R&D in line with the need to diffuse, adapt and modify technology for economic development.

TABLE 6-5  
DEVELOPMENT ALLOCATION FOR SCIENCE AND TECHNOLOGY,  
1986-95  
(\$ million)

Programme	5MP		6MP
	Allocation	Expenditure	Allocation
Direct R&D	413.8	285.4	600.0
Agriculture	203.2	127.5	273.8 <sup>1</sup>
Industry	138.1	98.3	177.7
Medical	33.1	30.6	59.8
Strategic	39.4	29.0	78.6
Social	—	—	10.1
S&T Infrastructure and Development	126.7	109.1	560.3
Total	540.5	394.5	1,160.3

Note:

<sup>1</sup> Allocation does not include cess funds under the Rubber Research Institute of Malaysia (RRIM) and Palm Oil Research Institute of Malaysia (PORIM).

6.70 An important objective will be to assist public research agencies and universities to emphasize the efficient and productive use of S&T advances, information and R&D capabilities. Available resources will be utilized, where feasible, to augment R&D capability within local enterprises. As the public sector represents the largest source of R&D wealth in the country, more resources will be channelled towards potential programmes that promote the transfer of untapped indigenous technology from public research institutions to the private sector.

## V. CONCLUSION

6.71 The important role of S&T has become critical in the light of global scientific and technological developments which has led to changes in the comparative advantage and competitiveness of economies worldwide. Although Malaysia lags behind many of NIEs in advanced technologies, it has realistic goals in building up competence in technologies relevant to its economic development. The Sixth Plan will build upon the foundation laid during the Fifth Plan to further enhance the coherence and transparency of policies, strategies and programmes evolved for S&T development. The emphasis will be on balanced growth in the science base that supports technology development and higher productivity in primary production as well as giving special emphasis to downstream market-oriented research, and higher level of technical competence in balance with technological innovation and entrepreneurship. Environmental research programmes will stress on resources management. The expansion of S&T will provide the growth impetus for the creation of sufficient resources and wealth required for the attainment of the National Development Policy objectives.

## **Chapter VII**

# **Trade**



## CHAPTER VII

# Trade

### I. INTRODUCTION

7.01 Trade, comprising domestic and external trade, continued to play an important role in the growth and development of the economy during the Fifth Malaysia Plan period. This sector facilitated the expansion and development of the major sectors of the economy, particularly agriculture, manufacturing and tourism. During the Sixth Malaysia Plan, the trade sector will be further consolidated and modernized with special emphasis on greater participation of the Bumiputera community. On the international front, efforts will continue to be made to ensure greater access of the country's exports to international markets. Programmes to facilitate and expand external trade will be further improved.

### II. PROGRESS, 1986-90

7.02 The trade sector attained an average growth rate of 4.7 per cent per annum during the Fifth Plan period. The value added of the wholesale and retail trade, and of the hotels and restaurants subsector increased from \$6,911 million in 1985 to \$8,701 million in 1990. Employment in the sector grew by 6.2 per cent per annum increasing from 917,300 to 1,239,400. Malaysia's external trade performance also improved during the period. Exports more than doubled from \$38,017 million in 1985 to \$79,548 million in 1990, with an average growth rate of 14.7 per cent per annum.

#### Domestic Trade

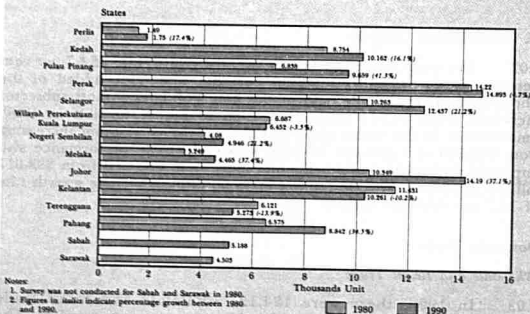
##### *Wholesale and Retail Trade*

7.03 In 1990, there were 124,121 wholesale and retail trade establishments in Malaysia of which 91 per cent were retailers. The

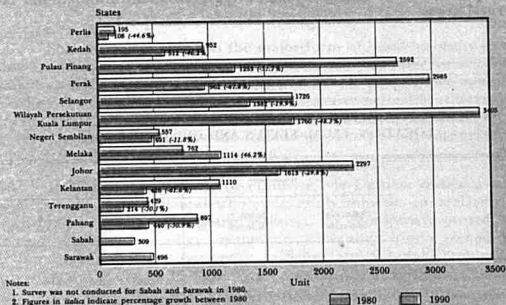
number of retail establishments grew by 15 per cent per annum during the eighties. The states that had experienced significant growth in the number of retailers were Pulau Pinang, Melaka, Johor, Pahang, Negeri Sembilan and Selangor as shown in *Chart 7-1*. However, there were reductions in the number of retailers, particularly in the states of Terengganu and Kelantan as well as Wilayah Persekutuan Kuala Lumpur. On the other hand, the number of wholesalers had declined significantly by 44.3 per cent in the eighties. This phenomenon was widespread, and had affected all states except Melaka, as shown in *Chart 7-2*.

7.04 There were a number of factors which had given rise to changes in the wholesale and retail sector. The growth of economic activities particularly in construction and property development diverted entrepreneurial and business opportunities away from this sector. At the same time, this phenomenon appeared to be in line with structural changes in the distributive trade sector, resulting from the growth of the economy and changes in the general taste and preferences of the consumers. Consequently, there was increasing demand for greater commercial and service-oriented operations, especially in the urban areas.

CHART 7-1  
NUMBER OF RETAIL TRADE ESTABLISHMENTS BY STATE,  
1980-90



**CHART 7-2**  
**NUMBER OF WHOLESALE TRADE ESTABLISHMENTS BY STATE,**  
**1980-90**



Notes:

1. Survey was not conducted for Sabah and Sarawak in 1990.
2. Figures in *italics* indicate percentage growth between 1980 and 1990.

This had increasingly necessitated the growth of trade operations and activities based on scale economies requiring horizontal and vertical integrations in order to effect efficiency, productivity and cost effectiveness of the wholesale and distributive systems. Other factors facilitating these structural changes were improved mode of air transportation, more efficient truck and internal transportation as well as better packaging and greater access to information technology.

7.05 Generally, retail outlets in Peninsular Malaysia were evenly distributed between urban and rural areas as shown in *Table 7-1*. About 52 per cent of retail establishments were situated in rural areas, 20 per cent in large towns and 28 per cent in metropolitan areas. On the other hand, wholesalers were concentrated in urban areas with 52.5 per cent in metropolitan areas, 20 per cent in large towns and the balance of 27.5 per cent in rural areas.

7.06 In contrast to Peninsular Malaysia, almost all wholesale and retail establishments in Sabah and Sarawak were urban-based, as shown in *Table 7-1*. This is largely attributed to the sparsely populated hinterland of the two states. About 60 per cent of retailers were located in metropolitan



areas, 34.6 per cent in large towns and only 5.5 per cent in rural areas. The urban nature of wholesale activities in Sabah and Sarawak was even more pronounced with 67.5 per cent of wholesalers located in metropolitan areas, 30.4 per cent in large towns and only 2.1 per cent in rural areas.

TABLE 7-1

NUMBER OF WHOLESALE AND RETAIL TRADE ESTABLISHMENTS BY  
LOCATION, LEGAL STATUS AND OWNERSHIP, 1990

	Wholesalers				Retailers			
	Peninsular Malaysia	%	Sabah & Sarawak	%	Peninsular Malaysia	%	Sabah & Sarawak	%
<b>Location</b>								
Metropolitan Areas	5,407	52.5	543	67.5	29,038	28.0	5,810	59.9
Large Towns	2,043	20.0	245	30.4	20,588	20.0	3,363	34.6
Rural Areas	2,826	27.5	17	2.1	53,705	52.0	536	5.5
<b>Total</b>	<b>10,276</b>	<b>100.0</b>	<b>805</b>	<b>100.0</b>	<b>103,331</b>	<b>100.0</b>	<b>9,709</b>	<b>100.0</b>
<b>Legal Status</b>								
Sole Proprietorship	4,713	45.9	271	33.7	85,041	82.3	8,368	86.2
Partnership	2,429	23.6	162	20.1	11,470	11.1	1,251	12.9
Company	3,046	29.6	369	45.8	6,200	6.0	38	0.4
Cooperatives	51	0.5	0	0.0	215	0.2	4	0.0
Others	37	0.4	3	0.4	405	0.4	48	0.5
<b>Total</b>	<b>10,276</b>	<b>100.0</b>	<b>805</b>	<b>100.0</b>	<b>103,331</b>	<b>100.0</b>	<b>9,709</b>	<b>100.0</b>
<b>Ownership By Ethnic Group</b>								
Bumiputera	1,056	10.2	31	3.8	33,375	32.3	1,685	17.4
Chinese	8,753	85.2	760	94.5	62,825	60.8	7,702	79.3
Indians	296	2.9	5	0.6	6,509	6.3	81	0.8
Other Malaysians	8	0.1	0	0.0	516	0.5	217	2.2
Foreigners	163	1.6	9	1.1	106	0.1	24	0.3
<b>Total</b>	<b>10,276</b>	<b>100.0</b>	<b>805</b>	<b>100.0</b>	<b>103,331</b>	<b>100.0</b>	<b>9,709</b>	<b>100.0</b>

7.07 The retail business in Malaysia includes provision shops, wet market stores and speciality stores. A survey undertaken in 1990 indicated that these three categories accounted for more than 90 per cent of the total number of establishments in retail business.

7.08 Sole proprietorship was the major form of business entity in the domestic trade sector. In Peninsular Malaysia, 82.3 per cent of the retailers and 45.9 per cent of wholesalers were sole proprietors, as shown in *Table 7-1*. In Sabah and Sarawak, the respective percentages were 86.2 per cent and 33.7 per cent. This indicated that the domestic trade sector was very much dominated by the traditional family-based businesses.

7.09 In terms of ownership by ethnicity, the Chinese owned a large proportion of the retail and wholesale establishments in Malaysia, as shown in *Table 7-1*. In Peninsular Malaysia, the Bumiputera owned 32.3 per cent of the total retail establishments, while the Chinese owned 60.8 per cent and Indians 6.3 per cent. In Sabah and Sarawak, Bumiputera ownership was lower at 17.4 per cent and the Chinese almost 79.3 per cent. Wholesale establishments showed an even higher proportion of Chinese ownership. In Peninsular Malaysia, Chinese owned 85.2 per cent of total wholesale establishments compared with 10.2 per cent for Bumiputera and 2.9 per cent for Indians. In Sabah and Sarawak, Chinese ownership was 94.5 per cent and Bumiputera 3.8 per cent.

7.10 The average monthly total gross sales for the distributive trade in the country was estimated at \$3,910 million. The average total monthly sales of wholesalers in Peninsular Malaysia was \$1,283 million, while for Sabah and Sarawak, it was \$243 million. In Peninsular Malaysia, almost one third of the monthly sales of \$2,300 million in retailing business was sold through general retailers. The balance was channelled through specialized outlets, namely, food, drink, tobacco, household and personal goods, fuels, motor vehicles and industrial goods and services.

7.11 During the Fifth Plan period, there was a discernible shift in terms of composition and pattern of sales. There was a marked shift in expenditure towards more durable goods and those which have satisfactory back-up services. These reflected changes in consumer preferences and tastes as a result of the increase in real incomes. It is anticipated that the demand for more efficient services from wholesale and retail business will be on the rise in the future.

### *Farmer and Night Markets*

7.12 Farmer and night markets were introduced to provide greater income-generating opportunities to farmers and small traders involved in the marketing of local agricultural products and consumer items. The number of farmer markets increased by about ninefold to 130 in 1990. Farmer markets were found mostly in the west coast states of Peninsular Malaysia, with total sales of more than \$30 million in 1990.

7.13 Both the night and farmer markets have been successful in increasing income of small traders. Preliminary findings revealed that 30 per cent and 69 per cent of traders in farmer and night markets, respectively, earned monthly incomes of more than \$750. The percentage of Bumiputera traders earning such incomes of more than \$750 was 47 per cent for farmer markets and 59 per cent for night markets.

### *Financial Accessibility*

7.14 Credit extended by the banking system to the general commerce sector rose from \$10,136 million at the end of 1985 to \$13,548 million at the end of 1990. However, its share to total credit extended by the banking system declined from 15.4 per cent to 11.9 per cent over the same period.

7.15 Small traders, including those from the Bumiputera community, continued to enjoy ready access to the Credit Guarantee Corporation (CGC) loan guarantee scheme. Under the Hawkers and Petty Traders Scheme launched in 1986, loans to the Bumiputera community represented 75 per cent of the total loans guaranteed, with a value of \$18.3 million at the end of 1990.

### *Support Facilities for Bumiputera Participation*

7.16 Programmes to promote Bumiputera participation in wholesale and retail trade, largely through trust agencies, continued to be implemented in the Fifth Plan period. The various Government agencies including Urban Development Authority (UDA), Council of Trust for Indigenous People (MARAs), State Economic Development Corporations (SEDCs), National Corporation (PERNAS), Food Industries of Malaysia (FIMA), Federal Agricultural Marketing Authority (FAMA) and Federal Land Development Authority (FELDA) extended assistance in various forms, such as provision of credit facilities, business premises, training and entrepreneurial development programmes. These efforts have substantially contributed to increased participation of Bumiputera in the domestic trade sector.

7.17 PERNAS Trading contributed significantly to the expansion of Bumiputera businesses, while PERNAS Edar provided support services to help Bumiputera small traders. FAMA, through farmer markets and other channels, actively marketed agricultural produce, particularly vegetables and fruits. In this regard, the sales turnover of agricultural produce increased from \$11.4 million in 1985 to \$154.2 million in 1990. Various Government agencies, namely, MARA, National Productivity Centre (NPC), UDA and *Bank Pembangunan Malaysia Berhad* also undertook to develop and upgrade entrepreneurial development programmes to assist the expansion of small enterprises.

## External Trade

### *Intra-ASEAN Trade*

7.18 Trade with Association of Southeast Asian Nations (ASEAN) countries accounted for about 26 per cent of Malaysia's total trade during the Fifth Plan period. The trade surplus with ASEAN countries increased from \$1,873 million in 1985 to \$8,443 million in 1990. Malaysia enjoyed a trade surplus with all ASEAN countries in 1990.

7.19 Trade under the ASEAN Preferential Trading Arrangements (PTA) is still relatively small. However, exports under PTA has shown a significant increase from \$37 million in 1985 to \$336 million in 1990. This was attributed largely to the competitiveness of Malaysia's exports in the international market. Trade under PTA, however, has not been fully harnessed since the exports of ASEAN member countries tend to be in competition with each other.

### *Generalized System of Preferences*

7.20 The Generalized System of Preferences (GSP) schemes are granted by most developed countries with the objective of facilitating industrialization and growth of developing nations. These schemes are unilateral and non-reciprocal in nature. In 1990, 26 countries accorded GSP to Malaysia, of which 12 were European Economic Community (EEC) countries. One of the major issues related to the GSP schemes was the inability on the part of the Malaysian exporters to fully utilize the benefits of the schemes due to certain constraints, such as the limited product coverage and the stringent rule of origin requirements. The former had arisen because of the inability of Malaysian exporters to synchronize their product development with GSP schemes, while the latter was the result of relatively stringent requirement of local content in Malaysian exports

and restrictions in the form of ceilings, reduced duties and quotas as required by the schemes. Nonetheless, exports under GSP registered an increase from \$2,071 million in 1985 to about \$8,100 million in 1990, reflecting substantial progress made on the part of the Malaysian exporters to fully utilize the benefits of the GSP schemes. Currently, about 3,500 companies have registered with the Ministry of International Trade and Industry to utilize the facilities. The major exports under GSP were palm oil and its derivatives, electrical products, rubber products, timber and timber products. Malaysia's major export markets under GSP in 1989 were EEC (\$3,636 million), United States of America (\$1,713 million) and Japan (\$1,279 million).

### *Support Facilities and Trade Facilitation Programmes*

7.21 During the Fifth Plan period, continuous efforts were undertaken to enhance Malaysia's export performance. In this regard, support facilities to promote exports were strengthened in order to expand sales, both in traditional and new markets. Under the export promotion programmes, trade fairs were successfully held in various countries. In addition, several trade missions were sent overseas during the period. Public sector export agencies also played a significant role in providing assistance to Malaysian exporters in the promotion of their products abroad. At the same time, Malaysian trade commissioners abroad have provided Malaysian exporters and manufacturers with relevant information pertaining to export potential, in the respective countries. To further enhance and spearhead export growth, the Export Promotion Council was established in 1987. The Council serves as a forum to discuss and resolve problems affecting the export sector.

7.22 Procedures, formalities and documentation that affected the expansion of trade were being simplified. In this respect, a National Trade Facilitation Committee was set up to examine all aspects of procedures, formalities and paperwork relating to trade transactions. The Committee succeeded in simplifying exchange control formalities, reducing the number of forms and documents used for shipment and cargo clearance, and in standardizing documents relating to foreign trade.

7.23 Recognizing the importance of the export sector, the Export Credit Refinancing (ECR) scheme was expanded and strengthened to meet the changing requirements of exporters. A major review was undertaken in 1985-86. The Phase I of the review, which was implemented in early 1986, involved mainly the extension of product

coverage, liberalization of the threshold limit and simplification of administrative procedures. The Phase II, which was implemented in November 1989, focused mainly on the reorganization of pre-shipment facility to assist the production of goods for exports as well as to promote backup linkages in industrial development. The revamp of the ECR scheme had resulted in the expanded usage of ECR facilities.

7.24 The Malaysian Export Credit Insurance Berhad (MECIB) continued to play a greater role in providing insurance coverage against export risks. At the end of 1990, a total of 250 insurance policies with a face value of \$1,600 million was in force. In order to strengthen its export credit insurance-cum-guarantee business, MECIB became a fully-owned subsidiary of *Bank Industri Malaysia Berhad* in September 1988. MECIB has undergone a major revamp, including an increase in its paid-up capital to \$75 million.

7.25 To complement the revamped ECR scheme, a new Export Credit and Insurance and Guarantee (ECIG) scheme was launched in March 1990. The new ECIG policy, known as the Banker's Export Finance Insurance Policy (BEFIP), was designed to protect commercial banks and financial institutions against non-payment of loans and advances made to exporters and suppliers. Since its inception, 14 BEFIP policies valued at \$24.4 million had been approved as at the end of 1990. BEFIP is expected to further support and enhance the growth of Malaysian exports in the coming years.

7.26 So far, Malaysia had concentrated on trading with EEC, the United States, Japan and Singapore. In the long run, it is to Malaysia's advantage to diversify the market and steps have been taken in this direction. Towards this end, the Government has negotiated bilateral payment arrangements with Third World countries. The first bilateral payment arrangement was signed with Iran in August 1988. Under this arrangement, the Government guarantees payment for Iranian exports to Malaysia and, conversely, the Iranian Monetary Authority guarantees payment for Malaysian exports to Iran. This has created confidence among traders in both nations, as it has converted normal credit risk into sovereign risk. Reflecting this confidence, Malaysia's trade with Iran increased from virtually zero to more than \$150 million in 1990. Similar bilateral payment arrangements have been signed with Venezuela and Mexico while a memorandum of understanding on payments was signed with Nigeria in 1990.

### III. PROSPECTS, 1991-95

7.27 During the Sixth Plan period, the activities of the trade sector will be expanded and support facilities for export and trade facilitation will be strengthened and improved. The Government will continue to participate in international fora concerning trade barriers and other unfair trade practices that affect the free flow of international trade, in general, and Malaysia's export accessibility and performance in the external market, in particular.

#### Domestic Trade

##### *Wholesale and Retail Trade*

7.28 *Consolidation of Small Businesses.* Several measures will be undertaken to strengthen and consolidate the distributive trade sector, particularly retail trade. In this respect, the Government will provide the necessary support and assistance to encourage the rationalization and modernization of small businesses through the programme of management improvements as well as mergers and acquisitions. Consequently, these businesses will have the opportunity to benefit from economies of scale and able to compete with larger enterprises. This will also provide the foundation for future expansion into export markets.

7.29 *Supportive Infrastructural Facilities.* Infrastructural developments, particularly road network, will play a major role in facilitating the modernization of the distributive trade sector. Despite the relatively high level of development in Malaysia's infrastructure, the current road network is inadequate to support an efficient and effective networking of the distribution system. In this respect, with further improvement and upgrading of road facilities and network in the Sixth Plan, it is envisaged that the modernization and rationalization of the wholesale and retail trade will be accelerated.

7.30 *Expansion of Domestic Market Share.* With the continued expansion and modernization of the domestic trade sector, local manufacturers and producers will be encouraged to increase their share of the domestic market. This will also help in the expansion of the domestic market for Malaysian products and reduce the current preference for imported goods. Current measures to instil a sense of loyalty and national pride among domestic consumers to purchase local goods will be further strengthened. Other programmes that support this include giving recognition to manufacturing companies which have achieved high standards and quality in the production of goods through the programme

of Product Excellence Award. Emphasis will also be continued to enforce the labelling of standards, contents and product life. At the same time, the need to continuously improve the packaging and presentation of these products as well as that of the business premises will be instilled.

### *Upgrading Bumiputera Participation*

7.31 Bumiputera participation and involvement in the distributive trade will be further upgraded and strengthened. Towards this end, Bumiputera retail operators will be encouraged to collaborate for bulk purchases, joint advertisements and promotions, as well as trading at preferential terms. Trust agencies which own wholesale companies will take the lead in organizing small- and medium-sized retailers to consolidate in order to improve their positions. This will include leverage buy-outs and joint ventures to enable viable enterprises to attain a more efficient scale of operations. Formal and informal liaisons among Bumiputera traders as well as with non-Bumiputera traders will also be encouraged, especially with regard to collation and sharing of market information and consumer behaviour.

7.32 During the Sixth Plan, more training programmes on the management of modern businesses for Bumiputera retailers and wholesalers will be structured and organized to enable them to face emerging challenges in the distributive trade. These courses will be introduced at the various educational institutions and Government agencies such as MARA, UDA and NPC. In addition to this, a more coherent and effective system of franchise will be considered in ensuring Bumiputera participation in this sector. For this purpose, PERNAS and MARA will be entrusted with the responsibility of spearheading the franchise system.

7.33 To further strengthen Bumiputera participation in the distributive trade, the Government will increase the marketing capability of incumbent Bumiputera traders as well as new entrants through the launching of a number of initiatives. These initiatives will be aimed at increasing the 'marketing edge' and value added of their activities. In terms of the former, programmes to upgrade and consolidate the market information system will be instituted. With regard to the latter, the value added of these activities will be enhanced through the development of just-in-time inventory management to remove carrying cost, the identification of convenient locations to maximize place value, the development of specialized and dedicated outlets to maximize choice value of consumers and to nurture the growth of 'value for money' outlets



to improve consumer surpluses and enhance competition. The Bumiputera trust agencies, such as MARA, UDA, PERNAS Edar, will be given the responsibility to realize these initiatives.

#### *Credit Facilities and Other Measures*

7.34 The Government will continue to provide small traders with credit at reasonable costs under the lending guidelines for commercial banks and finance companies. CGC will continue to guarantee bank loans extended to small-scale enterprises under its programmes.

#### *Improved Infrastructure for Farmer and Night Markets*

7.35 Farmer and night markets have become an important avenue for self-employment opportunities. In this regard, the Government will look into the possibility of introducing relevant legislation requiring housing developers to allocate strategic and permanent sites for night markets within the new residential areas with requisite facilities and infrastructure. As for farmer markets, efforts will be made to extend the operations to cover other major towns in the country. The Government will also encourage farmers' and fishermen's associations to set up wholesale trading units with the aim of improving their members' income and at the same time providing services to traders in farmer and night markets.

#### *Consumer Education and Protection*

7.36 Steps will be undertaken by the newly created Ministry of Domestic Trade and Consumer Affairs to protect consumers from unethical and unfair trade practices, misleading advertisements, unsatisfactory mail order services and other unethical market practices. In this regard, the Government will study the possibility of introducing a Consumer Protection Act to protect consumers from exploitation and malpractices. The National Advisory Consumers Protection Council will be strengthened to provide an effective check on exploitation of consumers as well as to promote consumerism. On the advertising aspect, the performance of advertising features will be strictly monitored in order to reduce misleading and false advertisements. To ensure a healthy and responsible growth of consumerism, the public will continuously be educated on the issues relating to their rights as consumers through lectures, seminars and the mass media. While consumer education will be promoted by the Government, private sector trade associations and organizations are also expected to complement these efforts by playing a more effective role than in the past.

## External Trade

### *Expansion of Market Shares*

7.37 Continuous efforts will be made to expand market shares within existing as well as new and non-traditional markets. Within this context, regional trade will be expanded not only to cover ASEAN nations but also countries in the Asia Pacific region. Among the ASEAN nations, intra-ASEAN trade is expected to be further liberalized through improvements to the present PTA. More specifically, there would be deepening of the Margin of Preferences (MOPs) to 50 per cent for existing items in PTA and reducing the exclusion lists of individual ASEAN nations to not more than 10 per cent of traded items. Items remaining in the exclusion lists should not account for more than 50 per cent of intra-ASEAN trade value. In addition, the ASEAN content requirement in the PTA Rules of Origin will be reduced from 50 per cent to 35 per cent on a case by case basis. This is expected to enhance further the export performance of the manufacturing sector. At the same time, standstill on non-tariff barriers (NTBs) and roll-back of NTBs will continue to be negotiated to benefit Malaysian traders. In addition, the Government has proposed and promoted the idea of forming an East Asian Economic Group (EAEG). The proposed group is expected to consolidate the strengths of its members so as to spur trade and investments within the region.

7.38 Countertrade will continue to be used as a supplementary trading arrangement and, on a selective basis, for trade and the transfer of technology. In addition, greater efforts will be undertaken to increase Malaysia's trade with developing countries through the improvement of existing mechanisms and instituting new ones where necessary. In this regard, the Government has agreed that a South Investment, Trade and Technology Data Centre (SITTDEC) be established in Malaysia. This is to promote trade, technological developments and investments among the Third World countries. The Government will continue to draw up bilateral payment arrangements with more central banks in other countries to support the development of trading relationships especially with the Third World countries.

### *Institutional Support to Enhance Export*

7.39 The promotion and development of exports will be further strengthened. In this respect, a new trade promotion organization will be established to replace agencies currently involved in export promotion. In order to be business like in orientation and market driven in approach, this organization will be established as a corporation and

will be directed at consolidating and coordinating export promotional activities. In addition, the Government will also establish trade promotion centres abroad as well as rationalize existing overseas trade representations with a view to avoiding duplications and strengthening export promotion. Steps will also be undertaken to further improve the collection and dissemination of market information in order to strengthen market analysis and international market intelligence for our exports. An efficient information system will be established to provide accurate and timely information to support the export efforts of individual companies.

7.40 Trade and industry associations are also expected to assume a more significant role in improving standards and quality and developing high value added products for exports. The Government will assist these associations in meeting and complying with the technical requirements of standards and quality of products in overseas markets. Besides promoting those activities, these associations will also be encouraged to carry out overseas marketing surveys as well as gather trade information for their members to understand the external market demands and technological developments. This will enhance the development of an international market-oriented approach that will influence relative cost and competitive position as well as product differentiation.

7.41 In addition to strengthening the public sector trade promotion organizations, the Government will provide a new premise to house agencies involved in trade promotion. The proposed building will provide the necessary facilities and space for trade exhibitions, seminars and workshops to promote trade and exports. Beside these, chambers of commerce and industry associations and other trade-related agencies will also be given the opportunity and encouragement to locate their offices in the complex. Efforts will also be intensified to increase the frequency of trade publications in order to keep exporters informed of the market opportunities available overseas. The Government, in cooperation with the private sector, will continue to organize trade fairs and missions to overseas markets, including the non-traditional markets. The Export Promotion Council will continue to assume a vital role in the formulation of export promotion programmes and trade facilitation measures to assist Malaysian exporters. In addition, the Consultative Panel on Trade and Industry will provide the forum for discussing policies affecting trade and industry as well as receiving feedback from the private sector on such policies.

7.42 *Export Refinancing and Insurance Guarantee Scheme.* MECIB will establish a network of branches during the Sixth Plan period and with the expansion of MECIB, the utilization of ECR is expected to increase

substantially during the same period. MECIB's current level of insurance coverage, which is less than 1 per cent of total exports, is expected to double in the next five years. The ECR scheme will continue to be upgraded and modified, whenever necessary, to suit changing export conditions. In addition, it could be expanded to include special long-term financing schemes to finance exports of various commodities to certain markets with potential.

7.43 *Improving Trading Practices.* Efforts will continue to be made to improve trading practices in order to foster the growth and development of domestic insurance and shipping industries, which in turn will assist in reducing the deficit in the services account. Measures will be taken to encourage traders to make greater use of local insurance and shipping services. Efforts will also be intensified to encourage exporters to ship their products to overseas markets in non conference vessels. As dependence on foreign vessels preclude the possibility of control over freight rates and shipping schedules, the Government will continue with efforts to promote the consolidation of cargo where through coordinated bookings, Malaysian exporters will be provided alternative shipping space at competitive rates on a regular basis.

7.44 *Generalized System of Preferences.* During the Plan period, it is expected that many developed countries will review their GSP schemes. In this regard, the Government will continue with its efforts to negotiate against any unfair withdrawal of the GSP schemes for Malaysia. At the same time, Malaysian exporters will need to prepare themselves for open competition. This will require exporters to continually enhance their competitiveness by improving efficiency and productivity of trade operations as well as the design and quality of products. The private sector's initiative will be supported by the existing as well as new programmes which will be provided for in the Sixth Plan in order to attain these objectives.

7.45 *Product Standards and Quality.* Standard and quality control systems will play an increasingly vital role in enhancing export as more and more value added products are produced. Within this context, manufacturers will be encouraged to institute in-house quality control measures at their production line in order to ensure products are of consistent quality and competitive in price. The Government will provide training and technical advice through vocational schools and technical institutes to industry in order to inculcate concern for quality and standards as well as encourage the adoption of in-house quality control measures as a standard routine in their daily operations. Research and development activities on product development and production efficiency will be intensified. In this respect, the Government will continue to

encourage R&D activities. On the other hand, the private sector is expected to play its role in financing and conducting such activities on a greater scale in the future.

7.46 *Other Measures.* The Government will continue to participate actively in international fora such as Multilateral Trade Negotiations, General Agreement on Tariffs and Trade and United Nations Conference on Trade and Development for the reduction and removal of tariffs and non-tariff barriers encountered by Malaysian exporters. Dialogues with ASEAN partners, will be continued in order to improve market access of Malaysian products.

#### IV. ALLOCATION

7.47 The Federal Government development allocation and estimated expenditure for the Fifth Plan period and the allocation for the Sixth Plan period for the trade sector are as shown in *Table 7-2*. The allocation for the Fifth Plan for this sector was \$368.7 million with an estimated expenditure of \$326.1 million, reflecting a shortfall of 11.6 per cent. For the Sixth Plan, a total of \$658.8 million is allocated for the sector. A major proportion of this allocation is for the construction of business

TABLE 7-2

DEVELOPMENT ALLOCATION FOR  
TRADE SECTOR, 1986-95  
(\$ million)

Programme	5MP		6MP
	Allocation	Expenditure	Allocation
Export Promotion	10.5	10.2	136.7
Strengthening and Modernization of Trade Administrative Services	98.7	97.7	125.0
Business Premises	243.1	237.8	371.9
Training and Consultancy Services	16.4	16.4	25.2
<b>Total</b>	<b>368.7</b>	<b>326.1</b>	<b>658.8</b>

premises by UDA, MARA and SEDCs to increase retail outlets, especially for the Bumiputera business community. Allocations will also be channelled for export promotion, training and consultancy services as well as for strengthening and modernizing business administration and services. The allocation reflects the emphasis and development thrusts for the sector and is aimed essentially at upgrading and modernizing domestic trade while simultaneously expanding and enhancing the support to expand international trade.

## V. CONCLUSION

7.48 With continuous support from the Government and with better economic conditions after the 1986 recession, the trade sector grew tremendously during the Fifth Plan period. The sector provided support for the expansion and development of the other major sectors of the economy particularly agriculture, manufacturing and tourism. The trade sector is expected to continue its role in providing the critical support for the growth and development of the economy during the Sixth Plan. Several major programmes will be implemented to consolidate and strengthen this sector. These programmes will include the modernization of wholesale and retail trade, upgrading the farmer and night markets, as well as the further enhancement of Bumiputera participation in these activities. Promotional activities to gain better access to international markets for new products will be intensified. For the Sixth Plan, the trade sector will be expected to play a greater role in the generation of output, income, employment and foreign exchange earnings.

## **Chapter VIII**

# **Tourism**

## CHAPTER VIII

# Tourism

### I. INTRODUCTION

8.01 Tourism has become an important economic activity in the overall development of the economy. In the Sixth Malaysia Plan, the development thrust will be to expand and diversify the tourism base to reduce its dependence on a narrow range of activities and markets. The overall strategy will be to mobilize and channel investments to selected regions and activities having tourism potential leading to increased employment, incomes, value added and linkages with other sectors of the economy. This will provide the necessary support for the promotion of international as well as local tourism.

8.02 A national tourism plan will be launched during the Sixth Plan to provide specific long-term policies and strategies to ensure the coordinated and integrated development of the sector. The policies and strategies will focus on the efficient development of the sector, while concurrently enhancing the quality of life of the local people and minimizing possible detrimental socio-cultural and environmental effects. It will also identify specific programmes that increase the participation of the local population and maximize the economic opportunities from tourism.

### II. PROGRESS, 1986-90

8.03 The development of the tourism industry during the Fifth Malaysia Plan was considerable despite the economic downturn in the early years of the period. The priority accorded to this sector culminated in increased public expenditure on extensive promotions and marketing, product and infrastructure development as well as extension of incentives for tourism-related investments. This was complemented by the hosting of prominent international conferences and events and the launching of



the Visit Malaysia Year 1990 campaigns and activities, both within and outside the country. Currently, greater confidence prevails in the tourism sector with the country enjoying a relatively high profile in the international market.

8.04 The estimated *tourist arrivals* increased by two fold in 1990 to reach 6 million, as shown in *Table 8-1*. The basic profile of tourist arrivals over the years has, however, remained the same. Tourists from the Association of South East Asian Nations (ASEAN) continued to account for more than 70 per cent of the total arrivals. Within ASEAN, Singapore and Thailand accounted for the largest number of tourists into Malaysia, contributing to 80 per cent and 10 per cent of all arrivals from the region, respectively. The profile of non-ASEAN tourist arrivals also remained unchanged. Tourist arrivals from Japan continued to be the largest, accounting for 24.1 per cent of the total with the other important tourist-generating markets being Australia, United Kingdom (U.K.), Continental Europe and the United States of America (U.S.A.).

8.05 The substantial increase in tourist arrivals and travel receipts during the Plan period was largely the result of promotional and marketing activities undertaken since 1985, particularly the aggressive Visit Malaysia Year 1990 campaigns launched in early 1988 as well as increasing cross-border travel, especially via the Johor Causeway. The movement of visitors across the Johor Causeway, which constitutes not less than 60 per cent of the total tourist arrivals is, therefore, important in determining the profile and pattern of arrivals. Although a substantial proportion of visitor arrivals across the causeway is not considered as conventional tourists staying at least overnight in a country, they, however, generated a sizeable amount of expenditure, particularly through shopping, leisure and entertainment activities, thus contributing to the growth of foreign exchange earnings.

8.06 *Foreign exchange earnings* from tourism have increased significantly, contributing to the improvement in the services account of the balance of payments. Gross receipts from tourism grew by 24.5 per cent per annum during the period increasing from \$1,500 million in 1985 to an estimated \$4,500 million in 1990. The share of tourism earnings in total services receipts increased steadily from 23.5 per cent in 1985 to 28 per cent in 1990, mainly due to the increase in foreign arrivals. However, the positive effects of tourism on the balance of payments were offset by the large outflows from outbound travel, which increased from \$2,800 million in 1985 to \$4,000 million in 1990. Consequently, the net receipts from tourism in the services account were not large. This, therefore, calls for a more effective implementation of

TABLE 8-1  
SELECTED TOURISM INDICATORS, 1985-95

<i>Indicator</i>	<i>1985</i>	<i>1990</i>	<i>1995</i>
Number of Tourist Arrivals (million)	3.1	6.0 <sup>1</sup>	8.0 <sup>1</sup>
By Country of Origin (per cent)			
<i>ASEAN</i>	79.0	73.6	76.0
<i>Japan</i>	3.9	6.7	7.1
<i>Australia</i>	2.6	2.0	2.4
<i>United Kingdom</i>	2.4	2.7	2.4
<i>USA</i>	1.4	2.0	0.9
<i>Others</i>	10.7	13.0	11.2
Total Annual Travel Receipts (\$ million)	1,543	4,473	5,000
Average Length of Stay (nights)	4.5	4.5	5.0
Total Annual Investment (\$ million)	731.2	581.1	-
Number of Hotels	851	989	1,020
Hotel Rooms (no.)	35,720	45,032	55,280
Direct Hotel Employment (no.)	25,170	39,960	51,270
Occupancy Rate of Hotel (per cent)	50.1	72.9	60.0

**Note:**

<sup>1</sup> Preliminary findings of a recent tourism survey, commissioned by the Government indicated that for 1990 a large proportion of the visitors from across the Johor Causeway were excursionists or daytrippers. It was estimated that about 75 per cent and 50 per cent of total visitors from across the causeway were Singaporean and non-Singaporean daytrippers, respectively. Thus, the estimates for 1990 and the target for 1995 of tourist arrivals have been adjusted accordingly.

the two-pronged strategy of increasing foreign tourist inflows, while at the same time promoting domestic tourism to reduce foreign exchange outflows on account of overseas leisure travel by Malaysians.

8.07 The average length of stay and expenditure patterns of foreign tourists reflected similar trends as in the past Plan period. The average length of stay of foreign tourists in Malaysia remained stable at 4.5 nights, with leisure accounting for the highest share in terms of purpose of visit. The expenditure pattern of foreign tourists indicated that about 45 per cent was spent on accommodation and 40 per cent on food and beverages and shopping, a pattern typical of many other countries. In terms of per capita expenditure, the Japanese had the highest propensity to spend,

recording an average per capita expenditure of \$1,197 in 1987, followed by tourists from Australia and U.K. with \$1,115 and \$1,024 respectively. Estimates of the expenditure pattern for domestic tourists indicated 23 per cent of the total expenditure was for food and beverages, 20 per cent for transportation and 19 per cent for accommodation with the balance for shopping, entertainment and other expenses. The domestic expenditure per person per trip was relatively low, estimated at less than \$100 in 1988. This was largely attributed to the low usage of rentable accommodations, as Malaysians often stayed with friends and relatives when travelling within the country.

8.08 The potential for greater development of *domestic tourism* remains untapped. Despite rising domestic incomes and the more extensive promotional and marketing efforts, domestic travel continued to be seasonal in nature, associated primarily with school holidays and festivals. Domestic travellers often vacationed in their home towns, visiting relatives and friends. Regular leisure travel within the country is yet to become a common feature in the Malaysian society. Nonetheless, in view of the rising quality of life, changing patterns in the living styles of Malaysians and the availability of more affordable facilities, it is envisaged that domestic tourism potential will be increasingly harnessed and developed.

8.09 In anticipation of improved prospects for tourism, total *investment in approved hotel and tourism-related projects* amounted to \$2,602 million during the period. The hotel industry, particularly in the urban areas, expanded with an additional 9,312 rooms, bringing the total number of rooms from 35,720 in 1985 to 45,032 in 1990. The majority of these hotels have more than 100 rooms. With the sizeable growth in tourists arrivals, the average occupancy rate rose from about 50 per cent in 1985 to 73 per cent in 1990.

8.10 Growth in tourism increased *employment opportunities*, generated largely by the new hotels and related services which came into operation during the Plan period. Direct employment in the hotel industry increased from 25,170 in 1985 to 39,960 by 1990, creating an additional 14,790 jobs. The number of tour and travel agencies increased from 611 in 1985 to 1,545 in 1990, while licences issued to tour coach, limousine taxi and car rental companies were estimated at 8,330 during the period.

8.11 Parallel to private sector investments in tourism-related accommodation, attractions and activities, the public sector invested more than \$500 million during the period in related activities such as promotions, marketing and the provision of infrastructural facilities. Substantial expenditure was incurred for Visit Malaysia Year 1990 in

promoting various events and festivities related to culture, arts, handicrafts, national celebrations, sports and competitions unique to Malaysia. These promotions created a greater awareness of Malaysia as a holiday destination both at home and abroad.

8.12 Special attention was accorded to *promotional efforts within the domestic market*, particularly with regard to the Visit Malaysia Year 1990 programmes. This was done through increased air-time on domestic communication networks as well as awareness programmes, such as people-oriented local activities like festivals and sports competitions. Local tour operators participated actively by creating attractively-priced holiday packages to local sites, while some financial institutions introduced consumer loans for travel.

8.13 *Promotional and marketing activities abroad* were intensified, largely in the primary target markets of ASEAN, Japan, Australia, Hong Kong, Taiwan, Western Europe and the west coast of U.S.A. These markets have greater awareness of Malaysia as a tourist destination with competitively priced tour packages and having accessibility with convenient airline connections. In addition, promotional activities were initiated in new market segments such as West Asia, Canada and the Scandinavian countries.

8.14 In terms of development of *basic infrastructural facilities*, a number of projects were completed. Recognizing the need for a one-stop information dissemination facility for both foreign and domestic tourists, the Malaysian Tourist Information Complex (MATIC) was set up in Kuala Lumpur in 1989. Other tourist-related developments included improved accessibility to the national parks of Peninsular Malaysia, Sabah and Sarawak, provision of additional facilities at popular tourist destinations, such as Pulau Besar Island Resort in Melaka, Desaru Integrated Tourism Complex in Johor and Tasik Kenyir Tourism Complex in Terengganu as well as conservation of traditional culture through expansion of handicraft centres like the Sarawak Cultural Village. Other infrastructural facilities included various improvements at the Kuala Lumpur International Airport, upgrading the Pulau Langkawi airport, rebuilding jetties at major tourism areas, such as Kuala Tahan, Pulau Langkawi and Pulau Tioman as well as improvements to major stretches of road and rail routes.

8.15 *Accessibility*, a vital factor in tourism development, was further upgraded and improved. The Malaysia Airlines (MAS) began operations to new foreign destinations like Brussels, Istanbul, Fukuoka, Auckland, New Delhi, Zurich, Guangzhou, Ho Chi Min City, Adelaide, Brisbane, Vienna and Kaohsiung. In order to meet increased passenger demand

and improve accessibility into the country, the Government also adopted an open-sky policy for charter flights. During the period, Hong Kong, Canada, Japan, Germany and Yugoslavia were allowed to operate charter flights into Malaysia. In addition, Singapore International Airlines (SIA) and its subsidiary Tradewinds were given approval to increase their flight frequencies to Pulau Langkawi, Pulau Tioman, Kota Kinabalu and Kuching.

8.16 In terms of domestic travel and accessibility, MAS upgraded and increased its frequencies and capacities to primary tourist destinations in the Peninsula as well as in Sabah and Sarawak. To complement the efforts of MAS, Pelangi Air extended its services since 1988, to several tourists destinations like Pulau Tioman, Melaka, Kuala Tahan, Kuala Terengganu, Kertih, Pulau Pinang and Kuantan. In addition, Malayan Railway undertook programmes to promote tourism with the introduction of the Visit Malaysia Year Rail Pass for international tourists, Legendary Langkawi Tour and Kenong Rimba Park Adventure Tour in Kuala Lipis. In order to encourage the inflow of tourists by land from Singapore and Thailand, regulations at entry points were further relaxed.

### III. PROSPECTS, 1991-95

8.17 The buoyant global economy is anticipated to continue to be conducive to growth in world tourism. There is also a positive shift to long-haul travel. The total number of long-haul trips worldwide is expected to rise substantially from 36.7 million trips in 1986 to 64.2 million trips in 1999. World tourism appears to have entered a very promising era and offers substantial opportunities for countries like Malaysia to exploit.

8.18 Malaysia is a relatively new entrant in international tourism compared with the more established destinations in ASEAN. The next decade will see the involvement of many more developing countries in tourism as part of their efforts to diversify and expand opportunities for economic development. Within this highly competitive environment, Malaysia will undertake concerted efforts to improve the quality, attractiveness and uniqueness of its tourism products and services in order to be competitive and to sustain tourist interests.

8.19 The growth prospects for the tourism sector during the Sixth Plan must be viewed in the light of the overall trend in international travel as well as the domestic policies and strategies to sustain further the relatively high levels of tourist arrivals and travel receipts attained during the Fifth Plan. In addition, the prospects for tourism will depend on

innovative follow-up promotions and marketing activities as well as development of competitive tourist products, services and related infrastructural facilities.

8.20 Tourist arrivals are expected to grow at a more sustainable pace of 6 per cent per annum during the Sixth Plan. While the ASEAN market will continue to be dominant, the non-ASEAN market consisting largely of Japan, Germany and Taiwan, is anticipated to gain greater prominence. The excursionists or daytrippers by land from and via Singapore will continue to be an important component of the tourism market. The domestic tourism sector is envisaged to become an important source of tourism growth, as a result of higher incomes and changes in the relative costs of travel.

8.21 Foreign exchange earnings from tourism are targeted to expand at an average annual rate of 2.3 per cent during the Sixth Plan period. The tourism sector is projected to create about 11,300 direct employment opportunities as well as generate considerable indirect employment. The construction of about 30 new hotels and expansion programmes are expected to increase the room supply by more than 10,000. A sizeable proportion of the new hotels to be built is envisaged to be in the medium-cost category.

8.22 There are a number of issues that need to be addressed in tourism development. These issues include the development of Malaysia's unique identity and image in the international arena, the promotion of domestic tourism *vis-a-vis* international tourism, selected development of tourist programmes and projects as well as specialized human resource development for the tourism industry. The tourism policy objectives and strategies as well as the programmes for the Sixth Plan are formulated to resolve these concerns.

### **Policy Objectives and Strategies for Tourism**

8.23 Tourism will be promoted as an important industry contributing to the creation of new sources of growth required for socio-economic development. Increasing emphasis will be placed on strengthening its growth prospects through measures to generate rapid expansion of domestic tour and travel, diversify existing and seek new tourist-generating markets especially within the region, expand infrastructural facilities, inculcate innovation in the provision of tourism products and promote entrepreneurship in related goods and services. Within this context, the tourism industry is expected to provide for increased opportunities for Bumiputera ownership, participation and entrepreneurship.

8.24 A balanced emphasis will be given to the development of tourism in the *international and domestic markets*. Marketing and promotional activities for international tourism will concentrate on sustaining existing markets and developing new markets. Extensive and innovative follow-up measures will be intensified to enhance the image of Malaysia as a highly diversified tourist destination and as part of the tourism potential of the ASEAN region.

8.25 Domestic tourism will be more aggressively promoted to take advantage of the momentum already set for travelling more extensively within rather than outside the country. Towards this end, more imaginative back-up programmes will be launched to create the demand for domestic travel. The accommodation, tour and travel industries as well as the financial and corporate sectors will be encouraged to promote local travel and tour opportunities. Emphasis will also be given to providing more comfortable, affordable and attractive facilities for domestic tourists.

8.26 The tourism industry will place increasing emphasis on developing a more *distinct Malaysian image and identity*. The country will promote its unique brand of tourism to reflect values consonant with the Malaysian way of life. This approach will be developed within the context of preserving and enhancing the *national heritage* and taking pride in the cultures and lifestyles of the various communities. In this regard, such an image will be integrated in relevant programmes and projects in the interests of tourism and future generations.

8.27 Malaysia's heterogeneous *culture* is recognized as an added asset to tourism. The multi-faceted local cultures will be promoted for their exotic appeal and uniqueness in this part of the world. The wide socio-cultural base which is rich in folklore, performing arts, traditions, handicrafts and architecture as well as food specialities, is expected to provide extensive opportunities in product differentiation and diversification.

8.28 An area of serious concern in tourism development has been *environmental protection and preservation*. In Malaysia, tourism is generally based on natural resources such as beaches, lakes, rivers, waterfalls, forests, wildlife and other natural assets with aesthetic, archaeological, cultural and historical value, which are susceptible to environmental damage and ecological imbalance. Tourism programmes and projects will, therefore, be selective and will include the control of pollution, sewerage discharge, shoreline and soil erosion as well as the preservation

of beaches, forests, other ecosystems and the identification of general zones and areas appropriate for tourism development. Local governments and communities are expected to be involved in project preparation, implementation and maintenance to ensure that environmental and cultural displacement is minimized.

8.29 The direct involvement of the local population will be emphasized in the development of tourism. Towards this end, public awareness and educational programmes will be developed to create greater appreciation of the benefits arising from this growing industry. Further, Malaysians will be informed on the value systems and lifestyles of foreign tourists. More information will also be disseminated to foreign visitors on the traditional values and cultures of Malaysians.

8.30 *Training* will be crucial for the growth of an efficient and competitive tourism industry as well as to meet its manpower demand. As tourism reaches a higher level of development and sophistication, it is envisaged that the demands and expectations of visitors will be more varied and diversified requiring specialized services and skills. More efforts will be concentrated on enhancing the level of professionalism and expanding the type and quality of services provided in the tourism industry. In particular, efforts will be made to restructure and expand existing educational and training programmes for the tourism sector. More training will be required in tourism-related activities such as specific languages for tour guides, hotel, restaurant and hospitality management as well as maintenance of hotels and tourism-related facilities and services.

8.31 Measures will be taken to improve and facilitate access into and within the country, particularly for facilitating direct access not only to popular tourist spots but also to the newer and smaller resorts and holiday destinations in the country. The various modes of transportation will be further improved upon.

8.32 Increased funding for tourism development will provide the added impetus to effect overall strengthening of the requisite infrastructure and quality of related goods and services. More resources will be allocated for the development of diversified tourism products, related infrastructure facilities and manpower training as well as marketing and promotional activities. Increased emphasis will be on higher productivity, efficiency and competitiveness in order to maximize benefits from tourism and provide for reduced costs of travel, tour, leisure and recreation.



8.33 Besides physical infrastructural development, the *institutional and managerial aspects* will be given emphasis. There will be policy rationalization and greater coordination at the Federal, state and local authority levels to ensure that the benefits of tourism are optimized and spread throughout society with stronger linkages with other sectors of the economy. Efforts will be concentrated on policy coordination and management between the public and private sectors in order to achieve some measure of balanced and cost effective tourism development. The Government will continue to provide the requisite infrastructural support and, where necessary, review related legislation, rules and regulations to promote greater private investment. The private sector, on its part, is expected to provide the added stimulus and impetus to the development of existing and the provision of new and varied attractions, activities and services.

8.34 A national tourism plan, now in the early stages of preparation, will provide the development guidelines for the future expansion of the industry. The formulation of the plan will involve the close collaboration of all levels of Government and the private sector to ensure inter-agency and inter-sectoral coordination in national tourism planning and implementation as well as increased participation of the private sector in tourism development.

### **Programmes and Projects**

#### *Product Development*

8.35 A variety of attractions, activities, facilities and services will be developed to provide for different interests and preferences of tourists with the view to increasing the length of stay and expenditure by both international and domestic tourists. The main thrust will be on preserving and enhancing existing natural and cultural assets, without excessive modification and over-commercialization. Several programmes will be undertaken including the preservation and restoration of historical sites, promotion of cleanliness and beautification campaigns, enforcement of environmental conservation, development of natural and cultural tourism products, provision of affordable tourist accommodation as well as the upgrading and construction of other tourism-related infrastructure and facilities.

8.36 The careful *preservation and restoration of historical places and artifacts* will conserve the national heritage and enhance the identity of the country while meeting the special interests of potential tourists. Several historical sites and buildings have been identified for preservation and restoration. These include Kellie's Castle, Muzium Taiping in Perak,

Muzium Kota Kayangan in Perlis, A Famosa in Melaka, Muzium Istana Bandar and Istana Jugra in Selangor, Muzium Kerajaan Melayu and Kubu Pertahanan Kerajaan Melayu, Johor Lama, Kota Lukut in Port Dickson and Fort Margherita in Sarawak as well as selected traditional Malay houses.

8.37 Special emphasis will be given to the preservation of the *natural attractions*, such as highland and island resorts, marine parks, forest reserves, wildlife sanctuaries and the tropical rain forests. A wide range of adventure and special interest tours will be made available where tourists can participate in a myriad of nature-related activities, particularly at the National Park in Peninsular Malaysia, Kinabalu National Park in Sabah and Niah National Park in Sarawak.

8.38 Holiday destinations and social and recreational facilities will be promoted not only for their uniqueness and exclusivity but also for their cleanliness and unspoilt beauty. The *cleanliness and beautification programmes* will concentrate on the major points of entry into the country, such as Pulau Pinang, Johor Bahru, Padang Besar, Bukit Kayu Hitam, Rantau Panjang, Kuching and Kota Kinabalu, as well as prominent tourist islands, beaches and hill resorts. In addition, more beachcombers will be mobilized to assist in the cleanliness campaigns of major beaches.

8.39 The Government will emphasize *conservation* to reduce the negative effects of environmental damage. In pursuance of this objective, specific guidelines and criteria for the development of tourism projects will be formulated as part of the process of identifying specific zones for tourism development.

8.40 *Culture and the arts* will be developed as integral components of tourism development. This approach will provide opportunities for the development of a diversified and vibrant cultural and entertainment services industry. It will also encourage local participation in the industry. The promotional efforts will focus on a number of areas such as commercial and non-commercial performing arts, museums, art galleries, handicraft and entertainment centres as well as theme parks. Among the projects to be implemented are the establishment of the National Theatre of Performing Arts, the development of cultural villages in Seremban and Sungai Rusa in Pulau Pinang as well as Cultural Craft Complexes at Pulau Langkawi and Kuala Lumpur and the *Orang Asli* Handicraft Centre at Cameron Highlands. The cultural and handicraft product development programmes are expected to provide opportunities for extensive product diversification, especially for small operators and entrepreneurs to initiate handicraft centres and culture-based activities to cater for tourists interests.

8.41 Greater emphasis will be accorded to the provision of adequate and *affordable accommodation* for tourists. The Government will embark on a programme of establishing affordable accommodation, such as camp sites, rest houses, chalets, lodges, hostels and motels at selected tourist destinations. These include the development of camping grounds in Air Keroh, Melaka and Pulau Tioman, Pahang as well as Gunong Pulai and Gunong Ledang in Johor. The construction of low- and medium-cost chalets at Tasik Kenyir, Terengganu and the national parks throughout the country will also be undertaken. Existing rest houses at a number of tourist destinations, such as Cameron Highlands and Fraser's Hill, will be upgraded. The future development, ownership and management of such accommodation will eventually be franchised and ultimately transferred to the private sector. This will create opportunities for increased participation of Bumiputera in commercial and business activities.

8.42 The anticipated growth in tourism will require the expansion of *tourism-related infrastructure and facilities*. New and better facilities will be built while existing ones upgraded. The public sector will supplement private sector efforts in providing the necessary infrastructure. During the Sixth Plan period, infrastructure and public facilities including access roads, jetties and bridges as well as tourist information centres will be provided at popular tourist destinations such as the islands of Langkawi, Pangkor and Tioman, and natural tourism attractions particularly the national parks and selected wildlife and forest reserves. Tourism potential in the less developed areas, such as those within the purview of regional development authorities, will also be considered.

8.43 Efforts will also be made to promote the country as a popular tourist destination through more attractive packaging of existing and new products taking into account different market segments. The packaging of these products will also consider the varying interests of tourists, ranging from vacations and sightseeing, recreation and sporting pursuits, business and conventions to nature and wildlife interests.

8.44 The private sector is expected to initiate the improvement of existing and provision of new and varied tourism products. This is an important challenge to private entrepreneurs to develop tourism products with a view to sustain interest among foreign tourists to continue to visit Malaysia and to induce the local population to travel extensively within the country. There is tremendous scope for creativity, innovativeness and entrepreneurship in this largely untapped field, with investment opportunities ranging from large-scale investment, such as hotels and resort development and the provision of related attractions and services.

Small- and medium-scale entrepreneurs are expected to explore and participate in the various business opportunities available such as in food and catering, shopping and entertainment as well as recreation and leisure which require relatively low capital but generate high value-added activities.

### *Training*

8.45 To meet the increasing demands of the tourism sector, a comprehensive and integrated approach to training will be initiated. Such an approach will encompass various types of skills at the vocational and tertiary levels of education. This will involve the training of new entrants to the labour market as well as the upgrading of skills and retraining of existing workers.

8.46 The Government will coordinate the planning and development of training and education for the tourism industry. The private sector will be expected to take on more of the formal and in-service training. A National Council for Hotel and Tourism Training will be established, comprising representatives from the public and private sectors. The Council will help to identify key areas where training is lacking, establish national standards and certification, determine the relevant curricula and provide overall coordination in human resource development for the tourism industry.

8.47 The expected increase in tourism activities will raise the demand for trained and experienced manpower at the managerial, supervisory, skilled and semi-skilled levels. It is anticipated that annually some 250 managerial, 550 supervisory and 2,400 skilled staff will be required. To meet this demand, manpower training programmes conducted by the MARA Institute of Technology, National Productivity Centre and the Tourist Development Corporation will be upgraded. In order to alleviate the shortage of managerial personnel, the Government will consider the proposal that local universities and institutes of higher learning offer degree and post-graduate diploma courses in hotel administration and tourism management.

### *Marketing and Promotion*

8.48 In promoting Malaysia as a major tourist destination, marketing and promotional efforts will be stepped up. The Government will accelerate its promotional and marketing activities in both the domestic

and international markets in close consultation with the private sector. Greater efforts will be made in increasing awareness of Malaysia as a choice destination for holidays, socio-cultural experience, conventions and special interest pursuits. The country will be projected as an all-year round multi-activity destination. In this regard, public awareness programmes will be disseminated through advertising, editorial supplements, direct mailing, trade fairs and exhibitions. Other forms of information assistance will be marketed through cooperative tour packages, educational workshops and seminars as well as the mass media and travel market information guides.

8.49 Special efforts will be made to develop a core of Malaysian wholesale and retail specialists in the area of tour and travel in all major foreign tourist-generating markets. This will ensure that Malaysians undertake the promotions and marketing of the tourism products and services available in the country without too much dependence on foreign wholesalers and retailers. In addition, these downstream services will increase value added in tourism.

8.50 Significant additional marketing and promotional efforts will be made to exploit the largely untapped domestic tourism market. The promotional thrust will be to increase awareness of Malaysians to the variety and quality of the different tourism products available locally.

#### *Accessibility*

8.51 Continued efforts will be made to strengthen accessibility into and within the country to support tourism growth. With regards to air travel, more landing rights will be negotiated especially in Europe, Canada and South America, while frequencies and capacities to overseas destinations will be increased. While the primary emphasis will be on augmenting scheduled services, provision will also be made for more passenger charter flights to complement these services.

8.52 Airport facilities and services will be increased and upgraded in order to meet rising tourism demands. The Kuala Lumpur International Airport will be further developed as the main gateway and hub of air transportation system in Malaysia, together with Pulau Pinang, Kuching and Kota Kinabalu airports. Domestic private airlines will be encouraged to provide supplementary services within the country. Alternative modes of transportation, namely, rail, road and sea transportation services will be expanded. The provision of better services at major entry points will be given emphasis.

8.53 Operational strategies to increase accessibility will also focus on the design and marketing of travel and tour packages, both for domestic and international tourists. Wholesalers and retailers in the tour and travel industry will need to pay particular attention to components, such as promotions, competitive fares, convenient routings and schedules, attractive and convenient travel packages, special accommodation and tour facilities as well as the availability of related services.

#### IV. ALLOCATION

8.54 The revised Federal Government development allocation and estimated expenditure for the period 1986-90 and the allocation for the period 1991-95 are shown in *Table 8-2*. The development allocation for the Sixth Plan will be more substantial compared with the amount provided under the Fifth Plan, indicating the growing importance of tourism. The increased funding will assist in accelerating the planning and implementation of programmes for the expansion of physical and social infrastructure required to support the growth of tourism.

TABLE 8-2  
DEVELOPMENT ALLOCATION FOR TOURISM, 1986-95  
(\$ million)

<i>Programme</i>	<i>5MP</i>		<i>6MP</i>
	<i>Allocation</i>	<i>Expenditure</i>	<i>Allocation</i>
Preservation of National/Historical Heritage	1.5	0.7	41.1
Tourist Accommodation	2.0	0	171.7
Beautification/Cleanliness Programmes and Environmental Protection	2.5	2.5	43.6
Cultural Product Development	2.5	2.5	112.9
Facilities and Infrastructure	79.2	76.7	157.4
Others	52.8	49.7	7.2
<b>Total</b>	<b>140.5</b>	<b>132.1</b>	<b>533.9</b>

## V. CONCLUSION

8.55 Tourism is a newly emerging industry. The industry not only creates considerably high multiplier effects and linkages in the economy, but also fosters national integration and unity. In promoting the tourism industry, the religious, moral and cultural values of the country will be fully respected and protected. The preservation and protection of the environment against both over-exploitation of natural resources and pollution of the environment will become more important to support the development of tourism. Close collaboration between the public and private sectors will continue to be fostered in the formulation and implementation of tourism development programmes.

## **Chapter IX**

# **Finance, Banking and Insurance**



## CHAPTER IX

# Finance, Banking and Insurance

### I. INTRODUCTION

9.01 The finance, banking and insurance sector played an important role in the mobilization and allocation of funds to support the growth and development of the economy during the Fifth Malaysia Plan period. The banking system, development finance institutions, the capital market and the insurance industry provided the financial support necessary for the expansion and development of agricultural, manufacturing and tourism activities. The sector extended funds at reasonable cost, thus enhancing the environment for economic expansion.

9.02 The finance, banking and insurance sector will continue to provide the supportive and complementary role for the further development of the economy during the Sixth Malaysia Plan period. The efficiency of the sector in mobilizing and allocating funds will continue to be enhanced. Measures will continue to be undertaken to widen and deepen the financial system. The financing mechanism and financial management will be further modernized and strengthened to meet the anticipated increased requirements of funds by the private sector. Continuous upgrading of skills and improvements in the standard of professionalism in this sector will be emphasized.

### II. PROGRESS, 1986-90

9.03 During the Fifth Plan Period, the finance, banking and insurance sector grew significantly at 8.4 per cent per annum which was higher than the projected Plan target of 6.8 per cent. Its share to Gross Domestic Product (GDP) rose from 8.8 per cent in 1985 to 9.7 per cent in 1990, while employment in the sector increased from 199,000 to 242,000. The financial system extended loans amounting to \$58,400 million to the private sector during the period for the expansion and development of

the major sectors of the economy. The total resources of the financial system increased significantly from \$169,000 million at the end of 1985 to \$320,400 million at the end of 1990, or at an average annual rate of 13.7 per cent.

## **Banking System**

### *Assets and Deposits*

9.04 The banking system, comprising the commercial banks, finance companies and merchant banks, accounted for about 56 per cent of the total assets of the financial system as at the end of 1990. The total assets of the banking system, as shown in *Table 9-1*, expanded at an average annual rate of 12.8 per cent from \$98,362 million at the end of 1985 to \$179,717 million at the end of 1990. Within the banking system, the commercial banks continued to dominate in terms of assets and deposits, although the finance companies recorded the fastest growth rate of 17.2 per cent per annum in assets during the period. The finance companies' share of deposits also increased from 20.7 per cent of total deposits to 27.2 per cent during the period.

### *Loans*

9.05 In line with the broad-based expansion of the economy, demand for credit generally remained strong during the Fifth Plan period with total outstanding loans from the banking system increasing at 11.6 per cent per annum from \$65,999 million at the end of 1985 to \$114,047 million at the end of 1990. A significant proportion of the loans extended continued to be channelled to the broad property sector, comprising construction, real estate development and housing for individuals, although there was a marked shift in the direction of credit towards a more even distribution among the major groups with manufacturing, which led the economic growth, absorbing the largest share of loans, as shown in *Table 9-2*.

9.06 The three priority sectors, as defined under the lending guidelines, namely, housing loans for individuals, small-scale enterprises and the Bumiputera community, continued to have adequate access to bank credit at preferential rates. In line with developments in the economy, lending guidelines to the commercial banks and finance companies have been progressively liberalized and removed. By the end of the Fifth Plan period, these guidelines included lending to the Bumiputera community and for loans made under the Principal

**TOTAL ASSETS, DEPOSITS AND LOANS OF THE  
BANKING SYSTEM, 1985-90**  
(\$ million as at end of year)

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Guarantee Scheme (PGS) of the Credit Guarantee Corporation (CGC). Interest rate ceilings were set for loans extended for the purchase of owner-occupied houses, where the price of the house did not exceed \$100,000 each, and for loans extended under PGS. Total loans extended to these three sectors rose significantly, particularly for the Bumiputera community. Loans extended to the Bumiputera community increased from \$17,267 million at the end of 1985 to \$31,475 million at the end of 1990 to account for 28.9 per cent of the total loans outstanding.

TABLE 9-2  
LOANS TO MAJOR SECTORS BY THE BANKING SYSTEM, 1980-90  
(\$ million as at end of year)

Sectors	1980	Share (%)	1985	Share (%)	1990	Share (%)	Change during 4MP	Share (%)	Change during 5MP	Share (%)
Agriculture	2,142	8.1	3,793	5.8	5,648	4.9	1,651	4.2	1,855	3.8
Mining	288	1.1	672	1.0	1,067	1.0	384	1.0	395	1.0
Manufacturing	5,443	20.7	10,054	15.2	21,528	18.9	4,611	11.6	11,474	23.8
Construction	1,808	6.9	4,525	6.9	8,142	7.1	2,717	6.8	3,617	7.5
Real Estate	2,282	8.7	10,325	15.6	12,902	11.3	8,043	20.3	2,577	5.3
Housing	2,852	10.8	8,135	12.3	13,006	11.4	5,283	13.3	4,871	10.1
General Services	5,217	19.8	10,136	15.4	13,548	11.9	4,919	12.4	3,412	7.1
Business Services	819	3.1	7,014	10.6	12,040	10.6	6,195	15.6	5,026	10.5
Transport	654	2.5	1,256	1.9	2,440	2.1	602	1.5	1,184	2.5
Consumption Credit	961	3.7	2,992	4.5	11,694	10.3	2,031	5.1	8,702	18.1
Others	3,836	14.6	7,097	10.8	12,032	10.5	3,261	8.2	4,935	10.3
<b>Total</b>	<b>26,302</b>	<b>100.0</b>	<b>65,999</b>	<b>100.0</b>	<b>114,047</b>	<b>100.0</b>	<b>39,697</b>	<b>100.0</b>	<b>48,048</b>	<b>100.0</b>

### *Special Funds*

9.07 In addition to the incentives provided under the Promotion of Investment Act, 1986, several financial and fiscal measures were introduced during the Fifth Plan to stimulate both domestic and foreign investments. Special funds were also introduced by the Government to assist and stimulate the growth of several priority sectors. The New Investment Fund (NIF) was launched in 1985, with an initial allocation of \$1,000 million by the Government to stimulate new investments in selected sectors, namely, manufacturing, agriculture, tourism and mining, as part of the Government's efforts to promote growth and shift new lending away from low priority sectors of property and real estate. To support the Government's efforts to promote private sector cash cropping on a commercial basis, the Government further provided an additional \$200 million, raising total NIF funds to \$1,200 million. The Fund was further expanded by an additional \$500 million, bringing the total to \$1,700 million.

9.08 As at the end of 1990, a total of \$1,428 million involving 422 projects were approved under the NIF scheme, of which \$1,024 million was for the manufacturing sector, \$277 million for agriculture, \$80 million for tourism and \$47 million under the cash-crop scheme. The NIF had contributed to the economic recovery from the 1985/86 recession. In 1988, with the Malaysian economy well on the recovery path and ample liquidity in the banking system, it was decided that the NIF scheme would no longer be extended.

9.09 The \$500 million *Enterprise Rehabilitation Fund* (ERF) was established with the objective of conserving and developing the scarce pool of Bumiputera entrepreneurs built up in the last decade. As at the end of 1990, 1,485 applications were received, of which 692 projects were approved, amounting to about \$479.9 million. In view of the fact that the rehabilitation of abandoned housing projects was the focus of ERF, a separate scheme, the *Abandoned Housing Projects Fund* with a total allocation of \$600 million was subsequently set up in June 1990 to revive abandoned housing projects and to provide affected house buyers with good titles. At the end of 1990, a total of 33 applications, amounting to \$137 million was approved under this Fund.

9.10 In addition, to nurture the growth of Bumiputera entrepreneurs, a \$250 million *New Entrepreneurs Fund* (NEF) was set up in December 1989 to provide financing at a concessionary interest rate to Bumiputera entrepreneurs to undertake new ventures, particularly in manufacturing, agriculture, tourism and export-oriented industries or industries supporting the export drive. As at the end of 1990, 280 applications were received, of which 153 were approved, amounting to \$21.7 million.

### *Bank Liquidity*

9.11 Bank liquidity was relatively tight during the early part of the Fifth Plan period due to the recession. However, with the strengthening of the balance of payments, easy liquidity prevailed. The liquidity remained ample for the banking system and this was reflected by the loan-deposit ratio of the banking system, which declined from 90.4 per cent at the end of 1985 to 89.4 per cent at the end of 1990.

### *Development of the Banking System*

9.12 During the period 1985-86, several medium-sized banks and deposit-taking cooperatives (DTCs) experienced huge losses. This has raised general concerns over the integrity and stability of the financial system as a whole. To maintain the soundness and stability of the financial system, the Government deployed manpower and other resources to turn around the ailing financial institutions and rescue the 24 DTCs. In this regard, three-pronged strategies were adopted. Firstly, steps were taken to remove or rebuild the major weak links in the financial system. Secondly, financial reforms were introduced to widen and deepen the financial market in order to enhance competition and efficiency, and finally, standards were upgraded to instil greater professionalism and discipline into the system. Through the process of capital reconstruction and management revamp, assisted by an upturn in economic activities, the ailing financial institutions were turned around with operational profits, while successful rescue schemes were formulated and implemented for the 24 DTCs.

9.13 Several measures were taken to improve the efficiency of the banking system during the Fifth Plan. In this regard most of the banking and financial institutions were computerized to better serve their customers. An on-line book entry system for Government papers and Cagamas bonds and an on-line interbank funds transfer system known as SPEEDS (*Sistem Pemindahan Elektronik untuk Dana dan Sekuriti*) were also introduced. Measures to harness electronic technology to speed up and increase the efficiency of payments and information transfer were also implemented. SWIFT (Society of Worldwide Interbank Financial Telecommunication), an international financial telecommunication system, was also introduced, while cheque clearing throughout the country was expedited with the launching of SPAN I (*Sistem Penjelasan Automatik Nasional*) and SPAN II. Retail payments were also considerably modernized, with the rapid expansion of automated teller machine (ATM) network, which permits cash withdrawals, funds transfer, payment of utility bills and EFTPOS (Electronic Fund Transfer at Point of Sale).

9.14 On the legislative front, the Banking and Financial Institution Act, 1989 (BAFIA) was enacted to modernize and streamline the laws relating to the conduct of banking and financial activities. Besides enabling all financial institutions supervised by Central Bank (other than insurance companies) to be placed under one regulatory regime, BAFIA also incorporated provisions to allow the Central Bank, with the concurrence of the Minister of Finance, to monitor and, if necessary, extend its arm to the fringe banking sector should the need arise. The Act also empowers the Central Bank to investigate and prosecute illegal deposit takers. Thus, the gap in the supervision of the financial sector has been significantly reduced.

9.15 Measures were also undertaken to eliminate structural barriers in order to create a more competitive environment. In addition, major reforms were also implemented to deepen the capital and money markets as well as enhance efficiency in the system. These include a more flexible interest rate regime, the introduction of new instruments, such as *Cagamas* bonds, corporate bonds and property trusts, computerization of the trading system for Government securities and *Cagamas* bonds, and providing greater flexibility to the banking institutions in liquidity and funds management.

9.16 Concurrently, measures were undertaken to tighten financial discipline in the system. A code of ethics to promote and maintain a uniform ethical standard among directors and employees of the banking system was introduced. Guidelines for the management on non-performing loans and bad debts as well as a framework of capital adequacy and requirement for a greater public disclosure by the banking institutions were also introduced during the Fifth Plan period. Steps were also taken to upgrade and overcome the shortage of trained staff in the banking industry. Guidelines were formulated to discourage staff pinching among financial institutions and promote industry-wide training and manpower development.

### **Development Finance Institutions**

9.17 The development finance institutions, comprising the Malaysian Industrial Development Finance (MIDF), the Borneo Development Cooperation, the Sabah Development Bank, *Bank Pembangunan Malaysia*, *Bank Industri Malaysia* and *Bank Pertanian Malaysia* complemented the role of the banking system in terms of providing medium-and-long-term capital financing as well as supplying a range of financial services not normally provided by commercial banks and finance companies. The total assets of these development finance institutions increased by 10 per

cent per annum from \$4,100 million at the end of 1985 to \$6,600 million at the end of 1990, with MIDF as the leading source of industrial development funds and *Bank Pertanian Malaysia* as the largest source of loans for rural credit which amounted to \$906.7 million at the end of 1990.

### **Other Institutions**

9.18 *The National Savings Bank (BSN)* experienced a period of rapid growth and modernization during the Fifth Plan period. It was marked by the massive branch expansion programme that raised the number of branches from 15 at the end of 1985 to 313 by the end of 1990. Accordingly, the number of ATMs installed also increased. The modernization programme included the computerization as well as the provision of a comprehensive range of financial services. The number of depositors grew significantly from 5.6 million at the end of 1985 to over 8.3 million as at the end of 1990. Correspondingly, the total assets of the bank rose from \$1,726 million to \$3,000 million. Total loans extended increased from \$14.5 million to \$535 million.

9.19 *The Employees Provident Fund (EPF)* is the premier social security scheme in the country, with assets totalling more than \$46,766 million held in trust for the benefit of 5.9 million members as at the end of 1990. The EPF is the single most important source of non-inflationary finance to the Government, with \$36,130 million or 79.1 per cent of its investment portfolio invested in the Malaysian Government Securities (MGS) as at the end of 1990. The remaining investible funds were channelled into various other avenues of investment such as the granting of loans to Government agencies and approved companies, investing in promissory notes, and participating in the equity and money market.

### **Capital Market**

#### *Growth Trends*

9.20 The capital market comprises all the public and private debt securities, and quoted corporate stocks and shares. Total funds raised in the capital market rose rapidly from \$ 4,223 million in 1985 to \$ 14,688 million in 1990. The Government securities market provided a major source of funds for financing the development expenditure of the public sector. The amount of outstanding Government securities increased from \$36,681 million as at the end of 1985 to \$62,106 million as at the end of 1990. The Government securities market underwent a significant transformation during the Fifth Plan period. Since 1987, Malaysian



Government securities have been issued with market-related coupon rates for the purpose of developing an active and viable secondary market. A principal dealership system was established in January 1989 for the same purpose. A total of 23 financial institutions have been appointed as principal dealers for Government securities. The system has taken off very satisfactorily and a viable secondary market in Government securities, Treasury bills and *Cagamas* bonds is fast developing.

9.21 To deepen the capital market, the Government encouraged the establishment of *Cagamas Berhad* in 1986. *Cagamas Berhad* has issued bonds (*Cagamas Bonds*) totalling \$2,900 million to finance its purchases of housing loans from banks and finance companies. The authorities also took measures to promote the development of a viable private debt securities market. In this regard, Guidelines on the Issue of Private Debt Securities were published in December 1988 on the legal and administrative framework for bond financing. Since then, a market in private debt securities has begun to emerge. The total amount of funds raised through a variety of instruments, including convertible unsecured loan stocks, conventional bonds, commercial papers and Islamic bonds, had increased more than tenfold from \$225 million in 1987 to \$2,387 million in 1990.

9.22 The amount of funds raised by the private sector in the capital market was relatively small compared with the amount raised by the Federal Government. However, the volume of transactions in the corporate securities in the secondary market, comprising mainly the Kuala Lumpur Stock Exchange (KLSE) and to a lesser extent the Bumiputera Stock Exchange (BSE), significantly outweighed the transactions in the Government securities. Unlike the Government securities, the ownership structure of the corporate securities was more diversified, being distributed among individual investors. The annual turnover of KLSE rose at an annual average of 37.1 per cent from 2,869.7 million units in 1985 to 13,138 million units in 1990. In terms of volume, turnover on KLSE was dominated by trading in the industrial shares which accounted for 45 per cent of the total turnover in 1990.

9.23 The Government undertook serious efforts to develop KLSE into a sophisticated international stock exchange. The Corporatization Policy, aimed at strengthening the capital base of the stockbroking companies as well as enhancing the level of professionalism in the securities industry was introduced in 1986. In this regard, the minimum paid-up capital requirement of the stockbroking company was set at not less than \$20 million and the minimum liquid fund requirement of stockbroking company was also revised. Of the 53 stockbroking companies, 11 were

corporatized during the Fifth Plan period. Out of this, four of them were corporatized through participation of foreign corporations and the balance were through local companies. In line with its modernization efforts, the Advanced Warning and Surveillance Unit (AWAS) was formed in 1987 to alert KLSE of stockbroking houses and public listed companies which were facing problems. The Semi-automated Trading System (SCORE) was introduced to replace completely the traditional outcry system. A fixed delivery and settlement system was also introduced to enhance the efficiency of the clearing and settlement functions. The implementation of the privatization programme has resulted in widening and broadening the KLSE board significantly with the listing of several large companies, such as *Telekom Malaysia Berhad*, Malaysia International Shipping Corporation and Malaysian Airlines. In an effort to fully develop KLSE, all Malaysian companies were directed to be delisted from the Stock Exchange of Singapore from January 1990. To enhance the growth of smaller companies, the Second Board was introduced in 1988 to enable potential companies to be listed in order to tap capital funds from the market through listing on KLSE.

9.24 During the Fifth Plan period, the Government undertook initiatives to promote the development of a corporate bond market and a secondary market in Government securities and in corporate bonds. Towards this end, a number of supportive reforms were introduced since 1986 to develop the Government securities market. These reform measures included the unpegging of interest rates on deposits, allowing the banking system to maintain its liquidity ratio and statutory reserves ratio on an average basis, expanding the number of money market participants, increasing the number of financial instruments, and using Kuala Lumpur Interbank Overnight Rate (KLIBOR) as an official indicator of money market conditions. The statutory reserves ratio of the commercial banks, the finance companies and the merchant banks were, at the same time, realigned to bring about greater competition. To further improve the operational efficiency of trading in securities, a scripless book-entry securities trading and funds transfer system, SPEEDS, was launched in 1990, which had since enhanced the secondary trading of MGS considerably.

9.25 On the corporate bonds market, the first major move to promote a private debt securities (PDS) market was undertaken in 1986 with the setting up of *Cagamas Berhad*, the national mortgage corporation. The function of *Cagamas* is essentially to be an intermediary between primary lenders of housing loans and investors of long-term funds, while assuming the role of a credible issuer of mortgage securities. PDS achieved a milestone in its development with the incorporation of a credit rating

agency in November 1990. In addition, in order to encourage large corporations to raise funds by issuing term notes as well as facilitate the development of both the primary and secondary markets for PDS, a set of guidelines on the issue of private debt securities was introduced in December, 1988.

#### *Amanah Saham Nasional Scheme*

9.26 *Amanah Saham Nasional Scheme* (ASN) attracted a net amount of more than \$5,200 million from Bumiputera investors during the Fifth Plan period, with an accumulated investment of \$11,000 million as at the end of 1990. The number of investors participating in the scheme also increased from 2.0 million to 2.5 million. The latter represents 46 per cent of the estimated 5.4 million Bumiputera individuals eligible to participate in the scheme. This was achieved through continuous vigorous marketing campaigns as well as through the introduction of various convenient schemes such as participation through direct mailing and monthly salary deductions. More efficient services were also provided to investors through the strengthening of branches of *Amanah Saham Nasional Berhad*, the managers of ASN, throughout Malaysia.

9.27 The funds mobilized from investors were invested in selected companies to provide appropriate returns on investment. As at the end of 1990, the investment portfolio of ASN comprised 67 companies, of which 60 companies are quoted on KLSE. Thus, from 1986 to 1990, with the active participation of Bumiputera investors in ASN, savings was mobilized to increase participation of Bumiputera individuals in the corporate sector through a unit trust scheme.

#### **Venture Capital**

9.28 Venture capital is a new form of equity investment in Malaysia, with only four venture capital companies operating in the country. To date, these venture capital companies have invested in 15 ventures, totalling \$14.6 million, comprising new and existing companies with high growth potential. The priority areas of investment by these companies were in manufacturing, agro-based businesses and tourism.

#### **Insurance**

##### *Growth Trends*

9.29 Total premium income of life and general sector grew at 10.3 per cent per annum from \$1,838 million in 1985 to \$3,005.2 million in 1990. New annual premium income of *life business* recorded an average

annual growth rate of about 13.3 per cent from \$231.4 million in 1985 to \$432 million in 1990. The increase in disposable income resulting from the nation's rapid economic development generated a sustained demand for life and associated sectors. Total annual premiums in force rose by an annual rate of 15 per cent from \$800 million in 1985 to \$1,600 million in 1990. The *general insurance business*, however, expanded at a slower pace compared with the life sector during the Fifth Plan period, where written premiums grew at 8.6 per cent per annum from \$1,200 million in 1985 to \$1,800 million in 1990. Total net written premiums (gross premiums less reinsurance within and outside Malaysia) grew at 7.6 per cent per annum from \$900 million to \$1,400 million in 1990. The higher growth of net premium income reflected an increase in the retention ratio of the industry from 75.7 per cent in 1985 to 76.9 per cent in 1990. Total claims (net of local reinsurance recoveries) paid by the industry rose by 7.2 per cent per annum from \$621.5 million in 1985 to \$883 million in 1990.

9.30 *Mobilization of Funds.* Insurers continued to play an important role in mobilizing domestic resources and remained an important source of funds for both the public and private sectors. Total assets of the insurance industry grew at 11.9 per cent per annum from \$5,268 million at the end of 1985 to \$9,258 million at the end of 1990, constituting 2.8 per cent of the total assets of the financial system. About 75 per cent of the total insurance fund was attributed to the life insurance sector. The assets of the *life insurance funds* amounted to \$6,900 million at the end of 1990 and were invested largely in Government securities, which accounted for 29 per cent of total life fund assets. The proportion of assets invested in corporate securities, loans, fixed assets and other assets were 19.1 per cent, 19.2 per cent, 4.5 per cent and 3.3 per cent, respectively. The balance were in the form of cash and deposits which amounted to 20.5 per cent. In terms of assets, life funds constituted 2.1 per cent of the total assets of the financial system. *General insurance fund* assets, which amounted to \$2,300 million at the end of 1990, have a more liquid asset portfolio, with cash and deposits comprising 34.6 per cent of its investments.

9.31 *Takaful Business.* *Syarikat Takaful Malaysia Sdn. Bhd.* (STMSB), the only company operating *takaful* business (Islamic insurance) since July 1985, continued to experience rapid growth. The assets of STMSB, both from the family and the general takaful funds, increased from \$1.9 million in 1986 to \$38.2 million in 1990. Contributions collected in 1990 amounted to \$28.4 million compared with only \$2.3 million in 1986. General takaful business represented 70.4 per cent of the total contribution in 1990.

9.32 *Reinsurance Overseas.* The written premiums of the general insurance sector increased from \$1,214.5 million in 1985 to \$1,834 million in 1990. Reinsurance premiums ceded overseas also increased from \$295.6 million to \$423.9 million during the same period. However, as a proportion of written premiums, reinsurance premium ceded overseas declined slightly from 24.3 per cent to 23.1 per cent. The highest cessions were in respect of fire business which amounted to \$114.1 million or 38.6 per cent of total reinsurance premiums ceded overseas in 1985 and \$183.5 million or 43.2 per cent in 1990. However, the reinsurance premiums ceded overseas represented gross outflows in respect of foreign exchange as there would be reinsurance claims, recoveries and commissions.

### *Training*

9.33 The insurance industry continued to face a shortage of suitably qualified personnel. In line with the Government's emphasis for more qualified personnel and the industry's consequential efforts to attract such personnel into the business, the number of professionally qualified insurance personnel increased by 12.8 per cent per annum during the Fifth Plan period. However, the increase in local professionals with insurance and actuarial skills was not sufficient to match the growth of insurance business. This has resulted in the demand for such professionals being met through continued dependence on foreign technical expertise in specialized fields of insurance and risk management. At the end of 1990, out of the total 2,472 professionals and graduates employed in the insurance industry, only 22 were actuaries compared with 18 in 1985. Presently, formal insurance education is provided by *Universiti Kebangsaan Malaysia* and MARA Institute of Technology. In addition, the Malaysian Insurance Institute (MII), as the industry's training and examining body of professional insurance examinations in Malaysia, has intensified efforts in playing a major role by increasing and upgrading its examination, education and training programmes.

### **III. PROSPECTS, 1991-95**

9.34 With the private sector assuming the role as the main engine of growth during the Sixth Plan period, the monetary and banking policies will be increasingly oriented towards encouraging greater and more sophisticated financial intermediation. This will include strengthening and improving the efficiency of the financial institutions, as well as enhancing the development of the money and capital markets in order

to effectively raise and mobilize savings for productive uses through the financial system. With the increasing complexity and sophistication demanded on the financial system, the number and range of financial instruments will be increased through the development of, among others, a sound primary and a secondary corporate bond markets, in order to widen the choice of available financial instruments for both the borrowers and investors.

### **Banking System**

9.35 During the Sixth Plan, the Government will continue its efforts to nurture a strong, dynamic and modern banking industry to meet the growing needs of the rapidly expanding economy. Consolidation of the banking sector will continue. Following measures undertaken during the Fifth Plan to remove asymmetrical regulations among different groups of institutions, competition has intensified. Pressures arising from competition are expected to encourage small and undercapitalized institutions to merge into stronger entities. More banking institutions are expected to seek public listing, particularly those medium-sized institutions intending to improve their market share and conduct a wider range of financial activities. Public listing will allow financial institutions to raise equity from the market and have a wider shareholding structure. Institutions will have a sharper profit-orientation and are expected to be better managed by appointed professional bankers.

9.36 The banks are also expected to be more universal in their business activities providing a wider range of other financial services, such as corporate advice, portfolio management, trust activities, venture investments and underwriting activities. Banks will be further encouraged to participate, within prudent limits, in the equity of manufacturing companies, particularly those in the start-up or take-off stages. The bigger banks will continue to be allowed to invest in a range of financial services such as finance company, stock broking, equity and property trust management and nominee companies.

9.37 To remain competitive, banking institutions will continue to accelerate the pace of automation in their banking operations by introducing innovative and wider range of services to provide speedier, more efficient and economical services to their customers. The attempts by the banking institutions to bring the latest technology in banking automation will benefit their customers as it is envisaged that in the future more complex banking transactions can be done at the customer's convenience.

9.38 The Government will continue to pursue its twin policy of structural deregulation and prudential re-regulation. Market reforms, new instruments and, where necessary, new institutions will be judiciously introduced along with the on-going process of prudential re-regulation so that efficiency and sophistication can be increased without jeopardising safety and prudential standards. The activities of the banking system and other financial intermediaries would be governed by the provisions of BAFIA, 1989. While BAFIA may be further refined to clarify certain ambiguities and rectify some inconsistencies in the Act, the legislative framework is well in place to support the Government's efforts to foster a modern and efficient as well as a safe and sound banking system.

9.39 The Government will continue to pay particular attention to manpower development and training in the banking industry. Towards this end, the minimum Staff Training Expenditure (STE) guidelines currently enforced will be continuously reviewed and monitored. At the same time, local universities will introduce more courses in the finance and banking related fields in order to ensure sufficient qualified manpower for the rapidly expanding banking industry.

#### **Other Financial Intermediaries**

9.40 Increased emphasis will be placed on improving the efficiency of development finance institutions. A critical review will be undertaken to consolidate their role and functions with a view to strengthening the financial base of these agencies and improving their operations, especially in the management of loans and debts. Towards this end, the Government will study the feasibility of an amalgamation of the various development finance institutions to reduce their overhead expenses and increase their efficiency. This will enhance Government efforts in the attainment of a greater focus in extending long-term loans to the manufacturing and agriculture sectors as well as in providing financial support for the small- and medium-scale industries (SMIs), especially in the development of the Bumiputera Commercial and Industrial Community (BCIC).

9.41 BSN will continue to expand its network of branches and range of services to cater not only for existing customers but also to reach out to new markets that have business potential. The bank's objective is to become a leader in the retail banking sector and to command a major share of the banking business of households in Malaysia. In order to realize these objectives, the bank will focus its strategies on strengthening its branches and delivery systems, improving the range and quality of its products, undertaking aggressive and effective marketing and selling

programmes, and providing quality customer services. BSN will also consider the introduction of hire purchase loans and business loans during the Sixth Plan period.

## **Capital Market**

9.42 With the increasing sophistication and diversification of the economy, the role of the capital market in sustaining economic development has become more significant. In this regard, there is a need to continue efforts to deepen the capital market through the introduction of suitable new instruments as well as the creation and maintenance of viable secondary markets for all instruments. In addition, the use of property trust and country funds will be encouraged and is expected to provide greater additional instruments for investment. To further support the development of debt securities markets, the Government will consider further diversification of EPF to be invested in these securities. In the Sixth Plan, a programme to rationalize and streamline the legal and administrative framework governing the private debt securities market will be drawn up and implemented. The salient features of this programme are to further encourage the issue of private debt securities by credit-worthy corporations and develop viable secondary markets for the various instruments issued, through appropriate institutional and market arrangements, including the possible extension of the principal dealer network to such private debt securities.

9.43 An essential feature in an active and developed capital market is the existence of credit rating that would guide the investors to decide on an acceptable price for debt securities according to the credit-worthiness of the issuers. The establishment of an independent credit rating agency will enhance confidence and will increase investor demand for corporate bonds. This would encourage the corporate sector to raise funds directly from the market. Increasingly, there will be less reliance on bank credit for corporate funding as the bond market provides the corporate sector a cheaper and more flexible avenue for funding.

9.44 Efforts will also be undertaken to further develop KLSSE into a sophisticated international stock exchange. In this regard, KLSSE will introduce the Central Depository System (CDS) in 1991. CDS will reduce the problems associated with the physical delivery and transfer of scrips as well as improve the efficiency of corporate distributions, thus enabling cross border transactions which will help enhance the image of KLSSE among the international bourses. Measures will also be undertaken



to upgrade the quality of service of the stockbroking companies with intensified research activities to improve broker services. In addition, the corporatization of the stockbroking companies would be continued with the aim of strengthening further the corporate securities industry. The Government will continue to encourage stockbroking companies to merge or go for listing as a measure to consolidate and strengthen the industry.

9.45 In order to meet the demand of the increasingly sophisticated securities industry, the Government will consider the establishment of a single regulatory body to promote the development of the capital market. The task force set up to review the Malaysian capital market has considered the possibility of establishing a securities commission for this purpose. The proposed agency or commission will be given the responsibility to streamline the regulations of the securities market and to speed up the processing of applications and approvals for transactions.

9.46 During the Sixth Plan, ASN and ASB will continue to be an important vehicle to mobilize savings of Bumiputera individuals and to increase Bumiputera participation in the corporate sector. The savings generated will be channelled to increase Bumiputera interest in the existing companies of the ASN and ASB portfolios as well as purchase new investments. Improvements in the mobilization of savings will be achieved through the introduction of improved services via the computerization of the operations of ASN and ASB throughout Malaysia. This exercise also involves the computerization of post offices throughout the country. By January 1991, 280 major post offices will be computerized, while the remaining 225 post offices will be computerized by 1993. This will provide an extensive branch network of computerized post offices to mobilize Bumiputera savings, especially the small savers.

### **Financial Futures Market**

9.47 To complement the securities market, the Government intends to promote the establishment of a financial futures and options market to assist investors to hedge their risk exposures in the securities market. Towards this end, the establishment of a new exchange, namely the Kuala Lumpur Options and Financial Futures Exchange, will be considered.

### **Venture Capital**

9.48 The business community in general is largely unaware of the opportunities and benefits of venture capital as a form of long-term and

high risk fund compared with the conventional methods of raising finance from the traditional sources. During the Sixth Plan, the Government will gear up its efforts to promote and develop venture capital financing. The financial and legal requirements to support the growth of venture capital will be improved. Initial or seed funds for venture capital will be introduced by the Development Finance Institutions in the effort to initiate the growth of specialized activity. In this regard, the emphasis and the target market of this venture capital fund will be in the development of technology-based SMI's involved in R&D commercialization and product development.

### **Insurance**

9.49 During the Sixth Plan, the insurance industry will be further strengthened in order to achieve stable growth as well as provide improved services. Efforts will be concentrated in steering the insurance industry towards a stronger footing, structurally and operationally. The strategy is to impose prudent financial discipline on insurers and upgrade managerial professionalism and expertise among insurers and their intermediaries. This will ensure that the industry is able to meet the insurance needs of the country by offering quality service at reasonable cost.

#### *Measures to Strengthen the Insurance Industry*

9.50 *The Insurance Act, 1963* will be amended. The main thrust of the revision would be to raise the minimum capital requirement of insurer's operations, improve financial surveillance of insurer operations as well as provide clearer and more stringent guidelines on investment requirement and operating cost controls and specific requirement for claims provision for greater consumer protection. In consonance with this move, data bases of the insurance industry will be developed. These data bases will facilitate the diagnosis of the industry's problems as well as assist the Government in monitoring the performance of insurers more effectively.

9.51 *Upgrading Capacity and Capability.* Efforts will also be undertaken to improve the performance of the general insurance companies. Several measures will be adopted by the Government to maximize domestic retention capacity of the industry and to generate new income. A proposed scheme for large risks is being developed, aimed at reducing heavy reinsurances abroad of such risks, with local insurers acting only as fronts for reinsurers abroad.

9.52 *Upgrading Technical Expertise.* Human resource development is an important aspect for the expansion of the industry. The Government will seek to upgrade technical skills within the industry by devoting greater time and efforts in raising professional standards through strengthening the organization and training programmes of MII. As an additional boost to training activity, the Government has imposed a levy to be collected from those insurers who are not investing sufficiently in the training of manpower. The levies so collected will be managed and used by MII to finance industry-wide training programmes for the industry.

9.53 Continuous efforts will be undertaken to improve the quality of service to the public. In this regard, actions will continue to be undertaken to introduce uniform accounting standards with a greater degree of public disclosure of financial information. At the same time, the insurers, insurance brokers and agents will be encouraged to adopt professional code of ethics as a step towards upgrading of professionalism within the industry.

9.54 Recognizing the problems in the industry and the need to enhance the industry for it to play its rightful role in the economy, a two-prong approach will continue to be the strategy, namely, enhancing income through new markets, such as pooling of insurance of large risks and reducing expenditure by cutting overheads, acquisition costs and losses due to fraud. The technical skills within the industry would also need to be upgraded to meet the increasing sophisticated needs of the insuring public. Over the medium term, it is envisaged that the insurance industry should evolve to be a more effective and efficient mechanism for the transfer and pooling of risks as well as a major player in the capital market.

### **Labuan As An International Offshore Financial Centre**

9.55 The legislative framework for Labuan as an international offshore financial centre (IOFC) was established by the passage of six bills in the Parliament in June 1990. The activities identified for Labuan include offshore banking and insurance, trust and fund management, offshore investment holding and licensing companies and other offshore activities carried out by multinational companies, excluding shipping and petroleum operations.

9.56 The Government will take several necessary steps to ensure the successful development of Labuan as an IOFC. In this regard, the basic

infrastructural facilities in Labuan will be further developed and improved. The number of flight services between Labuan and Kuala Lumpur and the rest of the established financial centres in the region will also be improved and increased. Other facilities such as a modern hospital and medical centre and an international school will be constructed. Since the existing administrative system in Labuan is not conducive to the development of IOFC, several improvements and modernization to the present administrative system will be undertaken. Aggressive promotional efforts will continue to be undertaken to market Labuan as an IOFC, domestically and internationally. In establishing Labuan as an IOFC, the Government will ensure that a high degree of professionalism and credibility in the services provided will be maintained and *bona fide* funds are deposited in Labuan.

#### IV. ALLOCATION

9.57 The Federal Government development allocation and estimated expenditure for the Fifth Plan period and the allocation for the Sixth Plan period for the finance sector are \$535.1 million, \$534.1 million and \$660.9 million, respectively, as shown in Table 9-3. In line with the Government's emphasis on development of SMIs, a substantial allocation for the Sixth Plan is for the provision of credit and financial services for the promotion of SMIs. Emphasis will also be given to the promotion of hi-tech and commercialization of potential R&D projects through venture capital financing.

#### V. CONCLUSION

9.58 The finance, banking and insurance sector has contributed significantly to the growth and development of the economy. It performed very well and grew with greater maturity, efficiency and effectiveness, particularly in facilitating resource mobilization and allocation. For the Sixth Plan, this sector is expected to further facilitate growth and development, especially for the priority sectors of the economy. Government efforts at ensuring the growth of an efficient and effective finance, banking and insurance sector will be emphasized, especially in ensuring continuous improvements in financial prudence, discipline and professionalism in the sector. The Government will continue to provide the necessary support for the creation of an efficient finance, banking and insurance sector, as part of the efforts to ensure a conducive investment climate for private enterprise and initiative.

TABLE 9-3  
DEVELOPMENT ALLOCATION FOR THE FINANCE, BANKING AND  
INSURANCE SECTOR, 1986-95  
(\$ million)

<i>Programme</i>	<i>5MP</i>		<i>6MP</i>
	<i>Allocation</i>	<i>Expenditure</i>	<i>Allocation</i>
Export credit	10.0	10.0	75.7
Venture capital for High Tech	0	0	115.0
Industrial Promotion	66.5	66.5	100.0
Small & medium enterprises loans	147.2	146.2	356.5
Other financial services	26.4	26.4	13.7
Government Equity	285.0	285.0	0
<b>Total</b>	<b>535.1</b>	<b>534.1</b>	<b>660.9</b>

## **Chapter X**

# **Transport And Communications**

## CHAPTER X

# Transport And Communications

### I. INTRODUCTION

✓ 10.01 The adequate provision of transport and communications infrastructure has been the key to supporting the growth momentum of the economy. It has also played an important role in promoting rural development and expanding opportunities for rural households to participate in the growth process. The rapid growth in the various sectors of the economy has created higher and more sophisticated demands on the distribution, capacity and efficiency of the transport and communications network in the country.

10.02 During the Fifth Malaysia Plan, apart from the physical expansion of projects, emphasis was placed on the qualitative and safety aspects of transport and communications facilities. Consideration was also given to environmental protection through the reduction of negative impact on the environment arising from infrastructure development. In this regard, programmes were initiated to reduce urban congestion and thereby travel cost and time as well as pollution problems. Attention was also given to the identification and implementation of programmes for private sector involvement.

✓ 10.03 During the Sixth Malaysia Plan, the Government will continue to expand, upgrade and improve transport modes to maintain Malaysia's strength in providing good infrastructural and communications facilities. The programmes will adequately serve the rising demand for such facilities and support the rapid growth in industrial, tourism and other economic activities. The private sector is expected to play a more complementary role and take advantage of the opportunities created by Government initiatives. The greater role expected for user charges mainly from privatization will be further emphasized, and the incorporation of information technology into the sector will enhance its future growth potential and lead to greater internationalization of the sector.

## II. PROGRESS, 1986-90

10.04 The transport and communications sector grew at 8.6 per cent during the Fifth Plan period, exceeding the original target of 7.6 per cent anticipated under the Plan. The sector's contribution to Gross Domestic Product increased slightly from 6.6 per cent in 1986 to 6.9 per cent by 1990. The rapid expansion in the transport and communications sector generated 41,000 employment opportunities, which accounted for 4.1 per cent of the total jobs created.

10.05 The development thrust in the sector was towards the expansion, upgrading and rehabilitation of the network, improving operational and management efficiency and upgrading the safety aspects. The actual amount of public sector investment in the sector totalling \$7,615 million accounted for nearly 21 per cent of the total Federal allocation under the Plan. A major portion of this investment was directed towards strengthening land and sea transportation, thereby giving rise to a fairly sophisticated network of roads and port facilities.

### Road Transport

10.06 Road transport continued to account for nearly 90 per cent of the total freight and passenger movement. Accordingly, major programmes were undertaken for the expansion of the major road networks and the rehabilitation and upgrading of roads and bridges. Extensive improvements to urban transport systems were pursued to reduce congestion through traffic dispersal schemes and improvements in public transportation.

10.07 The roads subsector accounted for nearly three-quarters or \$6,011 million of the total allocation for transport and communications. As shown in *Table 10-1*, the road network comprising Federal and state roads, increased by 46 per cent, from 43,415 kilometres in 1985 to 63,445 kilometres in 1990. A fifth or 13,028 kilometres were Federal roads, inclusive of 415 kilometres of toll expressways. Over the Plan period, the development of Federal roads had been impressive with an increase of 129 per cent compared with 33 per cent with respect to state roads. The development of paved roads was emphasized and by 1990, 74 per cent of the road network were paved compared with 69 per cent in 1985. However, new earth or gravel roads were still provided as these roads were forerunners to the development of remote areas, particularly through the opening up of land for agriculture. Sabah and Sarawak had a high percentage of unpaved roads mainly due to existing lower traffic volume and the scattered nature of the population.



TABLE 10-1  
ROAD DISTRIBUTION BY TYPE AND JURISDICTION, 1985-90  
(kilometres)

State	Federal Roads			State Roads			Total			Road Paved (%)		
	1985	1990	1985	1990	1985	1990	Paved	Unpaved	Total	Paved	Unpaved	Total
Johor	798	2,003	3,399	3,960	3,690	507	4,197	5,000	963	5,963	88	84
Kedah	264	502	4,027	4,398	3,191	1,100	4,291	3,969	931	4,900	74	81
Kelantan	628	597	2,944	3,191	2,479	1,093	3,572	3,083	705	3,788	69	81
Melaka	118	152	1,157	1,903	1,198	77	1,275	1,690	365	2,055	94	82
Negeri Sembilan	577	1,297	1,516	2,651	1,852	241	2,093	3,208	740	3,948	88	81
Pahang	1,020	2,958	2,270	3,775	2,555	738	3,290	5,095	1,638	6,733	78	76
Perak	678	1,289	3,212	4,924	3,468	422	3,890	5,787	426	6,213	89	93
Perlis	121	145	815	645	831	105	936	747	43	790	89	95
Pulau Pinang	125	149	1,583	2,032	1,301	207	1,508	2,079	102	2,181	86	95
Sabah	-	1,067	7,307	7,591	2,579	4,728	7,307	2,981	5,677	8,658	35	34
Sarawak	-	1,318	4,450	3,560	1,445	3,005	4,450	1,704	3,174	4,878	32	35
Selangor	678	720	2,782	7,862	2,660	800	3,460	7,363	1,219	8,582	77	86
Terengganu	690	831	2,110	2,859	2,448	352	2,800	3,146	544	3,690	87	85
Wilayah Persekutuan Kuala Lumpur	-	-	546	1,066	300	46	346	1,038	28	1,066	87	97
Total	5,697	13,028	37,718	50,417	29,994	13,421	43,415	46,890	16,555	63,445	69	74

Note: 1 Federalization of roads in Sabah and Sarawak commenced in 1986

10.08 Major road projects undertaken included the construction and completion of various portions of the North-South Expressway, a major stretch of the New Klang Valley Expressway (NKVE) and a major portion of the Sungai Perak West Coast/Lumut road. In Sabah, the construction of the West Coast trunk road Beaufort - Kota Kinabalu - Kota Belud - Kudat, while in Sarawak the First Trunk Road System from Sematan to Miri and Limbang were completed. These major projects were aimed primarily at providing better inter-urban linkages as well as improved access to the industrial sites. These projects also contributed to savings in time and vehicle operating costs as well as improved non-quantifiable safety and comfort benefits. The journey between Seremban and Melaka on the new 85.9 kilometre expressway reduced travel time by 39 minutes.

### ***Rural Roads***

10.09 In line with the overall balanced approach to development, the emphasis on rural road development continued to be on the provision of adequate access to rural areas and improvements in the intra-state road network to promote economic activities and facilitate the implementation of development programmes. The focus was on the construction and upgrading of rural roads linking small towns or districts as well as security roads and *kampung* roads. *Kampung* roads were upgraded to bituminous surfacing while the others were constructed to meet improved standards.

10.10 Under the Fifth Plan, 949 kilometres of rural roads benefiting 919 villages were constructed compared with the target of 1,146 kilometres, as shown in Table 10-2. This programme had a wide coverage although the emphasis was on the bigger and relatively poorer states and states with the capacity to implement the programmes. Consequently, Kedah, Kelantan, Negeri Sembilan, Perak and Sarawak received a greater share of the rural road programme. Under the programme of upgrading the existing village roads to bitumen-surfaced standard, about 11,470 or 97 per cent of the Fifth Plan target of 11,790 kilometres, were upgraded.

### ***Urban Transportation***

10.11 The urban transportation programmes implemented aimed at meeting the rapid increase in urban traffic through traffic dispersal schemes and improvements in public transportation. Higher income levels and vehicle ownership created congestion problems, particularly in the Klang Valley and major urban centres. The number of registered motor vehicles grew at an average rate of 4.4 per cent, from 4.2 million

TABLE 10-2  
DEVELOPMENT OF RURAL ROADS BY STATE, 1986-90  
(kilometres)

State	SMP		
	Target	Achieved	(%)
Johor	75	50	67
Kedah	150	140	93
Kelantan	90	70	78
Melaka	30	26	87
Negeri Sembilan	110	90	82
Pahang	85	64	75
Perak	126	119	94
Perlis	11	11	100
Pulau Pinang	41	41	100
Sabah	173	117	68
Sarawak	165	156	95
Selangor	20	15	75
Terengganu	70	50	71
<b>Total</b>	<b>1,146</b>	<b>949</b>	<b>83</b>

in 1985 to 5.2 million in 1990. The congestion problem was most serious in Selangor and Wilayah Persekutuan Kuala Lumpur, where car sales accounted for nearly 43 per cent of the total sales in the country. Accident fatalities remained at a high rate of 7.3 deaths per 10,000 vehicles during the Fifth Plan period.

10.12 As part of the traffic dispersal schemes, road and interchange projects were implemented within the city areas of Kuala Lumpur, George Town, Ipoh, Johor Bahru, Alor Setar and Kota Kinabalu. In view of the high costs of these schemes, privatization was promoted as a means of reducing the Government's financial burden. The major projects included NKVE, the Shah Alam Expressway and the Pulau Pinang North Coastal Road. The double tracking project of the Malayan Railway (KTM) represented another measure to improve public transportation. Studies were conducted to improve the Klang Valley bus system and for the development of a rail-based commuter system for the greater Klang Valley.

## **Rail Transport**

10.13 With the existing railway network adequately serving the various parts of the country, the thrust in railway development was on speedier service and better commuter services. In line with this, the main programmes undertaken were the strengthening and rehabilitation of tracks, computerization, double tracking, purchase of additional locomotives and construction of additional stations and facilities. Inland Container Depots (ICDs) to promote intermodal and improved services in terms of frequency and product packages were established. With these improvements, the volume of passenger traffic carried by KTM increased at 5 per cent per annum, from 1,408.8 million passenger-kilometres in 1985 to 1,794.2 million passenger-kilometres in 1990. The railway's share of containers increased threefold from 35,750 Twenty Foot Equivalent Units (TEU) in 1985 to 91,800 TEU in 1990. The double-tracked sectors are expected to generate traffic demand and facilitate the development of real estate in the locality of the various stations as well as promote tourism and leisure-related business along the railway corridor.

10.14 Consistent with the Government's efforts to corporatize KTM, a commercial orientation was pursued which enabled KTM to realize operational profits of \$1.54 million in 1988 and \$2.91 million in 1990 after a series of losses in the previous years. This turnaround in operational profits was attributed to increased operating income from higher freight and passenger traffic arising from aggressive traffic promotion.

## **Maritime Transport**

10.15 During the Fifth Plan, the rapid expansion of trade and industries led to increased demand for the expansion of port facilities and related maritime services. Increasing emphasis was placed on improving efficiency and productivity of port operations to enhance the utilization of Malaysian ports. In domestic shipping, measures were taken to increase the share of the shipping tonnage handled by ships registered locally and owned by Malaysians. Specific measures were taken to provide a more conducive environment and these included a review of the relevant legislation in the subsector, customs and immigration practices and the operations of shipping agencies and hauliers.

### **Ports**

10.16 The nation's ports handled almost 80 per cent of the foreign trade and greatly supported the expansion in domestic seaborne trade. At the same time, the ports contributed significantly to regional

development in stimulating economic activities centering on the ports. The total throughput handled grew by 8.9 per cent per annum, increasing from 52.2 million tonnes in 1985 to 80 million tonnes by 1990, as shown in *Table 10-3*. Total exports handled by the ports grew at 10.2 per cent, largely from growth in liquid and bulk cargo. Imports grew by 8.5 per cent boosted by rapid increases in the imports of intermediate and capital goods as well as consumer goods. Container handling recorded an impressive increase of 13.1 per cent, to register 739,880 TEU by 1990.

10.17 During the period, a number of port expansion programmes were undertaken, such as in the Kelang, Pulau Pinang and Johor Ports. In addition, the operation of Phase II of the Petroleum Supply Base in Kemaman, Terengganu began in 1986, while preliminary works for the construction of the Kuala Perlis jetty and the upgrading of the Kuala Kedah jetty were undertaken. In Sabah, the Kota Kinabalu and the Sandakan Ports were expanded to provide improved facilities for handling both general and containerized cargo. In Sarawak, the construction of the Phase II expansion of the Kuching Port was completed.

10.18 As part of the privatization programme, the container terminal at Port Kelang was privatized in 1986. Specific studies to determine the most feasible approach to the privatization of the Kelang, Johor, Pulau Pinang, Bintulu and Kuantan ports were undertaken during the period. Another major step undertaken to improve port operations was the introduction of the concept of an electronic data interchange (EDI) network for automated processing of trade documents which also link the ports with other relevant Government agencies.

TABLE 10-3  
COMPOSITION OF CARGO THROUGHPUT, 1985-95  
(million tonnes)

Type of Cargo	1985	1990	1995	Average Growth Rate, 5MP (%)	Average Growth Rate, 6MP (%)
General Cargo	12.3	21.0	30.5	11.3	7.7
Dry Bulk Cargo	12.3	17.9	26.0	7.8	7.8
Liquid Bulk Cargo	20.3	27.9	41.7	6.6	8.4
Containerized Cargo	7.3	13.2	26.8	12.6	15.2
<b>Total</b>	<b>52.2</b>	<b>80.0</b>	<b>125.0</b>	<b>8.9</b>	<b>9.3</b>

## **Shipping**

10.19 Local participation in shipping had expanded as reflected by the increase in the number of Malaysian vessels and tonnage carried. The number of Malaysian vessels increased by 4.7 per cent per annum, from 714 in 1985 to 898 in 1990. The two major shipping lines, the Malaysian International Shipping Corporation (MISC) and *Perbadanan Nasional Shipping Line* (PNSL) expanded their capacity. MISC's fleet increased from 44 vessels in 1985 to 51 in 1990 while that of PNSL increased from nine to ten vessels, resulting in marginal increases in their capacity. The share of sea-borne trade carried by MISC remained at 19.7 per cent, while that carried by PNSL increased from 7.1 per cent in 1985 to 10.5 per cent in 1990.

10.20 The marginal increase in shipping capacity in the face of a rapid increase in trade activities further aggravated the nation's reliance on the import of shipping services. The limited local shipping capacity to transport Malaysian goods and the inability of local traders to handle cargo on a *cif* basis continued to encourage foreign buyers to make their own shipping and insurance arrangements. As a result, freight and insurance payments abroad doubled from \$2,727 million in 1985 to \$5,491 million in 1990 and the deficit in this item rose from 17.8 per cent of the total services deficit to 37.8 per cent.

## **Air Transport**

10.21 The thrust in the aviation sector under the Fifth Plan was on the completion of on-going projects as well as upgrading of existing facilities. Continued efforts were undertaken in response to the rising demand for air travel resulting from improvements in living standards and the rise in the value of time as well as accommodate increased demand in air cargo from greater industrialization. Total air passenger traffic increased by 10.9 per cent per annum, from 10.3 million in 1985 to 17.3 million in 1990, largely due to the worldwide rise in travel demand. The number of international passengers nearly doubled to 6 million in 1990 from 3.6 million in 1985. Cargo handled recorded a 14.8 per cent growth to reach 241,590 tonnes, attributed mainly to the increase in the movement of high value-added commodities, notably electronics, spares for industries as well as fruits and cut-flowers. There were also new trends in air cargo movement involving the shift towards full freighter services.

10.22 Since the nation has a fairly adequate airport network, the focus of development was on upgrading and improving the airports. Major improvements at the Subang International Airport included the

lengthening of the runway for direct long haul wide-bodied aircraft operations and the refurbishment of Terminal II for domestic services. Work commenced on the new airport at Sibuluan. The other major projects completed include resurfacing work and upgrading works to enable wider-bodied aircraft landings at a number of airports.

10.23 While emphasis was given on the development of airports in the capital cities, continued support was also given to the development of rural airstrips. Lack of accessibility to the remote areas, particularly in Sabah and Sarawak, necessitated the expansion of rural air services and construction of a number of new airstrips.

10.24 The Malaysian Airlines, the privatized national airline, expanded and upgraded its domestic and international services with the expansion of its fleet from 35 in 1985 to 50 in 1990 which comprised a diversified fleet of B747, DC 10, A300, B737, F50, F27 and Twin Otters. Spurred by tourism, the number of international passengers served by Malaysian Airlines increased at a rate of 8.7 per cent, from 2.5 million to 3.8 million over the period. The airline served 8 new international destinations and additional frequencies were mounted for 10 destinations. The airline carried a total of 5.6 million passengers in 1985 and this increased to 7.9 million in 1990, indicating a growth of 7.1 per cent per annum. The airline recorded steady increases in operating revenues mainly attributable to the rapid expansion in network and increase in passenger and cargo traffic.

## **Telecommunications**

10.25 During the Fifth Plan, the telecommunications subsector recorded significant progress in meeting customer demand and achieving operational efficiency. The services also underwent structural changes whereby privatization, deregulation and liberalization of the subsector were initiated to ensure more efficient resource management and better access to capital. In addition, attention was focussed on the expansion and upgrading of facilities and services so as to cope with the increasing demand, to widen accessibility to a larger spectrum of the population and to keep pace with rapid technological innovation.

10.26 Under the Fifth Plan, the capacity of the telephone network increased to only 1.58 million subscribers compared with the target of 2.4 million. This resulted in an increase in the telephone-population ratio per hundred from 6.5 in 1985 to 8 in 1990, with a shortfall in meeting the target of the telephone-penetration ratio of 13.8.

10.27 Improved management practices and aggressive marketing by *Telekom Malaysia Berhad* which was corporatized in 1987, resulted in the shift from basic telephone services into advanced business services to support the move towards higher value-added manufacturing and service-oriented activities. Data services, such as the Malaysian Packet Services (Maypac), Circuit Switched Services (MAYCIS) datel, telefax and the Mobile Radio Communications Services such as the automatic telephone using radio (ATUR) system, Trunked Radio and Paging System experienced rapid growth. With a total investment of \$4,000 million in the network infrastructure and about 266,000 trunk and junction circuits digitized, the total exchange line capacity was increased by 11.9 per cent to 2.3 million lines.

10.28 Private operators were licensed to operate the payphone services in designated urban areas throughout the country and to operate the second cellular mobile radio service, namely the ART 900, in direct competition to *Telekom Malaysia Berhad* owned cellular service, the ATUR 450. Licences were also issued to operate localized radio communications services such as paging, trunked radio system and radio leased channels. However, to protect the interest of subscribers, a regulatory body was established to ensure fair and effective competition. The access and acceptance fees for certain services were abolished in 1990 to promote the open market sale of subscriber equipment.

10.29 In terms of regional and international integration, an optic fibre cable link between Kuantan and Kota Kinabalu was implemented as part of the ASEAN submarine cable system to meet the demand for improved telecommunications services. This system will improve the overall telecommunications services, particularly in domestic telephone and television communications. Malaysia also invested in the international satellites organisation.

10.30 As part of the efforts to improve accessibility and the quality of life of the rural population, telecommunications services were expanded to the rural areas. The exchange line capacity was increased from 1.8 million in 1985 to 2.7 million in 1990 and the effective cable pairs from 2.2 million to 3.7 million throughout the country. This enabled an additional 172,520 rural households to have access to such services. In addition, the number of rural payphones increased from 250 to 6,770 during the Fifth Plan period.



## Postal Services

10.31 During the Fifth Plan, the postal services were modernized and its network expanded to meet the rising demand for more innovative product packages and the requirements of the expanded economic activities. The overall mail traffic increased marginally from 2,080 million in 1985 to 2,200 million in 1990. This was due to competition from the courier services and the rapid advancement of the data transmission technology. In order to provide more efficient services and to meet the rising demand, 65 post offices were constructed while 179 mini post offices and 84 postal agencies were established. Priority was also accorded to extend the services to the rural areas and to a larger section of the population.

10.32 With respect to the modernization of postal services, besides the introduction of Culler-Faces Cancellor, Automatic Letter Sorting Machines with Letter Indexing Desks were installed at 11 post offices to provide more efficient mail services and expedite mail delivery. In addition, 100 receipting machines were installed and 280 post offices were computerized to enhance the role of post offices as a one-stop centre and to facilitate the transaction of *Amanah Saham Nasional* unit trust which was listed in January, 1991. The Expedite Mail Services was also introduced at competitive rates, thus benefiting the general public and the local industries. The Postal Services Department maintained its courier services at affordable rates despite the competition from other premium services.

## Meteorological Services

10.33 During the Fifth Plan, the meteorological and geophysical services and facilities were upgraded and modernized to cater for the needs of the multi-disciplinary user sectors. In this regard, aeronautical weather forecasting was upgraded and expanded to enable effective weather watch over the Kuala Lumpur and Kota Kinabalu Flight Information Regions. In addition to upgrading the weather satellite receiving system, the storm-warning radar at the Subang International Airport was replaced and a new system was installed at the Kuching International Airport to enhance safe operation of aircrafts.

10.34 In the efforts to comprehensively assess the degree of atmospheric environment degradation, a total of 12 sets of air pollution monitoring equipment were installed at selected sites throughout the country. Additional meteorological and agro-meteorological stations and seismological network were set up for more complete data acquisition.

### III. PROSPECTS, 1991-95

10.35 The development of the transport and communications sector during the Sixth Malaysia Plan will be in line with the changes in demand in the sector arising from the transformation of the economy and shifts in the relative importance of the various modes. With rising complexity and cost of development, greater opportunities for private sector participation will be created to reduce the heavy financial implications of such development on the Government and infuse more private entrepreneurship. A wider dispersal of the sector's facilities will be realized to promote development of the backward regions and bringing the rural areas closer to the growth centres.

10.36 The development of the sector will be undertaken in an integrated manner to promote multimodalism and complementarity among the modes. Communications facilities and services will be further expanded and modernized to meet the growing domestic and international demand. Technological innovations will also be introduced to keep abreast with developments in the sector. Increased efficiency through greater competitiveness in the sector will be stressed to induce changes and to create new investment opportunities. During the Plan period, the sector is expected to grow at a rate of 10.5 per cent, much faster than the growth of the national economy. About 60,000 or 5.3 per cent of the new employment opportunities to be created during the Plan period will be provided by the sector.

10.37 Given the strategic role of the sector in the nation's economic growth and social change, a number of major programmes will be undertaken during the Plan period. These include the improvement of the major inter-urban road network and upgrading of road systems within the urban areas, modernization of the railway system and the expansion of maritime and air transportation facilities. The programmes will also involve the upgrading of the telecommunications, postal and meteorological facilities to meet the higher demand and sophistication required by the users. The distribution of the allocation for transport and communications by subsector and major projects is indicated in *Table 10-4*.

#### Road Transport

10.38 Development in the subsector will seek to improve inter-urban linkages and alleviate transport-related problems arising from continued concentration of people and economic activities in the urban centres. The strategies will also address the need to disperse growth through the

TABLE 10-4  
DEVELOPMENT ALLOCATION FOR TRANSPORT AND  
COMMUNICATIONS BY SUBSECTOR AND MAJOR PROJECT,  
1991-95  
(\$ million)

Subsector	Allocation	Programme	Distribution of Allocation by Programme (%)
<b>LAND TRANSPORT</b>	<b>8,952.8 (83.0%)</b>	<b>Expressways</b>	<b>9.2</b>
		(i) <i>Upgrading of KL-Karak Expressway</i>	
		(ii) <i>North-South Toll Expressway Project (Privatized Project)</i>	
		<b>Highways</b>	<b>49.2</b>
		(i) <i>East-West Highway Western Section</i>	
		(ii) <i>KL-Petaling Jaya Traffic Dispersal Scheme</i>	
		(iii) <i>Simpang Pulai-Lojing-Gua Musang-Kuala Berang Road</i>	
		(iv) <i>Integrated Development of Johor Causeway</i>	
		(v) <i>Road and Bridge Construction to Pulau Lumut, Kelang</i>	
		(vi) <i>Improvement of the Trunk Road System in the West and East Coast of Sabah</i>	
		(vii) <i>Construction &amp; Rehabilitation of East-West Highway, Sabah</i>	
		(viii) <i>Upgrading &amp; Improvement of Pan-Borneo Highway, Sarawak</i>	
		(ix) <i>First Trunk Road Construction, Sarawak</i>	
		<b>Rural Roads</b>	<b>11.9</b>
		(i) <i>Construction, Upgrading and Improvement of Rural Roads</i>	
		(ii) <i>Construction, Upgrading and Improvement of Security Roads</i>	
		(iii) <i>Construction and Maintenance of Existing Village Roads</i>	
		<b>Railways</b>	<b>12.7</b>
		(i) <i>Track Rehabilitation Programme</i>	
		(ii) <i>Double Tracking Project</i>	
		(iii) <i>Purchase of Rolling Stocks</i>	
		(iv) <i>Construction of Padang Besar Railway Station</i>	
<b>AIR TRANSPORT</b>	<b>997.5 (9.2%)</b>	<b>International Airports</b>	<b>2.6</b>
		(i) <i>Upgrading of Subang International Airport</i>	
		(ii) <i>Upgrading of Senai Airport</i>	
		(iii) <i>Upgrading of Langkawi Airport</i>	

TABLE 10-4—(cont.)

Subsector	Allocation	Programme	Distribution of Allocation by Programme (%)
		<b>Domestic Airports</b>	<b>3.1</b>
		(i) Upgrading of Kuantan Airport	
		(ii) New Sibu Airport	
		(iii) New Limbang Airport	
		(iv) Development of Labuan Airport	
		(v) Resurfacing of Sandakan Airport	
		(vi) New Bintulu Airport	
		(vii) New Tawau Airport	
		<b>Airstrips</b>	<b>0.4</b>
		(i) Sitiawan Airstrip	
		(ii) Pangkor Airstrip	
		<b>Air Traffic Safety</b>	<b>3.1</b>
		Modernization of Air Traffic Control Facilities	
<b>MARITIME</b>	<b>768.6</b>	<b>Ports</b>	<b>7.0</b>
	<b>(7.1%)</b>	(i) Port Development in Pulau Lumut, Port Kelang	
		(ii) Phase III & Phase IV Expansion Projects, Johor Port	
		(iii) Port Development Programmes	
		<b>Marine</b>	<b>0.1</b>
		(i) Development of Kuala Perlis Passenger Jetty	
		(ii) Upgrading and Construction of Jetties	
		(iii) Upgrading of Kuah Jetty Facilities	
		(iv) Improvement and upgrading equipment and other facilities in the Department	
		(v) Ferry Services	
<b>COMMUNICATIONS</b>	<b>72.9</b>	<b>Telecommunications</b>	<b>0.4</b>
	<b>(0.7%)</b>	Regulatory Services	
		<b>Meteorological</b>	<b>0.3</b>
		<b>Services</b>	
		(i) Construction of Meteorological & Agrometeorological Stations	
		(ii) Replacement of Equipment	
		(iii) Equipment for Air Pollution Monitoring	
		(iv) Radar Integration Equipment for Peninsular Malaysia	
<b>TOTAL</b>	<b>10,791.8</b>		
	<b>(100%)</b>		

expansion of the road network. The road subsector will account for nearly two-thirds of the total allocation for the sector under the Sixth Malaysia Plan, of which a major portion will be for the implementation of continuation projects, the upgrading of existing roads, new road construction, the rehabilitation of roads and road safety works. A major programme will be the upgrading of the timber and sub-standard bridges on the Federal Highway.

10.39 The construction of the remaining sections of about 464 kilometres of the North-South Expressway, 34 kilometres of the North-South Link Expressway, 48 kilometres of the Shah Alam Expressway and the widening of 14.5 kilometres of the Federal Highway II to three-lane dual carriage will be undertaken. The North-South Expressway will be completed in 1994. The first phase of the Shah Alam Expressway will be operational by 1993. In addition to providing improved accessibility, these expressways are expected to spearhead industrial, tourism and trade development in the west coast corridor of Peninsular Malaysia. The expressways will reduce travel time substantially between 25 to 30 per cent per kilometre for normal journeys.

10.40 Improving urban transportation will continue to be emphasized to overcome the congestion problems in the Klang Valley as well as other urban areas in the country. New measures will be introduced to increase ridership of high occupancy vehicles notably buses and the train and to provide new mass transit transport services such as the light rail transit system. The quality of bus services will be improved through more relaxed opportunities to enter the market and increased frequencies with consequent reduction in total travel time. The completion of the railway double tracking project is also expected to divert part of the road traffic to the railroad. The project will halve the travel time from the present 90-minute trip between Kuala Lumpur and Seremban.

10.41 Accessibility to rural areas through improvements in the infrastructure network will be enhanced to promote economic and social activities of the rural population as well as to facilitate the implementation of other sectoral programmes. The construction and upgrading of about 650 kilometres of rural roads and the upgrading of 14,600 kilometres of village roads will be undertaken. These roads will also provide necessary physical infrastructure to meet the security needs of the country, particularly in the northern states of Perlis, Kedah, Perak and Kelantan.

10.42 The maintenance of roads and highways including all associated facilities will continue to be given priority since effective preventive maintenance will reduce transport costs and increase overall cost-

effectiveness of capital investment. In order to preserve the structural integrity of the road pavements and bridges, a two-pronged strategy will be adopted. Firstly, the maintenance system will be improved and modernized. Secondly, the enforcement of laws on vehicle weight restriction will be intensified to reduce overall maintenance cost. The weighing-in-motion systems strategically located on the trunk road network will be introduced. In this regard, the policies based on the findings of the National Road Axle Load Study will assist in the construction and management of road transport.

10.43 Increased use of concrete pavement technology in road construction will be pursued. Research will continuously be directed at the development of new technologies as well as adapting imported technologies to suit local conditions. Indigenous research on pavement evaluation and overlay design and behaviour of embankment over soft ground will also be continuously carried out, especially on technologies that will enhance the efficiency of the road construction industry. In addition, environmental impact assessment studies will be carried out as steps to reduce the negative impact of road transport development on the environment.

10.44 The continued increase in vehicles and traffic densities over the period has made it increasingly necessary to reduce fatalities caused by road traffic accidents, particularly since fatalities could increase with the growth in car ownership. Hence, the Government has recognized road safety as a national problem and has targeted to reduce fatalities caused by road traffic accidents by 30 per cent by the year 2000, thereby reducing fatality rates from 7.12 per 10,000 vehicles in 1990 to 5 per 10,000 vehicles by 1995. Among the measures to be taken include revision of certain road traffic regulations, strengthening of enforcement agencies, improvements in road infrastructural facilities and road signs, road safety and new driver-testing programmes.

## **Rail Transport**

10.45 With the physical rail network adequately developed, the emphasis will be on improving convenience and comfort of rail transport. These improvements will also help alleviate urban congestion by diverting part of the road traffic to the railway. The focus of development will be on providing an efficient and low-cost service for which rail has a competitive advantage. Passenger and freight traffic is expected to increase from 1,794.2 million passenger-kilometres and 1,423.5 million tonne-kilometres in 1990 to 2,232 million passenger-kilometres and 1,949.5 million tonne-kilometres in 1995, respectively.

10.46 Under the Sixth Plan, KTM will emphasize on two major segments of passenger transportation: the present market connected with express trains, mail trains and local trains, and the new market segment which will be generated from the commuter services to be introduced with the double-tracking projects between Kuala Lumpur - Port Klang - Subang International Airport and Seremban - Rawang. It is projected that these commuter services will largely cater for short distances and carry about 30 million passengers in 1995. The Study on Rail-Based Commuter Services in Klang Valley will assist in developing this commuter services market. In this regard, the programme will concentrate on integrated rail-based commuter services to upgrade and improve the system. It will also cover the commercial aspects of the integrated system with focus on off-track activities and land development to enhance the viability of the system. Express train services between Tumpat and Kuala Lumpur will also be introduced. The electrification of railways in the Klang Valley will provide speedier rail services and thereby increase the attractiveness of the rail services.

10.47 The role of KTM in promoting intermodalism will be further enhanced with the expected increase in container traffic. The carrying capacity of KTM will be improved with the increase in track capacity arising from the double tracking project. The intermodal system will be a lucrative market that will provide better flexibility, higher utilization of assets and hence higher profit margins. Accordingly, KTM will strategically shift its market towards the handling of general cargoes in containers and improve the logistics and operation of yards and terminal facilities. More ICDs will be built through joint-ventures with the private sector to support the growing requirements. In order to provide a good control system, KTM will also install the Computerized Wagon Control System to track wagons and allocate loads, thereby achieving a higher level of utilization and better returns of the rolling stocks.

10.48 In line with the Government's privatization policy, the corporatization of KTM will be undertaken. The corporatization of KTM will improve its operations and management and thereby raise efficiency, productivity and financial viability. A regulatory framework will also be established to ensure that the regulatory functions will be undertaken effectively.

### **Maritime Transport**

10.49 The basic policies for maritime transport development under the Sixth Plan will be to create an efficient port system that can provide speedier services, lower rates as well as facilities in line with developments

in the external shipping and trading patterns. Strategies in the sector will incorporate important new directions in transport practices and information technology.

10.50 The thrust will be on providing adequate capacity to meet the anticipated growth in traffic and increasing efficiency, competitiveness and productivity. An integrated development of ports will be undertaken and the privatization of port facilities and services accelerated so as to improve the operation and management of these facilities. In shipping, measures will continue to be taken to promote the expansion of the local mercantile fleet and increase the participation and utilization of Malaysian shipping lines in domestic and international trade so as to reduce the outflow of freight and insurance payments. The effectiveness of the Cabotage Policy in increasing the share of the shipping tonnage by vessels locally registered and owned by Malaysians will be reviewed to promote competition through greater liberalization.

### *Ports*

10.51 In line with the rapid growth of the economy, the total cargo throughput to be handled by the ports is estimated to increase from 80 million tonnes in 1990 to 125 million tonnes in 1995, representing an annual growth of 9.3 per cent, as shown in *Table 10-3*. In order to cater for this growth in cargo throughput, measures will be taken to increase the utilization of existing facilities and expand port capacity where necessary. By the end of the Plan period, the total handling capacity of the Malaysian ports is expected to increase to 130 million tonnes as compared with 79.8 million tonnes in 1990, thereby providing sufficient capacity to meet the expected increase in throughput.

10.52 The rapid increase in the global use of containers in the international carriage of goods is expected to generate greater containerized traffic at the Malaysian ports. With this development, other inland services associated with containerization will also be developed, including the upgrading of organizational facilities to meet the demands of intermodalism. The introduction of EDI and intermodalism will not only involve the ports but will also require active cooperation of many Government agencies as well as the private sector. This will include banking and insurance services, customs, freight forwarders and shipping agents. Specific training programmes designed to meet the new demands from these innovative strategies will be stepped up.



10.53 The construction of the highway and bridges and the general, liquid and dry bulk cargo and container berths and supporting facilities at Kelang Port will be completed by 1995. The Kelang Port will be developed as the main line container terminal connected by an efficient internal transportation system in line with the concept of intermodalism. The North Butterworth Container Terminal will be constructed to provide additional container facilities. The Phase III expansion of the Johor Port involving the construction of two additional container berths and other supporting facilities and the Phase IV expansion involving the construction of container and general cargo berth facilities will be completed during the Sixth Plan. The Kuantan Port will be expanded with additional general cargo/multipurpose berths to enable the port to handle the expected increase in the volume of cargo. The construction of a container yard and the purchase of straddle carriers at the Kota Kinabalu Port and the construction of additional general cargo berths at Sandakan Port will be undertaken. In Sarawak, the Bintulu Port will undertake the construction of a Liquefied Natural Gas (LNG) jetty.

10.54 The container haulage system will be continuously improved. New procedures and innovations will be adopted to relieve congestion along the highway routes. In view of the growing importance and complexity of international trade and greater intensity of global competition which requires timely and accurate information, the EDI system will be developed, the first phase of which will be confined to the Klang Valley. A national approach towards increasing port efficiency and productivity will be adopted with the establishment of a mechanism to plan, implement, monitor and evaluate port performance, particularly after the privatization of the various ports.

10.55 Privatization will be pursued actively in the port sector. The studies that have been completed will guide the privatization of port facilities and services. In this regard, the remaining services of Kelang Port will be privatized in 1991 followed by the ports of Bintulu, Johor, Kuantan and Pulau Pinang. A regulatory mechanism will also be established to monitor the performance as well as future development of these privatized entities.

### *Shipping*

10.56 Given the heavy dependence on foreign vessels and the resultant heavy outflow of funds, a coordinated approach to strengthening the shipping industry will be pursued. The possibility of

relaxing legislative restrictions to foreign equity participation in the industry will be explored and the formation of joint-ventures with foreign shipping lines will be promoted. The expansion of the merchant fleet, provision of efficient and appropriate supporting services, growth and development of an efficient shipbuilding and repairing industry and training and development of Malaysians in the professional, commercial and managerial aspects of the shipping industry will also be stressed. The activities of both MISC and PNSL will be expanded and diversified in both domestic and international shipping. During the Plan period, three new vessels are scheduled to join the MISC's current fleet of 51 to raise its capacity to 1.48 million tonnes by the end of 1995. PNSL will acquire an additional 12 vessels aimed at forming a diversified fleet of crude oil tankers, chemical and parcel tankers, bulk carriers and LNG carriers. By the end of 1995, its fleet in operation is expected to increase to 22, with a total capacity of 0.58 million tonnes.

10.57 In order to further encourage the utilization of Malaysian vessels for the country's trade, efforts towards strengthening the Shippers Council and the freight forwarding services will be continued in order to promote the interests of the local shippers. Shipping commitments in bilateral, regional and other trade arrangements in international shipping will be widened to further expand the shipping network.

10.58 In domestic shipping, the policy of confining domestic shipping to locally registered vessels will be reviewed. The performance of the domestic ship-owning and ship-operating community will be further improved in terms of efficiency and productivity so that the operations will be viable and profitable. The coastal trade between Peninsular Malaysia and Sabah and Sarawak is expected to increase to 4.5 million tonnes in 1995 which will constitute about 19.8 per cent of the total sea-borne trade of Sabah and Sarawak during the period.

10.59 Specific measures will be taken to enhance efficiency in the subsector. Liberalization of the haulier system will be continued to accelerate delivery time. With the development of the EDI network, the physical movement of documents will be replaced by a computer network that will connect the port authorities, the shippers and the forwarding agents and enable improved flow of information for faster clearance of documentation. Greater emphasis will be given to the carriage of Malaysian goods by the local shipping lines. The merchandise insurance industry will be developed further to encourage shippers and ship owners to insure with local insurance companies and reduce the need for reinsurance.

10.60 As shipping is a capital-intensive industry, the lack of sufficient financing has resulted in slow growth of the local shipping industry and a fleet which is mainly more than 15 years old. Although the Government has consistently provided fiscal incentives to attract greater investment into the industry, the limited success in stimulating growth of the Malaysian fleet remains a major concern. In this respect, the Government will assist in accelerating investment in the industry by instituting a loan scheme to supplement the efforts of the commercial banks, particularly *Bank Industri Malaysia Berhad* (BIMB). The loan scheme, which could be managed by BIMB to ensure that the fund is administered on sound commercial principles, should give priority for the smaller firms that have limited access to the financial market. In addition to improving access to ship financing, greater attention needs to be given to the close monitoring of the shipping industry in order to determine the types of vessels to be acquired, the identification of appropriate trades or sectors and the possibility of greater utilization of the local shipyards.

### **Air Transport**

10.61 Given the anticipated growth of the economy, there will be continued efforts to expand and improve air transport in response to the increasing volume of international and domestic passenger and cargo traffic. As the Asia - Pacific region is expected to be the second important region in air transport development, passenger traffic in Malaysia is expected to grow between 7 and 10 per cent per annum over the Sixth Plan. The airports will handle between 17 to 19 million passengers by 1995, while the volume of freight is projected to increase at an annual average rate of 13 per cent for the international sector and 8 per cent for the domestic sector. With the exception of Subang International Airport, the increase in traffic is not expected to exert demand beyond the handling capacity of the existing airports. The Subang International Airport, being the main gateway and premier airport, will be upgraded. Additional parking bays will be constructed to cater for the rise in traffic demand for the interim period. However, in the long-run, new airport facilities may be required to accomodate the increase in traffic demand after 1995.

10.62 As the existing airports can adequately serve the traffic requirements for the first half of the 1990's, and since generally peak periods are not a major concern in the majority of the airports, the *hub and spoke* concept will be pursued actively. This concept based on the main and feeder airport system, aims at maximizing the use of airport capacity. A 'hub' is a collection, consolidation and distribution centre while a 'spoke' is a feeder airport to the main 'hub'. Since this concept

will emphasize greater frequencies, development efforts will focus on safety aspects such as the upgrading of air traffic control system, navigational and communication aids, and minor upgrading of existing facilities. The cargo complex at the Subang International Airport with some capacity upgrading will be able to handle cargo traffic until 1995. The upgrading of airports supporting tourism will also be given priority to complement the efforts towards developing the tourism industry. In order to provide better access to the remote areas, particularly in Sabah and Sarawak, the Government will continue to upgrade and improve the rural airstrips. In addition, the Government will continue to regulate safety and security standards in line with international requirements.

10.63 In line with the strategy to corporatize the airports, aviation charges will be reviewed to ensure efficiency in the use of capital resources in developing airport infrastructure. However, affordability and national interest considerations can be catered for under a new regulatory framework. The corporatization of the airports and the establishment of the National Airport Authority will further upgrade the efficiency of the airports in the country.

10.64 The nation's liberal and open sky policy will be continued to further encourage foreign airlines to increase services into Malaysia to promote tourism. New and additional traffic rights will be sought, particularly in Europe, the Far East as well as in the Southeast Asian region. Services will be launched to new destinations in North and South America, the South Pacific, India, China, the Middle East and Africa. On the domestic sector, Malaysian Airlines will operate additional frequencies and capacity to meet the growth in domestic demand by replacing existing aircrafts and acquiring additional aircraft such as B737 - 400/Combi and F50. The purchase of additional B747 - 400/Combi will be able to accommodate the combined passenger and cargo needs.

### **Telecommunications**

10.65 Under the Sixth Plan, the sector is expected to intensify its efforts to provide modern, efficient and high quality telecommunications services at affordable and competitive prices. A total of \$5,350 million will be invested by *Telekom Malaysia Berhad* in the subsector for the digitalization of the domestic and international networks, the commissioning of the digital microwave network running from north to south and the launching of the Integrated System Digital Network (ISDN) on a commercial basis. With these developments, the exchange line capacity is targeted to increase from about 2.54 million in 1990 to 3.43 million in 1995.

10.66 It is anticipated that the telephone services will grow at about 14 per cent, as shown in *Table 10-5*. This will improve the telephone-population ratio per hundred from 8 in 1990 to 13 in 1995. In addition, the ATUR 450 will be expanded at a rate of 12 per cent per annum to cater for the rising demand. However, this service will be complemented with new systems such as the ATUR 800. A new generation of cordless telephones will be introduced for the general public. It is envisaged that other new mobile radio communications services, such as the ATUR digital systems, mobile data and Value-Added Network Services (VANS) including satellite-based services, will be considered. The potential for growth in the data and leased services is encouraging due to the increasing demand for data transfer. Although the demand for telex service will continue to decline further, this service will still be maintained, particularly as a means of communication to Third World countries.

10.67 As for regional development and international integration, about \$1,020 million will be invested on switching and building new exchanges as well as upgrading the exchanges from analogue to digital. The digital microwave transmission will continue to be expanded and the optic fibre system will be implemented to enable high speed digital links

TABLE 10-5

GROWTH OF TELECOMMUNICATIONS SERVICES  
BY TYPE, 1990-95

Type of Services	Subscribers		Average Annual Growth Rate, (%)
	1990	1995	
Telephone	1,579,634	3,028,446	14
Telex	8,115	6,280	-5
Cellular (ATUR)	87,000	250,000	24
Paging	36,000	160,000	35
Maypac	1,125	2,640	19
Trunked Radio System	1,250	12,000	57
Datel	5,678	21,702	31
Leased Circuits	15,071	39,574	21
Telefax	36,716	120,000	27

between exchanges and for trunk links nationwide. As for the international network, \$475 million will be spent on digital switching and for the use of cable and satellite facilities to support the rapid growth in international traffic. In addition, the new fully digital international telephone gateways will also be implemented.

10.68 The extension of telecommunications services to rural areas will continue with an investment of \$1,390 million. Rural telephones are projected to increase by 12 per cent while the rural pay-phones at an average of 20 per cent. Where the provision of services by conventional means are uneconomical or impractical, multi-access radio system, single channel radio and radio call service or ATUR will be used. Solar-powered public pay-phones will also be installed in areas where there are no main power supply. The rental rates for rural telephones will be reduced regardless of their distance from the exchange stations. Telephone penetration in rural areas will be increased from the current level of 1.8 to 3.1 per hundred by 1995.

10.69 The Government will review the tariff structure for all telecommunications services which has prevailed since 1985 so that the tariff and rental charges will be more reflective of cost and to attract local and foreign investors. In addition, it will also introduce new systems to manage radio spectrum in view of the demand for the radio communications services in the country.

### **Postal Services**

10.70 The postal services will continue to be expanded and modernized to improve quality and extent of coverage. In line with the changing socio-economic and technological environments, measures will continue to be taken to provide new and innovative services. The computerization programme will be extended to smaller post offices to provide improved counter services. This will be supplemented with the introduction of the tracking and tracing system for mail-related services and improving other supplementary services.

10.71 The Mail Order Business will be further promoted to generate new shopping methods where business establishments will operate from a single location and reach the entire consumer market. In addition, its services as a one-stop centre will be expanded to other small towns and the post offices will be made into convenient service-oriented centres providing services such as packaging, stationery and gift shops. Mechanization of the postal services will be continued to further promote efficiency.

10.72 In line with the socio-economic objectives, the post offices will continue to extend communications facilities, cash transmissions and delivery services to the remote areas which are not being provided by other establishments to enable the rural population to enjoy the benefits of such facilities and services. With the corporatization of the Postal Services Department, the corporatized entity will be able to diversify into the consumer market and participate in financial services.

### **Meteorological Services**

10.73 During the Sixth Plan, the current activities of the Meteorological Department will be further modernized and expanded to ensure more efficient collection and faster dissemination of data necessary for aeronautical weather forecasting. In addition to the replacement of the storm-warning radar at Kota Bharu and Kuantan and the installation of a new radar in Sibu, all the storm-warning radars will be integrated under a single system to obtain a complete overall view of storm conditions in the country. The existing seismological monitoring system will be replaced by a telemetry system for more efficient monitoring of seismological activities. As part of the Government's efforts to alleviate the environmental problems associated with air pollution and flash floods in the urban areas, the Automatic Applied Meteorological Observing System will be implemented, initially as a pilot project in the Klang Valley.

### **Facilities And Private Investment**

10.74 The programmes in the sector will further enhance the nation's reputation of having a well-developed and efficient transport and communications system. With the Sixth Plan programmes, which include the construction of major highways and innovative urban mass transit systems, modernization of the railroad, upgrading of port and airport capacity and the expansion of telecommunications services, the sector will be well placed to meet the demands from the rapid growth in industrialization and trade. The sector's facilities will be sufficient to attract private investment and eliminate any potential bottlenecks in the sector. The Government is also committed to provide the incentives and opportunities for the private sector to participate in the development of transport and communications, notably in the construction and operation of transport and telecommunications facilities.

#### IV. ALLOCATION

10.75 Recognizing that the efficiency of transport and communications facilities is critical to economic growth and competitive strength, substantial investment is required to finance the sector's development. As shown in Table 10-6, a total of \$25,190 million is expected to be invested in the sector under the Sixth Plan. Of this, \$10,792 million will form the Federal component with the rest from the Non-Financial Public Enterprises notably Malaysian Airlines, MISC, PNSL, *Telekom Malaysia Berhad* and the Port Authorities. Of the total Federal funding, \$7,585 million or 70 per cent is for road development. The allocation for the communications sector will amount to \$73 million which will be complemented by a substantial investment of \$5,350 million by *Telekom Malaysia Berhad*. This sizeable infusion of public sector funds will also offer significant opportunities for private sector involvement in the construction, maintenance and management of transport and communications facilities.

#### V. CONCLUSION

10.76 The high economic growth expected in the Sixth Plan period will exert pressure on the Government to expand investments to increase capacity and improve the quality of services in the transport and communications sector. The Government will continue to place heavy emphasis in developing the sector to ensure that the sector's facilities are provided ahead of demand and are of high quality. The strategic focus of these programmes will be to support national economic growth arising from rapid private sector investment in industrial and other commercial activities. The private sector is expected to participate more actively and take advantage of the opportunities created by the development of the sector.



TABLE 10-6  
DEVELOPMENT ALLOCATION FOR TRANSPORT  
AND COMMUNICATIONS, 1986-95  
(\$ million)

Sector	Federal Government		NFPEs		Total	
	Expenditure 5MP	Allocation 6MP	Expenditure 5MP	Planned Expenditure 6MP	Expenditure 5MP	6MP
<b>TRANSPORT</b>	<b>6,823.0</b>	<b>10,718.9</b>	<b>4,393.4</b>	<b>8,940.7</b>	<b>11,216.4</b>	<b>19,659.6</b>
Railways & Light Transit	370.0	1,368.1	527.1	609.0	897.1	1,977.1
Ports & Shipping	243.3	768.6	1,107.3	2,877.1 <sup>1</sup>	1,350.6	3,645.7
Ports	151.3	757.6	506.3	1,968.0	657.6	2,725.6
Shipping	92.0	-	601.0	909.1	693.0	909.1
Marine Academy	-	11.0	-	-	-	11.0
Civil Aviation	198.7	997.5	2,759.0	3,934.6 <sup>2</sup>	2,957.7	4,932.1
Roads & Bridges	4,849.6	6,298.7 <sup>3</sup>	-	1,520.0 <sup>4</sup>	4,849.6	7,818.7
Peninsular Malaysia	1,262.5	4,057.6	-	1,520.0	1,262.5	5,577.6
Sabah	440.0	390.4	-	-	440.0	390.4
Sarawak	548.7	786.8	-	-	548.7	786.8
Malaysian Highway Authority	2,555.4	991.0	-	-	2,555.4	991.0
Machinery	43.0	63.1	-	-	43.0	63.1
Research & Development	-	9.9	-	-	-	9.9
Rural Roads Programme	1,161.4	1,286.0	-	-	1,161.4	1,286.0
Rural Roads	525.2	550.6	-	-	525.2	550.6
Village Roads	499.2	500.0	-	-	499.2	500.0
Security Roads/KESBAN	137.0	235.4	-	-	137.0	235.4
<b>COMMUNICATIONS</b>	<b>791.9</b>	<b>72.9</b>	<b>3,512.4</b>	<b>5,457.9</b>	<b>4,304.3</b>	<b>5,530.8</b>
Telecommunications	778.7	41.3	3,432.2	5,350.0 <sup>5</sup>	4,210.9	5,391.3
Postal Services	-	-	80.2	107.9	80.2	107.9
Meteorological Services	13.2	31.6	-	-	13.2	31.6
<b>Total</b>	<b>7,614.9</b>	<b>10,791.8</b>	<b>7,905.8</b>	<b>14,398.6</b>	<b>15,520.7</b>	<b>25,190.4</b>

Notes:

<sup>1</sup> Investment by the Port Authorities, MISC and PNSL

<sup>2</sup> Expenditure by Malaysian Airlines

<sup>3</sup> Excludes allocation for Dewan Bandaraya (\$40.1 million)

<sup>4</sup> Includes privatized highways such as North-South Link, Kulim-Butterworth and Seremban-Port Dickson

<sup>5</sup> Investment by Telekom Malaysia Berhad

## **Chapter XI**

# **Energy**

## CHAPTER XI

# Energy

### I. INTRODUCTION

11.01 The development of energy resources has significantly contributed to the expansion of the Malaysian economy. Apart from providing energy resources, it has contributed substantially to enhancing export earnings and increasing public sector revenue as well as widening the industrial base of the economy. A major development in the sector during the Fifth Malaysia Plan period has been the attainment of a rapid diversification in the supply as well as demand of the nation's energy resources.

11.02 For the Sixth Malaysia Plan period, with the Malaysian economy envisaged to sustain a high growth momentum, the energy sector is expected to further enhance its contribution to the economy. In addition to its traditional role in providing sufficient supply of energy resources to other sectors of the economy, the sector will provide greater raw material input for the rapid expansion of the industrial sector.

### II. PROGRESS, 1986-90

11.03 The development thrusts of the sector during the Fifth Plan continued to be focussed on the diversification of the energy mix with the view to maintaining self-sufficiency, reducing dependence on oil as well as optimizing the utilization of the nation's indigenous resources, such as gas and hydropower. Apart from this, efforts were made to increase efficiency in the use of energy through fuel substitution and conservation measures.

#### Energy Supply

11.04 Significant progress had been made during the period 1986-90 in supplying energy input to support the nation's economic development.

The supply of primary commercial energy expanded by 7.3 per cent per annum, as shown in *Table 11-1*. In terms of diversification, a notable feature had been the rapid decline in the share of oil in total primary energy supply. As a source of energy, oil had been replaced by the greater use of gas and coal. The share of gas increased from 19.0 per cent in 1985 to 27.2 per cent in 1990 while that of oil declined from 70.9 per cent to 59.3 per cent. The share of coal increased from 2.7 per cent to 7.8 per cent, largely on account of its usage in electricity generation. The reduction in the dependence on oil for domestic energy requirements has not only contributed to the achievement of the energy diversification objective, but also enabled the nation to increase its oil export to earn additional foreign exchange as well as reduce oil imports. These had contributed towards the improvement of the nation's external trade position.

### *Oil and gas*

11.05 During the period, 25 Production Sharing Contracts (PSCs) were signed between *Petroleum Nasional Berhad* (PETRONAS) and foreign oil companies. The significant increase in the number was a direct consequence of the liberalization of PSC terms to encourage exploration and development activities in the upstream sector. These were with respect to the provisions for accelerated cost recovery, elimination of bonuses payable to PETRONAS and introduction of a sliding scale for the sharing of profit oil which also encouraged production from marginal fields.

11.06 In the upstream sector, crude oil production increased from an average production of about 446,400 barrels per day (bpd) in 1985 to about 622,470 bpd in 1990. The production level in 1990 was relatively higher in response to additional demand from several of the nation's trading partners, arising from the Gulf crisis. The additional crude oil production came from existing fields, such as Seligi, Guntong, St. Joseph and Bokor. Natural gas production, net of reinjection and flaring, also increased from an average of 946 million cubic feet per day (mmcf) in 1985 to 1,377 mmcf in 1990, mainly due to increased demand by the liquefied natural gas (LNG) plant in Bintulu.

11.07 In the downstream sector, a major project undertaken during the Fifth Plan was the construction of a catalytic reformer at the Kertih refinery. The reformer, which has a production capacity of 6,500 bpd, produces reformate used in the blending of motor gasoline. With the completion of this project in early 1990, PETRONAS was able to overcome the problem of limited supply of imported reformate and the attendant problem of rising cost.

TABLE 11-1

PRIMARY COMMERCIAL ENERGY SUPPLY<sup>1</sup> BY SOURCE,  
1985-95

	1985		1990		1995		Average Annual Growth Rate (%)	
	PJ <sup>2</sup>	%	PJ	%	PJ	%	5MP	6MP
Crude Oil & Petroleum Products	406.3	70.9	482.7	59.3	603.7	52.2	3.5	4.6
Hydro	42.6	7.4	46.5	5.7	50.9	4.4	1.8	1.8
Gas <sup>3</sup>	109.0	19.0	221.4	27.2	452.5	39.1	15.2	15.4
Coal & Coke	15.1	2.7	63.3	7.8	49.1	4.3	33.2	-5.0
<b>Total</b>	<b>573.0</b>	<b>100.0</b>	<b>813.9</b>	<b>100.0</b>	<b>1,156.2</b>	<b>100.0</b>	<b>7.3</b>	<b>7.3</b>

## Notes:

<sup>1</sup> Refers to the supply of commercial energy that has not undergone a transformation process to produce energy. Non-commercial energy, such as firewood and biomass, have been excluded.

<sup>2</sup> Joule is the unit of energy used to establish the equivalent physical heat content of each energy form  
1 petajoule (PJ) = 10<sup>15</sup> joules

<sup>3</sup> Excludes flared gas, reinjection and liquefied natural gas export.

*Coal*

11.08 During the period, two coal mining companies were in operation at Silantek and Merit-Pila in Sarawak. The total production capacity of the two mines was about 410,000 tonnes per year. Their initial production, however, amounted to only 120,000 tonnes per year, of which all were exported.

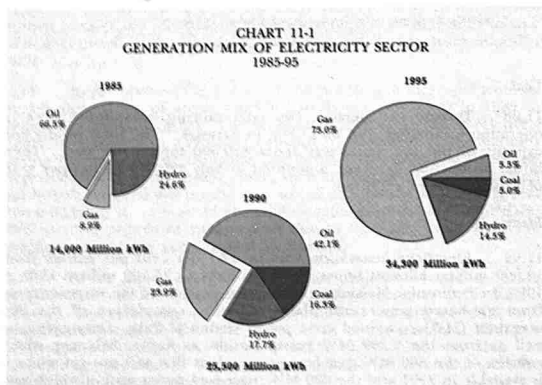
*Electric Power*

11.09 Electricity generation rose by 12.7 per cent per annum from 14,000 million kilowatt hours (kWh) in 1985 to 25,500 million kWh in 1990. In Peninsular Malaysia, a substantial portion of the increase came from gas-based generation plants with the completion of the 900 megawatt (MW) combined cycle power station at Paka, Terengganu, as well as from the 1,200 MW power station at Kapar, Selangor which consists of the 600 MW dual-fuel power plant that will use gas when it is available in 1991 and the 600 MW triple-fuel power station which uses

coal as the primary fuel. In addition, the hydropower plant at Kenyir, Terengganu, which has an installed capacity of 400 MW, was fully commissioned in 1986.

11.10 As a result of these diversification programmes, the success of fuel switching was remarkable in electricity generation. The over-reliance on oil was reduced tremendously from 67 per cent in 1985 to 42 per cent in 1990, as shown in *Chart 11-1*. In contrast, the share of gas increased markedly from 9 per cent to 24 per cent. Coal, which became a source of electricity generation since 1988, accounted for 16 per cent of the generation mix in 1990.

11.11 During the Fifth Plan period, the transmission and distribution network was further expanded. This expansion further strengthened system reliability and stability, resulting in improvements in the quality of electricity supply to consumers. In Peninsular Malaysia, the transmission line from the Kenyir hydropower station to Tanah Merah with a total length of 154 kilometres was completed, thus establishing a 275 kilovolt (kV) ring, inter-connecting the major power stations in the West Coast to those in the East Coast. In Sarawak, the grid linking



the Batang Ai hydropower station to load centres was implemented in stages. The first stage which connected Batang Ai and Kuching was completed in 1985. This was followed by the extension to Sibu, Sri Aman and Sarikei. In Sabah, a 132 kV transmission line extending to Keningau and a line inter-connecting Labuan Island and Beaufort in Sabah were commissioned in 1990. The latter enabled the transfer of excess electricity generated by the gas combined cycle plant of the Sabah Gas Industries (SGI) in Labuan to meet the demand in Sabah and vice versa.

## Energy Demand

11.12 Energy demand increased by about 7.7 per cent per annum during the Fifth Plan period, as shown in *Table 11-2*. In terms of energy mix, the share of petroleum products declined from about 77 per cent to 71 per cent while that of gas increased from 7 per cent to 10 per cent. The demand for gas during the period expanded rapidly by 15.4 per cent per annum, brought about mainly by higher levels of offtake from SGI and the ASEAN Bintulu Fertilizer (ABF) plants. The demand for electricity also expanded rapidly, at 11.8 per cent per annum, largely from increased demand by the industrial and commercial sectors. The

TABLE 11-2  
FINAL DEMAND<sup>1</sup> FOR COMMERCIAL ENERGY BY SOURCE,  
1985-95

	1985		1990		1995		Average Annual Growth Rate (%)	
	PJ	%	PJ	%	PJ	%	5MP	6MP
Petroleum Products	282.7	76.8	376.1	70.6	480.0	57.3	5.9	5.0
Electricity	45.1	12.3	78.6	14.8	138.5	16.5	11.8	12.0
Coal & Coke	15.1	4.1	26.6	5.0	34.4	4.1	12.0	5.3
Gas <sup>2</sup>	25.0	6.8	51.2	9.6	184.6	22.1	15.4	29.2
<b>Total</b>	<b>367.9</b>	<b>100.0</b>	<b>532.5</b>	<b>100.0</b>	<b>837.5</b>	<b>100.0</b>	<b>7.7</b>	<b>9.5</b>

### Notes:

<sup>1</sup> Refers to the quantity of commercial energy delivered to final consumers. Gas, coal and fuel oil used in electricity generation are included under 'electricity'.

<sup>2</sup> Includes both gas used as fuel and feedstock consumed by the non-power sector.

demand for coal by industrial consumers increased at 12.0 per cent per annum. The total consumption of coal in 1990 amounted to about two million tonnes, of which about 60 per cent was for electricity generation. The other large coal user was the cement industry. The consumption of coal was almost entirely met by imports.

11.13 On account of greater industrialization and urbanization, the manufacturing and transport sectors were the major energy consumers. Together, they accounted for about 70 per cent of total final energy consumed. The transport sector was the largest single consumer of final energy, accounting for about 43 per cent of total energy consumed in 1990, as shown in *Table 11-3*. Energy demand in the sector increased by 7.6 per cent per annum during the period. In terms of rate of growth, the manufacturing sector registered the highest rate of increase, at 13.2 per cent per annum. The significant increase was on account of the upsurge in manufacturing activities, particularly during the later part of the Fifth Plan period.

TABLE 11-3  
FINAL DEMAND FOR COMMERCIAL ENERGY BY SECTOR,  
1985-95

	1985		1990		1995		Average Annual Growth Rate (%)	
	PJ	%	PJ	%	PJ	%	5MP	6MP
Agriculture & Forestry	35.3	9.6	37.9	7.1	42.8	5.1	1.4	2.5
Mining & Quarrying	15.1	4.1	21.3	4.0	23.0	2.7	7.1	1.5
Manufacturing	74.0	20.1	137.3	25.8	286.4	34.2	13.2	15.8
Construction	12.0	3.3	15.6	2.9	22.4	2.7	5.4	7.5
Transport	158.3	43.0	228.4	42.9	343.8	41.1	7.6	8.5
Commercial & Services	20.5	5.6	28.9	5.4	43.6	5.2	7.1	8.6
Residential	36.6	9.9	41.3	7.8	49.2	5.9	2.4	3.6
Non-energy <sup>1</sup>	16.1	4.4	21.8	4.1	26.3	3.1	6.2	3.8
<b>Total</b>	<b>367.9</b>	<b>100.0</b>	<b>532.5</b>	<b>100.0</b>	<b>837.5</b>	<b>100.0</b>	<b>7.7</b>	<b>9.5</b>

Note:

<sup>1</sup> Use of energy by-products, such as asphalt or bitumen, lube or grease and refinery gas, for non-energy purposes.



### III. PROSPECTS, 1991-95

11.14 Concerted efforts will be undertaken to ensure that the development of energy resources will continue to contribute to the nation's economic expansion. Towards this end, policy focus will be on the main task of supplying energy efficiently and on a least-cost basis to all energy users. In addition, in line with the continued pursuance of the diversification policy, the nineties will mark the nation's entry into an era of greater gas utilization. Consequently, the use of gas in the supply of energy resources, particularly for electricity generation, will be significantly augmented. Apart from this, its increasing importance as industrial feedstocks will also be seen during the period.

#### Energy Supply

11.15 While the nation has achieved substantial progress in diversifying its energy resources, oil still remains an important source of energy, accounting for about 60 per cent of the total supply of primary energy. If consumption of petroleum products is allowed to grow at high rates, Malaysia's favourable status as a net exporter of oil could be reversed in the future. In the light of this, policy measures will be undertaken to ensure a timely schedule for the transition away from reliance on oil and prepare the economy for the final depletion of oil resources in the long term. The substitution of oil and the diversification of energy supply based on available indigenous resources will, therefore, be central to the objectives of energy supply policies and strategies. Research and development efforts in the area of non-conventional energy will also be encouraged.

11.16 In the implementation of the energy diversification strategies, emphasis will be placed on the utilization of domestic resources. In this respect, the nation is well-placed as it continues to be endowed with abundant energy resources and options. These include gas, hydropower, coal and to some extent, other forms of renewable energy, such as solar and biomass. Among these, natural gas is ideal for oil substitution in view of the size of its proven reserves and the premium it commands in terms of cleaner environment, higher efficiency and relatively lower economic costs. As a cleaner fuel, gas has virtually no sulphur and has significantly lower carbon intensity compared with fuel oil and coal. In terms of cost and fuel efficiency, gas combined cycle plants have considerable advantage over generation plants based on fuel oil and coal. In the light of this, natural gas and gas products are envisaged to replace substantially petroleum products in the power, commercial, industrial and transport sectors. By 1995, gas is expected to account for about 39 per cent of

primary commercial energy supply compared with 27 per cent in 1990, while the share of oil will be reduced further from 59 per cent to 52 per cent.

### *Hydropower*

11.17 Malaysia has abundant hydropower resources assessed at some 29,000 MW, with a potential energy of 123,000 million kWh per annum. However, some 70 per cent of these resources are located in Sarawak. This substantial energy resource represents not only an important long-term development alternative for electricity generation and a significant opportunity for diversification but more importantly, a considerably cheaper source of energy option. In the long term, these renewable hydropower potential will be required to meet the growing power demand of the nation, complementing thermal generation capacity.

11.18 The uneven distribution of hydropower potential, with the bulk of the potential hydropower supply far away from the major load centres, will require inter-regional transmission facilities. While large-scale hydroelectric power development promises economies of scale, its development with its long gestation period faces critical issues of timing, finance and environmental impact. Since the development of such resources is characterized by high capital and major load requirements, it can only be justified with considerable electricity demand which at the moment exists only in Peninsular Malaysia. In the light of this and as a medium-term option, the development of medium-sized hydropower resources in Sarawak as a potential source of energy supply to meet the electricity requirements of Sabah and Sarawak will be considered. Towards this end, the feasibility of inter-connecting the Sabah and Sarawak power grids will be investigated.

### *Coal*

11.19 Malaysia has significant coal resources, particularly in Sarawak, which could be mined at competitive costs. The penetration of coal in the energy market will not only ensure partial self-sufficiency in coal supply but also induce spin-off effects on downstream activities. For the electricity sector, its share in the generation mix is expected to decline. Notwithstanding this, efforts will be undertaken to test the technical suitability of blending Sarawak coal with imported coal used by the existing power plant. Apart from this, the feasibility of developing mine-mouth electricity generation will be explored in Sarawak, initially to meet localized demand.

11.20 As coal is a favourable fuel for large kilns in the cement and brick industries as well as for industrial boilers, the prospects for greater industrial applications will be explored. Apart from being price competitive compared with fuel oil, the quality and suitability of local coal have been proven for industrial and steaming purposes. In order to promote greater exploitation and utilization of local coal, several incentive schemes are being considered, including provision of infrastructure as well as fiscal measures. Efforts will be undertaken to formulate safety standards and regulations for mining operations as well as measures to minimize environmental pollution.

### *Oil*

11.21 The focus of the upstream sector during the Sixth Plan period will be on exploration and development activities, particularly in the new PSC areas. However, since such activities require relatively long duration to finalize, increase in crude oil production is anticipated to be marginal during the period. Notwithstanding this, there will be new oil fields which will begin production during the period. These include the Dulang and D35, offshore Terengganu and Sarawak, respectively. PETRONAS will also offer for bidding, blocks in the deeper water areas offshore Sabah and Sarawak to encourage deep-sea oil search. In addition, further oil development projects, such as platform installation, development drilling and sub-sea pipeline network installation, are expected to be undertaken at existing fields. These developments will enable the nation to sustain oil production at some 630,000 bpd during the period.

11.22 The thrust in the downstream sector is to ensure that the nation is self-sufficient in the supply of petroleum products. The 100,000 bpd sweet unit refinery in Melaka is expected to be on-stream by early 1994 while the proposed sour unit is expected to be completed by the end of 1994. The sweet unit will process local crude to meet increasing domestic demand for petroleum products while the sour unit will process imported sour crude, mainly for export markets.

### *Non-conventional energy*

11.23 Although solar panels are being increasingly used for domestic heating in urban areas, non-conventional sources of energy are virtually untapped in Malaysia. There is potential for solar, wind, wave, biogas and biomass energy for domestic and small-scale industry, particularly in isolated areas. In the light of this, research and development will be encouraged to develop their potential.

## Energy Demand

11.24 With the economy envisaged to sustain its high growth momentum during the Sixth Plan period, the demand for energy is expected to remain at a relatively high level, growing at 9.5 per cent per annum, as shown in *Table 11-2*. In consonance with the efforts towards the greater utilization of natural gas, the demand for gas is anticipated to increase significantly to partially replace petroleum products. The increase in demand for gas will be formidable, at some 29 per cent per annum. With this rapid increase, it is estimated to account for more than one-fifth of total energy demand by 1995, compared with less than one-tenth in 1990. On the other hand, the share of petroleum products is expected to decline from about 71 per cent to 57 per cent during the period.

11.25 The transport sector will remain as the largest single consumer of energy. For the manufacturing sector, in line with the growth in value added, energy demand in the sector will increase by 15.8 per cent per annum compared with 8.5 and 8.6 per cent per annum in the transport, and commercial and services sectors, respectively. Some 70 per cent of the energy demand in the manufacturing sector will be for gas, particularly as feedstocks for the petrochemical industry.

## Gas Development

11.26 The production of gas is expected to increase significantly. It is anticipated that at the turn of the century, gas production is likely to reach 3,753 mmcf/d, almost triple the current level. The major demand for gas will be predominantly for electricity generation and to some extent, to meet the feedstock requirements of the petrochemical industry. In addition, apart from promoting its direct usage in the industrial, commercial and residential sectors, its potential for greater exports will also be exploited.

### *Gas Transmission*

11.27 The infrastructure for gas transmission has already being laid. The completion of the Peninsular Gas Utilization II (PGU II) project in 1991 will enable the transmission network to reach the growth centres in the western and southern regions of Peninsular Malaysia. The PGU II project comprises 730 km of natural gas pipeline, two additional gas processing plants, an upgraded export terminal as well as other associated facilities. Costing some \$2,400 million, the project will have an initial capacity to transmit 700 mmcf/d of gas. The transmission capacity can,

however, be enhanced to some 1,000 mmcf/d with the addition of gas compressors. The two additional gas processing plants, equipped with ethane extraction facilities as well as propane and butane recovery capabilities, will have a total capacity of 500 mmcf/d. Initially, the bulk of the gas supply from the transmission pipeline will meet the gas requirements of electric power plants, as shown in *Chart 11-2*. The completion of the pipeline will also mark the beginning of gas exports to Singapore to meet its power generation requirements.

### *Gas Reticulation*

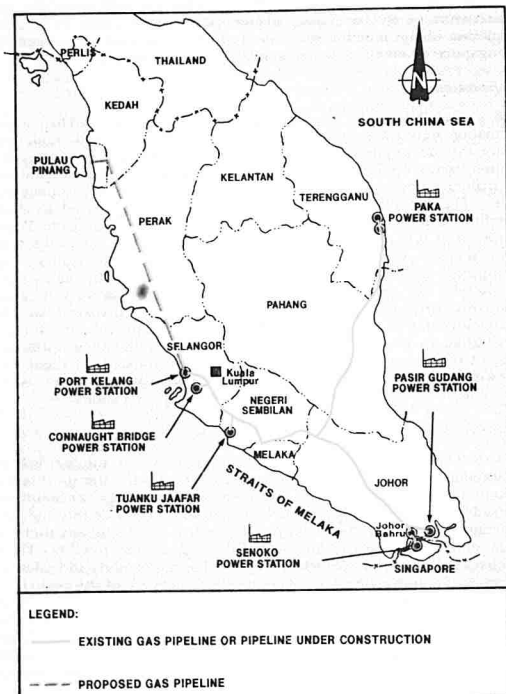
11.28 Parallel to the gas development in the power sector, a gas reticulation network to serve the industrial, commercial and residential sectors will be implemented to provide users with opportunities for cheaper energy options. Although the development of gas distribution infrastructure requires large front-end capital outlay, it will be financially viable. The network, to be developed in phases, is expected to cover communities along the gas pipeline route of the PGU II project. When completed, it is expected to supply about 140 mmcf/d of gas to the non-power sector. Of this, about 52 per cent will be to replace the consumption of fuel oil, 31 per cent liquefied petroleum gas and 17 per cent diesel. The development of a gas reticulation network will create numerous spin-offs in the ancillary industries involved in the manufacturing of plastic pipes, gas meters and regulators, thereby further contributing to economic development. In line with the privatization policy of the Government, the network will be privatized. A regulatory body will be instituted largely to ensure competitive pricing as well as the enforcement of safety standards and technical specifications.

### *Compressed Natural Gas*

11.29 The use of compressed natural gas (CNG) as autofuel will be promoted as an alternative to diesel and gasoline. As the transport sector accounts for more than 40 per cent of total final energy consumption, it provides substantial scope for CNG expansion. Towards this end, the Government has laid the incentive framework to encourage users of motor vehicles, particularly commercial fleet, to convert to CNG. These incentives include pricing mechanism as well as import duty and sales tax exemption on conversion kits. The necessary network of infrastructural facilities to promote the use of CNG, such as conversion as well as servicing and maintenance workshops, will be developed in line with the completion of the PGU II project. These measures, together with the inherent properties of CNG, such as low maintenance cost, greater efficiency and contribution towards a cleaner environment, will provide the impetus towards its greater use.

CHART 11-2

## GAS SUPPLY TO POWER STATIONS, 1991-95



### *Petrochemical and gas-based industries*

11.30 A significant development during the Sixth Plan period will be the coming on-stream of major petrochemical production. The petrochemical industry is expected to play an important role in the nation's efforts towards industrial advancement. Apart from enhancing the value added of natural gas, its development will contribute significantly towards the widening of the industrial base. Furthermore, as some of the products are geared towards the export market, the industry will also provide greater trading opportunities to penetrate and diversify into new international markets.

11.31 Several large petrochemical projects are in various stages of being implemented. Their implementation is largely private sector-led with PETRONAS having equity participation in the joint-venture companies. These include the propylene/methyl tertiary butyl ether (MTBE), polypropylene and ethylene/polyethylene projects. Production is expected to be on-stream during the Sixth Plan period. In Peninsular Malaysia, the propylene/MTBE project is expected to produce 300,000 metric tonnes of MTBE and 80,000 metric tonnes of propylene per year. The polypropylene plant is designed to produce 80,000 metric tonnes per year. The ethylene/polyethylene complex will have a capacity to produce 200,000 metric tonnes of polyethylene of various densities. To meet the annual feedstock requirements of these petrochemical projects, it is expected that 100,000 metric tonnes of propane, 240,000 metric tonnes of butane and 375,000 metric tonnes of ethane will be supplied.

11.32 In Sarawak, two major gas-based projects, the middle distillate synthesis (MDS) and the expansion of the LNG plant, will be implemented in Bintulu. The MDS project, with an annual production capacity of 470,000 metric tonnes and a gas consumption of 100 mmcf/d, will produce petroleum products such as kerosene, naphtha, diesel as well as wax. The LNG plant will be expanded from the existing three trains to six trains. This expansion programme is expected to be completed by the end of 1996. During the Sixth Plan period, as a result of the expansion programme, five trains will be operational and the gas offtake for LNG will be increased from 980 mmcf/d in 1990 to 1,394 mmcf/d in 1995 and the production capacity will be enhanced from 7.5 million tonnes to 12.5 million tonnes.

11.33 In line with the strategy to increase the value added of the gas resources in Sabah and Sarawak, the Government will continue its efforts to identify feasible energy-based and energy-intensive industries for these States. Several projects with encouraging potential which have been

identified include methanol/acetic acid, MTBE, polypropylene and formaldehyde.

### Electric Power

11.34 During the Sixth Plan period, in order to adequately meet increased demand for electricity, additional generating capacity will be installed, while the transmission and distribution network will be further strengthened to ensure greater system reliability and efficiency. Efforts will be geared towards the establishment of new gas-based generation plants and conversion of existing oil-fired plants into gas-based ones. In Peninsular Malaysia, *Tenaga Nasional Berhad* (TNB) is expected to add some 3,500 MW of new generating capacity, which will be largely gas-based, representing an increase of about 70 per cent from its existing installed capacity of about 5,100 MW. In addition, the conversion of existing thermal plants into gas-based generation will also be undertaken. The Sarawak Electricity Supply Corporation (SESCO) will commission a total of 240 MW of gas turbines at Bintulu (180 MW) and Kuching (60 MW). The feasibility of increasing gas-based electricity generation in Sarawak as an option to meet the requirements of Sabah will be examined. In terms of generation mix, it is anticipated that by the end of the Sixth Plan period, the share of gas-based electricity generation will reach some 75 per cent.

11.35 With respect to hydro development, a major hydroelectric project located along Sg. Pergau, Kelantan will be implemented. The project, with an installed capacity of 600 MW, is designed to generate about 520 million kWh per year to meet peaking requirements in Peninsular Malaysia. The project is expected to be commissioned by the end of the Sixth Plan period. In Sabah, the Sabah Electricity Board (SEB) will implement the Liwagu hydroelectric project, which has a capacity of 165 MW, to meet its medium-term requirements. In addition, seven mini-hydro projects will be implemented in Sabah and four in Sarawak.

11.36 The transmission and distribution network will be further expanded and upgraded with the view to not only widening the coverage of the grids but also reducing system losses and improving reliability and efficiency. In Peninsular Malaysia, some 1,800 kilometres of transmission lines will be installed. These projects, expected to be commissioned in stages during the period, will reinforce the existing electricity supply system to keep abreast with the expected growth in demand. They are aimed at supplying electricity from the national grid to consumers in new growth centres, new townships as well as bulk purchasers. In Sarawak,



the transmission and distribution projects are geared towards inter-connection between towns, industrial zones of timber-based industries and industrial estates in order to achieve economies of scale of power generation. A 275 kV transmission line will be extended from Sibul to Bintulu. With these transmission lines, major load centres in Sarawak will be linked together. In Sabah, the state electricity grid will be further extended with the implementation of a 132 kV line, linking Kota Belud with Kudat.

### **Rural Electrification**

11.37 To date, the implementation of the rural electrification programme has benefited about 1.6 million households or about 80 per cent of rural population. The coverage in Peninsular Malaysia at about 90 per cent, is higher than the national average. However, the coverage in Sabah and Sarawak is lower, at 48 per cent and 52 per cent, respectively. Geographical factors, affecting accessibility as well as sparse population distribution, have resulted in higher development costs and hindered the rapid expansion of programmes in Sabah and Sarawak.

11.38 During the Sixth Plan period, programme implementation will aim to achieve full coverage for Peninsular Malaysia and greater coverage for Sabah and Sarawak. By the end of the period, the national coverage is expected to reach 90 per cent, with almost 100 per cent for Peninsular Malaysia, 73 per cent for Sabah and 77 per cent for Sarawak. As the application of suitable technologies is critical for the success of this programme, particularly in remote areas, alternative technologies, such as photovoltaics (solar), micro-hydro plants and hybrid system, will be considered for implementation apart from the proven technologies of grid extensions, mini-hydro stations and diesel engines. In Peninsular Malaysia, the implementation strategy will be to further strengthen the system, especially in the identified rural growth centres to bolster industrial development. In Sabah and Sarawak, programmes will be intensified to cover more isolated villages.

### **Energy Pricing**

11.39 Pricing policies will be directed at ensuring that energy prices will reflect the economic or true cost of supply, be able to raise sufficient revenues for the sector's development as well as remain competitive to encourage diversification of energy resources into greater utilization of indigenous resources, such as gas. In the electricity sector, as fuel cost represents the single most important element in the operation of power utilities and given the policy emphasis on the diversification of power generation mix away from fuel oil, a competitively-priced gas supply will

be adopted. In the industrial, commercial, residential as well as the transport sectors, prices will also be determined on the basis of competitiveness with alternative fuels. A competitive price will not only provide consumers with alternative options but also facilitate the penetration of gas in these sectors.

11.40 With regard to electricity pricing, the availability of electricity in adequate quantity and quality and at reasonable prices are necessary for the promotion of industrial development. Towards this end, efforts will continue to be made to ensure stability in electricity tariffs at acceptable and internationally competitive levels, while at the same time, taking into account the needs of power utilities to generate sufficient revenues for their future development plans.

#### IV. ALLOCATION

11.41 In the light of the rapid expansion in the energy sector envisaged during the Sixth Plan period, substantial investments are required to finance the sector's development. Public sector agencies are expected to invest some \$26,264 million, more than double the previous Plan period, as shown in *Table 11-4*. Given the rapid expansion envisaged to meet increasing electricity demand, more than half of this investment will be made in the power sector. In the oil and gas sector, PETRONAS is expected to invest some \$10,815 million in both upstream and downstream activities. A significant proportion of the investment will be for the development of gas-based industries as well as gas-related activities.

11.42 The huge investment requirements provide potential opportunities for greater private sector initiative and participation in the development of the nation's energy resources. As the involvement of the private sector in the energy sector is relatively new, they will need to expand and broaden their scope of operations as well as mobilize their resources to participate in the vast opportunities.

11.43 In the power sector, with the corporatization of the National Electricity Board, the power utility in Peninsular Malaysia is already in the process of being privatized. The privatization of *Tenaga Nasional Berhad* is expected to be completed during the Sixth Plan period through the divestment of its equity ownership to the private sector. Apart from this, private sector participation will also be promoted to encourage competition in the sector. Towards this end, the concept of *build - operate - transfer*, particularly in power generation will provide avenues for private sector participation.

TABLE 11-4  
DEVELOPMENT ALLOCATION FOR ENERGY PROGRAMMES,  
1986-90 AND 1991-95  
(\$ million)

Programme	Federal Government		NFPEs <sup>1</sup>		Total	
	Expenditure 5MP	Allocation 6MP	Expenditure 5MP	Planned Expenditure 6MP	5MP	6MP
<b>Power Sector</b>						
Hydro	167.8	103.5	258.2	2,980.9	426.0	3,084.4
Thermal & Gas	143.6	77.9	1,901.2	5,097.4	2,044.8	5,175.3
Rural Electrification	569.6	764.6	156.0	0.0	725.6	764.6
Transmission & Distribution	28.4	18.9	3,426.3	5,233.5	3,454.7	5,252.4
Others	9.0	14.1	353.6	1,158.1	362.6	1,172.2
<b>Sub-total</b>	<b>918.4</b>	<b>979.0</b>	<b>6,095.3</b>	<b>14,469.9</b>	<b>7,013.7</b>	<b>15,448.9</b>
<b>Oil &amp; Gas Sector</b>						
Upstream	-	-	658.0	2,120.9	658.0	2,120.9
Downstream	-	-	1,879.2	5,488.0	1,879.2	5,488.0
Manufacturing	-	-	239.0	3,159.6	239.0	3,159.6
Others	-	-	146.9	46.3	146.9	46.3
<b>Sub-total</b>	<b>-</b>	<b>-</b>	<b>2,923.1</b>	<b>10,814.8</b>	<b>2,923.1</b>	<b>10,814.8</b>
<b>Total</b>	<b>918.4</b>	<b>979.0</b>	<b>9,018.4</b>	<b>25,284.7</b>	<b>9,936.8</b>	<b>26,263.7</b>

Note:

<sup>1</sup> Refers to TNB, SESCO, SEB and PETRONAS.

11.44 In the upstream activities of the oil and gas sector, private sector involvement has been dominant and is anticipated to remain so. In the downstream sector, however, a more predominant participation of the private sector will be promoted, with PETRONAS as supplier of oil and gas, playing a supportive and complementary role. PETRONAS will, as far as possible, restrict itself to upstream activities and leave business opportunities in the downstream sector for the private sector, particularly local entrepreneurs.

## V. CONCLUSION

11.45 The development of the energy sector has progressed significantly towards attaining the objectives of diversification as well as the development of indigenous resources to meet domestic requirements. The achievements have indeed been remarkable. The prospects during the Sixth Plan period will be even more challenging. The development of energy resources will not only have to be in tandem with the rising demand from anticipated strong economic performance, but also the acceleration of the nation's industrial growth, particularly the growing emphasis on the development of energy-intensive and energy-based industries. As a supplier of energy resources to the economy, the task is not only to meet sufficiently the nation's energy requirements, but more importantly, to ensure an efficient development of energy resources based on a least-cost option.

## **Chapter XII**

# **Water Resources**

## CHAPTER XII

# Water Resources

### I. INTRODUCTION

12.01 Priority has been accorded to the development of the water resources sector to meet the requirements for domestic, industrial and agricultural demands as well as for hydropower development. Under the Fifth Malaysia Plan, continued efforts were undertaken to provide adequate water to meet the increasing requirements mainly through the development of new sources and extending the water supply systems, particularly to new demand centres. The period also witnessed an increase in the water supply coverage whereby a greater proportion of the users had access not only to safe water but also enjoyed improved levels of service. Despite the progress made, there were still some areas having low water pressure and other supply-related problems and programmes were continuously being implemented to reduce these.

12.02 Under the Sixth Malaysia Plan, the water resources sector will be singled out for rapid expansion to preserve and secure water resources as well as provide sufficient water supplies. Adequate water will be made available for domestic use and to meet the rapid growth in demand by industries. The main thrusts of development in the sector will be on the optimal utilization of existing water resources through developing new sources; upgrading, rehabilitating and improving the efficiency of existing facilities; preservation of the quantity and quality of existing sources by controlling pollution and implementing pollution abatement measures as well as conservation and protection of catchment areas through controlled land development and deforestation. These programmes will ensure that increasing demands for water will always be met through increased supplies. Private sector participation in the development of this sector will be intensified to complement the Government's efforts to spearhead its development.

## II. PROGRESS, 1986-90

12.03 The development strategy during the Fifth Plan continued to be focussed on the development of water resources projects to ensure adequate supply to meet the needs of the various users. In order to ensure sufficient water for abstraction by treatment plants, storage dams were constructed to regulate river flows. Groundwater was tapped to supplement surface sources wherever feasible.

### Water Resources

12.04 During the Plan period, efforts were directed towards the development of surface water as the major source of raw water supply since surface runoff constituted about 56 per cent of the annual total rainfall, which was estimated to be 990 billion cubic metres (bcm), while groundwater accounted for only 6 per cent. Due to the uneven distribution of water resource potential and the need to increase the availability of water, dams were constructed to store surplus water during wet periods. Hence, the development of multi-purpose dams, especially in water-stress regions, and the implementation of inter-basin and inter-state water transfers from water-surplus to water-deficit areas or states were given priority.

12.05 At present, there are 54 dams in operation with a total live capacity of 12 bcm which is available to meet the demand of the various users. Of these, 11 were developed for hydropower while the remaining dams were for water supply, irrigation and flood mitigation. During the period, the construction of five dams, which commenced in the first half of the eighties, was completed. These dams provided an additional active storage capacity of 264 million cubic metres (mcm). In addition, seven dams were at various stages of implementation, as shown in *Table 12-1*. Feasibility studies were undertaken for a number of new dams. The location of these dams are as shown in *Chart 12-1* and *Chart 12-2*.

### Water Supply

12.06 In line with the policy of providing safe water to all as well as ensuring adequate supply for domestic and industrial uses, various programmes were implemented. The overall performance of the urban and rural water supply programmes were enhanced with the implementation of various project components, such as developing storage and treatment plant capacities, laying of distribution systems and utilizing groundwater sources.

TABLE 12-1  
WATER RESOURCES DEVELOPMENT, 1986-90

<i>Dam</i>	<i>State</i>	<i>Purpose</i>	<i>Completion Year</i>	<i>Yield (Mcm)</i>
<b>Completed</b>				
Layang	Johor	W	1987	90.0
Terip	Negeri Sembilan	I,W	1987	25.0
Batu	Selangor	F,W	1987	42.3
Malut	Kedah	W	1988	6.0
Ahning	Kedah	I,W	1988	100.4
<b>Construction</b>				
Bekok	Johor	F,W	1991	24.0
Timah-Tasoh	Perlis	F,I,W	1991	48.0
Juasch	Johor	W	1991	36.5
Upper Muar	Johor	I,W	1991	36.5
Pedas	Negeri Sembilan	W	1991	3.4
Mersing	Johor	W	1991	3.0
Linggiu	Johor	W	1994	48.4

Notes:

F: Flood Mitigation

I: Irrigation

W: Water Supply

12.07 For the development of storage and treatment plant capacities, 14 major projects with a total capacity of 1,478 million litres per day (mld) were completed, as shown in *Table 12-2*. These included the Ahning, Phase I; Sungai Semenyih; Johor Bahru, Phase IA and Greater Kuantan water supply schemes. In addition, five new projects were in various stages of implementation. The target of 6,713.5 mld under the Fifth Plan was almost met through the completion of various projects which contributed to an increase in the total treatment capacity by 57.2 per cent, as shown in *Table 12-3*. The quantity supplied also increased by 40.4 per cent to 4,979 mld. Although the water supply and demand balance in the country was fairly satisfactory, certain states such as Johor, Kelantan, Melaka, Negeri Sembilan and parts of the Klang Valley periodically suffered from low water pressure or shortage during the dry periods. This was due to the mismatch between the distribution of water sources and the areas of high water demand.



CHART 12-1

LOCATION OF DAMS IN PENINSULAR MALAYSIA

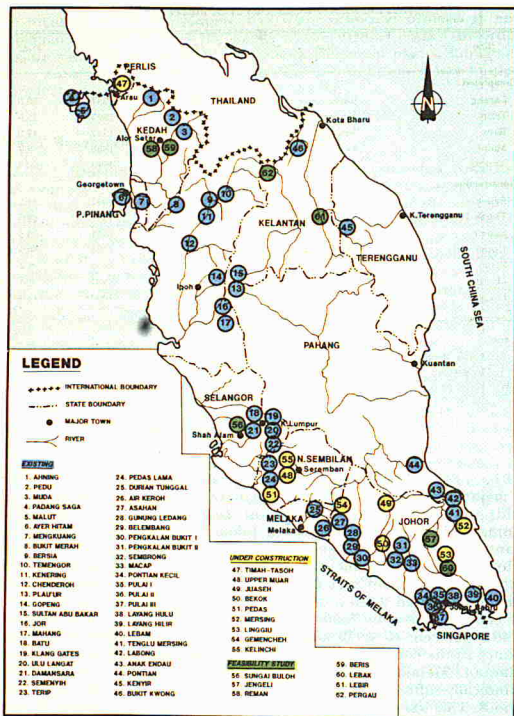


CHART 12-2

# LOCATION OF DAMS IN SABAH AND SARAWAK

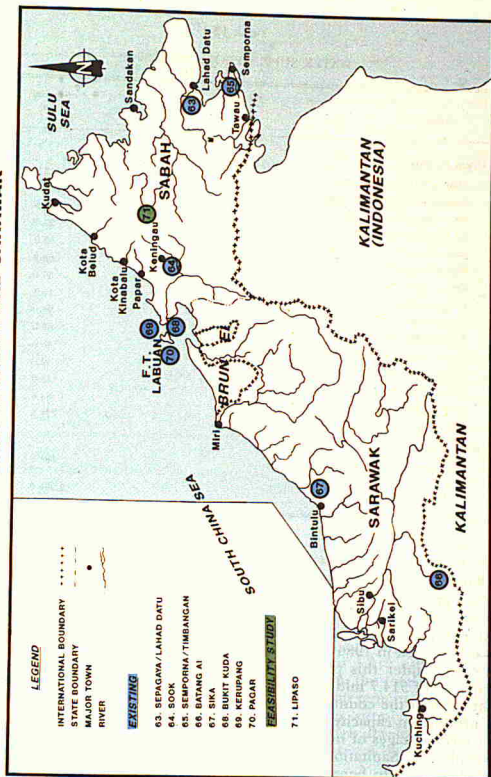


TABLE 12-2  
WATER SUPPLY PROJECTS, 1986-90

<i>Project</i>	<i>Capacity (Mld)</i>
<b>Urban Projects</b>	
Ahning Water Supply, Phase I	112.5
Greater Kuantan Water Supply	136.5
Johor Bahru Water Supply, Phase IA/IB	45.0
Johor Barat Water Supply, Phase I (Macap)	25.0
Johor Barat Water Supply, Phase II (Bekok/Semberong)	55.0
Kedah Tengah Water Supply	68.0
Kluang Water Supply	85.0
Langkawi Water Supply, Phase I	16.5
South Coastal Terengganu Water Supply	98.0
Sungai Muda Water Supply, Phase IIIA	68.0
Sungai Semenyih Water Supply	546.0
Sungai Terip Water Supply, Phase I	40.0
Sabah Water Supply	118.0
Sarawak Water Supply	64.0
Other Projects	721.5
<b>Rural Project</b>	
Special Rural Water Supply Programme	181.0
<b>Total</b>	<b>2,380.0</b>

12.08 The implementation of the rural water supply programme was given greater emphasis under the Fifth Plan to enable more rural people, especially those in remote areas, to have access to potable water. Alongside the normal rural water supply schemes, a special programme was launched in 1986 to increase the source development works for rural areas. Under this programme, 134 schemes with a total production capacity of 514.7 mld were approved for construction on a turnkey basis throughout the country. At the end of the Plan period, 59 projects with a production capacity of 181 mld were completed, while the others were in various stages of implementation. In addition, under the Rural Water Supply and Sanitation Programme, 18,314 water supply projects were implemented to benefit 496,515 people living in the rural areas.

TABLE 12-3  
WATER TREATMENT CAPACITY AND SUPPLY, 1985-95  
(Mld)

State	1985		1990		1995	
	Treatment Plant Capacity	Quantity Supplied	Treatment Plant Capacity	Quantity Supplied	Treatment Plant Capacity	Quantity Supplied
Johor	431	431	983	529	1,520	931
Kedah	237	237	478	374	837	602
Kelantan	135	104	149	116	441	187
Melaka	150	114	143	137	184	175
Negeri Sembilan	208	182	230	230	483	370
Pahang	276	201	528	369	822	542
Perak	552	468	644	564	838	722
Perlis	24	24	54	43	139	63
Pulau Pinang	418	343	494	452	695	577
Sabah	249	188	367	363	708	488
Sarawak	324	183	388	282	709	433
Selangor <sup>1</sup>	1,000	1,000	1,793	1,406	2,768	2,475
Terengganu	158	71	291	114	335	201
<b>Malaysia</b>	<b>4,162</b>	<b>3,546</b>	<b>6,542</b>	<b>4,979</b>	<b>10,479</b>	<b>7,766</b>

Note:

<sup>1</sup> Includes Wilayah Persekutuan Kuala Lumpur

12.09 With respect to the Federal Land Development Authority (FELDA) schemes, 34 projects with a total capacity of 36.4 mld were constructed, while seven schemes with a production capacity of 11 mld were completed in the Regional Development Authority (RDA) areas. These programmes benefited an additional 32,000 settler families and about 15,000 households in the RDA areas.

12.10 During the Plan period, about 970 out of 1,315 estates were supplied with piped water, thus enabling 62,000 from the total of 82,000 households to enjoy safe drinking water. This achievement was partly due to measures taken to extend the rural water supply systems to neighbouring estates to overcome the problems of high development cost and scarcity of suitable water sources being encountered by some estate managements.

12.11 As a result of these programmes, water supply coverage increased resulting in 78.3 per cent of the total population of the country having access to piped water by 1990. Despite an increase of 7.7 per cent in coverage, this achievement was still below the Fifth Plan target of 82.4 per cent. The total urban population provided with this amenity improved from 93 per cent to 96 per cent in 1990, as shown in *Table 12-4*. The urban coverage for all states, except Johor, Kelantan, Negeri Sembilan, Sarawak and Terengganu, exceeded the national urban coverage. As for the rural areas, the coverage increased from 57 per cent to 66 per cent, thus meeting the Plan target. With regard to state distribution, Melaka and Pulau Pinang recorded the highest rural coverage while the coverage in Kelantan, Sabah, Sarawak and Terengganu was still below the national rural average, as shown in *Table 12-5*. This was mainly due to the scattered nature and remoteness of the villages from water sources.

TABLE 12-4  
URBAN WATER SUPPLY COVERAGE, 1985-95

State	1985		1990		1995	
	Persons	(%)	Persons	(%)	Persons	(%)
Johor	673,992	92	888,960	96	1,145,473	97
Kedah	175,275	95	215,915	97	257,838	98
Kelantan	199,355	65	261,096	69	399,670	85
Melaka	114,800	100	126,400	100	139,200	100
Negeri Sembilan	207,904	89	265,880	92	345,504	96
Pahang	241,965	95	272,930	98	301,056	98
Perak	625,730	98	700,920	99	784,575	99
Perlis	15,252	93	20,273	97	26,900	100
Pulau Pinang	556,934	98	697,158	99	881,100	100
Sabah	292,900	100	392,800	100	540,700	100
Sarawak	283,765	95	353,856	96	450,500	100
Selangor <sup>1</sup>	1,892,400	95	2,478,714	98	3,266,200	100
Terengganu	255,000	85	350,010	90	481,555	95
Malaysia	5,535,272	93	7,024,912	96	9,020,271	98

Note:

<sup>1</sup> Includes Wilayah Persekutuan Kuala Lumpur

TABLE 12-5  
RURAL WATER SUPPLY COVERAGE, 1985-95

State	1985		1990		1995	
	Persons	(%)	Persons	(%)	Persons	(%)
Johor	687,836	61	792,342	67	936,546	78
Kedah	597,632	58	768,758	67	963,732	77
Kelantan	216,900	30	316,080	40	433,347	51
Melaka	311,108	82	375,030	90	441,392	98
Negeri Sembilan	295,425	75	335,495	85	370,215	95
Pahang	485,745	65	594,160	70	774,595	79
Perak	937,800	72	1,084,278	78	1,212,796	83
Perlis	74,600	50	108,030	65	148,680	80
Pulau Pinang	412,250	85	436,608	96	370,440	98
Sabah	381,710	38	594,152	52	1,002,800	80
Sarawak	414,447	33	656,731	47	1,145,150	74
Selangor <sup>1</sup>	724,671	73	833,000	85	715,528	94
Terengganu	135,560	40	195,199	53	241,280	65
Malaysia	5,675,684	57	7,089,863	66	8,756,501	79

Note:

<sup>1</sup> Includes Wilayah Persekutuan Kuala Lumpur

12.12 Under the Fifth Plan, a number of feasibility studies on the development of water resources were carried out to ensure the identification of a sustainable number of projects for implementation. The most significant study that was completed in 1989 pertained to the study on unaccounted for water losses. This study revealed that in 1988, the unaccounted for water losses was 43 per cent on the average for the whole country. This was attributed to meter under-registration, system leakages and other losses. In order to reduce such losses, the study recommended that upgrading and rehabilitation of the existing treatment plants and distribution systems be undertaken to ensure more efficient and effective utilization of water resources as well as existing facilities and in the process reduce the pressure to develop new sources to support the rapid socio-economic growth of the country.

12.13 In line with the privatization policy, several projects related to the water subsector were privatized during the Plan period. These schemes included the construction and subsequent operation of the Labuan Water Supply Project; Greater Ipoh, Phase II as well as Krian, Larut and Matang, Phase II water supply projects on a Build, Operate and Transfer basis. The Sungai Layang, Sungai Terip and Sungai Semenyih water treatment plants were also privatized through management contract to the private sector.

## **Sewerage**

12.14 The threat of pollution of water sources, coastal waters and beaches is increasing due to population growth, the rapid rate of urbanization and industrialization as well as the inadequate provision of sanitary facilities. This problem is further aggravated by the discharge of untreated or partially treated domestic wastewater which includes sewage and sullage, industrial effluents as well as agricultural and animal wastes into water courses. While pollution arising from the disposal of industrial wastes is under control, the discharge of untreated or inadequately treated sewage and sullage as well as animal waste is still of major concern since these pollutants are the major sources of pollution.

12.15 For the preservation and conservation of water resources and catchment areas as well as to improve the health and socio-economic well-being of the general public, various types of sewerage systems were implemented. The most comprehensive facility is the centralized sewerage system whereby domestic wastewater will be treated centrally to a stipulated effluent quality standard. However, due to its huge investment outlay as well as financial and human resources constraints being faced by most local authorities, the implementation of the sewerage programme had not been given emphasis in the past. As a result, only nine projects out of a total of 19 feasibility studies on centralized sewerage system for state capitals and major towns were implemented.

12.16 In order to control pollution arising from sewage and sullage, measures were instituted by the Government to enforce regulations which require developers of houses, hotels, tourist resorts and other developments to provide communal treatment plants and centralized sewerage system in their respective project areas. The development of decentralized sewerage systems, whereby treatment plants will be provided to cater for smaller and more viable zones, was also encouraged to accelerate its implementation.

12.17 The continued implementation of the sewerage programme during the Plan period increased marginally the total population being provided with centralized sewerage system. However, the coverage of the other acceptable facilities expanded by 12 per cent. This increase was attributed to the development of housing estates equipped with septic tanks or communal treatment plants and the implementation of pour flush latrines under the Rural Water Supply and Sanitation Programme. In addition, consistent with the policy to replace the unacceptable methods of sanitation with satisfactory systems, the usage of the bucket, pit and hanging latrines declined from 14.7 per cent to 6.7 per cent in 1990. The percentage of population that did not have any sanitary facility was reduced from 10.2 per cent to 6.3 per cent at the end of the Fifth Plan.

### **Urban Drainage**

12.18 One of the adverse effects of rapid urbanization is the increasing occurrence of flash floods in some of the major cities and towns. In order to overcome this problem, the Government embarked on a long-term programme to mitigate urban flooding with the implementation of several drainage improvement works. Under the Fifth Plan, the implementation of urban drainage works in Alor Setar, Kangar, Kota Bharu, Kuala Lumpur, Pekan and Seremban, which were initiated in the previous Plans, were continued. In addition, five new projects are under construction, namely the canalization of Sungai Pari, Sungai Pinang and Sungai Tiram as well as two urban drainage works in Terengganu. These projects, which are implemented in stages, have to some extent provided some degree of flood protection.

12.19 Besides the above projects, comprehensive flood mitigation studies were carried out for the Klang River Basin and Pulau Pinang. The Drainage Master Plan for the Klang River Basin was completed in 1989. One of the recommendations of the Plan was that the improvement of Sungai Klang under the Kuala Lumpur Flood Mitigation Project should be extended to include the lower reaches of Sungai Klang to provide flood protection for Klang.

### **III. PROSPECTS, 1991-95**

12.20 The long-term objectives of the sector will be to develop adequate water resources for all users, preserve and protect the quantity and quality of existing resources as well as identify and conserve potential



water sources to meet future needs. However, in terms of priority, greater emphasis will be given to water supply development in the light of increasing demand in the Sixth Plan. Particular attention will be given to planning for dam construction in view of the urgent need to protect potential water sources. Apart from fulfilling water requirements, these storage dams will also provide benefits arising from flood mitigation and urban drainage as well as the abatement of pollution through proper regulation of river flow. Besides the construction of multi-purpose projects, the development of inter-state and inter-basin water transfers will be further pursued during the period to address the problem of uneven distribution of water resources in the country.

12.21 Apart from the development of new sources, priority will be accorded to the implementation of a comprehensive programme to upgrade treatment plant capacities and rehabilitate the distribution system to reduce the high unaccounted for water losses. In addition, efforts will be made to reduce recurring water-related problems, such as the deterioration of water quality and occurrence of flash floods in urban areas.

## **Water Resources**

12.22 While the availability of surface water sources remains relatively unchanged, total water demand for domestic and industrial uses is forecasted to increase steadily from 11.6 bcm in 1990 to 13.5 bcm in 1995. Water demand for irrigation, which consumes a major share of the total water resources, is expected to rise only marginally and its overall share is projected to drop from 78 per cent to 73 per cent due to the gradual improvement in irrigation efficiency and the reduction in new irrigation projects. On the other hand, domestic and industrial water demand is forecasted to increase substantially by 46 per cent, from 2.6 bcm to 3.8 bcm.

12.23 Measures will also be undertaken to meet the medium - term water requirements of the various users in the context of rapid industrialization. The construction of the Bekok, Juaseh, Linggiu and Mersing dams in Johor; the Pedas and Upper Muar dams in Negeri Sembilan and the Timah-Tasoh dam in Perlis, which were initiated under the Fifth Plan, will be completed to give an annual combined storage capacity of 262 mcm and an annual yield of 200 mcm. Apart from providing medium-term improvements to the water supply and demand situation in the country, especially in the water-stress states, these projects will further mitigate the flooding and urban drainage problems.

12.24 Efforts will be made to address the problem of uneven distribution of water resources through the implementation of inter-state and inter-basin water transfers. Apart from ongoing projects, the Gemencheh and Kelinchi dams will be constructed as inter-basin water transfer projects in Negeri Sembilan, while the Sungai Muar Project will be developed for inter-state water transfer to meet the long-term water requirements of Melaka, as shown in *Table 12-6* and *Table 12-7*. From the completed feasibility studies, detailed engineering designs for six water supply and flood mitigation dams as well as two hydropower dams will be initiated to provide the necessary continuity for future water resources development. These projects will provide an estimated additional annual yield of 666 mcm. The hydropower dams will also function to conserve and store water to meet future needs.

TABLE 12-6  
WATER RESOURCES DEVELOPMENT, 1991-95

<i>Dam</i>	<i>State</i>	<i>Purpose</i>	<i>Completion Year</i>	<i>Estimated Yield (Mcm)</i>
<b>Design/Construction</b>				
Gemencheh	Negeri Sembilan	W	1996	40.2
Kelinchi	Negeri Sembilan	W	1997	56.0
<b>Feasibility Study</b>				
Sungai Buloh	Selangor	W	1986	69.4
Jengeli	Johor	W	1987	47.5
Reman	Kedah	W	1987	164.0
Beris	Kedah	I, W	1988	68.0
Lebak	Johor	W	1988	47.5
Lebir	Kelantan	F	1988	270.0
Pergau	Kelantan	H	1988	69.4
Lipaso	Sabah	H	1990	n.a

Notes:

- F: Flood Mitigation
- I: Irrigation
- W: Water Supply
- H: Hydropower
- n.a: Not Available

TABLE 12-7

## WATER SUPPLY PROJECTS, 1991-95

<i>Project</i>	<i>Capacity (Mld)</i>
<b>Urban Projects</b>	
<i>Construction</i>	
Bentong Water Supply	45.0
Gemas Water Supply	36.0
Johor Bahru Water Supply, Phase IB	45.0
Johor Bahru Water Supply, Phase II	270.0
Kulim Water Supply, Phase II	34.0
Langkawi Water Supply, Phase II	18.2
North Kelantan Water Supply	239.5
Pelubang Water Supply, Phase II	113.6
Sungai Lebam Water Supply, Phase II	27.0
Sungai Muar Water Transfer	160.0
Sungai Petani Water Supply, Phase II	68.0
Sungai Selangor Water Supply, Phase II	454.0
Sungai Terip Water Supply, Phase II	128.0
Temerloh/Mentakab Water Supply, Phase III	68.2
Upgrading of Treatment Plants Capacity <sup>1</sup>	500.0
Rehabilitation of Distribution Systems <sup>2</sup>	250.0
Sabah Water Supply	341.0
Sarawak Water Supply	321.0
Other Projects	484.8
<i>Design</i>	
Kota Tinggi Water Supply, Phase I	n.a.
Muar Water Supply, Phase III	n.a.
Sri Iskandar Water Supply, Phase II	n.a.
<b>Rural Project</b>	
Special Rural Water Supply Programme	333.7
<b>Total</b>	<b>3,937.0</b>

## Notes:

<sup>1</sup> Restoration of capacity of existing treatment plants and reduction of losses<sup>2</sup> Increasing the efficiency of distribution systems to reduce water losses

n.a. Not Available

12.25 A management information system on water resources will be developed to support the comprehensive and integrated planning objective. Apart from incentives, the institutional setting such as legal provisions will be streamlined to facilitate greater focus and introduce cost-effective developments in the sector. This will also allow legislative support for the preservation and conservation of existing water resources and catchment areas as well as the control and reduction of pollution of water sources so that long-term requirements are satisfied through sustainable development of the sector.

### Water Supply

12.26 The immediate objective of water supply development will be to meet the industrial and domestic requirements, particularly in areas that are identified as new growth centres as well as areas without access to this facility. The special need to accommodate the water requirements of high technology industries will be addressed once the location of industrial estates has been finalized. In addition, as part of the Government's efforts to promote economic development and improve the quality of life in the rural areas, the development of rural water supply programmes will continue to be given emphasis.

12.27 Several major programmes have been designed for implementation during the Sixth Plan. These include the completion of major schemes which were initiated during the Fifth Plan period and the construction of 16 new projects with a production capacity of 2,369 mld such as Johor Bahru, Phase II; North Kelantan and Sungai Selangor, Phase II water supply schemes, as shown in *Table 12-7*. Detailed engineering design will also be prepared for projects, such as Kota Tinggi; Muar, Phase III and Sri Iskandar, Phase II. In addition, several source development works and improvements to existing water supply systems will be implemented to ensure adequate, reliable and uninterrupted supply is made available to industrial areas and designated tourist resorts such as Desaru, Kulim, Nilai/Pajam, Pulau Langkawi and South Johor.

12.28 The ageing of treatment plants and distribution systems will be reviewed to reduce the high unaccounted for water losses. Initially, this new programme which entails changing of water meters, replacing old pipelines and refurbishing treatment plants will be carried out in several priority areas to ensure its effectiveness before it is replicated throughout the country. This will not only reduce the pressure on new source development but also improve the levels of service to existing users. The unaccounted for water losses for the whole country will also be decreased

from 43 per cent in 1988 to 32 per cent in 1995. In addition, the efficiency to be derived from this programme will contribute towards greater financial viability of the operating entities.

12.29 The high investment cost associated with the development of the sector will require cost recovery and tariff structures to be analyzed in conjunction with the consumers' affordability and willingness to pay. Since, in the future, more water supply projects will be privatized, the implementation of commercial accounting systems and increasing efficiency in revenue collection need to be addressed. In addition, studies will be undertaken on projects to be privatized to ensure that the affordability of consumers and competitiveness of industrial users will be safeguarded.

12.30 Concomitant with the Government's policy to increase accessibility to safe water, the implementation of the Special Rural Water Supply Programme will be continued. About 75 projects with a production capacity of 333.7 mld will be completed by 1992, thus benefiting 4.5 million people. In addition, about 2,420 projects will be implemented under the normal rural water supply programme. The main focus of this programme is on the installation of reticulation systems to distribute water mainly from the newly completed source works to the rural households. Groundwater and rainwater sources will be exploited to ensure that potable water will be made available to these consumers. Under the Rural Water Supply and Sanitation Programme, 46,868 water supply schemes benefiting 1.5 million people and 198,146 sanitation projects benefiting 990,730 people will be implemented.

12.31 In the FELDA schemes, 39 projects with a total production capacity of 47.3 mld will be implemented while 13 projects will also be constructed in the RDA areas. This programme will benefit 41,160 new settler families and 26,000 households in the RDA areas. To ensure that safe and reliable water supply is made available to estate workers, the implementation of the water supply programme in estates will also be stepped up.

12.32 The commissioning and implementation of water supply projects, especially those in the urban areas, will increase the treatment plant capacities from 6,542 mld in 1990 to 10,479 mld in 1995. As for the quantity supplied, it is expected to increase by 56 per cent, from 4,979 mld to 7,766 mld, as shown in *Table 12-3*. It is envisaged that 87.7 per cent of the total population will enjoy piped water supply by the end of the Plan period. Urban coverage is expected to reach almost 100 per cent in most states, except Kelantan, as shown in *Table 12-4*. On the

other hand, the coverage of rural water supply is projected to increase from 66 per cent in 1990 to 79 per cent in 1995. The completion of the Special Rural Water Supply Programme and the emphasis on extension of pipelines to rural areas will enable the rural coverage in Melaka, Negeri Sembilan, Perak, Perlis, Pulau Pinang, Sabah and Selangor to exceed the national rural water supply coverage, as shown in *Table 12-5*.

12.33 The rapid growth in the scope and complexity of water supply systems over the last few years underscore the need to manage and operate the systems efficiently. The emphasis on the rehabilitation and upgrading of water treatment plants and distribution systems in the Sixth Plan also requires studies on adoption and application of appropriate new technologies and materials to achieve the most cost-effective solutions. Hence, efforts on research and development will be intensified to upgrade the technological advancement in the water supply sector.

### Sewerage

12.34 In line with the Government's objectives to preserve the quality and quantity of water resources as well as to promote public health and tourism, sewerage development will be accorded higher priority under the Plan. Efforts to provide centralized sewerage facilities to state capitals, major urban centres and designated tourist resorts will be continued. In addition, appropriate sewerage treatment facilities will be provided to areas where the risk of sewage contamination to water intake is great. Besides further enforcement of the requirement that developers of houses, hotels, tourist resorts and other developments construct communal treatment plants and centralized sewerage systems in their project areas, industries will be encouraged to pretreat and discharge their effluents into sewerage treatment plants. In the light of the high development cost of centralized sewerage systems, incentives will be provided to ensure that sewerage projects will be viable for implementation and feasible to be privatized.

12.35 The construction of the Seremban Sewerage Project, which commenced in 1986, will be completed. Sewerage schemes will also be implemented in the designated tourist resorts of Desaru, Langkawi and Pangkor to complement the Government's efforts to promote tourism. In addition, detailed engineering design will be prepared for projects for which feasibility studies had been completed. Studies will also be carried out to determine the feasibility of implementing sewerage schemes for Kangar, Kuching and Taiping. Suitable sanitation systems will also be provided, as an integral part of infrastructure development, to improve the environment and living conditions of coastal villages.

12.36 The implementation of sewerage and sanitation programmes under the Sixth Plan will enable almost the entire population to be provided with acceptable facilities. Of this, 8.5 per cent of the population will be equipped with centralized and decentralized sewerage systems by 1995. In addition, research and development on low-cost systems using appropriate technologies will be intensified to increase the coverage of modern sewerage facilities, especially in urban fringe areas and new growth centres.

### Urban Drainage

12.37 As part of the efforts to reduce loss of life and damage to properties as well as to improve the socio-economic well-being of the people, more urban drainage facilities will be provided during the Sixth Plan. In addition, a more comprehensive planning approach based on the Master Plan for Drainage will be adopted. In this respect, non-structural measures, such as the use of flood retention ponds, flood zoning and other water retention concepts will be encouraged. Whilst the emphasis under the Plan will be on the completion of urban drainage projects, such as those in Alor Setar, Kangar, Kota Bharu, Kuala Lumpur and Seremban, this programme will be extended to include other potential growth centres of commerce, industry and tourism. Besides the 12 ongoing projects, 18 new drainage improvement schemes will be implemented. Some of the major projects will involve the preparation of drainage master plans, such as for Labuan and Pulau Pinang where implementation will be carried out in stages.

## IV. ALLOCATION

12.38 The allocation for the water resources sector during the Sixth Malaysia Plan period will be \$3,773 million, as shown in *Table 12-8*. The major proportion of this allocation, amounting to \$2,855 million will be for water supply development. Of this, \$1,717 million will be for source development works, \$350 million for the upgrading of existing treatment plants and rehabilitation of distribution systems and \$787 million for reticulation systems development. As for sewerage development, the allocation will be increased substantially to \$551 million. The urban drainage programme will be allocated \$368 million.

## V. CONCLUSION

12.39 In view of the need to develop water resources and implement programmes to support the promotion of economic development and population growth as well as to improve the quality of life, concerted

efforts will be made to conserve the catchment areas and protect the potential sources for future development. A comprehensive and integrated approach will be adopted towards water resources planning, development and management to ensure efficient use of this depleting resource and facilitate the implementation of multi-purpose projects as well as inter-basin and inter-state water transfers. To accelerate the development of the sector, privatization of the development and management of water resources projects, particularly water supply and sewerage, will be encouraged.

12.40 Sewerage development will be accorded higher priority under the Plan due to environmental concerns and efforts to control and abate water pollution. The implementation of projects for state capitals, major towns, designated tourist resorts and towns above the water intake points will continue to be given emphasis. In addition, in line with Government's efforts to improve the socio-economic well-being of the people and to mitigate the adverse effects of rapid urbanization, the development of the urban drainage programme will be continued.

TABLE 12-8  
DEVELOPMENT ALLOCATION FOR  
WATER RESOURCES, 1986-95  
(\$ million)

Programme	5MP		6MP
	Allocation	Expenditure	Allocation
Water Supply	2,716.2	2,467.0	2,854.5
Source Works	2,446.0	2,219.7	1,717.2
Upgrading and Rehabilitation	—	—	350.0
Reticulation	270.2	247.3	787.3
Sewerage	64.5	57.2	550.9
Urban Drainage	173.4	143.0	367.9
Total	2,954.1	2,667.2	3,773.3



12.41 The implementation of the programmes under the Plan period will ensure that the existing and potential water resources will be developed efficiently and effectively to meet the long-term water requirements of the various sectors. Meanwhile, new water supply programmes will continue to be developed to meet the increasing demand of industrial users as well as to improve the level of services.

## **Chapter XIII**

# **Health**

## CHAPTER XIII

# Health

### I. INTRODUCTION

13.01 Health is an integral part of socio-economic development. It supports the Government's development efforts in attaining progressive improvements in the health status of the population and productivity of the workforce. During the Fifth Malaysia Plan, health sector programmes were expanded to provide support to the other sectors of the economy.

13.02 The overall thrust of the health sector development programmes during the Fifth Plan was the attainment of *Health For All by the year 2000*, aimed at achieving a standard of health that will enable Malaysians to enjoy a high quality of life. This implies a population capable of working productively and participating actively in the social life of the community in which they live. It also implies a longer expectation of life, a decreasing rate of infant mortality and a diminishing incidence of infectious diseases. Towards this end, the strategies and programmes undertaken included more equitable distribution of efficient health services and facilities, both in the urban and rural areas as well as effective collaboration between health and other health-related programmes.

### II. PROGRESS, 1986-90

13.03 Consistent with the need to attain better and more equitable distribution of health services and facilities in both the urban and rural areas, the Government undertook the construction of 33 hospitals, 170 health centres and 464 rural clinics as well as the upgrading of 94 health facilities during the Fifth Plan period. Of these facilities, 97 health centres, 187 rural clinics and two district hospitals were completed while other hospitals and major upgrading works were under various stages of construction. In spite of these additional facilities, the delivery of health

services was affected by the shortage of doctors and specialists in the public sector, especially in general and district hospitals. In addition, the over-concentration of private doctors and specialists in urban areas further affected the equitable distribution of health services in the country.

### **Preventive Health Services**

13.04 Various preventive and promotive health activities were implemented during the period. They included immunization and vaccination, control of communicable diseases, rural environmental sanitation, applied food and nutrition, occupational health and safety, health education, family development, anti-dadah and road safety programmes.

13.05 The effective implementation of preventive and promotive programmes depended largely on efficient inter-sectoral coordination and collaboration of the relevant agencies in the public and private sectors. Although efforts were made to bring about proper coordination among the relevant agencies in the public sector, the need for a national coordinating body was greatly felt in the implementation of health programmes. Efforts were also made to bring about inter-agency coordination, while studies were undertaken to organize and propose mechanisms for more effective inter-sectoral coordination.

13.06 The Government played a dominant role in the provision of preventive and promotive health programmes. Among these, the rural environmental and sanitation programme provided clean water supply and sanitation facilities for about 212,400 rural households, while the applied food and nutrition programme benefited about 78,000 families. The expanded programme of immunization provided extensive coverage, especially BCG 99.4 per cent, poliomyelitis 83.3 per cent, double and triple antigen 84.1 per cent and measles about 61 per cent of immunizable children in 1990. These had contributed to the reduction in the infant and toddler mortality rates from 16.9 and 1.4 per thousand in 1985 to 13.5 and 1.3 per thousand in 1989, respectively. Immunization for rubella was started in 1987 for eligible women aged 15 to 44 years, and that for hepatitis B, in 1989.

### **Curative Health Services**

13.07 Curative health services were expanded during the Fifth Plan period. The Government undertook the upgrading and renovation programmes for existing general and district hospitals which included

the General Hospitals of Ipoh, Johor Bahru, Kangar, Kuala Lumpur, Kuching, Melaka, Seremban and the District Hospitals of Sungai Petani and Taiping. Existing health centres and rural clinics located in various parts of the country were also upgraded and renovated, thus enabling the improvement of health services in the rural areas. In order to improve diagnostic capabilities, high technology facilities such as computerized tomography and other biomedical equipment, costing \$55 million, were acquired for general hospitals. The construction of a modern and sophisticated National Heart Institute, costing about \$155 million, was started in 1990 to cope with the increasing incidence of cardiovascular diseases. This Institute will be equipped to perform open-heart surgery and to treat various types of cardiovascular diseases.

13.08 The expansion of health services was given high priority with the provision of basic health care and specialist services in medicine, surgery, paediatrics, obstetrics and gynaecology. The facilities for such services were under construction in District Hospitals such as Kulim, Segamat, Batu Pahat and Kuala Pilah. In addition to the above, 97 health centres, 187 rural clinics and two district hospitals were also completed. Where accessibility was a problem, mobile health and flying doctor services were also provided to the interior and remote parts of the country.

13.09 The Government also introduced programmes to improve the quality and increase the utilization of facilities at health centres and district hospitals to ensure effective delivery of health services to the public. In this regard, refresher courses for the relevant personnel in the management of curative health services were also organized.

13.10 Dental services during the period comprised personal dental care and preventive care components. A total of 254 projects were under construction under the personal dental care programme comprising 22 main dental clinics in towns, one school dental centre, 135 school dental clinics, 86 mobile dental clinics, and ten periodontal units in hospitals. Besides these, personal dental care was also provided through rural health centres of which 170 were completed during the Plan period. At the end of 1990, one main dental clinic, 33 school dental clinics, 34 mobile dental clinics and five periodontal units in hospitals were completed.

13.11 Under the preventive dental services programme, the fluoridation of water supplies and dental health education were implemented. Twenty-eight fluoridation plants were under construction in the Fifth Plan of which 14 were completed. Five out of 28 dental health education units were also completed.

13.12 The pharmaceutical service is an important support service that ensures adequate supply of drugs through appropriate purchasing and local manufacture and the control of quality, efficacy and safety of drugs as well as proper procedures for the importation, management and sale of drugs and pharmaceutical products. During the Fifth Plan, various achievements in this field were made. They included the modernization of stores management and inventory control system at the central and state levels, upgrading of pharmacies in hospitals and the implementation of the integrated medical store system.

### **Manpower Development**

13.13 The delivery of efficient and quality health services depends on the supply of trained health manpower. During the Fifth Plan period, there were 4,229 doctors, 249 specialists and 10,500 nurses in Government medical institutions. Despite this, the public health services faced shortages of manpower which affected the delivery and scope of health services. Many trained personnel gradually retired or left the public service to join the private sector, thus creating 370 vacancies for doctors, 171 for specialists and 400 for nurses in 1990.

13.14 In 1990, the doctor-population ratio for the nation was 1:2,560, below the Fifth Plan target of 1:2,000. In terms of distribution by state, Wilayah Persekutuan Kuala Lumpur and Pulau Pinang had a doctor-population ratio above the Plan target, due to high concentration of doctors in the private sector in the two states. All other states had not achieved the Plan target, as shown in *Table 13-1*. In order to overcome the shortage and the inequitable distribution of doctors amongst states, the Government recruited foreign doctors on contract, increased the intake of medical students in local universities and utilized the services of retired health personnel, while trained and competent medical assistants and nurses were deployed to district hospitals and health centres. In addition, the terms and conditions of service for public sector doctors and specialists were improved. The Government also undertook to improve and increase in-service training for doctors who were then deployed to the various hospitals in the country. Other incentives were also provided, such as free institutional quarters for doctors on call duty, higher specialist allowances and greater post-graduate training opportunities for doctors in the various professional fields.

13.15 These measures coupled with the expansion of preventive and curative health care services and facilities, led to an improvement in health status, as shown in *Table 13-2*. The life expectancy for males improved from 67.9 years in 1985 to 69 years in 1989 while for the females

from 73 to 73.5 years during the same period. The maternal mortality rate was also reduced from 0.37 to 0.3 per thousand while the crude death rate was reduced from 5 to 4.7 per thousand.

### Medical Research and Development

13.16 The thrust in medical research and development (R&D) was primarily to conduct applied biomedical research aimed at improving the diagnosis, management and prevention of parasitic, infectious and non-communicable diseases as well as assisting the general and district hospitals in pathological services. Considerable advances were made in research on tropical diseases which contributed towards the prevention and treatment of malaria and dengue. Institutions of higher learning were also encouraged to undertake medical research as part of their science and technology development programmes.

TABLE 13-1  
DOCTOR-POPULATION RATIO BY STATE, 1985-90

<i>State</i>	<i>1985</i>	<i>1990</i>
Johor	1: 4,187	1: 3,145
Kedah	1: 5,516	1: 4,277
Kelantan	1: 6,898	1: 3,764
Melaka	1: 3,012	1: 2,648
Negeri Sembilan	1: 3,353	1: 2,617
Pahang	1: 4,583	1: 3,508
Perak	1: 3,544	1: 2,823
Perlis	1: 3,794	1: 3,400
Pulau Pinang	1: 1,925	1: 1,815
Sabah	1: 6,897	1: 5,082
Sarawak	1: 6,696	1: 5,175
Selangor	1: 3,335	1: 2,280
Terengganu	1: 5,555	1: 4,226
Wilayah Persekutuan Kuala Lumpur	1: 815	1: 721
Malaysia	1: 3,175	1: 2,560

TABLE 13-2

SELECTED INDICATORS OF HEALTH STATUS AND HEALTH SERVICE FACILITIES<sup>1</sup>, 1980-90

Indicator	1980	1985	1990 <sup>2</sup>
Life Expectancy, in Years <sup>3</sup>			
Male	66.70	67.90	69.00
Female	71.60	73.00	73.50
Infant Mortality Rate (Per 1,000) <sup>3</sup>	19.70	16.95	13.50
Toddler Mortality Rate (Per 1,000) <sup>3</sup>	1.80	1.40	1.30
Maternal Mortality Rate (Per 1,000) <sup>3</sup>	0.60	0.37	0.30
Crude Birth Rate (Per 1,000)	30.90	31.70	27.10
Crude Death Rate (Per 1,000)	5.30	5.00	4.70
Doctors Per 10,000 Population	2.60	3.15	3.76
Dentists Per 10,000 Population	0.50	0.66	0.73
Acute Care Hospital Beds Per 1,000 Population <sup>4</sup>	1.70	1.70	1.50
Health Centres Per 100,000 Rural Population <sup>5</sup>	8.86	8.20	6.05

## Notes:

<sup>1</sup> The indicators took into account the usage of facilities by temporary immigrants.

<sup>2</sup> Refers to 1989 figures.

<sup>3</sup> For Peninsular Malaysia only.

<sup>4</sup> Excluding special medical institutions and private hospitals.

<sup>5</sup> The decreasing ratio from 1980 to 1990 is due to population increases and the expansion of outpatient facilities in the district hospitals.

## Private Sector Participation

13.17 The improvement in income levels and increasing demand for more services led to the expansion in the number of private hospitals and maternity and nursing homes from 119 in 1983 to 192 in 1990. Most of these private facilities were located in urban areas. In the public sector, the privatization of certain non-clinical services such as laundry, security and maintenance of facilities was undertaken in line with the Government's privatization policy. A feasibility study was undertaken to evaluate the viability of privatizing the management of the National Heart Institute which is under construction.



## Management of Health Services

13.18 Efforts were made to further improve the management of health services in order to effect greater quality and equity in the delivery of health services and the implementation of health and health-related development programmes. In view of population increases and changes in the population structure, additional and new demand continued to be made on the supply of quality and equitable health services. Towards this end, studies were implemented to improve resource mobilization and utilization as well as better coordination of health services development and operations.

13.19 Improvements were made to the billing system in general and district hospitals to ensure a more effective collection of user charges. A revised system of user charges was implemented to initiate nominal cost recovery in hospitals and clinics in the country. Computerization was introduced in order to create a more efficient billing system.

13.20 Several studies were conducted to improve the management, utilization, and coordination of health services. A feasibility study on the proposed National Health Security Fund (NHSF) was carried out in the Fifth Plan. The study proposed several organizational options for the NHSF. However, the viability of the proposed options needed to be further reviewed to clarify their financial, economic and social implications. A National Health Plan (NHP) study was undertaken in 1990 to identify and mobilize various health resources in the public and private sectors as well as their efficient and equitable distribution and development. The need for a national coordinating body became evident in the process of implementing health and health-related development programmes. The Government conducted a study on the establishment of a National Health Council as the coordinating body for the development of health and health-related programmes and services in the public and private sectors.

## III. PROSPECTS, 1991-95

13.21 The development of the health sector during the Sixth Malaysia Plan will continue to pursue the objective of attaining *Health For All by the year 2000*. The strategies will focus on efforts to further develop, strengthen and maintain an efficient and equitable health services system in order to have a healthy population. The system will also provide quality health care and greater accessibility of health services to the population. In this context, further strengthening of the services at the

district level will continue to be implemented. The ongoing NHP study will provide the basis for improving coordination in health development as well as management of the national health services and resources. Substantial Government allocation, amounting to \$2,253 million, will be provided under the Sixth Plan to undertake new as well as complete existing programmes and projects undertaken during the Fifth Plan.

### **Preventive Health Services**

13.22 Efficient preventive health programmes will continue to be undertaken during the period in order to reduce future expenditure on curative care. Occupational health and safety will be strengthened as an important component of the preventive health care programme. The ongoing study on occupational health and safety will assist in reviewing policies, regulations and guidelines, coordinating the related programmes as well as identifying further legislative requirements. An Institute for Occupational Health and Safety, costing \$15 million, will be constructed under the Sixth Plan.

13.23 The basic components of the environmental and sanitation programme will be expanded, particularly in the rural and squatter areas. Priority will be given to areas with a high prevalence of communicable diseases where potable water supply system is not available or affordable by the population groups concerned. A sum of \$63 million will be allocated to provide sanitation for 132,000 households and safe water supply for about 200,000 households.

13.24 Priority will be given to the continuation of the applied food and nutrition programme, directed towards the rural and urban poor. The Government will step up surveillance and enforcement on food quality control to ensure compliance with set standards. The local authorities will also continue to complement the efforts of the Ministry of Health. The Ministry will upgrade the Public Health Institute in Kuala Lumpur and its practical training centres in the various states. An allocation of \$10 million will be set aside for the training of health staff, such as medical officers of health and health inspectors.

13.25 The expanded programme of immunization against diseases, such as poliomyelitis, diphtheria, pertussis, tetanus and measles, will be continued with priority to improve the coverage, particularly in remote areas. Efforts will be made to achieve complete coverage in BCG immunization. It is envisaged that three million people will be immunized against rubella and hepatitis B during the Sixth Plan period.

13.26 A major health promotion programme to inculcate a healthy life style in the population will be launched during the Sixth Plan. This programme is designed to reduce the incidence of diseases of affluence, such as diabetes and hypertension. Besides this, improving personal hygiene and life styles through health education will be conducted by the health and health-related agencies as well as the mass media, such as Radio Television Malaysia and the Department of Information.

### **Curative Health Services**

13.27 The physical and non-physical facilities for primary, secondary and tertiary levels of health care will be further improved and expanded in the Sixth Plan. The Government has improved its referral system making it more efficient and effective to ensure that patients receive appropriate care based on need. Measures such as decentralized urban polyclinics and day-care services will be continued in order to maximize the utilization of facilities and services at various levels and to ease congestion, especially at general hospitals.

13.28 In consonance with the aim of more equitable distribution of services, the district health system will be strengthened with the provision of X-ray facilities and the upgrading of laboratory services in health centres and polyclinics. The on-going master plan for the upgrading and rehabilitation of 13 existing general and district hospitals as well as other minor upgrading will be formulated by 1992. A sum of \$704 million will be allocated for their construction which is expected to be completed by 1995. The upgrading and rehabilitation programme is in line with the Government's objective of providing basic specialist services in medicine, surgery, paediatrics, obstetrics and gynaecology at various selected district hospitals to meet the growing demand for such services. The expansion of basic specialist services will be supported by the supply of adequate trained manpower through post-graduate training.

13.29 Two of the new district hospitals at Yan and Jitra undertaken during the Fifth Plan are expected to be commissioned in 1991. In addition to upgrading, the construction of new curative facilities, such as the 32 district hospitals and the National Heart Institute, will be completed and commissioned before the end of the Sixth Plan period. An allocation of \$1,352 million will be set aside to cater for the construction and the purchase of equipment for such facilities. These facilities are expected to provide an additional 1,000 hospital beds by the end of the Sixth Plan period, including beds for open-heart surgery and treatment of cardiovascular diseases. Studies on the upgrading of National Blood Transfusion Services and Spinal Injury Treatment Services will also be completed during the period.

13.30 The construction of a new district hospital with basic specialist facilities in Labuan will be undertaken to support the development of Labuan as an International Offshore Financial Centre. In order to promote and enhance tourism, the Government has also approved the construction of new district hospitals and the upgrading of health facilities in Cameron Highlands, Pulau Langkawi, Port Dickson and Sri Manjung, costing \$153 million.

13.31 In the Sixth Plan, development of dental services will continue to aim at further raising the level of dental health of Malaysians through promotive, preventive, curative and rehabilitative measures. Personal dental care and preventive dental programmes undertaken during the Fifth Plan will be continued. Priority will be accorded to economically disadvantaged population groups to ensure an overall balanced provision of dental care in the country. In this context, efforts will be made to improve accessibility and quality of dental services, particularly in the rural areas. Priority will be given to upgrade the knowledge and professional skills of dental personnel and provide more dental specialist services. Priority will also be accorded to expand school dental health services.

13.32 In the Sixth Plan, quality control to ensure the efficacy and safety of drugs will be strengthened. Towards this end, the National Pharmaceutical Control Laboratory will be upgraded at a cost of \$13 million. Priority will also be given to improve storage capacity of medical stores to ensure an efficient drug supply system in the public sector. The pharmaceutical industry has vast potential for development as local manufacturers satisfy only about 25 per cent of the nation's needs. The Government will provide the necessary encouragement for the expansion of local pharmaceutical industry as well as encourage local entrepreneurs and foreign multi-nationals to set up more manufacturing facilities in Malaysia.

### **Manpower Development**

13.33 The Government has set a doctor-population ratio target of 1:1,500 for the year 2000 in order to provide a higher level of care to the population and efforts will be made towards achieving this target. During the Sixth Plan, the Government's training programme is expected to produce 2,000 doctors locally, while about 500 doctors are expected to return from overseas. In order to overcome the current shortage of doctors, retired doctors will continue to reemployed. The Government has approved the setting up of a teaching hospital in Cheras for *Universiti Kebangsaan Malaysia* and has commissioned a feasibility study on the

proposed establishment of a medical complex in *Universiti Islam Antarabangsa*, in order to increase the number of student intake into the faculties of medicine so as to increase the supply of doctors. In addition, the Government will continue to send an increasing number of students to study overseas, and more foreign doctors and specialists will be employed on a contract basis.

13.34 The training capacity in existing schools for nurses under the Ministry of Health will be expanded. During the Sixth Plan, about 5,295 nurses will be trained by the Government. The Government will also consider the possibility of recruiting foreign nurses to supplement local supply. The training of other para-medical personnel will involve about 800 laboratory technologists, 2,100 medical assistants, 250 occupational therapists, 630 pharmaceutical assistants, 250 physiotherapists and 520 public health inspectors. In view of the shortage of about 400 nurses in 1990 and further expansion of Government hospitals, the private sector will be encouraged to increase their training capacities to supplement the public sector efforts. Through contractual arrangements, the Government will continue to encourage private physicians and surgeons to work on a part-time basis and to utilize facilities available at general and district hospitals in order to alleviate the shortage of doctors in the public sector.

### **Medical Research and Development**

13.35 The Institute of Medical Research (IMR) will continue to undertake R&D with the objective of developing applied biomedical research and assisting the general and district hospitals in the country to provide more sophisticated pathological services. About \$17 million from the R&D fund for science and technology will be allocated to IMR to undertake innovative biomedical research on various aspects of health and health-related problems under the programme of Intensification of Research on Priority Areas (IRPA). Research on diseases of affluence and health problems related to food quality, tropical diseases, Acquired Immune Deficiency Syndrome (AIDS) and other viral diseases will also be undertaken.

13.36 Further research will be undertaken to facilitate the application of available technology to control food and water-borne diseases, nutritional deficiencies, inappropriate fertility and immunizable diseases. Research on non-communicable diseases caused by hazardous factors, such as smoking, alcohol and pollution, will also be expanded. The institutions of higher learning will also be required to cooperate and

coordinate their research under the IRPA programme. Overall a total of \$59.8 million will be provided for R&D activities in the medical and health fields.

### **Private Sector Participation**

13.37 The Government will continue to encourage the private sector to provide health services. However, the growth of the private sector health services has to be coordinated in order to supplement the Government efforts in meeting the demand for health services by the public as well as ensuring equitable distribution of such facilities. The Government will consider the recommendations of the Health Services Financing study to reorientate private medical practice to meet the country's need through an agreed code of conduct and practice so as to maintain a standard quality of services based on available facilities and affordability of the consumers. In situations where Government facilities are not available, the Government would use private facilities if they are found to be cost-effective. The Government will evaluate the viability of privatizing the management and operations of the National Heart Institute, without affecting the accessibility of Government employees and the low-income group to medical treatment. The Government will continue to support the setting up of private medical facilities, such as hospitals and clinics, to cater for those who can afford such services.

### **Management of Health Services**

13.38 The NHP study will be completed in 1992. NHP will include the framework for the mobilization and utilization of health resources in the public and private sectors, manpower development, distribution of health facilities and the upgrading and renovation of existing ones, incentives for private sector relocation to under-served areas and the coordination of the public and private sector programmes. A further review of the NHSF study will be undertaken to ascertain the advantages and disadvantages of the proposed scheme compared with the existing system of financing health care in Malaysia. It is also envisaged that a National Health Council will be established to coordinate policies and programmes in the health sector.

13.39 In order to facilitate an orderly development as well as to effect an equitable distribution of health services and facilities between urban and rural areas, a master plan indicating the nature and location of existing and required levels of health services and facilities for the entire country will be drawn up.

#### IV. ALLOCATION

13.40 The total development allocation for the health sector during the Sixth Malaysia Plan is about \$2,253 million, as shown in *Table 13-3*. This amount is 4.1 per cent of the total Federal Government development allocation for the Sixth Plan period compared to 2.6 per cent under the Fifth Plan.

#### V. CONCLUSION

13.41 The improvement of health services as well as the well-being of society will continue to be emphasized during the Sixth Plan period. The objective of health services will be to improve the quality of life of all Malaysians through the provision of equitable health and health-related services.

TABLE 13-3  
DEVELOPMENT ALLOCATION FOR HEALTH, 1986-95  
(\$ million)

<i>Programme</i>	<i>5MP</i>		<i>6MP</i>
	<i>Allocation</i>	<i>Expenditure</i>	<i>Allocation</i>
Patient Care Services			
New Hospitals	319	311	1,352
Upgrading & Renovation	383	371	594
Public Health Services			
Rural Health	191	181	160
Dental Services	6	6	7
Training	12	11	67
Other Health Services	33	31	39
Applied Food and Nutrition	21	10	22
Population	16	10	12
<b>Total</b>	<b>981</b>	<b>931</b>	<b>2,253</b>

## **Chapter XIV**

# **Social Development**



## CHAPTER XIV

# Social Development

### I. INTRODUCTION

14.01 Social development forms an integral part of the overall socio-economic development of the country and contributes towards the development of a more caring society. The social development programmes include housing, youth, sports and community development as well as social welfare. These programmes are aimed at inculcating positive values, self-reliance and resilience in the society and provide invaluable support for the development of other sectors of the economy as well as contribute towards a better quality of life.

### II. PROGRESS, 1986-90

#### Housing

14.02 The objective of the housing policy was to provide Malaysians of all income levels, particularly the low-income group, accessibility to adequate and affordable shelter. The development of housing was also aimed at providing a reasonable standard of living as well as promoting social integration for the community in the long term. Towards this end, housing development programmes were implemented based on the human settlement concept, whereby housing areas were provided with various social facilities and amenities which included schools, clinics, sports facilities, recreation and religious worship as well as commercial facilities, such as shop houses and markets.

#### *Public and Private Sector Housing*

14.03 During the Fifth Malaysia Plan, a total of 701,500 units were planned for construction, of which the public sector was targeted to build

21 per cent or 149,000 units and the private sector 79 per cent or 552,500 units. However, about 300,930 units were constructed during the Plan period. Of the total units completed, about 164,400 units were low-cost houses, 116,780 units medium-cost and 19,750 units high-cost. The public sector completed about 97,130 units or 65 per cent of its target, while the private sector, 203,800 units or 37 per cent of its target. *Table 14-1* summarizes the achievement of the public and private sectors during the period.

14.04 Low-cost housing is developed both by the Government through public funding as well as by the private sector. Out of the 495,000 units targeted, about 164,400 units or 33 per cent were completed. The public sector completed about 74,330 units or 61 per cent of its target, while the private sector under the ordinary low-cost scheme completed 4,940 units or 4 per cent. This slow progress in the construction of ordinary low-cost housing by the private sector was partly due to the shift in emphasis to the Special Low-Cost Housing Programme (SLCHP) to take advantage of the special incentives offered by the scheme.

14.05 SLCHP, which was launched in 1986 and planned for completion in 1989, was part of the anti-recession measures designed to stimulate the growth of the economy during the recession period as well as to increase the supply of low-cost houses. The special privileges accorded to SLCHP facilitated its implementation. Such privileges included the establishment of a one-stop approval agency, flexibility in rules, regulations and standards as well as greater accessibility to financial facilities from commercial banks. These measures were introduced with a view to reducing construction costs.

14.06 SLCHP received overwhelming response from private developers. A total of 334,600 units were registered for construction compared with only 240,000 units planned under the programme. However, up to 1990, only about 83,940 units or 35 per cent were completed. *Table 14-2* shows the progress of SLCHP by state.

14.07 The slow progress in the implementation of housing programmes, including SLCHP, was attributed to several factors. These included unsuitability of sites or locations, financial and management problems of developers, misuse of funds collected from house-buyers, incompetent contractors and delays in getting plan approvals. These resulted in many housing projects being delayed or abandoned. About 277 projects, comprising 63,560 units were abandoned. These were mainly private sector projects, of which 80 per cent were medium-cost houses, involving 36,130 house buyers. *Table 14-3* shows the distribution of abandoned projects by state.

TABLE 14-1

PUBLIC AND PRIVATE SECTOR HOUSING  
PROGRESS AND TARGETS, 1986-95

Programme	Targeted 5MP				Completed 5MP				Targets 6MP			
	Total	Low cost	Medium cost	High cost	Total	Low cost	Medium cost	High cost	Total	Low cost	Medium cost	High cost
<b>PUBLIC SECTOR</b>												
Public Low-Cost Housing	42,880	42,880	-	-	26,172	26,172	-	-	24,430	24,430	-	-
Sites and Services Scheme	2,920	2,920	-	-	- <sup>1</sup>	- <sup>1</sup>	-	-	15,570	15,570	-	-
Housing in Land Schemes	57,500	57,500	-	-	32,056	31,827	229	-	56,100	56,100	-	-
Institutional Quarters and Other Staff Accommodation	27,000	4,400	22,500	100	11,284	5,882	5,116	286	32,600	17,600	14,700	300
Commercial Agencies	18,700	13,200	5,400	100	27,614	10,451	16,009	1,154 <sup>1</sup>	45,300	13,100	29,900	2,300
Sub-total	149,000	120,900	27,900	200	97,126	74,332	21,354	1,440	174,000	126,800	44,600	2,600
<b>PRIVATE SECTOR</b>												
Ordinary Low-Cost Housing	130,400	130,400	-	-	4,937	4,937	-	-	44,080	44,080	-	-
Special Low-Cost Housing Programme (SLCHP)	240,000	240,000	-	-	83,940	83,940	-	-	171,620	171,620	-	-
Medium-Cost Housing	146,000	-	146,000	-	89,741	-	89,741	-	145,800	-	145,800	-
High-Cost Housing	23,600	-	-	23,600	17,701	-	-	17,701	24,900	-	-	24,900
Cooperative Societies	12,500	3,700	6,300	2,500	7,483	1,187	5,687	609	12,600	1,300	10,100	1,200
Sub-total	552,500	374,100	152,300	26,100	203,802	90,064	95,428	18,310	399,000	217,000	153,900	26,100
<b>Total</b>	<b>701,500</b>	<b>495,000</b>	<b>180,200</b>	<b>26,300</b>	<b>300,928</b>	<b>164,396</b>	<b>116,782</b>	<b>19,750</b>	<b>573,000</b>	<b>343,800</b>	<b>200,500</b>	<b>28,700</b>

Note:

<sup>1</sup> Only site preparation completed. Therefore no physical housing units were recorded at the end of the Fifth Plan.

TABLE 14-2

PERFORMANCE OF THE SPECIAL LOW-COST  
HOUSING PROGRAMME BY STATE, 1986-90

State	Registered		Completed		Units Under Implementation
	Project	Unit	Project	Unit	
Johor	86	44,100	25	12,858	22,075
Kedah	246	65,900	41	23,228	26,449
Kelantan	69	12,920	7	1,182	7,498
Melaka	42	9,630	8	2,242	2,766
Negeri Sembilan	43	17,580	11	5,091	7,209
Pahang	104	25,960	2	4,012	5,261
Perak	97	34,320	10	15,001	11,599
Perlis	19	2,430	1	620	1,532
Pulau Pinang	72	41,020	2	4,866	20,455
Sabah	10	5,530	1	1,258	2,128
Sarawak	-	-	-	-	-
Selangor	160	50,520	13	6,648	30,455
Terengganu	29	2,660	1	527	1,234
Wilayah Persekutuan Kuala Lumpur	29	22,030	6	6,407	11,479
<b>Total</b>	<b>1,006</b>	<b>334,600</b>	<b>128</b>	<b>83,940</b>	<b>150,140</b>

14.08 In order to overcome the problem of abandoned housing projects, the Government established the Abandoned Housing Projects Fund in 1990 under the administration and supervision of Bank Negara Malaysia. An initial allocation of \$300 million was provided and this was subsequently increased to \$600 million. The Fund was to assist worthy housing developers to complete their projects as well as assist buyers to secure their houses. A Coordination Committee in each state was set up to coordinate and facilitate the rehabilitation of abandoned projects.

TABLE 14-3  
ABANDONED HOUSING PROJECTS BY STATE, 1990

<i>State</i>	<i>Project</i>	<i>No. of Houses</i>	<i>No. of Buyers</i>	<i>Estimated Values (\$ million)</i>
Johor	40	14,747	10,472	733
Kedah	8	2,095	1,259	81
Kelantan	17	1,942	946	113
Melaka	19	3,544	2,310	176
Negeri Sembilan	29	6,264	3,450	310
Pahang	18	2,610	1,625	124
Perak	40	8,177	4,482	472
Perlis	8	1,012	499	64
Pulau Pinang	21	4,692	1,819	366
Selangor	52	13,640	7,435	777
Terengganu	18	374	326	46
Wilayah Persekutuan Kuala Lumpur	7	4,463	1,507	368
<b>Total</b>	<b>277</b>	<b>63,560</b>	<b>36,130</b>	<b>3,630</b>

14.09 The terms of the Government Housing Loan Scheme for civil servants were revised during the Plan period. The interest rate on housing loans was revised downwards from 6 per cent to 4 per cent per annum. The loan amount was determined according to borrowers' eligibility. These measures were taken to provide greater accessibility to civil servants to buy houses according to their affordability.

14.10 During the Plan period, the inadequate supply as well as rising prices of low-cost houses affected the accessibility of the low-income group to such facilities. In addition, there was also an inadequate supply of low-medium-cost houses to cater for those in the income bracket of \$1,000 to \$1,500 a month. The limited supply of this category of houses had in turn induced them to buy low-cost houses, depriving further the accessibility of the low-income group to low-cost houses.

14.11 The Sites and Services Scheme, which was launched during the Mid-Term Review of the Fifth Plan, had received encouraging response from the state governments. The programme was designed to provide an alternative to low-cost houses, particularly for those who could not afford low-cost houses under the existing programmes. Under the Scheme, the cost per unit is \$10,000 for Peninsular Malaysia and \$13,000 for Sabah and Sarawak, including site preparation as well as infrastructure. During the period, 12 projects comprising 1,840 units in the States of Kelantan, Pahang, Perak and Sarawak, were approved for implementation.

#### *Housing Development in Rural Areas*

14.12 The Traditional Village Regrouping Programme and the Village Rehabilitation Programme were initiated to uplift the quality of life of the rural community. Under the Traditional Village Regrouping Programme, priority was given to the redevelopment of scattered villages located in flood-prone areas, villages in the coastal areas which were affected by coastal erosion as well as small villages in remote areas. These villages were regrouped into socio-economic clusters for effective and optimum distribution of resources and effective implementation of social and physical infrastructure facilities. A total of 198 villages were regrouped into 64 economic clusters and provided with infrastructural facilities and social amenities. The Village Rehabilitation Programme was reactivated and focussed on the hard-core poor. Under this programme, financial and material assistance was provided to rehabilitate dilapidated houses. By 1990, a total of 15,720 houses were rehabilitated.

#### **Sports**

14.13 The National Sports Policy (NSP) adopted in 1989, provided general guidelines for national sports development and focussed on high performance and mass participation sports programmes. High performance programmes were aimed at achieving excellence in national and international competitions as well as enhancing the national image, while mass participation programmes were aimed at promoting greater participation in sports and recreation, especially at the grassroot level, with a view to developing a healthy, active and productive society. Various sports development programmes undertaken during the Fifth Plan period included the training of athletes and sports officials, development of sports facilities, organization of competitions and outdoor pursuits as well as the provision of incentives.

14.14 During the Fifth Plan, the public sector undertook the upgrading and renovation as well as the construction of sports facilities, both at the national and state levels. These included the Stadium Merdeka, Stadium Negara, Tun Razak Hockey Stadium and Squash Complex, National Tennis Centre, Federal Territory Sports Complex, *Pusat Sukan* Kuala Lumpur as well as the State *Gelanggang Budaya* and State Sports Complexes. Sports facilities and mini-sports complexes were also built in small towns and in rural areas. In addition, the Government also contributed to the construction of the Olympic Council of Malaysia (OCM) headquarters in Kuala Lumpur.

14.15 The training of sportsmen for international competitions was mainly undertaken by the respective National Sports Associations (NSA), with occasional support from the private sector. The National Sports Council (NSC) provided assistance to sportsmen in preparation for certain international competitions, such as the South East Asia (SEA) Games, Asian Games and Olympic Games. The Sportsmen Development Programme, launched by the Government in 1989, further strengthened the training and competition preparation for sportsmen, coaches and administrators of NSA.

14.16 Certain secondary schools in each state were designated as sports schools on the basis of sports specialization. Talented students were selected and grouped in these schools for special coaching in their respective field of sports. The sports facilities in these schools were expanded or upgraded. However, the lack of adequate, qualified and competent coaches and trainers affected the proper implementation of this programme.

14.17 Malaysia also succeeded in organizing a number of major sports events which had enhanced the image of the country. The nation successfully hosted the SEA Games in 1989 and other events, such as the World Youth Hockey Tournament (1989), the World Squash Open (1989), International Professional Tennis Tournaments (1989-90), World Cup Badminton (1990), World Youth Basketball Championships (1990) and the Professional Golf Association Championships (1990).

## Youth

14.18 Youth form an important group in the society and constitute the majority of the population. In 1990, 7.6 million or 42 per cent of the population were youth between the ages of 15-40 years. By the year 2000, the youth population is expected to reach 9.3 million. With this

increase, it is envisaged that there will be more challenges that would have to be met to enable youth to play an effective role in the nation. Thus, there is a need for long-term planning to develop the potential of youth.

14.19 The continued progress and prosperity of the nation largely depend on the youth. They constitute the assets and the potential upon which the nation will depend to achieve progress. In this respect, the Government is committed to the planning and execution of youth programmes in line with the aspiration of the National Development Policy.

14.20 The National Youth Policy, adopted in 1985, provided for a balanced development of youth in the economic and social fields. The programmes implemented during the Fifth Plan period included the expansion and construction of Youth Training Centres and activities aimed at fostering unity among youth of various ethnic groups as well as inculcating discipline, self-reliance and national unity.

14.21 The existing Youth Training Centres in various states were expanded to cater for the increasing demand for skill training, especially for the unemployed youth. In addition to skill training, various programmes were implemented to instil discipline, sense of responsibility, motivation and leadership among youths. During the Fifth Plan, 1,865 youths were trained in various trades at Dusun Tua, 1,500 in Pertak, Kuala Kubu Bharu, 450 in Skudai and 825 in Kuala Terengganu, while about 4,870 youths were provided on-the-job training at various business establishments. The Advanced Training Centre in Sepang was established in 1990 to cater for advanced training in metal-working, tool and die-making and machining. Currently, there are about 100 trainees undergoing various courses.

14.22 In line with the objective of encouraging self-employment among youths, a number of *Projek Belia Niaga* and *Projek Belia Peladang* were undertaken which involved about 10,000 youths. The Youth Economic Development Trust Fund was established in 1987 to finance various small businesses, including agro-based projects. To date, the Ministry of Youth and Sports had undertaken about 340 projects costing \$4.2 million, and this had created about 3,000 jobs. In 1990, there were 30 youth associations with about 7,500 branches throughout the country with a total membership of about 1.4 million youths. The activities of these associations, coordinated at the national level by the Malaysian Youth Council, were geared towards fostering unity among youth and inculcating discipline. The Youth Exchange Programme between Malaysia and other countries was also undertaken during this period.



## **Social Welfare Services**

14.23 The National Social Welfare Policy was adopted by the Government in 1990 to promote a stable, self-reliant and caring society for the nation's progress. The policy advocates greater assistance to the handicapped, the disabled and destitute as well as the unfortunate to enable them to participate in and benefit from socio-economic development. It also addresses the need to give priority to national development and to guarantee the well-being of the people. This is achieved through the process of development directed towards uplifting the potential of all groups in the society. Specific attention is also given to equalizing opportunities for the backward groups to enable them to lead a more meaningful life in the mainstream of development. The aspects of social welfare emphasized are social integration and cohesion, community development, social education and development and care for groups with special needs. Through these efforts, the welfare of all ethnic groups is guaranteed in the process of achieving national unity.

14.24 In line with the above policy objectives, the Government spent \$7.5 million under the Fifth Plan for the renovation and construction of 294 Old Folk Homes throughout the country and about \$12 million for the rehabilitation and training of disabled and handicapped persons. In the Fifth Plan period, various voluntary organizations and district welfare committees for children were given grants for their activities. Public awareness and involvement in caring for the old, the disabled and the destitute were enhanced through the Community Rehabilitation Programme.

## **Information and Broadcasting**

14.25 The role of information and broadcasting is to contribute to the development of a well-informed society imbued with positive, strong moral and ethical values receptive to modernization. Broadcast media and face-to-face communication have been the most effective instruments for disseminating information on Government development policies, programmes and strategies, to ensure social and political stability. Towards this end, wider radio and television coverage in the country was effected through further extension and enhancement of radio and television transmission. As an information strategy towards the creation of a robust, hardworking, loyal and dedicated united Malaysia, activities with grassroots involvement were organised to enhance the success of the process of development. The local content of programmes was increased in line with the cardinal principles of *Rukunegara*. *Perbadanan Kemajuan*

*Film Nasional Malaysia* (FINAS), while continuing to intensify efforts to nurture, promote and protect the local movie industry, gave emphasis to the growth of professionalism among film makers to ensure the effective contribution of the private sector towards modernization and greater national unity. *Film Negara* supplemented the efforts of RTM and the film industry in producing short films and documentaries capable of inculcating balanced spiritual and material values among the multi-racial people.

### **Library Services**

14.26 The objective of the library development programme is to inculcate and promote a greater reading habit among Malaysians with a view to developing a knowledgeable and well-informed society, as part of the overall national goal of developing quality citizens. Towards this end, the provision of an effective library service network, both in the urban and rural areas was undertaken. In the rural areas, the library service network was further supported by mobile library services. During the Fifth Plan period, the construction of 17 libraries was undertaken in various states. Two were completed while 15 others are under various stages of construction. In order to provide mobile library services, 14 mobile units were procured and delivered to all states. The construction of the National Library building with computer facilities started in 1989 and is expected to be completed by 1991.

### **Fire Services**

14.27 The objective of the fire services is to provide an effective service in fire prevention and fire fighting with the aim of protecting lives and property. During the Fifth Plan period, there were 62,900 fire cases which resulted in a loss of property amounting to \$1,033 million. The Fire Services Act was passed in 1988 to provide guidelines on the role, function and authority of the Fire Services Department. The Act also provided guidelines for the public regarding fire prevention and security in all premises.

14.28 During the Fifth Plan period, three new fire stations situated in Kerteh, Pasir Gudang and Kota Bharu were completed. In addition, 67 units of fire engines were procured to replace or add to the existing fleet of fire engines.

## Cooperatives

14.29 Cooperatives were established with the aim of providing opportunities for the people to save, invest and participate in economic enterprises. The Government played a vital role in encouraging the formation of strong cooperatives with large memberships with a view to providing opportunities to raise sufficient capital and funds for investment. Executive directors and officials of cooperatives were given training in management and investment at the Cooperative College to enhance their capabilities. The Government also assisted cooperatives which had insufficient funds through the provision of soft loans.

14.30 There were 3,333 cooperatives with a total membership of about 2.7 million in 1990. Cooperative activities also provided employment opportunities for its members. In 1990, about 11,300 people were employed by various cooperative bodies of whom about 9,600 were permanent staff and the balance temporary workers.

14.31 In 1990, there were 363 credit cooperative societies, including 18 deposit-taking cooperatives, which came under the supervision of the Cooperative Development Department. These excluded the 21 deposit-taking cooperatives whose activities were frozen and placed under the control of Bank Negara Malaysia since 1986.

14.32 The Government also encouraged the formation of *Koperasi Pembangunan Daerah* (KPD) in the various districts. By the end of 1990, about 76 KPD were established. The total membership of KPDs was estimated at 25,000 with a paid-up capital of about \$900,000. Some KPDs have diversified their activities into new areas such as construction.

## Community Development

14.33 The main objective of the community development programme is to inculcate positive values oriented towards development and self-reliance amongst the rural and sub-urban population. Various agencies, such as the Community Development Division of the Ministry of Rural Development (KEMAS), Federal Land Development Authority (FELDA), Rubber Industry Smallholders Development Authority (RISDA) and Farmers Organization Authority (FOA) carried out community development activities. The activities of KEMAS included family development, nutrition, family health, hygiene, home economics as well as provision of services, such as the establishment of rural libraries and pre-school centres. About 5,100 pre-school centres were established,

benefiting 151,660 children, mainly in rural areas. Other programmes carried out included the upgrading and renovation of ten community service centres to house the various community development activities, such as rural libraries and pre-school centres.

14.34 The inadequate supply of trained manpower in community development was a major problem encountered during the period. However, existing programmes were implemented through the employment of contract staff so as to maintain the quality of services to the people. In addition, the spirit of self-help (*gotong-royong*) was encouraged and supported to enhance community participation.

### Culture

14.35 The role of culture is to enrich national identity, strengthen cultural understanding among the ethnic groups and inculcate consciousness and appreciation of the arts and culture among the people. During the Fifth Plan, concerted efforts in conservation and preservation of the cultural heritage, dissemination of cultural information and the development of the arts and culture were undertaken. Programmes in training, research, promotion and development in the various fields of the arts and culture were also undertaken. Among the projects undertaken included the upgrading of the National Culture Complex, upgrading of the building to house the National Art Gallery and the provision of an arts theatre located at the Tourist Information Centre building.

## III. PROSPECTS, 1991-95

### Housing

14.36 Housing as a basic social need will continue to be given emphasis by the Government during the Sixth Malaysia Plan to ensure that prices are within the affordability of various income group, particularly those in the low-income group. Towards this end, the existing strategies and programmes will be continued. The private sector will be encouraged to build more low-cost and low-medium-cost houses with the public sector supplementing the supply of houses in this category. Efforts will be taken to ensure that the prices of low-cost houses at \$25,000 per unit or below will remain within the reach of the low-income group. Towards this end, some state governments are revising the existing formula and will take steps to construct low-cost houses within the price range of \$15,000 to \$18,000 per unit.

14.37 The Government will continue to play a facilitating role and provide institutional support to the private sector. Among the measures to be undertaken include the updating of legislation and regulations, review of infrastructural standards with the view to increasing density and higher plot utilization and intensifying research and development activities to produce cheaper building materials and construction techniques. In line with the Malaysia Incorporated concept, important groups in the housing industry, such as the Housing Developers Association (HDA), Master Builders Association (MBA), and suppliers of building materials should support Government efforts in ensuring adequate supply of cheaper low-cost and low-medium-cost houses. In addition, MBA can also play a role in developing efficient technology for low-cost housing to complement research efforts undertaken by the National Housing Department of the Ministry of Housing and Local Government.

14.38 The Government will also implement the Housing Developers (Housing Development Account) Regulation which was approved in August, 1990. The Regulation is expected to be effective by August, 1991. The Housing Development Account regulates the use of monies collected or monies raised by licensed housing developers in housing development projects. Among others, the Regulation will ensure that monies collected by a developer for a specific housing project is solely used for that particular project. The Regulation will prevent the misuse of money collected from house-buyers, thus protecting them from the malpractices of developers. The implementation of these regulations is also expected to prevent housing projects from being abandoned due to financial difficulties arising from the misuse of funds by developers.

#### *Public and Private Sector Housing*

14.39 About 602,700 units of houses will be required during the Sixth Plan period. Of this, about 444,900 units will be to meet the demand of new households while about 157,800 units will be for replacement and upgrading of existing houses. The distribution of housing needs for the various states is shown in *Table 14-4*.

14.40 To meet these requirements, a total of 573,000 units of houses will be built by both the public and private sectors. These include institutional and staff quarters for the Armed Forces, Police, Customs and Fire Services. Where necessary, the Government will consider purchasing suitable buildings and completed housing units offered by private developers to meet the housing requirements of uniformed personnel. *Table 14-1* summarizes the housing programmes proposed for

construction by the public and private sectors. The privatization of housing schemes will be encouraged as a measure to promote greater involvement of the private sector in housing development. Towards this end, state governments will be encouraged to identify feasible projects for privatization.

14.41 The low-cost housing programme constitutes a major component of housing units planned for construction during the Plan period. They comprise about 343,800 units, including the remaining units of SLCHP, or 60 per cent of the total housing target of 573,000 units. SLCHP will be extended during the Sixth Plan to meet the target of 240,000 units originally planned for construction. An evaluation will be undertaken with respect to the implementation status of this programme.

TABLE 14-4  
HOUSING NEEDS BY STATE, 1991-95  
(units)

<i>State</i>	<i>New Requirement</i>	<i>Replacement/ Upgrading</i>	<i>Total Housing Needs</i>
Johor	48,889	11,042	59,931
Kedah	32,228	9,559	41,787
Kelantan	38,584	19,137	57,721
Melaka	12,405	2,167	14,572
Negeri Sembilan	17,199	5,261	22,460
Pahang	30,121	6,739	36,860
Perak	42,038	16,801	58,839
Perlis	5,089	440	5,529
Pulau Pinang	16,376	4,365	20,741
Sabah	52,482	28,966	81,448
Sarawak	44,178	29,796	73,974
Selangor	53,566	13,685	67,251
Terengganu	24,782	3,576	28,358
Wilayah Persekutuan Kuala Lumpur	26,930	6,322	33,252
<b>Total</b>	<b>444,867</b>	<b>157,856</b>	<b>602,723</b>

14.42 Suitable housing facilities will be provided for the industrial workforce in order to facilitate their participation in the respective industrial areas. Towards this end, housing areas and facilities will be suitably located near the industrial areas. State authorities as well as private developers involved in the development of industrial estates will be required to allocate land for housing development, suited to the requirements of the industrial workforce. In respect of implementation, there is a need for housing developers to coordinate their housing projects with the development of industrial zones. This coordination is essential to prevent housing schemes from encroaching into industrial areas which may pose health hazards to the residents.

14.43 Squatter settlements in the urban areas have been on the increase and bring with them related problems of health, overcrowding and other social problems, if left unchecked. In this regard, relocation programmes will be introduced during the Sixth Plan period to alleviate this problem. Squatter families affected by the implementation of development projects in their locality will be given the option to either buy or rent low-cost houses already constructed. Alternatively, they will be resettled in transit houses before moving into permanent low-cost housing.

#### *Housing Development in Rural Areas*

14.44 Housing development in the rural areas will be implemented based on the *Halacara Baru* concept of rural development with a view to modernizing traditional villages through diversified development approaches. The diversified approaches are necessary in order to develop the 11,750 scattered traditional villages in remote areas. These villages lack physical and social infrastructural facilities and have been left behind in the mainstream of development due to their remote and scattered locations. Of 11,750 traditional villages, about 644 villages have been identified as having the potential for development into Rural Growth Centres. In addition, for the hard-core poverty programme, a total of 27,350 units of houses will be rehabilitated. For the estate workers, the Government will undertake administrative and other measures to facilitate estate management to implement housing schemes such as the house ownership scheme for workers.

14.45 Under the Rural Growth Centre programmes, a total of 11 growth centres will be implemented. These centres will be developed and provided with infrastructural and social amenities. Modern economic activities, including the development of light industries and tertiary services will be introduced in line with the overall goal of promoting

them as local economic centres. Under the Traditional Village Regrouping Programme, a total of 304 villages will be regrouped into 168 economic clusters. These villages will be provided with suitable infrastructural as well as social amenities.

## Sports

14.46 During the Sixth Plan period, the National Sports Development Plan Study will be completed to facilitate the efficient mobilization of resources in the public and private sectors for sports development. It will incorporate, among others, the development of human resources in sports, physical facilities and infrastructure. Institutional and organizational improvements will be undertaken to enhance the management of sports and encourage the development of sports industry.

14.47 The construction of new facilities as well as the upgrading and renovation of existing ones will be continued during the Plan period. These include state stadiums and complexes in Johor, Kedah, Melaka, Negeri Sembilan, Perak, Perlis and Wilayah Persekutuan Kuala Lumpur. In addition, the upgrading of *Gelanggang Budaya* facilities as well as the construction of additional facilities in small towns and rural areas will also be continued to provide greater accessibility to sports facilities for the community. The professional management of sports facilities will be encouraged and implemented to ensure proper utilization of sports facilities.

14.48 The National Sports Institute (NSI) programmes will operate by utilizing existing sports facilities. NSI will be established under the Ministry of Youth and Sports and managed by high calibre personnel to ensure performance comparable to international standards. The Sportsmen Development Programme developed during the Fifth Plan will be continued to enable a more effective training of sportsmen.

14.49 NSC will focus on high performance sports and will continue to assist NSA in preparing national teams for international competitions. In addition, NSC will continue the conferment of National Sports Awards and the application of incentive schemes to promote greater achievements in sports.

14.50 The Ministry of Youth and Sports will continue to develop mass sports as well as implement the talent development programme at the grassroot level. This is crucial in developing a broad base in sports talent. The Ministry will also continue with its outdoor pursuits and fitness development programmes.



14.51 The sports schools development programmes, introduced in the various states in the Fifth Plan, will be continued with further strengthening of the programme through the provision of more qualified and competent coaches and trainers. A pool of competent teachers and coaches will be provided to service these schools on a full-time basis.

14.52 The organization of international competitions will be encouraged in order to complement the Government's efforts in promoting tourism as well as enhancing the image of the country. This will also assist in nurturing the growth of professionalism in sports in the country.

## Youth

14.53 Youth development programmes will emphasize attitudinal change, in order to inculcate positive values such as discipline, punctuality, diligence, hard work, respect for elders and commitment to achieve quality in their work. Emphasis will also be placed on skill training for youth. The development of youth training centres as well as the provision of on-the-job training will be continued. In order to support the youth development programmes, the expansion of existing and construction of new training centres and the upgrading of existing facilities will be undertaken together with improvements in the curriculum. In addition, instructor upgrading programmes will be undertaken to complement the need to upgrade the quality of courses. Youth intending to enrol in Youth Training Centres will be required to participate in a special course designed to inculcate positive values and attitudes. In this respect, the Government will allocate \$100 million for *Biro Tata Negara* (BTN) to provide facilities and to conduct courses and training on good values and positive attitude for youth. Trainees in public training institutions will be required to undergo this special training programme. Care will be taken to provide equitable access for youth, especially the drop-outs from the school system. These special courses on values will help to mould youth into a responsible and constructive group in society and prepare them to meet the challenges of an industrial-based economy.

14.54 *Projek Belia Niaga* and *Projek Belia Peladang* will also be continued to increase their income opportunities. Among the fields to be given emphasis are modern agriculture, manufacturing and trading which are geared towards promoting entrepreneurship among the youth. Their participation in Youth Training Centres will also expose them to business opportunities and business management.

14.55 New youth clubs with multi-ethnic membership will be encouraged to provide them with an avenue to participate in productive activities during their free time as well as to promote greater understanding, goodwill and tolerance in society. The implementation of the urban youth programmes and holiday camps introduced during the Fifth Plan will be continued.

### **Social Welfare Services**

14.56 During the Sixth Plan, the thrust of social welfare services will be towards inculcating self-reliance among disadvantaged groups. The provision of facilities for the treatment, aftercare, supervision and vocational training of the disabled and less fortunate members of society will be continued. A comprehensive industrial rehabilitation centre for the orthopaedically handicapped is under construction. This centre will also organize medical and vocational rehabilitation programmes to enable displaced persons to be gainfully employed in industries.

14.57 The Government will provide additional facilities located in Kuala Terengganu for the chronically ill. Facilities for the terminally ill in Kuala Kubu Bharu, the probation centre in Melaka for delinquents, and the probation hostel for wayward girls in Miri, Sarawak will be renovated and upgraded. The existing school and probation hostel in Sungei Besi for delinquents will be expanded and upgraded. The Government's efforts in the rehabilitation of the handicapped and disabled as well as delinquents will also be supported by comprehensive programmes involving community participation. Occupational therapy and career guidance will also be provided to enable rehabilitated inmates to return to society and be gainfully employed.

14.58 Child abuse has been on the increase due to destabilized families, poverty and other social problems. In order to overcome this, the Government is formulating measures to enforce existing legislative provisions which include, among others, the immediate removal of victims of abuse to places of safety and mandatory reporting by medical practitioners of such cases. The Government has established the National Coordinating Council on Eradication of Child Abuse and formed child protection teams to safeguard the welfare of children. The Malaysian Council for Child Welfare will also continue to make concerted efforts in preventing child abuse.

## Information and Broadcasting

14.59 The Government will continue to enhance radio and television coverage in the country to ensure greater access to all citizens. With adequate infrastructure, up-to-date technology and skilled manpower, broadcasting inculcates public awareness, while face-to-face communication garners public receptiveness towards objectives of nation building pertinent to the 2020 vision.

14.60 In order to improve the quality of radio reception in the remote and pocket areas, the FM transmission will be introduced to improve reception by more local stations and listeners. Further efforts will be made to expand and improve VHF/FM broadcasting to enable high quality broadcasting services to be provided as well as improve the coverage throughout the country.

14.61 The quality of television transmission and reception will be improved. A feasibility study on the corporatization of the radio and TV broadcasting service will be undertaken during the Sixth Plan period with a view to further improving efficiency and effectiveness in operations and delivery of service. Emphasis will be made to train competent manpower necessary to support the efficient and effective delivery of the radio and TV services.

## Library Services

14.62 During the Sixth Plan, library development programmes will continue to emphasize greater accessibility to library services for the community. This emphasis will be in line with the Government's efforts to inculcate the reading habit and a reading culture aimed at developing a well-informed and knowledgeable society. Local books and other reading materials in *Bahasa Malaysia* will also be produced to further strengthen library collections.

14.63 During the Plan period, five new state library buildings will be constructed in Johor, Melaka, Pahang, Perak and Terengganu while 13 branch libraries will be constructed in Johor, Kedah, Pahang, Perak, Pulau Pinang, Selangor and Terengganu. In addition, a total of 70 rural libraries and 40 mobile units will be provided to all states. The feasibility of utilizing unused Government buildings for libraries will be reviewed and where necessary new library buildings will be constructed.

## **Fire Services**

14.64 During the Plan period, preventive measures will be further emphasized in the protection of lives and properties from destruction by fire. In addition, curative measures will also be undertaken to combat fire outbreaks through the development of efficient and effective fire services.

14.65 Preventive measures will emphasize effective public education on fire hazards and their prevention as well as the proper and stringent enforcement of fire prevention and fire fighting regulations. The Government agencies and local authorities responsible, as well as the Fire Services Department, will take steps to effectively enforce these measures. Community fire fighting squads will be established in communities and neighbourhoods and they will be adequately trained in fire fighting and fire prevention. This is to ensure timely action by a well-trained community in the event of fire.

14.66 The Fire Services Department will spearhead the efforts in developing efficient and effective fire-fighting capabilities through effective training and acquiring appropriate equipment and logistics support. The Fire Services Act, 1988, will also be appropriately enforced. During the period, 30 new fire stations will be built and 152 units of vehicles and equipment will be procured to strengthen the fire services. The Fire Training Centre in Kuala Kubu Bharu will be upgraded and equipped with suitable equipment and facilities as well as trained instructors.

## **Cooperatives**

14.67 Various measures will be undertaken to inculcate the importance of savings and investments in the community to increase and popularize participation in the cooperative movement. This will include the dissemination of the concept, principle and philosophy of the cooperative movement and its activities. The financial management and accounting systems for all cooperatives will also be emphasized.

14.68 Assistance will continue to be given for the administration of cooperatives in schools and KPDs with a view to encouraging the establishment of cooperatives. In addition, training in cooperative management will continue to be provided to those who are responsible in administering the cooperatives. The Government will also continue to provide loans to cooperatives from the cooperative revolving fund to enable them to overcome their lack of capital for their operations. Cooperatives will be encouraged to undertake ventures, such as feasible

housing development projects, for the benefit of their members as well as to enable them to become self-financing.

### **Community Development**

14.69 KEMAS will continue to undertake programmes to develop values oriented towards the development of self-reliance. The focus of activities will be on the rural population whose activities will be supported and guided by KEMAS social workers.

14.70 During the Plan period, the construction of three family development training centres and various community service centres will be continued. KEMAS will also expand its programme for the rural population by providing more rural libraries and pre-school centres. About 70 rural libraries, seven community service centres and 6,120 pre-school centres will be established. The training and manpower development capabilities of KEMAS will be upgraded through the improvement and renovation of existing training centres.

### **Culture**

14.71 Culture as an instrument to improve the quality of life as well as a medium to create Malaysian consciousness will be given greater attention during the Sixth Plan. While efforts to strengthen cultural understanding and consciousness will continue, special focus will be given to the arts as an integral part of culture. As a measure to upgrade the quality of the performing arts, especially in theatre and music, training and education in the various fields of the performing arts will be carried out. In order to facilitate active participation of the public in cultural activities, the National Theatre as well as Art Centres in various states will be established. While Government assistance to cultural bodies will continue, private institutions are encouraged to be more directly involved in financing and sponsoring cultural activities. The development of visual arts as well as conservation work will also be given due attention under the Sixth Malaysia Plan.

## **IV. ALLOCATION**

14.72 The allocation for the social development programmes during the Sixth Malaysia Plan is \$1,777 million. *Table 14-5* summarizes the development allocation and expenditure for social development programmes during the Fifth Plan and development allocation for the Sixth Plan.

TABLE 14-5

**DEVELOPMENT ALLOCATION FOR SOCIAL  
DEVELOPMENT PROGRAMMES, 1986-95**  
(\$ million)

<i>Programme</i>	<i>5MP</i>		<i>6MP</i>
	<i>Allocation</i>	<i>Expenditure</i>	<i>Allocation</i>
<b>Public Housing</b>	<b>1,465</b>	<b>1,423</b>	<b>803</b>
Public Low-Cost Housing	374	345	570
Sites and Services Schemes	18	7	165
Government Quarters	73	71	67
Government Housing Loan Scheme	1,000	1,000	1
<b>Rural Housing Development</b>	<b>108</b>	<b>75</b>	<b>149</b>
Village Rehabilitation Programme	79	51	93
Traditional Village Regrouping Programme	30	24	35
Rural Growth Centres	<i>Nil</i>	<i>Nil</i>	21
<b>Youth<sup>1</sup></b>	<b>54</b>	<b>44</b>	<b>34</b>
<b>Sports</b>	<b>97</b>	<b>49</b>	<b>179</b>
<b>Information and Broadcasting</b>	<b>33</b>	<b>20</b>	<b>128</b>
<b>Social Welfare Services</b>	<b>26</b>	<b>4</b>	<b>99</b>
<b>Cooperative Services</b>	<b>34</b>	<b>28</b>	<b>13</b>
<b>Library Services</b>	<b>33</b>	<b>20</b>	<b>56</b>
<b>Fire Services</b>	<b>38</b>	<b>22</b>	<b>193</b>
<b>Community Development (KEMAS)</b>	<b>35</b>	<b>32</b>	<b>123</b>
<b>Total</b>	<b>1,923</b>	<b>1,717</b>	<b>1,777</b>

Notes:

<sup>1</sup> Allocation For Youth Training Centres and Youth Entrepreneurship Institute have also been included under Education and Training Programme.

## V. CONCLUSION

14.73 The contribution of social development programmes to the overall development of the economy as well as the well-being of society will continue to be emphasized during the Sixth Plan period. The objective of these programmes will be to improve the quality of life of all Malaysians through the provision of proper and decent housing and related facilities. This will be further enhanced by the provision and implementation of social development activities.

## **Chapter XV**

# **Environment**



## CHAPTER XV

# Environment

### I. INTRODUCTION

15.01 As efficient management of the environment and natural resources is an essential condition for ensuring balanced development, the Government, during the Sixth Malaysia Plan period will develop better techniques for integrating environmental considerations in the formulation of programmes and projects. Effective implementation of environmental programmes will ensure that the poor are not adversely affected by environmental degradation since they are the most vulnerable and least capable of protecting themselves. In addition, to sustain the development of scarce and depletable natural resources, the Government will progressively control pollution and enhance the natural beauty of national landscapes and physical surroundings through the conservation of natural resources and the preservation of the environment.

15.02 At the international level, Malaysia continues to play a visible role. The Langkawi Declaration on the Environment, which Malaysia initiated at the Commonwealth Heads of Government Meeting (CHOGM) in October 1989, epitomized our continued commitment to the global plan of action aimed at arresting possible environmental degradation and promoting environmentally-sound and sustainable development.

### II. PROGRESS, 1986-90

#### State of the Environment

15.03 *Air Quality.* During the period 1986-90, air quality in terms of total suspended particulates (TSP) monitored in the commercial and industrial areas had improved while the levels of particulates increased slightly in the residential and vehicular traffic areas. However, air quality

as measured by TSP was within the recommended Malaysian Annual Guideline of 90 microgram per cubic metre ( $\mu\text{g}/\text{m}^3$ ). While air quality generally improved, TSP values in the industrial and heavy traffic areas in the Klang Valley, Johor Bahru and Pulau Pinang were slightly above the recommended level.

15.04 The concentration of atmospheric lead, another indicator of air quality, declined in all areas. These improvements, particularly in the heavy traffic areas and residential areas, were attributable to the mandatory reduction of lead content in gasoline from 0.4 gram per litre (g/litre) to 0.15 g/litre.

15.05 Studies on the concentration of gaseous pollutants in the ambient air in the Klang Valley indicated that levels of sulphur dioxide and nitrogen dioxide were well within the recommended Malaysian one-hour guidelines of  $350 \mu\text{g}/\text{m}^3$  and  $320 \mu\text{g}/\text{m}^3$ , respectively. Ozone levels in Kuala Lumpur city centre occasionally exceeded the Malaysian one-hour guideline value of  $200 \mu\text{g}/\text{m}^3$ , while carbon monoxide levels were fairly high, exceeding the  $35 \mu\text{g}/\text{m}^3$  guideline. These findings also indicated that the sulphur dioxide, nitrogen dioxide and carbon monoxide levels were within satisfactory limits in the residential areas.

15.06 *Water Quality.* During the Fifth Plan period, the quality of river water, in terms of biological oxygen demand (BOD), suspended solids, and ammoniacal-nitrogen, deteriorated. The quality of water is considered 'clean' for biological support of life if the BOD measure is 3 milligram per litre (mg/litre), total suspended solids content of not more than 50 mg/litre and if its ammoniacal-nitrogen content does not exceed 0.3 mg/litre. In terms of BOD, organic pollution deteriorated at the rate of 0.37 per cent while the levels of ammoniacal-nitrogen and suspended solids deteriorated at 10.17 per cent and 1.89 per cent, respectively. These indicated the prevalence of heavy and uncontrolled loadings of organic wastes and silt in the water courses. Industrial and domestic discharges accounted for major components of the organic load while land clearing, unregulated development, mining and logging activities in the catchment areas were responsible for sedimentation and siltation problems. Untreated domestic sewage and animal wastes continued to pose a major problem as indicated by the deterioration rate of 10.17 per cent for ammoniacal-nitrogen.

15.07 Rivers on the west coast of Peninsular Malaysia were more polluted with heavy metals such as mercury than other rivers in the country. This was due to extensive land use and industrialization

resulting in increased wastewater discharges containing heavy metals. Small and service type industries established without proper and adequate wastewater treatment facilities were the principal source of pollution.

15.08 *Coastal and Marine Water Quality.* The coastal and marine waters remained contaminated with traces of oil and grease, total suspended solids and faecal coliform. However, the degree of contamination remained at about the same level compared with the previous Plan period, although water quality had deteriorated slightly in certain locations. Some parts of the coastal areas of the States of Kelantan, Melaka, Negeri Sembilan, Sabah, Selangor and Terengganu were found to have traces of oil and grease. The situation in Sabah and Selangor had, however, improved.

15.09 Sewage contamination mainly from both domestic and animal wastes, as indicated by faecal coliform, were found in Pahang, Perak, Pulau Pinang and Sarawak. A number of river estuaries in the States of Johor, Kedah, Kelantan, Perak, Pulau Pinang, Selangor and Terengganu were also contaminated. This was due to high population density, unorganized disposal of human wastes in squatter areas, increased urbanization, the prevalence of dense settlements along the coast and the lack of adequate facilities for sewage treatment. Except for a few isolated locations, the coastal waters of recreational beaches were not contaminated and were safe for recreational and water sport activities. Nevertheless, the degree of contamination by suspended solids continued to prevail as a result of continued extensive land development activities carried out in the upland and adjacent areas.

### **Management of Toxic and Hazardous Wastes**

15.10 Periodic surveys to monitor the generation and management of toxic and hazardous wastes were carried out. A study on the treatment and disposal of hazardous wastes indicated that not less than 380,000 m<sup>3</sup> of toxic and hazardous wastes were being generated annually from some 1,000 sources.

15.11 Since May 1989, two new sets of regulations and an order for the management of 'scheduled wastes' (toxic and hazardous wastes) were enforced. The Environmental Quality (Scheduled Wastes) Regulations, 1989, prescribe a list of waste substances described as 'scheduled wastes'. The Environmental Quality (Prescribed Premises) (Scheduled Wastes Treatment and Disposal Facilities) Order, 1989, has identified six types of facilities which require licensing. These are off-site storage, treatment

facilities, off-site recovery facilities, scheduled waste incinerators, land treatment facilities and secured landfills. In addition, the Environmental Quality (Prescribed Premises) (Scheduled Wastes Treatment and Disposal Facilities) Regulations, 1989, has specified the operation and licensing procedures for facilities constructed for the recovery, treatment, storage and disposal of scheduled wastes.

15.12 The regulations for the management of toxic and hazardous wastes are comprehensive, covering all stages of waste handling. A computerized system for the tracking and monitoring of hazardous wastes was developed. Regulations were introduced requiring that the appropriate authorities be informed of activities involving the generation, storage and transportation of toxic and hazardous wastes. Presently, factories store their wastes on-site while awaiting the availability of treatment and disposal facilities. In recognition of this problem, the Government provides tax and other incentives to encourage companies to build facilities for the storage, treatment and disposal of such wastes.

### **Control of Pollution**

15.13 *Water Pollution.* Industrial sources of water pollution continued to be concentrated on the west coast of Peninsular Malaysia, with Johor, Pulau Pinang and Selangor accounting for almost 50 per cent. The principal industries responsible for such pollution were industries manufacturing textiles, rubber, paper, and food and beverages.

15.14 Pollution from non-industrial wastes, the most significant contributor of organic pollution in inland waters, showed little improvement during the Fifth Plan period. Sewage and wastes from animal husbandry increased over the period: with the former from 6.28 million population equivalent to 7.56 million population equivalent, and the latter from 1.1 million population equivalent to 1.3 million population equivalent. Sewage remains the main contributor to organic pollution accounting for three times the combined load discharged from industries and animal husbandry.

15.15 Pollution load discharges from palm oil and rubber processing were within control despite increases in the number of such factories. The organic load discharged by the two industries in 1990 were equivalent to the waste generated by a population of only 260,000 compared with 420,000 in 1989 and 600,000 in 1986. The enforcement of the relevant regulations with respect to effluents discharged by these industries indicated that treated effluents complied with specified standards.

15.16 Progress was made in the control of pollution from other industries. Nevertheless, factories established prior to the enforcement of the Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979, experienced difficulties in complying with the requirements due to constraints such as land. However, those established after the enforcement of these Regulations were able to meet the requirement.

15.17 The problem of pollution from animal husbandry has not been resolved. Some states have yet to legislate the required enactments to control and enforce hygienic control of animal wastes while others have not effectively enforced the enacted laws. The 'Pig Farming Area' (PFA) concept contained in the National Agriculture Policy has not been fully implemented. Controlled and organized pig farming is necessary since the industry has become a significant environmental problem, especially in Negeri Sembilan and Pulau Pinang. In Negeri Sembilan, it has affected water sources from Sungai Linggi which require expensive biological and chemical treatment before the water can be used for domestic purposes. Animal waste pollution from the river has also affected coastal waters and beaches, thereby affecting the attraction of Port Dickson as a popular tourist destination. The beaches in some locations in Pulau Pinang have deteriorated, affecting the hygienic quality of aquaculture products. Despite a number of research projects, for example, by the Malaysian Agricultural Research Development Institute (MARDI), no practical and viable system for treating animal wastes has been found. This is because most of the pig farms are managed as cottage industries.

15.18 Pollution load from sewage continued to increase due to greater urbanization and inadequate sewerage facilities as only 5 per cent of the urban population benefited from centralized sewerage facilities. Improvements to sewerage facilities in existing towns were constrained by the high costs of implementing centralized systems and limited financial resources of local authorities. However, in the new built-up areas, the local authorities have enacted regulations requiring developers to provide adequate sewerage and sanitation facilities in these areas.

15.19 *Air Pollution.* Air pollution was estimated to have increased by 6 per cent during the Fifth Plan period. The largest contributor to air pollution was motor vehicles which registered rapid increase during the period. The Motor Vehicle (Control of Smoke and Gas Emission) Rules, 1977, regulates the emission of black smoke from diesel-powered motor vehicles.

15.20 Until June 1990, about 180,000 vehicles had been tested for smoke emissions using the Hartridge Smokemeter and 29,325 drivers or owners had been served with summons for exceeding the specified limit of 50 Hartridge Smoke Units (HSU). The overall percentage of compliance remained constant at 83 per cent. Effective from 1st January 1990, the concentration of lead (Pb) in petrol was further reduced to 0.15 g/litre as required by the Environmental Quality (Control of Lead Concentration in Motor Gasoline) Regulations, 1985. Random samples taken from petrol manufacturers and suppliers particularly petrol kiosks in urban areas have shown compliance with the new standard.

15.21 Industrial sources of air pollution are controlled by the Environmental Quality (Clean Air) Regulations, 1978. In accordance with the Regulations, new factories emitting air impurities into the atmosphere have to be evaluated to ensure compatibility with land usage in surrounding areas. In addition, the installation of air pollution control devices are required to ensure compliance with standards of emission for air impurities.

15.22 The open burning of industrial wastes, particularly in wood-based and rubber-based factories, remains a major problem. Up to July 1990, about 1,370 cases of open burning have been compounded. The open burning of wastes at local authority dumping grounds was also found to be a problem.

15.23 *Marine Pollution.* To further control waste discharges from land-based sources to the marine environment, the amendment to the Environment Quality Act, 1974, that came into effect on 9th January 1986, prohibits the discharge and spillage of oil and wastes into Malaysian waters, unless licensed. As for the control of pollution from sea-based sources, the Merchant Shipping Ordinance (MSO), 1952, controls the discharge of oil and harmful substances from ships.

15.24 *Pollution from oil spills.* During the Fifth Malaysia Plan period, more sightings of oil spills were reported from oil platforms. With the cooperation of the Marine Department and various port authorities, most of the spills occurring in port areas were cleaned up and the costs of cleaning were recovered from the spillers.

15.25 *Noise pollution.* Control of noise pollution from motor vehicles was carried out under the Environmental Quality (Motor Vehicles Noise) Regulations, 1987. However, enforcement initially was focussed on noise

pollution from motorcycles. Plans and strategies for the management and control of noise and vibration problems in dense settlements are being formulated, including the feasibility of constructing noise barriers along major highways.

### **Pollution from Agricultural Chemicals**

15.26 No specific programmes have been implemented to control pollution arising from the use of chemical fertilizers, pesticides and herbicides in agriculture. The indiscriminate use of such chemicals in certain locations resulted in the substantial reduction of freshwater fish. Studies have not been carried out to determine the effects of pollution from these chemicals.

### **Response Planning for Oil Spills**

15.27 During the Fifth Plan period, the National Oil Spills Contingency Plan was formulated, incorporating the Plans for the Straits of Melaka and the South China Sea. The concept of cooperative support and joint response action was built into the Contingency Plan. Unlike the Straits of Melaka Contingency Plan, which was developed during the Third and Fourth Malaysia Plans, the National Contingency Plan placed greater emphasis on the pooling of resources and maximizing the utilization of available resources. Under this Plan, oil industries and port authorities were required to upgrade their response capabilities. The Department of Environment (DOE) is modernizing its equipment by replacing the old oil booms and skimmers. At the regional level, Malaysia, Indonesia and Singapore developed a cooperative plan to combat oil spills in the Straits of Melaka and Singapore waters. A similar cooperative plan has also been initiated between Malaysia and Brunei Darussalam to cover the seas bordering these two countries. An Association of South-East Asian Nations (ASEAN) Plan for mitigating oil spills is being developed with assistance from international agencies.

15.28 Since communications play an important role in contingency planning, a Communications Centre was set up at the DOE to complement operational capabilities of other operation centres at *Petroleum Nasional Berhad* (PETRONAS), the Marine Department and the Maritime Enforcement Coordination Centre in dealing with oil spills. Guidelines on the use of dispersants for combating oil spills were formulated by the National Oil Spills Contingency Plan Committee.

## **Conservation of Natural Resources**

15.29 Malaysia is endowed with rich and varied natural resources particularly forests, rivers, coastlines and fertile soil. Despite developments encroaching upon virgin forest areas, 12.73 million hectares, or 38.6 per cent, remain as permanent forests. Of this, 29 per cent is protected or maintained as amenity forests. In addition to the area under permanent forest, 1.39 million hectares are being maintained as national parks and wildlife reserves, and 4.61 million hectares as state land forests. During the Fifth Plan period, some 1.56 million hectares of permanent forests were rehabilitated while some 80,000 hectares of logged-over areas in Peninsular Malaysia are being rehabilitated.

15.30 During the Fifth Plan period, the Government continued to monitor developments encroaching upon these natural reserves. Excessive forest harvestings and extensive land-based development could lead to deforestation, massive erosion, diminution of catchment areas with consequential effects on weather, atmospheric temperature, water sources and soil quality as well as coastal pollution. Lowland forests, mangrove and peat swamp areas were also closely monitored in order to prevent further destruction of spawning grounds for fish and other marine life. Since the marine ecosystem is vital in sustaining bio-organisms on which fishes thrive, large-scale mangrove and peat swamp clearings, aquaculture and cage culture activities were closely monitored.

## **Environmental Awareness**

15.31 Environmental education, as a tool for creating environmental awareness, was introduced in the upper primary school curriculum in 1986 in the form of the subject 'Man And His Environment'. This subject is intended to provide knowledge, perception and positive attitudes towards the environment in a holistic manner. At the tertiary level, both *Universiti Pertanian Malaysia* (UPM) and *Universiti Teknologi Malaysia* (UTM) offered formal degree courses which covered environmental topics such as pollution control, environmental management and environmental control technology. Environmental education and awareness programmes on a non-formal basis were conducted by various Government agencies, voluntary organizations and by the private sector.

## **III. PROSPECTS, 1991-95**

15.32 In line with the spirit of the Langkawi Declaration on the Environment, the implementation of sectoral programmes and projects will continue to focus on the necessity of maintaining a balance between the competing demands of growth and sustainable development.



15.33 In the light of rapid industrialization, high population growth, increasing urbanization, growing scarcity of land and other resources, greater emphasis will be given to sustainable development. The increased tempo of development calls for greater efforts at maintaining environmental cleanliness and ecological balance through more effective environmental management.

### **Environmental Issues and Concerns**

15.34 During the Sixth Plan period, the major environmental issues and concerns which require effective management are as follows:

- the increasing air and noise pollution in the urban areas as a result of the expansion of automobile ownership and vehicular traffic, with increasing affluence of Malaysians;
- constraints on the supply of affordable housing and efficient sewerage and sanitation facilities in major towns;
- the lack of adequate and efficient on-site or off-site waste disposal facilities;
- pollution caused by unorganized disposal of consumer products;
- the encroachment of economic activities on vegetation, forest cover and catchment areas which have serious repercussions on sustained water supply; and
- soil-related pollution caused by unplanned construction activities.

Effective management of these concerns will continue to pose new challenges to the nation during the coming decades.

15.35 The conservation of the environment is the responsibility of all, namely, the Government, industries and the public. Reliance on the Government and its machinery alone is insufficient to guarantee environmentally-sound and sustainable development. Public sector agencies will be required to give equal priority to environmental consideration in formulating and implementing programmes and projects. Strict enforcement of existing laws will be made to require industrial establishments to control the production of pollutants and adoption of a more effective storage and disposal system.

15.36 Although within the Government, DOE is charged with the responsibility to monitor the state of the environment, all public agencies are equally responsible for environmental preservation and resource sustainability. While DOE will play the lead role in enforcement programmes, other public agencies will complement its role through

incorporating environmental concerns in the formulation of programmes and projects. This coordinated effort will enhance the effectiveness of environmental management.

15.37 State governments will have to give higher priority to efforts directed at sustainable development of natural resources which are depletable and non-renewable. In addition, the states need to manage developments which have serious repercussions on the environment and the welfare of society. Therefore, measures should be undertaken to prevent overlogging, safeguard catchment areas and control industrial pollution.

15.38 The private sector has an important role to play in safeguarding the environment since many of its activities result in pollution. In the pursuit of profits, the negative externalities or costs to society must be taken into account by internalizing as much as possible the pollution costs. The Government will consider the feasibility of imposing pollution charges and surcharges on the private sector to ensure compliance.

15.39 Environmental awareness programmes will be intensified to promote greater consciousness among the public since the lack of environmental awareness may be due to ignorance of the long-term adverse implications of pollution hazards to human welfare.

15.40 In view of the current inadequate disposal and treatment facilities and the higher tempo of industrialization, future approvals of investment proposals will give due consideration to the technology to be used to ensure that the negative impact on the environment is minimized. In order to facilitate this effort, state governments and local authorities will expedite the identification of suitable disposal areas.

15.41 With the level of atmospheric and air pollution on the increase in major urban areas, measures will be undertaken to limit traffic flows in congested towns like Kuala Lumpur, Georgetown and Johor Bahru. Public transport facilities will be improved to reduce traffic congestion.

### **Conservation and Sustainable Resource Development**

15.42 *Sustainable Forestry Resources.* Forest resources will be carefully exploited to ensure sustainable growth and safeguard the welfare of future generations. Since indiscriminate and unorganized exploitation of resources accelerates the depletion rate and undermines the development of vital sectors, the Government is formulating a National Conservation Strategy to provide the framework for comprehensive resource management and utilization.

15.43 Of the 12.73 million hectares of permanent forests, 2.74 million hectares are protected forests and 9 million hectares are production forests. About 4.74 million hectares of permanent forests are located in the Peninsular, 3.35 million hectares in Sabah and 4.64 million hectares in Sarawak. In addition, about 6.09 million hectares are logged-over areas of which 2.40 million hectares are in Peninsular Malaysia, 2.25 million hectares are in Sabah and 1.44 million hectares are in Sarawak. These logged-over areas which represent 17.5 per cent of the national land area need to be progressively reforested.

15.44 In the Sixth Plan period, programmes will be implemented to support the sustainable development of forest resources. *Firstly*, additional forested areas will be designated as forest reserves, animal sanctuaries and national recreational parks to ensure that the ecological balance is maintained, environmental occurrences of degradation minimized and essential habitats and biodiversity preserved.

15.45 In support of this strategy to conserve the natural heritage, nine states have taken the initiative, with the assistance of the World Wildlife Fund for Nature, to formulate conservation strategies. These States are Kedah, Kelantan, Melaka, Negeri Sembilan, Perlis, Sarawak, Selangor, Terengganu and Wilayah Persekutuan Kuala Lumpur.

15.46 *Secondly*, large-scale reafforestation supported by agro-forestry programmes will be carried out. Greater priority will be given to provide funds for research and development (R&D) on reforestation, ensure strict enforcement and conduct studies to determine fees for licences for logging to preserve environmental quality.

15.47 *Thirdly*, tree cover will be expanded to preserve the habitats, safeguard soil quality, reduce siltation and erosion, sustain climatic balance and also absorb excessive carbon dioxide released into the atmosphere. This programme is anticipated to reduce soil losses, droughts, floods, disruption of water supplies and to replenish the natural productivity of land.

15.48 *Fourthly*, the conservation of marine resources is an important development programme during the Sixth Plan period. In addition to sustaining fishery resources, the marine ecosystem will be further protected to preserve natural heritage, promote tourism and encourage marine research.

15.49 The maritime waters around 22 islands have been gazetted as Fishery Protected Areas. This programme, which began in 1985, presently covers six visitor parks in Mersing, Pulau Besar, Pulau Payor, Pulau Redang, Pulau Tinggi and Pulau Tioman. These areas will also be zoned for scientific research, restoration, recreation and educational purposes. The Fisheries Department, in particular, is entrusted with the responsibility towards proper management of these areas.

15.50 Corals are essential for the maintenance of the delicate ecosystem that shelter marine organisms and marine life. Inshore water and beach contamination from untreated animal wastes and human discharges into coastal waters have affected living coral reefs. In addition, ground water and streams carrying untreated sewage and agricultural chemicals have led to the growth of algae which kill marine organisms. Shifting cultivation, which has accentuated sedimentation of rivers and streams has spurred algae growth which destroyed the growth of corals. There is, therefore, an urgent need to sustain marine resources by controlling sewage discharges, restraining mangrove felling, judicious land clearing as well as large-scale land reclamation.

15.51 To rectify the problem created by animal waste pollution arising from pig rearing activities particularly in Negeri Sembilan and Pulau Pinang, the Government is considering suitable areas for relocation and providing the necessary facilities for filtering and treating pig wastes and charging the users of such facilities by imposing a suitable poll tax on pigs. The pig rearers have produced negative externalities to society, a cost which is not reflected by the price of their products. This burden to society in the form of pollution to the environment needs to be compensated by them.

15.52 *Fifthly*, programmes and projects which are likely to adversely affect the environment will be carefully planned and implemented. The preservation of unique flora and fauna and biodiversity which may be endangered by such projects will be given due attention.

15.53 *Marine and Coastal Resources.* Coastal and lowland forest areas and mangroves and peat swamps have been extensively felled for fuel, piling and aquaculture projects. As a result, only about 98,300 hectares of mangroves are left, of which some 81,250 hectares, or 82.6 per cent, are productive. Since coastal forests, especially mangroves, are fast disappearing and the mangrove ecosystem is essential for the maintenance of crucial fishery resources, both inshore and offshore, the Government will take the necessary preventive measures to sustain them.

In this respect, large-scale land reclamation projects which are likely to have negative effects on mangroves and the coastal ecosystem will be closely monitored.

15.54 Twelve areas of wildlife sanctuaries and reserves, involving about 548,000 hectares have been identified in Johor, Kedah, Kelantan, Pahang and Perak. Of these, Johor has gazetted the Endau-Rompin area as a state park. Besides maintaining biological diversity, these programmes will serve as additional tourist attractions. Towards implementing these programmes, the Federal Government will initiate discussions with the respective state governments to gazette these areas as wildlife sanctuaries and nature reserves.

15.55 Malaysia has abundant potential marine resources and beaches for an expanding tourism industry. However, pollution is fast threatening these resources, unless vigorous control measures are undertaken. The beaches in Negeri Sembilan especially Port Dickson are being threatened by pollution from pig rearing which pollutes the Sungai Linggi. Similarly, the lack of adequate and efficient sewerage facilities on account of the rapid growth of the hotel industry along the beaches in Pulau Pinang has resulted in problems of beach pollution in Pulau Pinang. Therefore, uncontrolled development onshore and along the coasts will not only accentuate beach pollution but will also eliminate potential for states to benefit from the expanding tourism sector. The tourism sector is a growing sector in Malaysia and thus the potentials of the beaches and coastal waters as touristic resources need to be sustained.

15.56 Towards this end, some of the major programmes to be implemented under the Sixth Plan period will be:

- o promoting the development of waste disposal facilities for industries and the adoption of environmentally-sound technologies and processes;
- o sustaining 12.73 million hectares of land area as permanent forests and 1.16 million hectares as national parks, nature reserves, habitats and wildlife sanctuaries;
- o rehabilitation of 101,300 hectares of logged-over areas annually and sustaining 1.65 million hectares of rehabilitated areas as permanent forests as well as enforcing rules on the destruction of mangroves and control of rivers and water quality standards;
- o implementing agro-forestry projects, involving some 90,000 hectares of land, and planting trees in unused agricultural lands and beautifying the natural surroundings of urban areas;

- minimizing the adverse impacts of pollution, erosion and sedimentation from development activities; and
- enforcing fully the Environmental Impact Assessment (EIA) requirement for projects which have potential of damaging the environment.

15.57 With regard to marine pollution, the control of pollution from ships will be emphasized in the amendment to be made to the MSO, 1952, which presently covers only Peninsular Malaysia. The new amendment will enable the provisions under the Ordinance to be extended to cover the whole nation. In addition, it will also facilitate the ratification of international conventions pertaining to marine pollution and intervention on the high seas.

### **Economic Development and the Environment**

15.58 Future development efforts will emphasize the impact of development on the environment to ensure that environmental quality is sustained.

15.59 *Industrialization and Environment.* To ensure that the industrialization process will not result in the worsening of the environment, measures will be undertaken to:

- review current environmental protection measures, namely, the laws, rules and regulations, environmental standards and guidelines to improve their effectiveness;
- encourage existing industrial establishments to give priority to measures towards safer storage, treatment and disposal of toxic and hazardous wastes and effluents and to use more environmentally-sound technology and processes that will minimize pollution;
- ensure that industries complement Government efforts by meeting acceptable industry-specific effluent and emission standards, and following other desirable environmental practices;
- ensure that approval of new industrial investments gives special consideration to the most appropriate technology for production and processing as well as effective waste treatment and disposal systems;
- ensure that public sector R&D agencies devote a significant part of their research efforts towards identifying suitable and effective disposal systems and disposal locations, and the feasibility of using wastes for productive purposes; and

- o provide clear codes and guidelines to industries and monitor their compliance regularly.

15.60 These measures will be instituted without unduly resorting to subsidies or incentives. At the same time, the Government will consider the efficacy of instituting penalties such as fines and surcharges on industries for non-compliance and contravention of existing laws in accordance with the 'polluter pay' principle.

15.61 The Government will improve standard codes and guidelines on the necessary measures to be undertaken towards control, abatement and disposal of industry-induced pollution. In addition, minimum standards covering ambient air, emissions and effluents, products as well as exposure to hazards in factories will also be improved.

15.62 As industrial development grows in importance, the proper storage, treatment and disposal of industrial wastes becomes increasingly necessary. In order to reduce hazards to the environment, new incentives giving pioneer status for activities to promote the proper storage, treatment and disposal of toxic and hazardous wastes by industries and import duty exemption schemes for machinery, equipment and raw materials as well as components imported for these purposes will be continued.

15.63 In addition to the general concern of the Government to ensure that adequate regulations exist to protect the environment, the private sector will be further encouraged to ensure that toxic and hazardous wastes are safely stored, treated and disposed. The Government is also studying the feasibility of establishing such facilities on a privatized basis. In the meantime, companies need to take adequate measures to provide their own facilities under the incentive programme. In addition, the practice of dumping wastes into the rivers, discharging untreated waste water into drains and burying toxic wastes in dumping sites will be closely monitored.

15.64 *Agricultural Development and Environment.* Intensification of agricultural production and minimization of crop losses from pests and diseases could lead to the use of more chemical fertilizers, pesticides and herbicides. In addition, agricultural mechanization also damages soil structure making it more prone to water erosion. Besides the resulting sedimentation and siltation of surface water from large-scale land-based development in agriculture, intensive use of chemical fertilizers, pesticides and herbicides result in serious groundwater pollution. Such contaminated water requires expensive biological and mechanical

filtering facilities before the water is usable for domestic and industrial purposes. Resulting from this groundwater pollution, some plants and animal species, including freshwater fish, have become extinct.

15.65 The feedmeals used in animal production could also cause soil pollution while the over-use of water and sustained irrigation produces salination. In addition, extensive land clearing and bringing wetlands under cultivation can lead to the loss of topsoil, biological diversity and wildlife habitat. In order to sustain the aesthetic value of the countryside, the destruction of hedges and the realignment of water courses will have to be restrained.

15.66 Large-scale modernized husbandry, like pig farming, as well as effective waste treatment and disposal system are urgently necessary to minimize the danger of water contamination, pollution of beaches, coastal and marine ecology. The Federal Government, with the cooperation of the states, will strictly control the expansion of industry through a more stringent permit system and specific guidelines on pollution control.

15.67 Consideration of the above issues raises the question of the balance between economic development and environmental protection. It has become increasingly necessary to integrate developmental and environmental policies to produce practical and effective solutions. Development, while promoting economic benefits, should not lead to deterioration of the environment. It should promote landscape amenity and conservation and reduce agricultural and industrial pollution.

### **Pollution from Consumer Products**

15.68 In meeting the demands of modern living, industries have produced goods which enhance living standards and quality of life. The development of new technologies has not only reduced costs of production but has also resulted in consumer products which are increasingly accessible, affordable and durable. These conveniences of life could pose serious potential dangers to the environment if they are not safely disposed after use.

15.69 There is a lack of understanding of the possible environmental hazards of unorganized disposal especially in terms of polluting rivers and beaches. Wrappers, packaging materials and domestic refuse, a substantial proportion of which are plastics and aluminium-based materials, are not only not bio-degradable but are also not possible to be recycled for other uses.



15.70 Industries will continue to be encouraged to use environmentally-sound technologies and processes, produce biodegradable products as well as recycle products. Consumers will have to be motivated to dispose their used products more systematically. Therefore, it is necessary to infuse public awareness of the adverse implications of unsystematic disposal of used products so that the dangers to health and environment are progressively reduced. Local government authorities will be required to take actions to systematically dispose domestic refuse and enforce public compliance.

### **Urbanization and Urban Growth**

15.71 By the end of the Sixth Plan period, an estimated 45 per cent of Malaysians will be living in the urban areas. With increasing employment and income opportunities in the expanding industrial and services sectors, and increased educational levels, further out-migration from the rural areas is expected. Besides housing, additional urban facilities and amenities will have to be provided and existing ones improved so that dangers of pollution due to inadequate urban sanitation, and unorganized disposal of domestic sewage, solid wastes and wastewater are minimized. This is to ensure that water supply for domestic, industrial and recreational uses is not endangered.

15.72 Increased urbanization and expanding industries can also exacerbate environmental degradation due to smoke, gas emission, lead concentration as well as noise pollution. With increased income and expanding urban population, the number of vehicular traffic is expected to expand rapidly. Smog in major towns will continue to pose serious hazards to town dwellers. Despite the reduction of the lead content of petrol, urban air quality can be adversely affected by increased vehicle density, the lack of proper vehicle maintenance, less stringent enforcement of permissible exhaust emissions as well as a laxity of attitude. In order to mitigate environmental deterioration in urban areas, more preventive measures will be undertaken. In this regard, the Government will implement improvements to the modes of transportation in congested towns, including implementing a suitable light rail transit (LRT) system, double tracking rails and electric-powered trains and improving urban public transport as well as the location of housing estates in major towns.

15.73 Sewerage facilities will continue to be expanded to progressively control pollution of ground and surface water. Aside from expanding central sewerage projects for Pulau Pinang and Kuala Lumpur, and completing the Seremban sewerage project, sewerage schemes are also

being implemented in designated tourist resorts in Desaru, Port Dickson, Pulau Langkawi and Pulau Pangkor in order to sustain these resorts as principal tourist destinations. In addition, feasibility studies are being conducted for major towns like Kangar, Kota Bharu and Kuching. Suitable sanitation systems to improve the environment and counter pollution from sewage in densely populated coastal areas are also being considered. By the end of the Sixth Plan period, 8.5 per cent of the urban population would have been provided with centralized and decentralized sewerage facilities.

### **Research and Development**

15.74 R&D programmes will continue to be carried out to develop more effective preventive measures towards pollution control and abatement. Besides consistent monitoring of the environment, studies will continue to be conducted to enable the Government to take corrective measures. R&D activities to develop efficient, practical and economical technologies for use in pollution control as well as exploring the feasibility of utilizing wastes for alternative economic uses will be undertaken. In addition, there is a need to intensify R&D in developing safer processes and products. Towards this end, public sector research institutions will have to devote a significant proportion of their time, funds and manpower for the purpose of augmenting efforts at sustaining, if not improving, environmental quality. The Government will allocate adequate funds under R&D for the purpose.

### **Integrated Project Planning**

15.75 Under the integrated project planning approach, aside from EIAs, environmental considerations will continue to be integrated into project planning and implementation. The EIA, mandated under the Environmental Quality (Amendment) Act, 1985, and Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order, 1987, specifies 19 categories of 'prescribed activities'. Preliminary studies have shown that the costs of incorporating the EIA requirement were only marginal to the overall project costs. In addition, procedures for carrying out impact assessment were published in 1987 as the *Handbook of Environmental Impact Assessment Guidelines*.

15.76 The preparation of development and structure plans, infrastructure and conservation projects, sectoral and urban development programmes will continue to incorporate environmental considerations. With regard to projects not subject to EIA, the siting of potentially

polluting projects will be away from environmentally sensitive areas, such as residential areas, schools, hospitals and water catchment areas, especially if those areas are without sufficient buffers. Furthermore, mitigation and control measures to prevent and reduce the possibility of environmental pollution will also be given special consideration in implementing such projects.

15.77 Integrated project planning calls for increased Federal and state level cooperation in environmental management. Towards this end, State Action Committees have been formed to consider the environmental aspects of development projects. The meeting of Federal and State Ministers and State Executive Council members responsible for environmental affairs, initiated in 1989, will be continued to further enhance this cooperation.

### **International Cooperation and Transboundary Pollution**

15.78 Malaysia has played an important role in promoting environmental consciousness in world fora. This was exemplified by Malaysia in obtaining the consensus of the Commonwealth Heads of Government in the Langkawi Declaration on the Environment. In addition, under the umbrella of the Association of South East Asian Nations (ASEAN) Committee on Science and Technology (COST), projects under the ASEAN Environmental Programme (ASEP) II (1983-87) and ASEP III (1988-91) were initiated and will continue during the Sixth Plan period. Further, the ASEAN Senior Officials on Environment (ASOEN) would focus on, *firstly*, strengthening ASEAN cooperation in the exchange of information, technology, resources and manpower in dealing with international environmental concerns; and, *secondly*, ensuring the integration of environmental dimensions in the decisions of other ASEAN Committees. During the Sixth Plan period, Malaysia is expected to continue benefiting from various cooperation programmes in marine sciences between ASEAN and its partners, namely, Australia, the United States of America (USA) and Canada.

15.79 A number of international environmental issues have implications on Malaysia. These relate to the build-up of greenhouse gases, climatic changes and the use of chloro-fluorocarbons (CFCs) which adversely affect the ozone layer. In accordance with the Montreal Protocol, Malaysia agreed to a total phase-out of controlled substances, including CFCs and halons, by the year 2000. Of greater concern to Malaysia is the indiscriminate export and dumping of hazardous chemicals and wastes across borders by multinational companies arising

from the industrial processes in the developed world. It is on this account that Malaysia is considering to become a signatory to the United Nations Environment Programme (UNEP) and the Basel Convention on the Control of Transboundary Movements and the Disposal of Hazardous Wastes, 1989. In addition, there is the potential danger of acid rain and the release of cancer-causing gases produced by chemical plants of the developed world reaching Malaysia through atmospheric movements.

### **Attitude, Values and Awareness**

15.80 *Private Sector Awareness.* One of the greatest problems in the context of the environment is the commercial ethics of industrialists who are more concerned with maximizing profits rather than with the effects of industrial pollution on society. Production is expanded in order to reap economies of scale which generate faster rates of returns to capital investments without taking into account the need for instituting pollution control measures and installing anti-pollution devices.

15.81 *Public Awareness.* The lack of awareness among the general public may be due to insufficient understanding of the long-term consequences of pollution and environmental deterioration. This problem is more serious in the urban and semi-urban areas where facilities for disposal of solid waste and spent waters are not adequate. In the squatter areas where various types of wastes are disposed indiscriminately, the problem is even more serious. In activities related to the exploitation of natural resources such as timber and mangroves, the lack of concern is because of the presumption that such resources are given by nature and, therefore, a scarcity price is not tagged on these resources. A necessary strategy in the future will be to emphasize this awareness among the general public.

15.82 *Awareness Programme.* The impact of environmental degradation is a long-term one and the price for such deterioration will have to be paid by future generations. Pollution imposes external costs on others who are not the polluters. Therefore, they are passive and indifferent to the problem. Environmental degradation requires not only laws and regulations, strict compliance and enforcement but also dissemination of knowledge to the general public so that they are adequately informed. Greater exposure, increased knowledge and better scientific understanding of the environment is, therefore, essential. Knowledge and awareness influence attitudes and values towards caring more for the environment.

15.83 The effectiveness of environmental education, as a preventive strategy in environmental management, hinges upon careful planning, effective coordination and willingness and commitment among all environment-related agencies and organizations, both in and outside the Government. Malaysians must cooperate and complement efforts of the Government in creating a pollution-free environment and promoting sustainable resource development.

### **Framework for Institutional Cooperation**

15.84 The preservation of the natural heritage of the nation and the promotion of biodiversity calls for setting aside areas as protected forests, marine and coastal recreational parks, wildlife sanctuaries and nature reserves. To compensate for the potential loss of revenue resources of states and the cost of managing these proposed programmes and projects, the Federal Government will enter into discussions with the state governments to explore greater sharing of financial responsibility of environmental-related projects between the Federal and state governments.

15.85 DOE is the principal agency entrusted with the responsibility to monitor the state of the environment and effectively enforce laws, rules and regulations governing the environment. In order to enable DOE and other public sector agencies to effectively and consistently monitor and evaluate the state of the environment and take steps to enforce the required measures, the environmental role of these agencies will be given priority. Therefore, beginning with the Sixth Plan, all public institutions will be required to collaborate and cooperate with DOE and effectively integrate environmental considerations in the planning and implementation of their programmes and projects. DOE will also be strengthened to enable it to play a developmental role as well as to be more effective in enforcement. These measures will ensure that in the exercise of their respective designated functions, the environment is seen as an integral component of the strategies and programmes of public sector agencies.

15.86 A major problem in the past was inadequate coordination of environment-related policies, strategies and programmes. In order to rectify these deficiencies, and to ensure that all public agencies give due priority to the maintenance of good environmental conditions, as well as promote sustainable development and minimize environmental degradation, the Government will set up the National Council for the Environment (NCE) to coordinate the functioning of all agencies,

consider strategies and programmes which have implications on the environment and advise the Government on policies towards a more holistic approach to environmental management.

#### **IV. ALLOCATION**

15.87 The Federal development allocation for programmes to ensure the maintenance of sustainable development and the effective management of the environment is reflected in components of sectoral allocation placed under the control of the respective agencies. DOE, will be allocated \$40.35 million to carry out research as well as implement projects for the betterment of the environment. Among major projects to be implemented include the Control of Air and Noise Pollution, Environmental Impact Assessments and Control of Water and Marine Pollution. In addition, DOE will also embark on programmes such as Environment Information and Education, and the formulation of guidelines and regulations pertaining to environmental control.

15.88 Apart from DOE, other relevant ministries such as the Ministry of Agriculture, the Ministry of International Trade and Industry, the Ministry of Rural Development, and the Ministry of Land and Cooperative Development and their agencies, will also be given allocations to incorporate the environmental aspects into their programmes and projects wherever relevant, in order to help sustain a clean and healthy environment.

#### **V. CONCLUSION**

15.89 Consistent with the spirit of the Langkawi Declaration on the Environment, the policy of promoting sustainable development will be given priority. This policy will cover strategies affecting sectoral growth and equitable distribution, in particular the optimum utilization of national depletable and renewable resources. The efficient utilization of these resources has a close bearing on the development of the states dependent on them. Focus will be given to conservation, environment and ecological balance within the context of sustainable development.

## **Chapter XVI**

# **Women In Development**

## CHAPTER XVI

# Women In Development

### I. INTRODUCTION

✓ 16.01 The Government has long acknowledged the significant contribution by women to overall national development. As such, it has actively and consistently promoted the participation of women in development through facilitating their access to social, economic and political opportunities. The formulation of the National Policy for Women (NPW) reflects the Government's commitment towards optimizing the potential of women in the social and economic development of the nation.

16.02 In cognizance of the multiplicity of women's roles in the family, society and economy, the Government also recognizes that specific strategies must necessarily be formulated to effectively incorporate women in the process of development. Towards this end, concerted efforts will be made to progressively reduce existing constraints and facilitate the assimilation of women into the mainstream of social and economic activities. These measures are in line with the NPW's objective to integrate the contribution of women in national development efforts.

### II. PROGRESS AND ACHIEVEMENTS

16.03 In view of the increasingly active role of women in development, the Government formulated NPW in 1989. Its overall objectives are:

- *to ensure equitable sharing in the acquisition of resources and information as well as access to opportunities and benefits of development, for both men and women; and*
- *to integrate women in all sectors of national development in line with their abilities and needs in order to improve the quality of life, eradicate poverty, abolish ignorance and illiteracy and ensure a peaceful and prosperous nation.*



NPW essentially articulates the Government's commitment towards facilitating the participation of women in the social and economic life of the nation. It also establishes guidelines for the integration of women's contributions in the process of national development.

### **Family Development**

16.04 In view of the important role of women in family development as well as their increasing involvement in the various economic sectors, efforts were made to educate the Malaysian public on the benefits to society when both men and women share family responsibilities. In addition, the significant role mothers play towards moulding future generations of progressive citizens brings to the forefront the need to equip women with sufficient resources and skills. Towards this end, the National Population and Family Development Board (NPFDB) conducted courses on family life, parenting and counselling techniques as well as implemented programmes related to the promotion of happy families through family togetherness.

16.05 The non-formal education system was also utilized to inculcate positive values and attitudes within the family through programmes specifically geared towards women. An important element of such programmes was leadership training aimed at preparing women to be more progressive and receptive to changes.

### **Labour Force Participation and Employment**

16.06 Women constitute about one half of the population, but currently only account for one third of the labour force. The *labour force participation rate* for women increased from 37.2 per cent in 1970 to 46.7 per cent in 1990. Their participation rate, however, continued to lag behind that of men who registered rates of 81.3 per cent and 85.6 per cent over the same period.

16.07 The *employment trends* between sexes reflected a similar pattern. While the average percentage distribution of men decreased from 69 per cent to 65 per cent between 1970 and 1990, that of women increased from 31 per cent to 35 per cent during the same period, as shown in *Table 16-1*. The overall female employment remained low compared to male, largely attributable to the lack of appropriate skills and competing demands of the home.

TABLE 16-1

PERCENTAGE DISTRIBUTION OF  
EMPLOYMENT BY SECTOR AND SEX, 1970-90

Industry	1970		1980		1985		1990	
	Male	Female	Male	Female	Male	Female	Male	Female
Agriculture & Forestry	62.0	38.0	61.0	39.0	61.6	38.4	65.6	34.4
Mining & Quarrying	87.4	12.6	89.7	10.3	89.5	10.5	87.1	12.9
Manufacturing	71.9	28.1	59.9	40.1	56.9	43.1	53.6	46.4
Electricity, Gas & Water	94.7	5.3	92.5	7.5	96.6	3.4	93.1	6.9
Construction	93.3	6.7	92.9	7.1	94.4	5.6	95.7	4.3
Wholesale & Retail Trade, Hotels & Restaurants	81.8	18.2	70.7	29.3	62.3	37.7	61.4	38.6
Transport, Storage & Communications	95.7	4.3	93.7	6.3	89.6	10.4	88.9	11.1
Finance, Insurance, Real Estate & Business Services	-	-	70.5	29.5	64.9	35.1	65.8	34.2
Community, Social & Personal Services	71.1	28.9	70.6	29.4	63.2	36.8	62.1	37.9
Average Percentage Distribution	69.0	31.0	67.3	32.7	65.4	34.6	65.0	35.0

16.08 Over the last two decades, the *employment status* of women improved significantly in line with the expansion of employment and structural changes in the economy. The proportion of women as unpaid family workers in the traditional and informal sectors fell from 39.7 per cent in 1970 to 21.6 per cent in 1990. The decline was largely due to the absorption of this group of women into the modern sectors, particularly the estate subsector and the industrial and services sectors. Consequently, the proportion classified as employee rose from 38.9 per cent to 62.9 per cent during the same period, indicating the growing significance of formal female employment.

16.09 In terms of the *occupational structure*, women were largely concentrated in low-skilled, labour-intensive jobs in the agriculture sector and in low-paying, semi-skilled, assembly-type production operations in the industrial sector, as illustrated in *Table 16-2*. In 1990, even though 9.4 per cent of women were in professional and technical occupations, the majority of them were in teaching and nursing. Their participation in administrative and managerial occupations was also less than 1 per cent.

TABLE 16-2  
EMPLOYMENT DISTRIBUTION BY OCCUPATION AND SEX, 1970-90  
(%)

Occupational Category	1970		1980		1985		1990	
	Male	Female	Male	Female	Male	Female	Male	Female
Professional, Technical & Related Workers	4.6	5.3	6.4	8.5	6.8	9.1	6.4	9.4
Administrative & Managerial Workers	1.0	0.1	1.4	0.3	3.2	0.6	2.8	0.6
Clerical & Related Workers	5.4	4.1	6.8	11.1	7.4	14.2	7.0	14.1
Sales & Related Workers	9.8	4.9	10.3	7.2	11.1	11.0	11.4	11.4
Service Workers	8.1	8.4	9.0	9.0	10.1	13.7	9.9	14.1
Agricultural Workers	47.6	66.8	35.9	46.3	28.7	33.7	29.4	28.1
Production & Related Workers	23.5	10.4	30.2	17.6	32.7	17.7	33.1	22.3
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

16.10 Overall, agricultural activities continued to absorb the largest proportion of women, employing 28.2 per cent of all female workers in 1990, followed by manufacturing, and community, social and personal services, as shown in *Table 16-3*. The proportion of women employed in the electricity, gas and water sector declined over the Fifth Plan period.

TABLE 16-3  
EMPLOYMENT DISTRIBUTION BY INDUSTRY AND SEX, 1970-90  
(%)

Industry	1970		1980		1985		1990	
	Male	Female	Male	Female	Male	Female	Male	Female
Agriculture & Forestry	49.6	67.9	37.5	49.3	28.6	33.7	28.9	28.2
Mining & Quarrying	2.3	0.7	1.4	0.3	1.1	0.2	0.7	0.2
Manufacturing	9.3	8.1	11.8	16.3	13.0	18.9	15.2	24.3
Electricity, Gas & Water	1.0	0.1	0.2	0.1	0.8	0.5	0.9	0.1
Construction	3.1	0.5	6.4	1.0	10.7	1.2	8.7	0.7
Wholesale & Retail Trade, Hotels & Restaurants	11.6	5.8	13.1	11.2	16.8	19.1	16.9	19.7
Transport, Storage & Communications	5.0	0.5	5.0	0.7	5.9	1.3	5.9	1.5
Finance, Insurance, Real Estate & Business Services	-	-	1.9	1.6	3.8	3.9	4.0	3.9
Community, Social & Personal Services	18.1	16.4	22.7	19.5	19.3	21.2	18.8	21.4
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

16.11 *Agriculture Sector.* Although agriculture continued to be the major employer of women, the proportion of women employed declined from 67.9 per cent in 1970 to 28.2 per cent in 1990, consistent with the structural transformation of the economy. Within *Keluarga Tani*, women played an important role as the decision-maker in financial matters, provided the labour for the family farm and were the driving force in terms of family development. It is clear that women remain an important factor in the rural agriculture sector.

16.12 *Manufacturing Sector.* Female employment in the secondary sector increased significantly. The manufacturing sector accounted for 24.3 per cent of total female employment in 1990 compared with 8.1 per cent in 1970. However, a survey of manufacturing industries in 1988 indicated that more than half of the female workers were in low-paying, semi-skilled jobs in production operations, compared with only 17.7 per cent in technical and supervisory occupations and 10.9 per cent in managerial and professional positions. In the labour-intensive industries, such as textiles and electronics, women comprised as high as 57 per cent of all workers in a majority of establishments.

16.13 *Services Sector.* Female employment in the services sector, particularly community, social and personal services, increased from 16.4 per cent in 1970 to 21.4 per cent in 1990. In the wholesale and retail trade, as well as the hotels and restaurants subsector, female employment increased from 5.8 per cent to 19.7 per cent over the same period. Despite this increase, the majority of them were employed as domestic workers, general workers, sales personnel and hawkers. They were under-represented in the higher levels of the occupational ladder.

16.14 In the public sector, female employment increased from 29.3 per cent of the total employment in 1985 to 32.9 per cent in 1990. They were largely concentrated in the lower categories, namely, the C and D categories. Women in these two categories accounted for 82.3 per cent of the total female employment in the public sector. In the C category, women essentially served as primary school teachers, nurses, office and clerical workers, while in the D category, they primarily comprised unskilled general workers. In the teaching profession, 51.3 per cent of teachers and education service officers were women in 1990, an increase of 5.6 percentage points since the beginning of the Fifth Plan period. A substantial proportion were primary school teachers.

## Female Earnings

16.15 In the public sector, there was no discrimination against women in employment, either in terms of recruitment or remuneration. In the private sector, however, male-female wage differentials, although narrowing, continued to exist for certain production occupations. This is indicated in *Table 16-4*.

TABLE 16-4  
AVERAGE FEMALE MONTHLY EARNINGS AS A  
PERCENTAGE OF MALE EARNINGS IN SELECTED  
OCCUPATIONS IN THE MANUFACTURING SUBSECTOR,  
1974-90

	1974	1980	1990
<i>Rubber Products</i>			
Production Supervisor & Foreman	57.9	52.5	86.2
Rubber Moulding Press Operator	45.1	53.1	72.4
<i>Printing And Publishing</i>			
Production Supervisor & Foreman	-	70.4	75.1
Hand Compositor	61.3	59.9	111.1
Book Binder	60.1	47.2	-
<i>Plywood And Particle Board</i>			
Production Supervisor & Foreman	30.8	56.6	67.0
Veneer Cutter	-	75.5	-
<i>Textiles</i>			
Production Supervisor & Foreman	66.2	69.7	75.2
Thread and Yarn Spinner	85.6	101.7	93.8
Fibre Rower	88.5	87.0	103.0
Machine Cloth Weaver	126.9	74.7	111.0
<i>Electronics</i>			
Supervisor & Foreman	55.5	62.1	82.8
Production Operator	-	97.4	82.7
<i>Rubber Latex Processing</i>			
Rubber Processing Worker	72.3	72.2	73.1
Sheet Rubber Maker	-	77.3	102.3
Rubber Sheet Clipper	75.3	-	-

## *Unemployment*

16.16 The incidence of unemployment among women was higher than that of men in every age group in both the rural and urban areas. Female workers were particularly vulnerable during the economic downturn in the mid-80s as they were concentrated in industries that were severely affected by the recession. At the height of the recession, about two-thirds of retrenched workers who were predominantly female were from the textile and electronic industry.

## **Education**

16.17 Women benefited from equal access to educational opportunities as shown by the enrolment rates of male and female students at the primary and secondary levels of education. Gender differentiation was, nevertheless, apparent by the preference of female students for non-technical and non-vocational disciplines, as indicated in *Table 16-5*. However, over the 1970-90 period, female enrolment in the technical stream increased markedly from 4.3 per cent to 35.9 per cent.

16.18 Female intake into universities constituted about 44 per cent of the total intake during the Fifth Plan period, with female students making increasing inroads into areas like medicine, dentistry, engineering, architecture and accountancy. Although more female students enrolled in science and technological courses, there continued to be a preponderance of female students in the arts and applied arts courses.

## **Government and Non-Government Organizations**

16.19 A number of institutions were created to integrate women into the mainstream of development. The National Advisory Council on the Integration of Women in Development (NACIWID) was set up in the Prime Minister's Department in 1976 to translate the world plan on women in development within the national context. In 1983, a Secretariat for Women's Affairs (HAWA) was established to monitor and evaluate services for women provided by the public and private sectors. In addition to being the primary information centre on women's affairs, HAWA also functions as secretariat to NACIWID.

TABLE 16-5

PERCENTAGE ENROLMENT OF FEMALE STUDENTS  
ACCORDING TO LEVEL AND STREAM OF EDUCATION,  
1970-90

	1970	1980	1990
<i>Level of Education</i>			
Primary	46.8	48.6	48.6
Secondary	40.6	47.6	50.5
Post Secondary	42.6	45.5	59.3
University	29.1	35.5	44.3
<i>College</i>			
Polytechnics	13.2	21.5	25.2
Teacher Training Institutions	41.9	48.3	56.1
MARA Institute of Technology	32.4	42.9	45.8
Tunku Abdul Rahman College	23.5	33.9	37.2
<i>Stream</i>			
Arts	47.4	61.0	64.8
Science	24.5	36.3	44.7
Vocational	24.2	30.4	22.0
Technical	4.3	27.1	35.9

16.20 The delivery system for various woman support services further benefited from activities of Government organizations like *Kemajuan Masyarakat* (KEMAS), Federal Land Development Authority (FELDA), Rubber Industry Smallholders Development Authority (RISDA) and various Regional Development Authorities. Activities targeted at women were not only economic-based, but also covered a broad spectrum of educational, social and religious programmes.

16.21 The establishment of *Amanah Ikhtiar Malaysia* (AIM), a non-government trust agency, further facilitated the increasing involvement of women in economic activities. Preliminary studies indicated that not only did women account for the majority of the clientele of AIM's credit scheme, but they were also better debt payers. In the process, the participation of women, particularly in non-farm activities, enabled household incomes to increase substantially.



16.22 Other non-governmental organizations (NGOs) also played significant roles in promoting the participation of women in economic and social activities. NGOs, such as the National Council of Women's Organizations (NCWO), Women's Institute (WI), Islamic Women's Action Organization (PERTIWI), Women's Aid Organization and the Islamic Women's Welfare Board, instituted various self-help development programmes and provided support facilities.

### **Legal Status**

16.23 The Federal Constitution guarantees the equality of men and women. In addition, various legislations have been enacted to preserve, reinforce and protect the rights of women.

16.24 The Law Reform (Marriage and Divorce) Act, 1976, designed to protect non-Muslim women from weaknesses within previous laws on marriage and divorce, abolished polygamy, prescribed a minimum age of sixteen years for marriage and provided for the compulsory registration of all marriages. With regard to Muslim women, the Islamic Family Law Enactment also endowed more rights and benefits to protect the welfare of divorced Muslim women and their children.

16.25 In order to safeguard the interests of women and to protect them from abuse, laws relating to rape and molestation were amended by Parliament in April, 1989. Mandatory sentences of not less than five years and up to a maximum of twenty years were also imposed to serve as an effective deterrent to crimes against women.

16.26 The status of women as economic agents was further enhanced with the improved provisions of the Income Tax Act, 1967. Under the new provisions, women could file separate assessments as well as incorporate income from all sources for tax purposes. The new provisions, therefore, provided for equal treatment of women under the existing tax laws.

### **III. PROSPECTS, 1991-95**

16.27 Women play an important role in national development. As wives and mothers, they are the primary force behind the development of future generations of caring and progressive Malaysians. Outside the

home, they are an important economic resource. However, in the face of a rapidly tightening supply of labour in certain sectors and locations, it is a matter of concern that the involvement of women in economic activities continues to be inhibited by a number of constraints such as:

- *the dual and, often, competing responsibilities of family and career restrict the mobility and increased participation of women in the labour market;*
- *gender differentiation in schools not only transforms into occupational differentiation later, it also limits the adaptability and participation of women in the labour market;*
- *social mores and prejudices regarding the role and status of women in society and in the labour market restrain their involvement in economic activities;*
- *women with children, who are financially dependent on their husbands, are particularly vulnerable in cases of domestic violence. The lack of skills very often limits their options, preventing them from securing alternative sources of income;*
- *women are often perceived as secondary earners who only supplement family incomes rather than as co-earners whose economic activities are crucial to the family. Consequently, income-generating programmes targeted at women generally reinforce their home-maker roles, providing few opportunities for the acquisition of new and more marketable skills;*
- *the lack of appropriate management training and the consequent absence of professionalism, inadequate access to credit and a paucity of relevant market information also hinder the participation of women in the economy; and*
- *the working environment is generally not conducive to the sustained employment of working wives and mothers. This limits the training opportunities available and hampers career development. The separation of home from the workplace and the fixed hours of work constitute additional drawbacks which preclude prolonged female participation in the labour market.*

16.28 In view of the various problems constraining women in development, the major thrust of the Government's efforts will be towards ensuring that future development policies are designed to facilitate the more effective participation of women as partners in social and economic development. Within the framework of NPW, greater emphasis will be placed on the promotion of skill-enhancement activities.

## **Family Development**

16.29 The capabilities and capacities of women towards providing a conducive and harmonious family environment will continue to be strengthened through comprehensive and multi-sectoral programmes organized by NPFDB and other public agencies. Activities that contribute towards the increased well-being of women will also be promoted in order to facilitate their active participation in economic activities outside the home.

16.30 The non-formal education system will continue to be effectively utilized to enhance the involvement of women in economic and social activities as well as to ensure the formation of future generations of quality citizens. Programmes pertinent to family development, such as parenting, marital stability, nutrition, reproductive health, management of family resources and counselling, will be incorporated into the training curriculum.

16.31 Research projects will also be undertaken and surveys will be conducted to provide for a greater understanding of the factors which would facilitate the role of women in the family and their participation in the work environment. The findings will assist the Government in the formulation of more appropriate programmes in the future.

## **Labour Force Participation and Employment**

16.32 Recognizing the economic potential of women, the Government will promote human capital enhancement programmes aimed at improving their occupational status. Skill training and retraining programmes will be expanded to increase their employability in the market-place. Prospects for women in the economy will also be greatly improved with the opening up of opportunities in non-traditional occupations. A larger intake of female students in vocational and technical education will ultimately contribute to their greater involvement in higher-skilled and better-paying jobs in the labour market.

16.33 The Ministry of National Unity and Social Development will focus on the needs of disadvantaged women, particularly in female-headed households. Towards this end, studies will be initiated to assist future planning efforts. Special programmes to equip women with marketable skills will also be formulated to improve their human capital

and facilitate access to employment and income-generating opportunities. The provision of support facilities, such as child-care centres and creches for employees' children, will also be encouraged to facilitate higher and more sustained participation of women in the labour market.

### **✓ Women in Business**

16.34 Women must also be equipped with entrepreneurial and business skills in order to encourage greater self-employment and diversify their participation in the economy. Taking into account the special needs of women, they must be provided with economic resources, such as credit facilities and licences, as well as adequate representation in existing trade and business associations. In this context, efforts will be made not only to provide facilities for the upgrading of managerial skills, but also to lay the groundwork for more effective participation of women in the business arena. In addition, the development of a Bumiputera Commercial and Industrial Community (BCIC) will also be facilitated by promoting Bumiputera women in business.

### **Non-Government Organizations**

16.35 With the implementation of NPW, the role of related NGOs and voluntary organizations will no longer be confined to community development and social activities. Equally important will be their active and effective involvement in programmes and activities designed to bring women into the mainstream of development. NGOs and voluntary organizations will also act as catalysts for the development of programmes or schemes that would serve as vehicles of change for rural women. Within this context, women's organizations will focus their activities on the mobilization of rural women to improve the output from both agricultural and non-farm activities by providing advice on production, processing, marketing and other related economic activities.

16.36 A more functional and viable mechanism between the Government and NGOs will be established with a view to enhancing the complementarity of efforts and avoiding the duplication of functions. The proposed establishment of Consultative Committees at the state and district levels will strengthen both the networking and feedback systems. In addition, it will also ensure the participation of individuals, NGOs and other interest groups in the formulation, monitoring, review and appraisal of relevant policies, programmes and activities.

16.37 Women's NGOs will also be encouraged to provide counselling and other support services, particularly in cases of domestic violence and violence against women. The welfare of women will be further safeguarded through the establishment of crisis centres and shelters for battered women, the provision of subsidized legal aid as well as the establishment of other intervention centres for women in distress. This is crucial towards enabling women to regain their sense of self-worth and facilitating their re-entry into productive activities.

#### **National Policy for Women – Plan of Action**

16.38 HAWA will formulate a *Plan of Action* in order to put into effect various recommendations enshrined in NPW, which will include proposals to:

- *strengthen the national machinery to address women's issues;*
- *reorientate the institutional process for the planning, implementation and monitoring of Government policies and programmes to accommodate women's concerns;*
- *raise public awareness and sensitize the Government bureaucracy with regard to women's concerns;*
- *activate NGOs in order to increase the efficiency and effectiveness of socio-economic programmes; and*
- *redress problems of discrimination and promote affirmative action for the benefit of women in particular.*

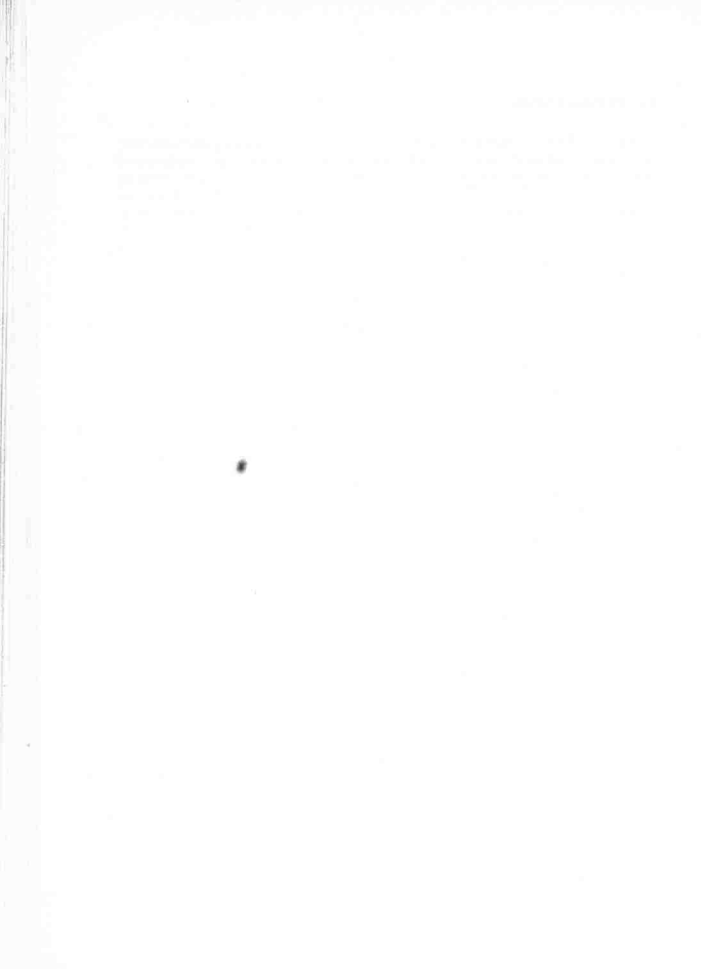
16.39 HAWA will also review related legislation and make recommendations to the Government so that the existing legal and institutional framework both accommodates and promotes the participation of women in national development.

#### **IV. ALLOCATION**

16.40 The Government has set aside an allocation of \$20 million in the Sixth Plan to support programmes and projects to be implemented by HAWA.

## ✓ V. CONCLUSION

16.41 The Government is committed towards increasing the effective involvement of women in overall national development. In recognition of the crucial role women play in family development and their increasing participation in economic activities, the Government will continue to support programmes that strive to facilitate the role of women both within and outside the family. As women constitute a vital economic resource, the Government's goal is, therefore, to integrate women as equal partners in nation building.



## **Chapter XVII**

# **Administrative Improvements**





## CHAPTER XVII

# Administrative Improvements

### I. INTRODUCTION

17.01 A well-equipped and capable public sector is critical to the achievement of development goals and objectives. The public sector plays a major role in the planning and implementation of development programmes, the management of the economy, the creation of a healthy environment to promote investments and economic growth as well as the provision of social services.

17.02 During the Fifth Malaysia Plan period, several adjustments were made to improve efficiency and productivity in the public sector. These included measures to enhance resource utilization and manpower development, improve the administrative machinery and introduce more stringent budgetary controls and cost-cutting measures. Efforts were also made to reduce the size of the public sector through the privatization of various agencies and the exercise of strict control over the creation of new posts.

17.03 During the Sixth Malaysia Plan period, the public sector will pursue the directions set out earlier with continued emphasis on improving productivity and output through a more judicious management of its resources. This will be achieved primarily through the decentralization of functions, where appropriate, and the streamlining of certain rules, regulations and administrative procedures to expedite the delivery of services to the private sector. The implementation of development programmes and projects will be improved through better inter-agency coordination. The size of the administration will continue to be rationalized through better utilization of manpower, upgrading of skills and capability, and a more extensive use of technology, office automation and computer applications.

## **II. PROGRESS, 1986-90**

17.04. Various measures to improve the performance and output of the public sector were introduced during the period of the Fifth Plan. Changes were made in the administrative machinery for the implementation of development programmes and projects. Structures, functions and processes of public sector agencies were reorganized while personnel development was emphasized.

17.05 In order to further strengthen public sector capability, the Panel on Administrative Improvements to the Civil Service was established in March 1986 to initiate programmes to improve administration and chart the course for the development of the public sector. This Panel was responsible for identifying new strategies to develop the public sector, formulate administrative improvement programmes and set the direction and pace for improving public sector performance.

### **Improvements to the Planning, Implementation, Monitoring and Evaluation System**

17.06 Various limitations in the planning and implementation machinery were identified by the Government. Consequently, a review of the planning process was undertaken in 1986 to introduce corrective measures. The functions of State Economic Planning Units were studied with the view to strengthening and consolidating the role of these Units in the development process. At the district level, the role of the district officer as the catalyst for development was emphasized. This new emphasis was supported by the emplacement of appropriately trained and experienced personnel.

17.07 Attention was also given to reduce delays and shortfalls in project implementation. In this respect, improvements were made to the management information system, SETIA, for monitoring the progress of project implementation. In addition, the computerization of agencies involved in implementing development projects was expedited in order to upgrade the capabilities of the agencies concerned.

### **A District Development Guide Book**

17.08 MERAHDUA was introduced to assist implementing agencies in the districts to plan the implementation of projects and programmes in a more coordinated and integrated manner. In addition, the Project Scheduling Technique was introduced to ensure that projects met the

implementation targets. The Working Committee of the National Action Council was activated to closely monitor the implementation of projects and resolve administrative bottlenecks.

17.09 The evaluation of major public development policies was undertaken to assess the distribution and impacts of programmes and projects. Twenty-nine evaluation studies were conducted during this period, covering programmes for the eradication of poverty and restructuring of society, rural-urban migration as well as the impact of urbanization and industrialization. The information gathered was channelled back to the relevant agencies to facilitate the achievement of development objectives.

### **Improving the Administration and Management of Public Sector Agencies**

17.10 The capability of public sector agencies to produce high quality services continued to be a major area of concern. Emphasis was given to the efficient delivery of services to the private sector and the general public. The capability of agencies in this regard was upgraded through a variety of measures, such as improved counter services, filing and documentation systems as well as streamlining correspondence procedures and systems. In addition, improvements to form design, such as rationalizing the customs declaration forms, police report forms and the immigration landing cards, were undertaken.

17.11 A handbook on quality improvement of counter services was launched while workshops were regularly held throughout the country to train counter-service personnel. As an incentive, the Excellent Office Award was introduced to confer recognition on departments which provided outstanding service to clients.

17.12 Another area of administrative improvement that was rigorously pursued during the Plan period was increasing the number of one-stop centres for the payment of utility bills and rates. As shown in *Table 17-1*, there are currently 1,298 centres in existence for the convenience of the public. In addition, there are a total of 155 one-stop service centres of which 87 are located in Peninsular Malaysia, 31 in Sabah and 37 in Sarawak. *Bank Simpanan Nasional* also established the GIRO System in 1986 to facilitate the payment of utility bills. Currently, there are 313 GIRO outlets in the country.

17.13 The concept of one-stop centres was extended to facilitate private sector investors with the setting up of Centres On Investment (COIs). Relevant agencies involved in the processing of licences and

TABLE 17-1  
NUMBER OF ONE-STOP PAYMENT CENTRES, 1990

<i>Agency</i>	<i>Number</i>
<i>Telekom Malaysia Berhad</i>	103
<i>Tenaga Nasional Berhad</i>	114
Waterworks Department	68
Postals Department	940
Local Councils/Authorities and City Halls	73
<b>Total</b>	<b>1,298</b>

permits were housed under one roof, thereby reducing the time taken by potential investors in obtaining the approvals for their businesses. Currently, there are nine COIs throughout the country. Malaysian Industrial Development Authority (MIDA) is the coordinating centre for investment at the Federal level. At the state level, the COIs are located at the State Economic Development Corporations in the case of Johor, Kelantan, Melaka, Pahang and Perak, and at the State Economic Planning Units in Negeri Sembilan, Selangor and Terengganu. Since the COIs came into being in October 1988, MIDA has increased its capability to process a larger volume of applications. Approvals for manufacturing licence and tax incentives more than doubled from 1,687 in September 1988 to 3,522 in September 1990. Approvals for duty exemption on raw materials/components increased by approximately 67 per cent from 3,813 to 6,355 over the same period. Furthermore, MIDA has succeeded in reducing the processing time for applications for tax exemption to two months, exemption for import duties on raw materials and components to one month and exemption from customs duties for machinery and equipment to two weeks.

17.14 The development of closer linkages between the public and the private sector under the Malaysia Incorporated concept was emphasized. The main thrust of Malaysia Incorporated is to generate a healthy dialogue between the public and private sectors towards achieving economic growth and expansion. In this regard, a sub-committee to the Panel on Administrative Improvements to the Civil Service was established

in March 1990 under the chairmanship of the Chief Secretary to the Government. This sub-committee comprises captains of industries and representatives of the trade and industrial sectors. It serves as a major forum for discussion on administrative improvement programmes to increase the effectiveness of the delivery of public sector services to the private sector. Efforts were also made to revitalize existing consultative panels at the ministerial and Federal departmental levels and encourage the establishment of similar panels at the state and district levels in order to obtain feedback on Government policies and strategies affecting the private sector. This was essential to facilitate the private sector to play its role as the engine of growth.

17.15 The output and performance of public sector agencies continued to be upgraded through improvements to their structures, work procedure systems and personnel. Seventy-six organizational reviews were undertaken during this period to reformulate agency objectives and upgrade and simplify their service delivery systems. Management functions were also strengthened to make agencies more responsive to the needs of a changing environment.

17.16 Following the launching of the Excellent Work Culture Movement in 1989, the public sector introduced the Quality Management Programme. The Handbook of Quality Management and Improvement for the Public Sector was introduced in June 1990, providing definitions and explanations on quality management as well as instructions on the procedures for the successful implementation of quality programmes in Government agencies.

17.17 During this period, efforts were also initiated to establish the required structures within public sector agencies to plan, implement, manage and monitor concrete programmes for quality improvement. The training of facilitators to spearhead the quality movement within each agency was also undertaken through special training seminars and workshops. Talks and briefings on the quality improvement movement were also held at various agencies.

17.18 Quality Control Circles (QCCs) as an effective tool for identifying administrative improvement measures at the process level were also widely and successfully used by public sector agencies. Through QCCs, effective measures were introduced to improve diverse areas, such as waiting time in hospitals, file movements in agencies and provision of services by town councils.

17.19 The financial management of the public sector continued to be a major area for administrative improvement. Emphasis was given to

achieve more cost-effective operations through standardizing financial structures, improving budgeting systems, using new technology and internal controls. The Modified Budgeting System (MBS) was introduced on a pilot basis in 1989 in three ministries, namely, the Ministry of Health, the Ministry of Works and the Ministry of National Unity and Community Development. Greater authority for financial management within agencies was delegated to Controlling Officers in line with a decentralized process of management. Over and above compliance with financial rules and regulations, the Ministries would also have to account for programme efficiency and effectiveness. Evaluation was required to be conducted on a regular basis. This system was designed to improve programme implementation and performance monitoring of operating agencies.

17.20 Nine computerized accounting systems were identified under the Financial Management Improvement Project. All these systems have been implemented with the exception of the Departmental Reporting System which has been scheduled to be implemented in phases for ministries and departments and the Financial Modelling module of the Cash Management System which will be developed and implemented in the next phase of the project.

17.21 With the implementation of these systems, the benefits accruing include better service to the public in terms of faster payments, better control of public funds, faster collection of revenue and other payments and updating of accounts. These systems will also result in more effective cash and public debt management as well as more timely and accurate retrieval of information and preparation of accounting, financial and management reports.

17.22 The computerization of the public sector agencies was a major programme under the Fifth Plan and this period saw a phenomenal rise in the number of mainframe, mini and personal computers in the public sector. The main areas in which computerization was introduced included inventory management, revenue collection, accounting, scientific and technological research, land administration and security.

17.23 The office automation programme continued to be emphasized in the process of upgrading administrative efficiency and effectiveness. The use of equipment for expediting work processes, enhancing quality of output and upgrading the safety and comfort of personnel was increased. A programme was implemented to identify and introduce innovative, work-saving and labour-saving office equipment to public sector agencies, where necessary and feasible.

## Personnel Development in the Public Sector

17.24 Manpower training continued to receive attention during this period with the objective of ensuring optimum utilization of human resources. Programmes to improve the output and performance of public sector personnel focussed on training and motivation, performance appraisal, recruitment and emplacement, health, fitness and welfare.

17.25 The overriding policy concern governing manpower development programmes during this period was the stringent controls on public sector expansion in terms of number of employees. Table 17-2 shows the number of employees in the public sector (excluding Police and Armed Forces) decreased from 709,180 persons in 1985 to 694,730 persons in 1990. Efforts were undertaken to improve output through the modernization of systems and training and motivation of personnel. Under the Fifth Plan, the Public Services Department alone sponsored 11,530 persons for in-service training while 8,040 persons were trained under the Look East Policy. The total number of persons trained by the Public Services Department was 19,570, involving a cost of \$296.9 million, as shown in Table 17-3.

TABLE 17-2  
NUMBER OF EMPLOYEES IN THE PUBLIC SECTOR<sup>1</sup>  
BY CATEGORY, 1985-90

Category	No. of Employees	
	1985	1990
A	53,280	63,650
B	40,525	48,500
C	247,025	248,120
D	368,350	334,460
Total	709,180	694,730

Note:

<sup>1</sup> Excludes police and armed forces.



TABLE 17-3

**TRAINING IN THE PUBLIC SECTOR SPONSORED  
BY PUBLIC SERVICES DEPARTMENT, 1986-90**

	<i>In Service Training</i>		<i>Training Under Look-East Policy</i>		<i>Total</i>	
	<i>Persons</i>	<i>Expenditure (\$ million)</i>	<i>Persons</i>	<i>Expenditure (\$ million)</i>	<i>Persons</i>	<i>Expenditure (\$ million)</i>
1986	1,890	28.9	1,550	19.7	3,440	48.6
1987	1,870	19.4	1,560	20.3	3,430	39.7
1988	2,130	26.2	1,560	24.6	3,690	50.8
1989	2,480	39.6	1,690	28.9	4,170	68.5
1990	3,160	60.0	1,680	29.3	4,840	89.3
<b>Total</b>	<b>11,530</b>	<b>174.1</b>	<b>8,040</b>	<b>122.8</b>	<b>19,570</b>	<b>296.9</b>

17.26 *Institut Tadbiran Awan Negara* (INTAN) provided substantial in-service training for public sector personnel, averaging 22,400 persons per annum. The training programmes undertaken by INTAN continued to emphasize the demands of planning and implementing successful development, training of administrators and staff as agents of change, financial and economic management skills, computer literacy as well as public policy and international relations. *Table 17-4* shows the type of training courses conducted by INTAN over the Plan period and the numbers that benefited from the training programmes.

17.27 The training of employees at departmental level represented a major component of the programme to improve human resource capability of the public sector. Training programmes undertaken at this level were designed to meet the technical skills and expertise required by individual agencies as well as to improve motivation, increase productivity and output, and inculcate positive attitudes and work ethics. On an average, about 75,000 persons per annum were estimated to have benefited from departmental training programmes during the Fifth Plan period. This excludes those trained in teacher training colleges, armed forces, statutory bodies, state agencies and local authorities.

TABLE 17-4  
TRAINING<sup>1</sup> OF PUBLIC SECTOR EMPLOYEES  
BY INTAN, 1986-90

<i>Field of Study</i>	<i>No. of Participants</i>
Urbanization, Rural Development and Regional Planning	20,005
Economics, Policy, Project Planning and Management	28,274
Diplomacy and International Relations	4,987
Computer Studies	5,786
Finance and Accounting	6,585
Human Resource Management, Quality and Productivity Management	28,178
Training Methodology and Media Technology	2,955
Language Studies	2,347
Clerical and Supervisory Training	11,975
Sub-total	111,092
Mandatory courses <sup>2</sup>	903
<b>Total</b>	<b>111,995</b>

Notes:

<sup>1</sup> Includes seminars, workshops, forums and courses.

<sup>2</sup> Mandatory courses are those which are part of requirements for promotion and pre-entry training for the Administrative and Diplomatic Service.

17.28 A number of measures to increase the productivity and quality of public sector personnel were introduced, such as job-rotation and job-enrichment programmes and improved working environments. Recognition and awards were given for outstanding performance to individuals and departments.

17.29 In recognition of the close connection between health and fitness and work productivity, a programme was launched in 1988 to increase awareness of the importance of health and fitness among civil servants. This programme included a series of health and fitness seminars for senior executives, weekly or monthly fitness sessions for all staff and

the circulation of literature on health and fitness in public sector agencies. Emphasis was placed on the importance of having proper diet and nutrition, regular physical activity and medical check-ups as well as knowledge on stress management.

### **III. PROSPECTS, 1991-95**

17.30 Under the Sixth Malaysia Plan, the public sector will increasingly focus on its role as pace-setter in the socio-economic development of the nation and also as facilitator and partner to the private sector in establishing a competitive, dynamic and resilient economy as a cornerstone of national advancement. In order to further improve Malaysia's position in the international arena of trade and industry, it is increasingly important for the nation to utilize its competitive edge. Continuous efforts are required to sustain and improve this competitive edge. Furthermore, creativity and innovation will need to be developed and sustained. In this context, the public sector's role in nurturing and ensuring a constant source of innovation and improvement not only within itself but also nationally will be given major emphasis. Among its key functions will be the development of specialized services and skills to spearhead and support economic success and progress. At the same time, the public sector will continue to be proactive in the provision of social services and in safeguarding public interests, such as environmental and consumer issues.

17.31 The direction and design of administrative improvement programmes for the public sector will continue to take into account the various changes in the environment and adapt itself accordingly to meet the challenges. The major focus of concern will be on consolidating the administrative machinery for development, rationalizing public sector systems, optimizing resources and developing the capability of human resources in this sector.

#### **Improving Project Planning, Implementation and Evaluation**

17.32 The organizational efficiency of the administrative machinery in terms of its capability to implement development projects efficiently, effectively and on target will be enhanced through the introduction of various strategic measures to reduce delays and time-consuming processes in the project cycle. The establishment of planning and development divisions will be stepped up at the ministry level to undertake planning,

monitoring and evaluation of development projects. This will ensure that the targets set during the Plan period will be adequately met and the incidence of shortfalls reduced.

17.33 The Sixth Plan also envisages improvements to the project management and monitoring process. The use of computer technology for developing a more effective monitoring network will be emphasized for up-to-date data gathering and dissemination of information on the status of projects being implemented at the Federal, state and district levels. This computerized project scheduling system, to be known as the Integrated Application of Scheduling System (SIAP) will be introduced as an added feature to the SETIA System to ensure the smooth implementation of Sixth Plan projects. This system will monitor the physical progress of development projects being implemented as compared to the SETIA system which monitors financial progress. Agencies involved in the implementation of development projects will be required to prepare project implementation plans which will include relevant information such as launching and completion dates and annual expenditure requirements to facilitate monitoring. At the same time, project managers will be appointed for major projects to manage and coordinate these projects. The SIAP system also envisages constant feedback on project implementation to ensure early detection of problems and bottlenecks for quick remedial action.

17.34 The monitoring system for development projects will give more responsibility to project managers, district officers and state development officers. This process involves an increasing decentralization of problem-solving and decision-making responsibility and authority to agencies at state and district levels. The Government will also consider using the spatial analysis technique in the establishment of a Geographical Information System.

17.35 The evaluation of project impact will be given more emphasis during the Sixth Plan period by agencies at the Federal, state and district levels. A four-stage monitoring and evaluation system will be implemented to assess the impact at each stage of the project cycle. These stages are the physical implementation, project completion, operation and maintenance and full development.

17.36 Indicators to measure project impact at each stage of the project cycle will be designed. These indicators will take into consideration the equitable distribution of development benefits, balanced growth among regions, states, strata and groups, opportunities to participate in development and access to social services. Indicators on the quality of life and social well-being will also be given emphasis.

## **Rationalization and Optimization of Administrative Systems and Resources**

17.37 During the Sixth Plan, emphasis will be given to the decentralization of systems and functions, streamlining of procedures and rules, improvement of financial management and control, extension of the use of information technology and office automation. Efforts towards rationalization of the public sector will be continued. Improving the efficiency of the administrative machinery in the delivery of public services to the private sector and the general public will be pursued.

17.38 Efforts will be made to further streamline rules and regulations and to expedite decision-making processes, especially in the area of approvals of permits and licences. Agencies will be requested to determine appropriate criteria and guidelines in the execution of legislative powers in order to reduce subjectivity and arbitrariness. This measure is designed to achieve transparency in decision-making and to generate confidence that decisions made by public sector agencies are made fairly and judiciously. Furthermore, the efforts at streamlining rules and regulations and further facilitating private sector operations will be enhanced through the consultative panels established under the Malaysia Incorporated concept.

17.39 *Decentralization* of authority will be pursued in line with the overall objective and strategy to further strengthen administration at the peripheral level. Measures were implemented during the Fifth Plan period, whereby agencies such as the Public Services Department and the Treasury devolved more decision-making authority to ministries and departments in personnel and financial management matters. Under the Sixth Plan, more of such powers will be studied for decentralization not only from the central agencies to the ministries and departments but also from the Federal to the state and district levels. The decentralization programme will be supported by efforts to strengthen and consolidate the district office as well as other district level agencies to expedite development and to ensure more efficient and convenient provision of services. The district office as a one-stop service and payment centre will be developed.

17.40 Closer rapport with the private sector at state and district levels through the establishment of Joint Consultative Councils will also be encouraged to promote better consultation and cooperation between the public and private sectors in the area of economic development. In addition, manpower at the state and district levels will be upgraded through the deployment of more experienced and trained personnel.

District level personnel will also be provided with modern and well-equipped office premises which will serve as the centre for development in the district.

17.41 The rationalization of the public sector will be pursued to restrain its size, with expansion confined to priority areas only. Agencies and functions which are directly related to and involved in the mobilization of economic resources and in the generation and collection of revenue will be given priority in terms of their staffing needs. Similarly, agencies involved in research and development (R&D), infrastructural development and providing social services will be permitted the necessary increases to meet personnel needs.

17.42 Quality and productivity improvements in the public sector will continue to be a major thrust during this period. Efforts will be made to ensure that public sector employees imbibe the quality improvement culture through effective training programmes, structured quality and productivity improvement programmes within organizations, and through follow-up and follow-through activities. Close monitoring of the implementation of these activities will be undertaken by the Panel on Administrative Improvements to the Civil Service, the regular meetings of Secretaries-General of Ministries and Heads of Services and the meetings of the Heads of Federal Departments.

17.43 The training of facilitators and other quality management personnel to spearhead the quality movement in every public sector agency will be continued in recognition of the importance of leadership and pro-active action in quality improvement. Further programmes will be initiated from time to time to help public service organizations improve their productivity and quality. In the efforts to improve productivity, public service organizations will be required to draw up a comprehensive productivity improvement programme. This programme will focus on achieving specific goals. Each organization will also be required to establish indicators to be used as standards to measure productivity improvements.

17.44 *Financial management* will continue to be emphasized at all levels of the administration during the Plan period. Feasibility studies will be undertaken to determine the extent to which a national accounting and financial network consisting of real-time and on-line distributed databases may be introduced in the various branches of the Accountant General's Office. In addition, a pilot project for the use of a Computerized System of Vote-book Maintenance and Reconciliation is underway in a number of agencies and will be introduced on a more extensive basis during the Sixth Plan.

17.45 Increased financial discipline, consistent with the existing rules and regulations, will continue to be enforced in order to prevent unwarranted loss of public funds. In realizing this aim, adherence to the disciplinary procedure will be strictly enforced to increase the effectiveness of financial management. Computerized accounting systems and micro accounting will be adopted to increase efficiency, speed and control as well as supply of more up-to-date information. This will facilitate performance assessment and improve financial management. An in-built system for constant monitoring of accounts receivable will be introduced in the overall system of public financial management. At the same time, a more efficient system for recording and management of assets, inventory and office supplies will be implemented through the use of improved formats and procedures. In order to reduce the carrying cost, the Government inventory will be maintained at an optimum level and all efforts will be made to shorten time lags between usage and ordering of stocks in order to move towards the *just in time* inventory system.

17.46 Tax administration will continue to be emphasized through better methods of tax collection as well as through improved dissemination of information at tax advice counters. Computerization of the revenue collection machinery has already been introduced and will continue as a priority area during this period. Steps will also be taken to further improve financial operations through the efficient use of computer systems and through the delegation of authority to line managers.

17.47 MBS represents one of the Government's long-term initiatives to improve the financial management system of the public sector. The pilot project, currently introduced in three ministries, will be evaluated for its efficiency and effectiveness in the allocation and control of public expenditure. The results of the evaluation and the implementation experience gathered thus far will be the basis for the extension of the system to other ministries and departments.

17.48 During the Sixth Plan period, steps will be taken to improve *information technology* (IT). In the public sector, this programme will emphasize the development of IT infrastructure and harness the information availability and accessibility to enhance managerial effectiveness and improving productivity.

17.49 To achieve these objectives, focus will be placed on standards development, database development, the establishment of a Government data network, enhancing computer security, human resource

development and promoting IT awareness. In standards development, emphasis will be on the formulation of an IT Standards Plan which will outline standards for data exchange, open systems, security, electronic data interchange (EDI) systems development methodology, Government data networks and procurement procedures. Attention will also be given to the establishment of databases in areas vital to social and economic development. Information dissemination procedures and guidelines will be prepared.

17.50 The programme on the establishment of a Government data network is required in view of the need for better management of Government departmental networks and to promote both connectivity and cost-effectiveness in utilizing the networks. In this regard, a study will be conducted to assess the feasibility of setting up such a network. At the same time, the security of computer installations will also be a focus in the Plan period. A study will be conducted soon to assess the current and required levels of computer security in Government computer installations.

17.51 Human resource development in the field of information technology will emphasize the development of a competitive workforce. Focus will be given to the anticipation of future manpower requirements and expertise and collaborative training efforts between industry, government and universities. In promoting IT awareness, the emphasis will be on the development of a Malaysian society that is both appreciative and knowledgeable in the use of IT.

17.52 Efforts will continue to be made to upgrade civil service expertise and improve in-house capability in the delivery of services and in the dissemination of information in a correct and timely manner. This is important in terms of conveying the true and genuine objectives of the Government as well as improving the public perception and understanding regarding Government policies, programmes and projects. However, in areas where this expertise is lacking, the Government will tap the expertise of the private sector to enhance the commercial value and the quality of the products of the civil service. An effective delivery method will enable the public to respond positively to measures and programmes undertaken by the civil service.

### **Development of Public Sector Personnel**

17.53 Training programmes in the public sector during the Sixth Plan will be undertaken to further improve efficiency of the public sector and to implement national socio-economic policies. Programmes that will be



emphasized include international economics and financial management, corporate and strategic management and new fields in science and technology. Training programmes for development administration, regional and district administration as well as project management at district level will continue.

17.54 New programmes for in-service training during the Plan period will include an executive development programme for those at middle-management level and the attachment of Government officers in foreign companies based in Malaysia under the Malaysia Incorporated concept. Programme linkages between various Government institutions and foreign training agencies will be expanded while foreign language programmes will be encouraged. Training for R&D and training for those in the technical, mechanical and electrical grades will continue during this period. Decentralization of training will continue to feature during the Sixth Plan period where departments will carry out in-house training for their staff, especially those in categories C and D.

17.55 Training programmes under the Look East Policy will continue during this period but with adjustments to meet the requirements of the industrial sector. It is estimated that 34,700 public sector employees will benefit from training programmes sponsored by the Public Services Department.

17.56 Integral to the changing role of the public sector is the corresponding need for a change in the attitudes and work culture of civil servants. Structural changes cannot be implemented effectively without supporting changes in the attitudes of the personnel involved in implementing these changes. Thus, attitudinal change and the development of a positive work culture in the public sector will continue to be emphasized through training and other programmes.

17.57 Strategies for ensuring on-going awareness and commitment to quality will include activities to create awareness, such as the publishing of magazines, bulletins, manuals and video tapes and organizing of seminars and talks on quality. Programmes will be continued to ensure commitment to quality service and quality consciousness among public sector employees. Management support and commitment will be emphasized through the Annual Prime Minister's Quality Award. Special awards for innovations generated by individual employees or agencies will be introduced in 1991 as an additional incentive for quality upgrading.

## Welfare of Public Sector Employees

17.58 The housing requirements of public sector employees will be addressed and measures will be taken to improve the situation during the Plan period. The construction of more housing units, especially in the larger urban areas will be reviewed as a measure to provide average-priced housing within relative proximity to places of work. Provision of institutional quarters will be reviewed owing to shortage of appropriate housing in the more remote areas. Under the Sixth Plan, the Government will allocate \$1,229.8 million for the Federal Government building programme, as shown in *Table 17-5*.

**TABLE 17-5**  
**DEVELOPMENT ALLOCATION FOR BUILDING AND EQUIPMENT, 1986-95**  
(\$ million)

Programme	5MP		6MP
	Allocation	Expenditure	Allocation
<b>Building</b>			
Federal Complexes	22.0	20.9	290.8
Departmental Building	625.0	609.5	680.4
District Offices	37.2	35.9	49.9
State Government Building	46.2	44.9	92.9
Federal Stores (JKR)	47.8	46.3	13.3
Institutional Quarters	118.9	91.7	93.0
Others	24.4	24.4	9.5
<b>Sub-total</b>	<b>921.5</b>	<b>873.6</b>	<b>1,229.8</b>
<b>Equipment</b>			
Computer	35.8	35.8	230.0
Vehicles	5.1	4.5	3.7
Launches	15.8	8.2	15.2
Radar Equipment	0	0	39.0
Others	66.8	21.9	139.0
<b>Sub-total</b>	<b>123.5</b>	<b>70.4</b>	<b>426.9</b>
<b>Upgrading &amp; Renovation</b>	<b>196.0</b>	<b>179.0</b>	<b>231.3</b>
<b>Total</b>	<b>1,241.0</b>	<b>1,123.0</b>	<b>1,888.0</b>

17.59 Efforts will also be made to improve the quality of the work environment through the provision of better office space, furniture and equipment. These efforts will also include the upgrading of office facilities where they are inadequate. Under this programme, a sum of \$426.9 million will be allocated to provide the necessary office equipment, computers, vehicles and other facilities to improve the work environment.

#### **IV. CONCLUSION**

17.60 During the Sixth Plan period, the major thrust of improvements is to evolve an administrative structure that is cohesive, responsive and pro-active to the needs of national development. These improvements will incorporate changes to the structure, system and procedures related to financial and human resource management, attitudinal change and an administrative culture dedicated to serving the needs of the nation.

## **Glossary of Acronyms**



## GLOSSARY OF ACRONYMS

ABF	=	ASEAN Bintulu Fertilizer
AIM	=	Amanah Ikhtiar Malaysia
AJDF	=	ASEAN-Japan Development Fund
AIDS	=	Acquired Immune Deficiency Syndrome
AMT	=	Automated Manufacturing Technology
APITD	=	Action Plan for Industrial Technology Development
ASB	=	Amanah Saham Bumiputera
ASEAN	=	Association of South East Asian Nations
ASEP	=	ASEAN Environmental Programme
ASN	=	National Unit Trust Scheme
ATM	=	Automated Teller Machine
ATUR	=	Automatic-Telephone-Using-Radio
AWAS	=	Advanced Warning and Surveillance Unit
BAFIA	=	Banking and Financial Institutions Act, 1989
BCIC	=	Bumiputera Commercial and Industrial Community
BEFIP	=	Banker's Export Finance Insurance Policy
BIMB	=	Industrial Bank of Malaysia Berhad
BO	=	Build-Operate
BOD	=	Biological Oxygen Demand
BOT	=	Build-Operate-Transfer
BPM	=	Agriculture Bank of Malaysia
BSE	=	Bumiputera Stock Exchange
BSN	=	National Savings Bank
BTN	=	Biro Tatanegara
CAD	=	Computer-Aided Design
CAE	=	Computer-Aided Engineering
CDS	=	Central Depository System
CFCs	=	Chloro-fluorocarbons
CGC	=	Credit Guarantee Corporation
CHOGM	=	Commonwealth Heads of Government Meeting
CIC	=	Capital Issues Committee
CIE	=	Computer in Education
CNC	=	Computerised Numerical Control
CNG	=	Compressed Natural Gas
COIs	=	Centres on Investment

COST	=	Committee on Science and Technology
DARA	=	Pahang Tenggara Regional Development Authority
DESSA	=	Development of Sarawak Smallholders Agriculture Scheme
DOA	=	Department of Agriculture
DOE	=	Department of Environment
DOF	=	Department of Fisheries
DTCs	=	Deposit-Taking Cooperatives
DVS	=	Department of Veterinary Services
EAEG	=	East Asian Economic Grouping
ECIG	=	Export Credit and Insurance Guarantee
ECR	=	Export Credit Refinancing
EDI	=	Electronic Data Interchange
EEC	=	European Economic Community
EFTPOS	=	Electronic Fund Transfer at Point of Sales
EIA	=	Environmental Impact Assessment
EPF	=	Employees Provident Fund
ERF	=	Enterprise Rehabilitation Fund
FAMA	=	Federal Agricultural Marketing Authority
FELCRA	=	Federal Land Consolidation and Rehabilitation Authority
FELDA	=	Federal Land Development Authority
FIC	=	Foreign Investment Committee
FIMA	=	Food Industries of Malaysia
FINAS	=	National Film Development Corporation
FMM	=	Federation of Malaysian Manufacturers
FOA	=	Farmers Organisation Authority
FTZ	=	Free Trade Zone
GIS	=	Geographical Information System
GSP	=	Generalized System of Preferences
HAWA	=	Secretariat for Women's Affairs
HDA	=	Housing Developers Association
HICOM	=	Heavy Industries Corporation of Malaysia
HMT	=	Hindustan Machine Tool
HSU	=	Hartridge Smoke Units
IADP	=	Integrated Agricultural Development Project
IAF	=	Industrial Adjustment Fund

ICA	= Industrial Coordination Act
ICDs	= Inland Container Depots
IKM	= Mara Vocational Institute
IMP	= Industrial Master Plan
IMR	= Institute of Medical Research
INTAN	= National Institute of Public Administration
IOFC	= International Offshore Financial Centre
IRPA	= Intensification of Research on Priority Areas
ISDN	= Integrated System Digital Network
IT	= Information Technology
ITAF	= Industrial Technical Assistance Fund
ITM	= MARA Institute of Technology
ITI	= Industrial Training Institute
JENGKA	= Jengka Regional Development Authority
KBSM	= Integrated Secondary School Curriculum
KBSR	= New Primary School Curriculum
KEDA	= Kedah Regional Development Authority
KEJORA	= Johor Tenggara Regional Development Authority
KEMAS	= Community Development Division of the Ministry of Rural Development
KESEDAR	= South Kelantan Regional Development Authority
KETENGAH	= Terengganu Tengah Regional Development Authority
KLIBOR	= Kuala Lumpur Interbank Overnight Rate
KLSE	= Kuala Lumpur Stock Exchange
KPD	= Koperasi Pembangunan Daerah
KPLI	= Post-Graduate Teacher Education Program
KTM	= Malayan Railway
LFPR	= Labour Force Participation Rate
LKIM	= Malaysian Fisheries Development Authority
LNG	= Liquefied Natural Gas
LPN	= National Padi and Rice Authority
LRT	= Light Rail Transit
MARA	= Council of Trust for Indigenous People
MARDEC	= Malaysian Rubber Development Corporation
MARDI	= Malaysian Agricultural Research Development Institute



MAS	=	Malaysian Airlines
MATIC	=	Malaysian Tourist Information Complex
MAYCIS	=	Circuit Switched Services
MAYPAC	=	Malaysian Packet Services
MBA	=	Master Builders Association
MBS	=	Modified Budgeting System
MCB	=	Malaysian Cocoa Board
MCCs	=	Milk Collection Centres
MDS	=	Middle Distillate Synthesis
MECIB	=	Malaysian Export Credit Insurance Berhad
MGS	=	Malaysian Government Securities
MIDA	=	Malaysian Industrial Development Authority
MIDF	=	Malaysian Industrial Development Finance
MII	=	Malaysian Insurance Institute
MISC	=	Malaysian International Shipping Corporation
MITI	=	Ministry of International Trade and Industry
MOE	=	Ministry of Education
MOP	=	Margin of Preferences
MPIB	=	Malaysian Pineapple Industry Board
MSO	=	Merchant Shipping Ordinance
MTBE	=	Methyl Tertiary Butyl Ether
MTCP	=	Malaysian Technical Cooperation Programme
NACIWID	=	National Advisory Council on the Integration of Women in Development
NAP	=	National Agriculture Policy
NCE	=	National Council for Environment
NCSR	=	National Council for Scientific Research and Development
NCS	=	National Conservation Strategy
NCWO	=	National Council of Women's Organisation
NDP	=	National Development Policy
NEP	=	New Economic Policy
NFPEs	=	Non-Financial Public Enterprises
NGOs	=	Non-Government Organizations
NHSF	=	National Health Security Fund
NHP	=	National Health Plan

NIEs	=	Newly Industrialized Economies
NIF	=	New Investment Fund
NEF	=	New Entrepreneurs Fund
NKVE	=	New Klang Valley Expressway
NPC	=	National Productivity Centre
NPFDB	=	National Population and Family Development Board
NPW	=	National Policy for Women
NSA	=	National Sports Association
NSC	=	National Sports Council
NSI	=	National Sports Institute
NSP	=	National Sports Policy
NTB	=	National Tobacco Board
NTBs	=	Non-Tariff Barriers
NUP	=	National Urbanisation Policy
NVTC	=	National Vocational Training Council
OCM	=	Olympic Council of Malaysia
OPEC	=	Organisation of Petroleum Exporting Countries
OPP	=	Outline Perspective Plan
PDS	=	Private Debt Securities
PERDA	=	Penang Regional Development Authority
PERNAS	=	National Corporation
PERTIWI	=	Islamic Women's Action Organisation
PETRONAS	=	National Oil Corporation
PFA	=	Pig Farming Areas
PGS	=	Principal Guarantee Scheme
PGU II	=	Peninsular Gas Utilization II
PIA	=	Promotion of Investment Act
PNB	=	National Equity Corporation
PNSL	=	Perbadanan Nasional Shipping Line
PORIM	=	Palm Oil Research Institute of Malaysia
PROTON	=	National Automobile Industry
PSCs	=	Production Sharing Contracts
PTA	=	Preferential Trading Arrangement
PTAs	=	Parent-Teacher Associations

QCCs	=	Quality Control Circles
R&D	=	Research & Development
RDAs	=	Regional Development Authorities
RISDA	=	Rubber Industry Smallholders Development Authority
RTM	=	Radio Television Malaysia
S&T	=	Science & Technology
SADC	=	State Agriculture Development Corporation
SAFODA	=	Sabah Forestry Development Authority
SALCRA	=	Sarawak Land Consolidation and Rehabilitation Authority
SCORE	=	System on Computerised Order Routing and Execution
SDOA	=	Sarawak Department of Agriculture
SEA	=	South East Asia
SEB	=	Sabah Electricity Board
SEDC	=	State Economic Development Corporation
SESCO	=	Sarawak Electricity Supply Corporation
SETIA	=	Integrated Project Management Information System
SIA	=	Singapore International Airlines
SIAP	=	Integrated Application of Scheduling System
SIRIM	=	Standards and Industrial Research Institute of Malaysia
SITTDEC	=	South Investment, Trade and Technology Data Centre
SLCHP	=	Special Low-Cost Housing Programme
SMIs	=	Small- and Medium-Scale Industries
SPAN I&II	=	National Automated Cheque Clearing System
SPEEDS	=	Scripless Book-Entry Trading and Funds Transfer System
SPKP	=	Centralized Agriculture Credit Scheme
SPM	=	Malaysia Certificate of Education
SPMV	=	Malaysia Certificate of Vocational Education
SRFB	=	Sabah Rubber Fund Board
SRP	=	Lower Certificate of Education
STE	=	Staff Training Expenditure
STMSB	=	Syarikat Takaful Malaysia Sendirian Berhad
SWIFT	=	Society of Worldwide Inter-Bank Financial Telecommunications
TDC	=	Tourist Development Corporation
TEU	=	Twenty Foot Equivalent Units
TNB	=	Tenaga Nasional Berhad

TSP	=	Total Suspended Particulate
TV3	=	Syarikat Television Malaysia Berhad
UDA	=	Urban Development Authority
UIA	=	Islamic International University
UKM	=	National University of Malaysia
UK	=	United Kingdom
UNEP	=	United Nations Environment Programme
UPM	=	University of Agriculture Malaysia
UPSR	=	Primary School Achievement Test
USM	=	University of Science Malaysia
USA	=	United States of America
UTM	=	University of Technology Malaysia
UUM	=	Northern University of Malaysia
VANS	=	Value Added Network Services
WI	=	Women's Institute



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