CHAPTER 9 - INDUSTRIAL DEVELOPMENT

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Chapter 9

Industrial Development

9 INDUSTRIAL DEVELOPMENT

I. INTRODUCTION

9.01 The expansion of the manufacturing sector continued to provide the main stimulus to the growth of the Malaysian economy. During the Seventh Malaysia Plan period, various measures were implemented by the Government to consolidate and strengthen the competitiveness of the manufacturing sector. Although the sector was adversely affected during the economic slowdown, improvements in external and domestic demand during 1999-2000 contributed to a broad-based recovery in the manufacturing sector.

9.02 During the Eighth Malaysia Plan period, emphasis will be given to the development of a new competitive advantage based on information and communications technology (ICT) and enhanced productivity, to enable the sector to advance further. Industrial development will be supported with greater efforts in research and development (R&D) to enable industries to improve on existing products as well as introduce new ones, which are more competitive in the market. The implementation of the Small and Medium Industry Development Plan (SMIDP) is expected to contribute to the establishment of resilient and competitive small- and medium-scale industries that will strengthen inter- and intra-industry linkages in the economy. In addition, efforts at product and market promotion will be intensified to sustain and enhance Malaysia's exports in the global market.

II. PROGRESS, 1996-2000

Growth Performance by Industry

9.03 Manufacturing output expanded during the period at an average annual rate of 9.1 per cent, higher than the revised Plan target of 3.9 per cent. While

output was affected during the economic slowdown in 1998, with the sector registering a contraction of 13.4 per cent, the overall performance of the manufacturing sector recovered strongly in 1999. The sector grew by 13.5 per cent in 1999 and 21.0 per cent in 2000, in line with the rapid growth in demand for manufactured goods. With the favourable performance of the sector, its share to Gross Domestic Product (GDP) rose from 27.1 per cent in 1995 to 33.4 per cent in 2000, as shown in *Table 9-1*.

TABLE 9-1

GROWTH OF MANUFACTURING INDUSTRIES, 1995-2000

Industry	*Value Added (RM million in 1987 prices)*		*Share of Value Added (%)*		*Average Annual Growth Rate, 1996-2000*
	1995	*2000*	*1995*	*2000*	*(%)*
Resource-Based	**21,814**	**29,939**	***48.3***	***42.9***	***6.5***
Vegetables, Animal Oils & Fats	1,203	2,222	*2.7*	*3.2*	*13.1*
Other Food Processing, Beverages & Tobacco	3,504	4,724	*7.8*	*6.8*	*6.2*
Wood & Wood Products	3,030	3,196	*6.7*	*4.6*	*1.1*
Paper & Paper Products	1,888	2,802	*4.2*	*4.0*	*8.2*
Industrial Chemical & Fertilizer	2,581	3,495	*5.7*	*5.0*	*6.3*
Other Chemical & Plastic Products	2,613	3,528	*5.8*	*5.0*	*6.2*
Petroleum Products	2,477	4,252	*5.5*	*6.1*	*11.4*
Rubber Processing & Products	1,549	1,853	*3.4*	*2.7*	*3.6*
Non-Metallic Mineral Products	2,969	3,867	*6.6*	*5.5*	*5.4*
Non-Resource-Based	**22,306**	**38,439**	***49.4***	***55.0***	***11.5***
Textiles, Wearing Apparel & Leather	2,311	2,451	*5.1*	*3.5*	*1.2*
Basic Metal Industry	513	1,049	*1.1*	*1.5*	*15.4*
Metal Products	1,551	3,182	*3.4*	*4.6*	*15.5*
Manufacture of Machinery Except Electrical	2,675	3,434	*5.9*	*4.9*	*5.1*
Electronics	10,288	19,460	*22.8*	*27.9*	*13.6*
Electrical Machinery	832	1,507	*1.8*	*2.2*	*12.6*
Transport Equipment	4,136	7,356	*9.2*	*10.5*	*12.2*
Others	**1,055**	**1,489**	***2.3***	***2.1***	***7.1***
Total	**45,175**	**69,867**	***100.0***	***100.0***	***9.1***
% to GDP			*27.1*	*33.4*	

9.04 During the Plan period, the non-resource-based industries grew at an average annual rate of 11.5 per cent compared with resource-based industries, which grew at 6.5 per cent. The electronics industry remained as the leading industry in terms of its contribution to manufacturing value added, with its share increasing to 27.9 per cent in 2000 compared with 22.8 per cent in 1995. The high global demand for products in this subsector was largely attributable to the increased usage of the Internet and electronic commerce (e-commerce) as well as intensified efforts in upgrading facilities to address the Y2K problem. The period also witnessed double-digit growth in the basic metal, transport equipment, oils and fats as well as petroleum products industries, which further supported the growth of the sector.

Export of Manufactured Goods

9.05 The expansion of exports provided the main impetus to the growth and recovery of the manufacturing sector in the Seventh Plan. The export performance of the sector was impressive, increasing by 16.6 per cent per annum from RM147.3 billion in 1995 to RM317.9 billion in 2000, as shown in *Table 9-2*. As a result, exports of manufactured goods accounted for a higher share of 85.2 per cent of total gross exports in 2000 compared with 79.6 per cent in 1995. The main contributor to this growth was the electrical and electronic products industry, which accounted for 72.5 per cent of total manufactured exports in 2000. In line with the shift into higher value-added industries, a wider range of electrical and electronic products was exported including electro-diagnostic apparatus and digital video discs. Other industries that contributed favourably to the growth in exports included the chemical products, petroleum products, manufactures of metal as well as textiles, clothings and footwear.

9.06 In terms of market destination, the United States, Europe and Japan remained the major trading partners for Malaysia's manufactured exports, as shown in *Chart 9-1*. Export to these countries accounted for about 51 per cent of the total exports of manufactures. Nevertheless, progress was also made in new markets, particularly in the Asia-Pacific region in countries such as Taiwan, Australia and the People's Republic of China. The share of manufactured exports to ASEAN countries declined from 27.8 per cent in 1995 to 26.6 per cent in 2000 due to the economic slowdown in the region.

Employment, Productivity and Training

9.07 The expansion of the manufacturing sector contributed significantly to employment creation during the Seventh Plan period. Employment in the sector

TABLE 9-2

EXPORTS OF MANUFACTURED GOODS[1], 1995-2000
(RM million)

Industry	*1995*	*%*	*2000*	*%*	*Average Annual Growth Rate, 1996-2000 (%)*
Resource-Based	**22,896.4**	***15.5***	**42,923.9**	***13.5***	***13.4***
Food	3,218.1	*2.2*	4,508.5	*1.4*	*7.0*
Beverages & Tobacco	397.0	*0.3*	1,206.6	*0.4*	*24.9*
Petroleum Products	3,126.6	*2.1*	8,130.7	*2.6*	*21.1*
Chemical & Chemical Products	6,256.5	*4.2*	15,011.3	*4.7*	*19.1*
Rubber Products	3,267.8	*2.2*	4,695.0	*1.5*	*7.5*
Wood Products	4,953.7	*3.4*	6,801.3	*2.1*	*6.5*
Non-Metallic Mineral Products	1,676.7	*1.1*	2,570.5	*0.8*	*8.9*
Non-Resource-Based	**113,172.9**	***76.9***	**252,383.3**	***79.4***	***17.4***
Textiles, Clothing & Footwear	6,518.5	*4.4*	10,433.4	*3.3*	*9.9*
Manufactures of Metal	4,655.6	*3.2*	8,617.8	*2.7*	*13.1*
Electrical & Electronic Products	96,747.8	*65.7*	230,429.3	*72.5*	*19.0*
Transport Equipment	5,251.0	*3.6*	2,902.8	*0.9*	*-11.2*
Other Manufactures	**11,183.7**	***7.6***	**22,601.1**	***7.1***	***15.1***
Total	**147,253.0**	***100.0***	**317,908.3**	***100.0***	***16.6***
Total (US$)[2]	58,711.0		83,660.1		*7.3*
% of Total Gross Exports	*79.6*		*85.2*		

Notes:

[1] Exclude exports of processed palm oil and other edible oil products.

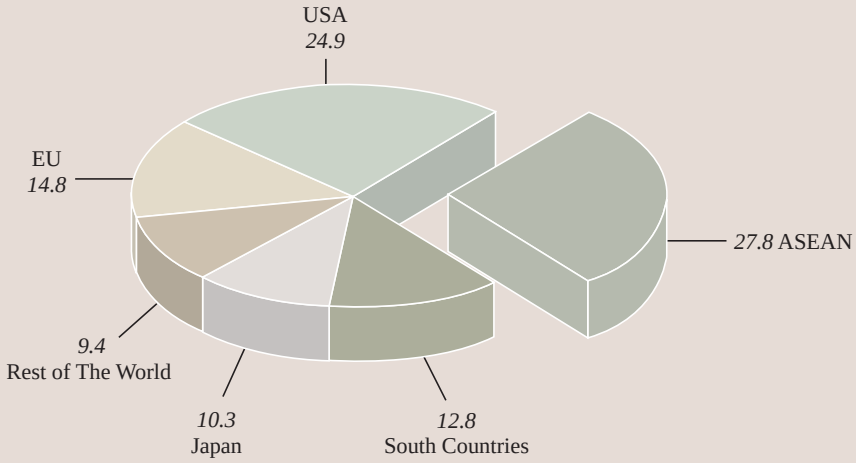
[2] Based on the following exchange rates:- RM/US$: 1995 = RM2.5081 and 2000 = RM3.8000.

expanded at a rate of 4.8 per cent per annum, faster than the target of 3.4 per cent. As a result, the sector accounted for 41.7 per cent or 530,800 of the new jobs created during the period. A total of 2,558,300 people was employed in the sector in 2000 compared with 2,027,500 in 1995. The subsectors that contributed significantly to employment creation in the manufacturing sector were the electrical and electronic products, wood and wood products, rubber products and textile industries. The demand for all categories of workers expanded during the period, as shown in *Table 9-3*. The technical and supervisory category grew at a high rate of 8.0 per cent per annum and accounted for 10.5 per cent of total employment

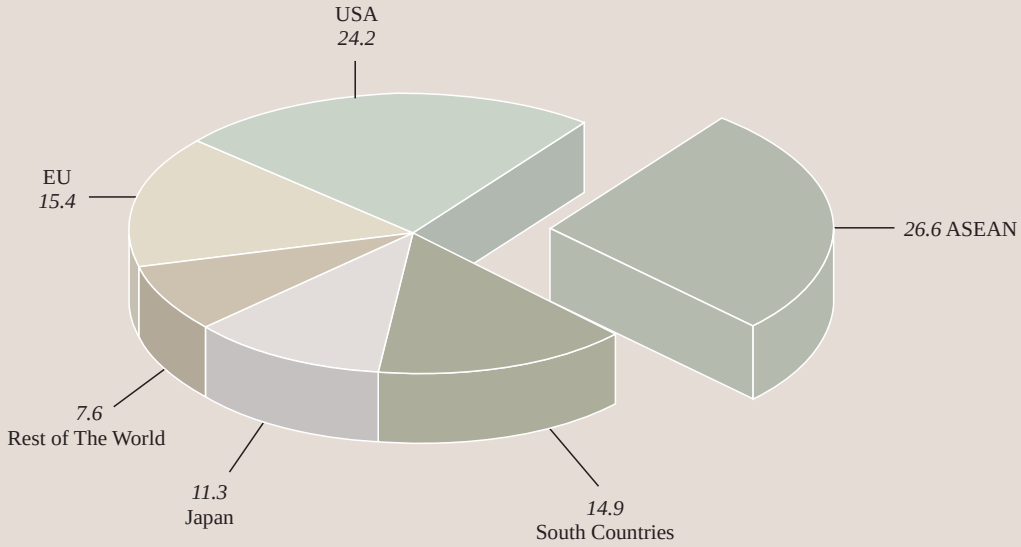
CHART 9-1

MAJOR EXPORT DESTINATIONS FOR MANUFACTURED PRODUCTS, 1995-2000

(%)



1995
RM147.3 billion



2000
RM317.9 billion

created in the manufacturing sector by 2000. This was a positive development and indicated increasing adoption of new technologies in the manufacturing sector. The largest share of employment of 31.2 per cent was for the unskilled category of workers. However, the skilled category recorded a high growth of 5.2 per cent compared with 3.1 per cent for the unskilled category. The higher demand for skilled workers also reflected a shift towards more technology-intensive industries.

TABLE 9-3

EMPLOYMENT IN THE MANUFACTURING SECTOR BY CATEGORY OF WORKERS, 1995-2000

Category	*1995*	*%*	*2000*	*%*	*Average Annual Growth Rate, 1996-2000 (%)*
Managerial & Professional	87,183	*4.3*	122,797	*4.8*	*7.1*
Technical & Supervisory	182,475	*9.0*	268,622	*10.5*	*8.0*
Clerical	127,733	*6.3*	156,056	*6.1*	*4.1*
General Workers	62,852	*3.1*	74,191	*2.9*	*3.4*
Skilled	527,150	*26.0*	677,950	*26.5*	*5.2*
Semi-skilled	354,812	*17.5*	460,494	*18.0*	*5.4*
Unskilled	685,295	*33.8*	798,190	*31.2*	*3.1*
Total	**2,027,500**	***100.0***	**2,558,300**	***100.0***	***4.8***

9.08 Productivity in the manufacturing sector, measured in terms of manufacturing output per employee, grew by 4.2 per cent per annum during the Plan period. The productivity level was adversely affected in 1998 mainly due to excess capacities because of the economic slowdown. Consequently, a negative rate of 7.9 per cent in productivity was recorded. With the robust growth of the sector towards the end of the Plan period, a positive growth rate of 10.8 per cent was recorded in 2000. Among the initiatives undertaken to enhance productivity were the continuous upgrading of the quality of the workforce, enhancing productivity and quality systems, higher technology utilization and strengthening institutional support systems. These initiatives were supported by promotional activities and information dissemination undertaken by the National Productivity Corporation

(NPC) and SIRIM Berhad, to educate enterprises on the latest techniques in productivity and quality improvements.

9.09 The Government continued to give emphasis on industrial training to meet the increasing demand for skilled manpower. In this regard, a total of RM87.4 million was provided by the Federal Government to the state skill development centres (SDCs), mainly for the purchase of equipment. The SDCs also received support from the state governments in the form of land and building as well as for their operating budgets while the private sector provided some equipment and management expertise in running the centres. During the Plan period, a total of 72,187 people was trained. Of this total, 71 per cent were workers while the remainder were school leavers who were given early exposure on basic skills to prepare them for the job market. Most of the training provided was in high-technology and high-skilled areas including industrial automation and electronics, information and communications technology (ICT), manufacturing technology and mechatronics. In addition to the SDCs, the industrial training institutes also produced skilled manpower totalling 14,855 during the period to meet the needs of industry.

Manufacturing Investment

9.10 During the Plan period, private investment in the manufacturing sector was significant and amounted to about RM90 billion compared with RM84 billion during the Sixth Plan period. In consonance with the Government's policy to promote investments, especially in high-technology and value-added industries that would strengthen international competitiveness of the sector as well as generate strong linkages with the domestic economy, a total of 3,908 projects was approved with a proposed investment of RM137 billion, as shown in *Table 9-4*. Foreign investments amounted to RM73.7 billion or 53.8 per cent, while domestic investments amounted to RM63.3 billion. The high level of foreign investment reflected the confidence and continued commitment among foreign investors to invest in the country.

9.11 Project approvals were highest in the electrical and electronic products industry, machinery manufacturing, fabricated metal products, chemical and chemical products as well as transport equipment industries. A significant development was the large number of projects for expansion and diversification.

Almost one-half of the approved projects was for this purpose, indicating the attractiveness of the country as a location for manufacturing investments. Proposed investments were highest in the electrical and electronic products (RM40.9 billion) followed by the petroleum products including petrochemicals (RM23.1 billion), basic metal products (RM9.9 billion), chemical and chemical products (RM9.6 billion) and natural gas (RM9.5 billion) industries. About 63 per cent of projects with proposed investments of RM100 million and above were from these industries.

TABLE 9-4

APPROVED MANUFACTURING PROJECTS, 1996-2000[1]

Industry	*Number*	*Capital Investment (RM million)*		
		Domestic	*Foreign*	*Total*
Resource-Based	**1,609**	**38,092.3**	**32,912.0**	**71,004.3**
Food Manufacturing	229	1,679.1	1,479.2	3,158.3
Beverages & Tobacco	34	198.4	595.9	794.3
Wood & Wood Products	191	2,224.9	732.0	2,956.9
Furniture & Fixtures	178	836.4	343.6	1,180.0
Paper, Printing & Publishing	121	4,599.4	3,616.6	8,216.0
Chemical & Chemical Products	241	3,641.4	5,947.7	9,589.1
Petroleum Products	55	9,347.2	13,775.3	23,122.5
Natural Gas	3	7,993.5	1,477.9	9,471.4
Rubber Products	116	908.4	872.3	1,780.7
Plastic Products	225	1,457.2	1,047.0	2,504.2
Non-Metallic Mineral Products	216	5,206.4	3,024.5	8,230.9
Non-Resource-Based	**2,233**	**24,966.9**	**40,610.5**	**65,577.4**
Textiles & Textile Products	218	926.6	1,902.0	2,828.6
Leather & Leather Products	14	45.5	31.7	77.2
Basic Metal Products	187	6,926.4	2,971.0	9,897.4
Fabricated Metal Products	249	1,406.3	2,051.9	3,458.2
Machinery Manufacturing	292	1,329.1	1,596.9	2,926.0
Electrical & Electronic Products	1,003	10,734.8	30,176.5	40,911.3
Transport Equipment	237	3,547.9	1,621.7	5,169.6
Scientific & Measuring Equipment	33	50.3	258.8	309.1
Miscellaneous	**66**	**249.1**	**163.6**	**412.7**
Total	**3,908**	**63,308.3**	**73,686.1**	**136,994.4**

Note: [1] For the year 2000, capital invesment is defined to include financing for working capital requirement and pre-operational expenses.

9.12 In terms of the distribution of projects by state, the approved investment projects were largely located in the States of Selangor, Johor and Pulau Pinang, as shown in *Table 9-5*. These states attracted 2,427 projects or 62 per cent of the total number of projects. Some progress was also made in encouraging investors to locate in the Eastern Corridor of Peninsular Malaysia[1], Sabah and Sarawak. Investments totalling RM43.2 billion were approved in these areas compared with RM35.9 billion during the Sixth Plan period. The incentives to promote investments in the Eastern Corridor included income tax exemption of 85 per cent of statutory income to companies granted pioneer status or an investment tax allowance of 80 per cent in respect of the qualifying capital expenditure incurred. During the Plan period, the Government also focused efforts in developing the physical and social infrastructure of the designated Eastern Corridor of Peninsular Malaysia, Sabah and Sarawak to improve its attractiveness to investors.

TABLE 9-5

APPROVED MANUFACTURING PROJECTS BY STATE, 1996-2000[1]

State	*Number of Projects*	*Proposed Capital Investment (RM million)*
Johor	857	19,775.2
Kedah	233	12,214.6
Kelantan	44	543.1
Melaka	164	6,750.2
Negeri Sembilan	165	6,200.1
Pahang	116	10,405.7
Perak	259	6,283.4
Perlis	13	1,575.0
Pulau Pinang	519	16,592.6
Sabah	125	3,725.3
Sarawak	181	15,338.9
Selangor	1,051	23,479.5
Terengganu	79	13,225.1
Wilayah Persekutuan Kuala Lumpur	97	853.6
Wilayah Persekutuan Labuan	5	32.1
Total	**3,908**	**136,994.4**

Note: [1] For the year 2000, capital invesment is defined to include financing for working capital requirement and pre-operational expenses.

[1] Comprises the States of Kelantan, Terengganu, Pahang and the district of Mersing in Johor.

9.13 Total outstanding loans to the manufacturing sector by the banking system increased at a rate of 6.3 per cent per annum from RM42.4 billion in 1995 to RM57.4 billion in 2000. Most of the loans were extended to the wood and wood products, iron and steel products, electrical and electronic products, non-metallic mineral products as well as textile and wearing apparel industries, as shown in *Table 9-6*. The domestic market-oriented industries received about 60 per cent share of the loans compared with 40 per cent to the export-oriented industries.

TABLE 9-6

LENDING OF COMMERCIAL BANKS TO THE MANUFACTURING SECTOR BY INDUSTRY, 1995-2000

(RM million)

Industry	*1995*	*%*	*2000*	*%*	*Average Annual Growth Rate, 1996-2000 (%)*
Rubber Processing & Rubber Products	1,549.8	*3.7*	316.6	*0.6*	*-27.2*
Tin	83.1	*0.2*	25.8	*0.0*	*-20.9*
Palm Oil Processing	1,456.8	*3.4*	2,016.5	*3.5*	*6.7*
Food, Beverages & Tobacco	2,271.8	*5.4*	4,021.3	*7.0*	*12.1*
Textile & Wearing Apparel	2,803.9	*6.6*	4,258.6	*7.4*	*8.7*
Wood & Wood Products	4,342.1	*10.2*	5,996.5	*10.5*	*6.7*
Paper & Paper Products	1,276.1	*3.0*	1,690.5	*2.9*	*5.8*
Printing & Publishing	1,105.5	*2.6*	2,024.0	*3.5*	*12.9*
Industrial Chemicals	1,033.7	*2.4*	2,091.2	*3.7*	*15.1*
Petroleum Products	325.5	*0.8*	n.a.	*n.a.*	*n.a.*
Plastic Products	2,120.6	*5.0*	2,567.3	*4.5*	*3.9*
Building Materials	2,018.3	*4.8*	2,061.5	*3.6*	*0.4*
Iron & Steel Products	5,596.9	*13.2*	5,896.6	*10.3*	*1.0*
Metal Products	1,794.0	*4.2*	3,337.5	*5.8*	*13.2*
Machinery (Non-Electrical)	544.1	*1.3*	929.1	*1.6*	*11.3*
Electrical Machinery & Appliances	5,169.3	*12.2*	5,820.8	*10.1*	*2.4*
Transport Equipment	1,407.9	*3.3*	1,578.0	*2.8*	*2.3*
Non-Metallic Mineral Products	n.a.	*n.a.*	4,618.3	*8.0*	*n.a.*
Others	7,510.7	*17.7*	8,180.5	*14.2*	*1.7*
Total	**42,410.1**	***100.0***	**57,430.6**	***100.0***	***6.3***

n.a. Not available

Development of Small- and Medium-Scale Enterprises

9.14 The Seventh Plan accorded an important role to the small- and medium-scale enterprises (SMEs) in supporting national industrialization efforts through forging linkages across the manufacturing sector. Of an estimated 20,200 manufacturing establishments operating in Malaysia in 1996, more than 90 per cent were small- and medium-sized establishments. Despite their number, SMEs[2] contributed only 27.0 per cent to total manufacturing output and 26.2 per cent to total value added in the sector. SMEs employed 868,000 workers or 38.9 per cent of the total number of workers in the manufacturing sector. Most of the SMEs were concentrated in the food and food products, furniture and fixtures, chemical and chemical products and metal products subsectors.

9.15 To support the development of SMEs, the Government established the Small and Medium Industries Development Corporation (SMIDEC) in 1996 to provide effective leadership in planning and overall coordination. In particular, SMIDEC was tasked to promote the development of indigenous SMEs that were efficient and competitive as well as capable of producing high value-added and quality products and services for the global market. A study on the Small and Medium Industry Development Plan (SMIDP), 2001-2005 was undertaken in 1999 with a view to charting the future directions of SMEs. Specifically, the SMIDP study analyzed the strengths and weaknesses of the SMEs in terms of their capacity, capability and competitiveness in providing the essential support to the country's industrialization agenda and made recommendations on the strategies and measures for the full integration of the SME sector into the mainstream of manufacturing activities.

9.16 In an effort to further strengthen the SMEs, several programmes were implemented during the Plan period, covering a wide spectrum of SMEs' needs. These programmes included the Industrial Linkage Programme (ILP), Technology Development and Acquisition, Skills Development and Upgrading, Market Development, Infrastructure Development and Financial Support. The ILP, aimed at enhancing linkages and integration between SMEs and large companies, provided a captive market for SMEs through the supply of parts and components on a long-term basis. Since the introduction of this programme in 1997, a total of 128 SMEs benefited with a turnover of RM111.6 million. As a majority of the SMEs did not have the technological capability to improve production efficiency and

[2] The SMIDP defines SME as a company with an annual sales turnover of not exceeding RM25 million or full time employees of not exceeding 150.

product quality, the Government provided a matching grant of up to RM250,000 to SMEs to undertake product and process improvements. A total of 237 SMEs benefited from this programme during the Plan period. SMEs were also encouraged to acquire state-of-the-art technologies and processes under the Technology Acquisition Fund (TAF) where grants of up to 70 per cent were provided for the purchase of high-tech equipment and for technology licensing. In this regard, out of RM75.1 million grants approved under TAF, RM64 million or 85.2 per cent were extended to SMEs.

9.17 In addition to these programmes, SMEs were offered various financial packages such as the Industrial Technical Assistance Fund (ITAF), Y2K Grant, Financial Package for Small- and Medium-scale Industries (PAKSI), Modernization and Automation Scheme and the Quality Enhancement Scheme. Other available funds included the Fund for SMEs established in 1998 to assist existing SMEs to expand, diversify, export as well as utilize existing capacity, and the Rehabilitation Fund for Small- and Medium-scale Industries to assist SMEs with viable projects but had non-performing loans and temporary cash flow problems due to the economic slowdown.

9.18 To upgrade the knowledge and enhance the technical and managerial skills among SMEs, the Skills Upgrading Programme was introduced in 1997, which financed 50 per cent of the training fees incurred by SMEs. In addition, SMEs that contributed to the Human Resource Development Fund (HRDF) were eligible to claim for an additional 45 per cent of the training fees from the Fund. The scope of the Skills Upgrading Programme was expanded with the implementation of the Global Supplier Programme. This programme, which involved a strategic partnership among the SMEs, multinational corporations and training institutions, was aimed at strengthening the capability of SMEs as global suppliers.

9.19 To assist SMEs to penetrate export markets, two schemes, namely, the Business Planning and Development Scheme and the Market Development Scheme, were implemented. In addition, export incentives were also extended to SMEs such as the Export Credit Refinancing, Double Deduction for Promotion of Export and Export Credit Insurance. Since e-commerce was increasingly becoming a way of doing business, several electronic malls or portals were created as a means of encouraging SMEs to conduct trade electronically. One such portal was MyBiz, which attracted the participation of 376 SMEs by the end of 2000.

9.20 During the Plan period, the Government also provided support to Bumiputera SMEs in line with the objective of developing a viable and resilient Bumiputera

Commercial and Industrial Community (BCIC). There was an increased participation of Bumiputera SMEs in the Vendor Development Programme, which involved the participation of 256 vendors, 82 anchor companies and 18 financial institutions. To upgrade the capabilities of Bumiputera SMEs in managing their businesses, emphasis was placed on the provision of entrepreneurial skills. Towards this end, various types of entrepreneurial training programmes were provided, benefiting 58,888 Bumiputera entrepreneurs.

Industrial Technology and R&D

9.21 During the Seventh Plan period, the private sector continued to increase its contribution to the expansion of research activities. The National Survey of Research and Development indicated that the private sector spent a total of RM746.1 million in 1998 compared with RM400.1 million in 1996. Of this total, RM586.5 million or 78.6 per cent was spent in the manufacturing sector, mainly for the introduction of new equipment, systems or processes and their improvements. The electronic equipment and components as well as the transport equipment industries accounted for 29.1 per cent and 13.3 per cent of the R&D expenditure, respectively. While the R&D expenditure of foreign companies was focused on the electronic equipment industry, the R&D expenditure of local companies was distributed over a wide range of industries.

9.22 Only one-third of the companies carrying out R&D activities were small- and medium-sized firms, contributing 10.8 per cent to the total R&D expenditure. One of the factors hindering R&D was the lack of skilled personnel. In the Inter-Firm Linkages and Technology Development Study carried out in 1997, it was found that the average number of scientific, engineering and technical (SET) personnel per 100 employees for small local firms was 2.4 compared with 3.2 for the medium and 4.1 for the large local firms. For foreign firms, the average was 6.1 SET personnel per 100 employees.

9.23 Fiscal and financial incentives continued to be provided to stimulate R&D and technological innovation activities in the private sector. The fiscal incentives included full income tax exemption to companies granted pioneer status or an investment tax allowance of 100 per cent in respect of the qualifying capital expenditure incurred, double deductions for R&D expenditure, capital allowance, import duty exemption and industry building allowance. In terms of financial assistance, a total of 2,679 projects received matching grants amounting

to RM53.6 million provided under the ITAF 1 to 4, to support product development and design schemes as well as quality and productivity improvement schemes. The Industrial Research and Development Grant Scheme (IGS) was established with an initial allocation of RM100 million to promote market-oriented R&D and technology development projects involving the collaboration of the private sector, universities and research institutions. Since its launch in March 1997, a total of 58 projects amounting to RM138 million was approved.

9.24 To further accelerate and upgrade the development of indigenous technological capabilities, the Commercialization of Research and Development Fund (CRDF) and TAF were launched in September 1997. Both these funds, managed by the Malaysian Technology Development Corporation (MTDC), were allocated RM63 million and RM118 million, respectively. The focus of CRDF was the commercialization of R&D findings undertaken by local universities and research institutions as well as companies and individual researchers and inventors. By the end of 2000, a total of 38 projects amounting to RM32 million was approved under the CRDF. Among the successful projects were the Radiant Modular Kiln Drying System and a portable card acceptance device with biometrics capability. The TAF grant complemented the various technology incentive programmes by assisting in the acquisition of technology in strategic industries. In this regard, the grant facilitated the acquisition of foreign technologies through the purchase of high technology machinery and equipment, technology licensing and technical training. A total of 69 projects with a value of RM75.3 million was approved. The projects included the acquisition of equipment and machinery for the production of high precision carbide end mills and smart card modules.

9.25 Techno-infrastructure was also expanded to provide facilities for the private sector, especially for technology-intensive industries. Technology incubator centres were set up by MTDC and Technology Park Malaysia (TPM) to nurture and develop high technology start-up companies. MTDC technology incubation centres located in the vicinity of five universities, allowed the high-tech industries easy access to the universities' resources and facilities for R&D and technical expertise. By the end of the Plan period, a total of 53 companies was located in the MTDC incubator centres while another 79 technology-based start-up companies were in TPM. These companies were involved in activities related to biotechnology, multimedia and ICT, advanced electronics and software development. In addition, 20 companies producing high value-added cosmetic and toiletry products, benefited from the industrial incubator facilities provided by SIRIM Berhad.

9.26 Emphasis was also accorded to programmes providing technical and engineering support services to industries as well as promoting applied and developmental research and innovation in areas that contributed to industrial development. SIRIM Berhad provided services such as pilot plant design, R&D and engineering services for the automotive industry and support services for the printed circuit board. In particular, the Industrial and Engineering Design Centre was established to provide technical and engineering support services to the industry and the Automotive Components Centre was set up to provide a comprehensive package of services in the area of prototyping, testing of noise and other engineering services as well as R&D. The safety testing capacity and capability of SIRIM Berhad were also expanded to include cosmetics and toiletries, industrial and electrical appliances as well as communications equipment. MIMOS Berhad expanded the development of essential infrastructure to build indigenous capabilities in the electronics industry. In this regard, the Semiconductor Technology Programme was designed to develop skilled personnel with expertise in technology and product development in wafer fabrication and integrated circuit design. Under the programme, micro processors were developed for general purpose programmable controller and cryptography application. In the area of integrated circuit design, non-volatile memory chip cards were developed for smart card applications. In addition, several memory chip card designs were also developed for the telecommunications industry.

Other Initiatives to Support Industrial Development

9.27 During the Seventh Plan period, the Government provided a conducive environment to attract new investments in high-technology and knowledge-intensive industries as well as encouraged reinvestments through expansion and diversification of manufacturing projects and related services. The proactive approach of the Government in support of industries was demonstrated by the various measures implemented during the Plan period. These included the temporary waiver of the equity policy and export conditions for foreign and local manufacturers involved in new projects as well as expansion and diversification projects and double deduction on expenses incurred for advertising locally Malaysian brand names products. In addition, to promote the use of ICT, operating expenditure on ICT systems was made deductible for tax purposes from the year of assessment 2000.

9.28 Efforts were also undertaken to increase environment-friendly processes and systems in industries. To facilitate adjustments in this direction, the Government

provided tax incentives to encourage the procurement of pollution control equipment and for the setting-up of facilities for the storage, treatment and disposal of industrial wastes. Industries were also encouraged to implement good environmental management practices including cleaner production technologies and more efficient utilization of resources through recovery and recycling. As at the end of 2000, a total of 171 companies was awarded the ISO 14000, after adopting the prescribed environmental management system in their activities, products and standards.

III. PROSPECTS, 2001-2005

9.29 The Eighth Plan period will witness a new phase in the country's industrial development. The overriding objective will be to strengthen the resilience and growth of the manufacturing sector. In this regard, the Government will continue to provide support for the development of infrastructure facilities for industries and efforts will be made to increase investments in the sector by providing a conducive environment for business.

9.30 Industrial development during the Plan period will face the increasing challenges of globalization. There will be a greater movement of capital, skills and technology in the world. Changing production trends, such as outsourcing and global supply chain management, are altering the process of international production. This implies that there is a need to build up infrastructure capabilities in the nation, including e-commerce infrastructure, in order to attract knowledge-intensive industries to locate in Malaysia. Global benchmarking of local industries will also be important to keep abreast of the latest developments in the market and to increase innovation in the manufacturing sector.

Growth Prospects of the Manufacturing Sector

9.31 The manufacturing sector is targeted to grow by 8.9 per cent per annum during the Plan period, contributing 35.8 per cent to the share of GDP by 2005. The growth of the sector will be export-led, with export of manufactures projected to grow by 8.9 per cent per annum, accounting for 89 per cent of the nation's export earnings by 2005. While the electrical and electronic products industry will continue to be the major contributor to exports, the growth of new sources

of exports, especially resource-based industries, will be enhanced to increase the country's exports. Taking cognizance of the changes in global and regional developments, the policy thrusts during the Eighth Plan will be as follows:

- ❑ *positioning industries to take advantage of the opportunities arising from globalization;*
- ❑ *strengthening the manufacturing base by developing strong industrial clusters;*
- ❑ *sustaining the momentum of growth by strengthening manufacturing-related services;*
- ❑ *providing more focused incentives for high value-added industries;*
- ❑ *increasing the use of technology and developing strong domestic capability;*
- ❑ *enhancing the local production of capital and intermediate goods to reduce import intensity and foster industrial development;*
- ❑ *enhancing competitiveness through productivity improvements;*
- ❑ *developing new initiatives in export promotion;*
- ❑ *increasing the use of ICT; and*
- ❑ *developing resilient SMEs.*

Positioning Industries For Globalization

9.32 As the 17th largest exporting nation in the world, Malaysia will continue to face challenges in the light of developments under the World Trade Organization (WTO), ASEAN Free Trade Area (AFTA) and ASEAN Investment Area (AIA). Malaysia will enact several new acts and amend certain provisions of existing legislations to comply with WTO including intellectual property rights of the Trade-Related Intellectual Property Rights (TRIPS) Agreement. The Government will continue to disseminate information to the private sector on the latest developments in international trade and support private sector efforts to adjust to the demands of a competitive trading environment.

9.33 The removal of tariffs to realize AFTA is expected to further increase intra-ASEAN trade while the AIA will increase intra-ASEAN investment by improving the overall investment environment in ASEAN to attract foreign direct investment. The average tariff for Malaysia is expected to decline to 2.6 per cent by 2003, reflecting the openness of the economy. In this regard, the manufacturing sector will need to further strengthen its competitiveness and capacity as well as position itself to take advantage of the opportunities and challenges arising from global and regional developments in trade and investment. At the same time, the Government together with the private sector will proactively address issues arising from on-going negotiations in fora such as the WTO and ASEAN so that there are mutual benefits to all trading countries.

Strengthening the Industrial Clusters

9.34 Efforts will continue to be made to enhance the development of new sources of growth in order to diversify and broaden the manufacturing base. The strategic thrust will be to promote greater inter-industry and sectoral linkages in line with the industry cluster development approach of the Second Industrial Master Plan (IMP2). In order to promote the development of dynamic industrial clusters, the key factors such as a critical mass of entrepreneurial firms, networking capabilities, technology management, technology transition and skill formation will be addressed. The challenge is to generate cluster growth dynamics that mutually adjusts one factor to the other along a high growth path. Greater coordination is required at the state level to stimulate the growth dynamics of clusters and in promoting systemic links within individual regional clusters.

Electrical and Electronic Products Industry

9.35 During the Plan period, the growth prospects for the electrical and electronic products industry is anticipated to be favourable. The industry is targeted to grow at an average annual rate of 8.8 per cent. The electrical and electronic products subsector in the country is shifting into higher value-added activities through skills upgrading, product design and R&D. In the semiconductor product group, several companies will be upgrading and producing integrated circuits that require high technology. Similarly, in the consumer electronics group, more advanced products will be manufactured such as thin film transistor-liquid crystal display for television, personal computer monitors and handphones. To promote and support the development of the electrical and electronic products subsector, the Government will encourage companies to have more integrated operations

involving R&D, design, procurement, distribution and marketing as well as treasury and headquarters' functions. The Government will also encourage the development of a critical mass of innovative and entrepreneurial firms and strengthen their capabilities in skills training, innovation and technology.

Automotive Industry

9.36 Greater efforts will be required to support the development of a strong automotive industry cluster to facilitate the industrialization process. In order to achieve economies of scale for both vehicle and component manufacture, the export-oriented strategy will continue to be implemented. The efficiency and competitiveness of the automotive cluster will have to be improved to tap market opportunities in the regional and global markets. To support this, the key strategies will be to develop capabilities and production technologies, improve R&D and design work as well as strengthen the distribution network and marketing expertise. Locally produced components and parts will be upgraded through joint R&D activities and technical collaborations between component manufacturers and large firms. Efforts will also be undertaken to forge strategic alliances with global automotive and component manufacturers to achieve world-class standard and capabilities in the industry.

Aerospace Industry

9.37 The Government will continue to promote the development of the aerospace industry, which is a knowledge- and capital-intensive industry. While the industry is at its early stage of development, local capabilities are being developed, particularly in the repair, overhaul and maintenance activities of the aviation subsector. Local technology development capability in aerospace and composite components manufacturing will be further enhanced with the expansion of aircraft production by the Composite Technology Research Malaysia (CTRM) in the Aerospace Industrial Complex located in Batu Berendam, Melaka. Strategies to accelerate the growth of the aerospace industry cluster include developing Malaysia as a regional centre for repair, maintenance, overhaul, modification and conversion activities, promoting components and parts manufacturing through joint-ventures with the world's major aerospace companies and undertaking a comprehensive human resource development programme to supply the skilled manpower required by the industry. During the Eighth Plan period, more aerospace-related projects will be implemented. The growth of the aerospace industry will help spur the development of the machinery and equipment industry.

Strategic Resource-based Industries

9.38 Measures will continue to be taken to develop the resource-based industries such as the wood-based products, rubber products, palm oil-based products, cocoa-based products, food products, ceramics and chemical industries. To keep abreast of the latest developments in the global market, enterprises will have to restructure to remain competitive.

9.39 The *wood-based products* industry in Malaysia faces a number of challenges, the most critical being the need for an adequate supply of raw materials to sustain the growth of the industry. In this regard, more aggressive promotion of forest plantation projects including rubber forest plantation will be undertaken to address the need for a sustainable supply of timber in the long run. Other strategies to further develop the industry include to continue upgrading existing industries to develop downstream activities and promoting new investments in high value-added and differentiated products. Among the products with the potential to be developed further for the export market are panel products for interior décor, up-market goods such as household and home-office furniture, and builders' woodwork, which includes solid wood doors and windows. In order to maximize the recovery rate of wood and encourage further the utilization of wood waste, efforts will be taken to intensify R&D activities and develop new technologies. In addition, the manufacture of ornamental wood-based products will be encouraged. The Government will continue to encourage the consolidation and rationalization of industries to replace small, uneconomic and low-technology operations in order to compete effectively in the global market.

9.40 Besides the rubber wood industry, the *rubber products* industry is currently dominated by the latex goods subsector. In this regard, the development thrust will be to broaden the base of the industry through diversification into other subsectors, particularly the Industrial Rubber Good (IRG). The potential for export of products in the IRG subsector such as bridge bearings, engine mounts and suspension bushes is good. During the Plan period, the annual global demand for bridge bearings is estimated at USD26 million while the market for engine mounts and suspension bushes is estimated at USD1.7 billion and USD1.0 billion, respectively. In order to penetrate the export market, manufacturers must take steps not only to improve the quality through enhanced R&D and management system but also the establishment of consortia of manufacturers to produce and market the products abroad. Achieving ISO 9000 certification for quality control will demonstrate best manufacturing practices. This is particularly important for

the manufacturers of IRG where they are often required to provide warranty on the products. In the light of this, manufacturers will need to consider establishing a warranty scheme for these products.

9.41 In order to enhance the competitiveness of the *palm oil-based products* industry, efforts will be directed towards the development of new applications of palm oil both in the food and non-food subsectors. In the food subsector, there is good potential for products such as trans-free margarine, shortening and specialty products. In the non-food subsector, the Government will continue to encourage the manufacture of oleochemicals and their value-added derivatives, which have great export potential due to the growing world demand for natural-based oleochemical products. Market prospects are favourable for the production of specialty products, including fatty nitrogen derivatives and fatty acid esters. Major end users for specialty surfactants are manufacturers of personal care and cosmetics products as well as fabric softeners. In order to be competitive in these markets, Malaysian producers will need to build up R&D capacity, seek research alliances with major end users and adopt a flexible approach to product development that encourages customized production of new products. In addition, the Government will continue to emphasize downstream processing and diversification of the usage of palm oil so as to increase income through higher value-added activities. Towards this end, the proposal to set up methyl ester plants to increase the local use of palm oil and the use of oil palm biomass in making pulp and paper as well as raw materials for the wood-based industry, such as particle boards and medium density fibre boards, will be encouraged.

9.42 In view of the potential health attributes found in cocoa, further efforts will be directed towards improving the quality, variety and competitiveness of existing *cocoa-based products* such as chocolates, beverages and confectionery as well as developing and commercializing competitive new cocoa-based products such as cosmetics and pharmaceuticals. This will require the intensification of collaborative research between R&D institutions and the private sector. The Government will continue to encourage the private sector to venture into producing these new products including developing Malaysian brand names for cocoa-based products.

9.43. Recognizing the importance of developing an efficient and modern *food products industry,* the Government will formulate strategies and programmes to facilitate the development of the industry. Among the new incentives to enhance food production include granting full tax deduction on investments in wholly-

owned food manufacturing subsidiaries. The subsidiary itself will also be given full tax exemption on its statutory income for 10 years, commencing from the first year it is profitable. The private sector will have to improve its efficiency in the distribution of food products such as providing adequate cold room and refrigerated truck facilities and related services. To achieve the objectives of establishing Malaysia as a hub for *halal* food production, it will be important for food manufacturers to obtain quality and *halal* certification. The private sector will also need to intensify efforts to penetrate new and emerging markets by undertaking market promotion as well as improving packaging and labelling.

9.44 The IMP2 has identified the *ceramics industry* as having potential for development under the Materials Industry Group. Strategies to support the development of the ceramics industry include upgrading and modernizing existing industries to move into higher value-added products such as bone china and decorative ceramics. To enhance the competitiveness of the industry, greater emphasis will be given to R&D to improve quality and design as well as for the production of advanced ceramics. There is potential for the manufacture of advanced ceramic materials and products such as ceramic disc elements, ceramic components for electrical and industrial use as well as bits and tools for the textile, metal and engineering industries.

9.45 The *chemical industry,* which includes petroleum products, petrochemicals, inorganic chemicals, oleochemicals and industrial gases, is gaining importance as a growth industry for the country. The industry can take advantage of the country's feedstock position, its cost competitiveness and strategic location in ASEAN. In addition, the infrastructure is in place to support the future development of the industry. Industrial areas to cater for petrochemical industries include the Kertih-Gebeng corridor, Tanjung Langsat and Pulau Bunting-Yan. The chemical industry will be encouraged to move along the value chain by strengthening linkages with other industries using locally available raw materials.

9.46 The projected world *pharmaceuticals* market in 2002 is USD405.9 billion. In comparison, the local pharmaceutical industry is very small as the value of total output is about RM400 million in 2000. Local producers are mainly concentrated in producing generic drugs. To tap the vast potential of this industry, the Government is promoting the manufacture of active ingredients such as cephalosporin (an antibiotic group), cytokines (for cancer treatment) and artemisinine

(for treatment of malaria). Another area that will be promoted is the production of patented drugs. In this regard, multinational corporations will be encouraged to establish integrated manufacturing plants for patented pharmaceuticals with R&D facilities to promote contract manufacturing. There is also the potential to use tropical flora and microbes to produce active ingredients and to manufacture traditional herbal medicine for the local and export markets. Development strategies for the pharmaceutical industry include the consolidation of local manufacturers through strategic alliances and rationalization of products as well as strengthening and expanding R&D activities in disciplines such as medicinal chemistry, biotechnology and genetic engineering.

Strengthening the Manufacturing-Related Services

9.47 During the Eighth Plan period, the competitive edge of products will depend to a large extent on non-price factors such as quality, customization and delivery time. Accordingly, enterprises and industrial clusters will need to continuously upgrade their products and process technologies. In support of the industries, the manufacturing-related services such as ICT-network-virtual manufacturing, R&D, quality and standards certification, packaging and export services will need to provide efficient, cost effective and fast delivery services. Taking cognizance of the importance of strong supporting services, the Government will undertake a study to analyze and upgrade the capabilities of the existing engineering services sector such as machining, mould and die, metal stamping, metal fabrication, heat treatment and rapid tooling as well as identify new manufacturing and non-manufacturing support services required for the development of high-technology industries.

9.48 The establishment of the Rasa Machinery and Equipment Technology Centre (RAMET) in Selangor, will provide the support for the development of the foundry technology as well as tooling and machining technologies, which are required for the development of the machinery and equipment industry. RAMET will emphasize on machinery and systems design and prototyping as well as developing technologies such as precision heavy machining, machine structure fabrication and heat treatment. A Training Centre for Computerized Numerical Control Machines for Machine Tooling will also be set up to provide hands-on training for entrepreneurs to produce machine components and spare parts.

Providing More Focused Incentives for High Value-Added Industries

9.49 The Government will formulate policies and incentives to promote investments in high value-added industries. In this regard, the Government has further extended the waiver of the equity policy as well as the export condition that allow companies to sell up to 100 per cent of their products in the domestic market. Taking cognizance of the importance of high-tech and capital intensive investments to provide significant spin-offs to the economy, the Government will identify improvements to existing incentives as well as introduce more focused incentives to strengthen industrialization in the country. Domestic investments in these industries will be further encouraged. Efforts will also be undertaken to attract foreign direct investment through industry specific promotions and informing companies of investment opportunities in priority areas. Accordingly, the pre-packaged incentives for strategic industries will continue to be provided. In addition, existing companies will continue to be encouraged to expand and diversify into high value-added industries as well as move into related services, particularly design activities. Measures will continue to be taken to facilitate the establishment of industries by streamlining procedures at the Federal, state and local government levels.

Increasing the Use of Technology and Developing Strong Domestic Capability

9.50 Efforts will continue to focus on increasing the use of technology and developing a strong domestic capability in order to contribute to productivity-driven growth and industrial competitiveness. In this regard, firms are expected to intensify efforts in technology upgrading and developing indigenous technological capabilities in an environment of increasingly competitive markets and accelerating pace of scientific and technological change. This trend, together with the expanding range of technologies that firms must manage, will require R&D and technology development to be market-oriented.

9.51 To facilitate private sector involvement in R&D and technology development, the Government will continue to provide fiscal and financial incentives as well as appropriate infrastructure facilities. Emphasis will be given to co-financing and joint programmes of research between industry and public sector institutions. Towards this end, the allocation for the Industrial Research and Development Grant Scheme (IGS) will be increased to RM200 million. The Commercialization of Research and Development Fund (CRDF) and Technology Acquisition Fund

(TAF) will also be continued with an allocation of RM110 million and RM250 million, respectively.

9.52 In view of the high risks and costs associated with investments in R&D and development of strategic industries, a national approach will be increasingly adopted. Specific research institutions, singly or jointly with industry partners, will be provided with resources to develop targeted areas of industrial technology such as microelectronics, advanced materials, aerospace and multimedia. In this respect, the Intensification of Research in Priority Areas (IRPA) programme will identify and provide allocations for R&D in industries with a high R&D component that will sustain long-term technology development. For this purpose, IRPA will be allocated RM1 billion under the Eighth Plan. The offset programme will also be reviewed to facilitate domestic technology development through technology acquisition.

9.53 The industrial design capabilities of SIRIM Berhad will be further upgraded to provide integrated services involving industrial products and packaging, design and consultancy, model-making and prototyping services, and training for industries, particularly the SMEs. Emphasis will be given to consumer products such as electrical and electronic goods, processed food, cosmetics and furniture. Efforts will also be continued to enhance industrial efficiency and technological developments through the development of Malaysian Standards in line with international standards. It is anticipated that a total of 1,000 new standards will be developed and 400 existing standards reviewed. In addition, active participation in regional and international standards development activities will be continued in order to ensure that national needs are protected. Recognizing that Malaysia is a major producer and exporter of palm oil, initiatives will be taken to promote and lead in the development of standards for palm oil at the international level. To further improve standards and quality, the functions of the National Metrology Centre will be expanded with its relocation to Sepang, Selangor. The services will be extended to include legal metrology as well as scientific and industrial applications. In addition, as part of the efforts to strengthen industrial design capabilities, the Government will consider the establishment of a centre to design products that are suitable for the tropical region.

9.54 Facilities will be expanded to increase R&D in advanced materials manufacturing and microelectronics in line with the IMP2. In particular, the Advanced Materials Research Centre in Kulim Hi-Tech Park will provide facilities for research in areas such as photonics, composites and nano materials, which

will assist in the development of the automotive, electronics, telecommunications, aerospace and health industries. In addition, recognizing the importance of technology diffusion, efforts will be focused on strengthening support services, particularly to the SMEs, through improving and expanding technical extension services and training.

Enhancing Local Production of Capital and Intermediate Goods

9.55 Imports of capital and intermediate goods have followed the pace of industrialization. Imports of intermediate goods increased from RM126.3 billion in 1995 to RM230.6 billion in 2000. The pattern is one of increasing dependence on imports such that by 2000, imports of capital and intermediate goods accounted for 88.9 per cent of total imports. The Government will continue to emphasize on the policy to increase the production of capital and intermediate goods so as to provide a range of economic benefits such as improvements in the balance of payments and foreign reserves. In addition, it is expected to lead to a deepening of the technological, industrial, management and skills base as well as growth in value added in the manufacturing sector. In this regard, a study will be undertaken to identify policies and incentives to promote the local production of capital and intermediate goods. Among the subsectors to be reviewed are the machinery and equipment, electrical and electronics, food processing and transport equipment. A preliminary assessment indicates that the potential products for import substitution with import value exceeding RM100 million per year included cylinder block liners for engines, gear and gearing, packing and wrapping machinery, flat-rolled products of stainless steel, aluminium plates, sheets and strips as well as cathodes and sections of cathodes.

Developing New Initiatives in Export Promotion

9.56 During the Plan period, new approaches and initiatives will be implemented to promote exports. These include establishing regional display and distribution centres in selected overseas markets to be complemented by distribution facilities in collaboration with the private sector, promoting more inward buying delegations to Malaysia and organizing specialized international trade fairs in Malaysia to promote exports. Participation in specialized and general trade fairs abroad and organization of Malaysian Products Exhibition in new and emerging markets will be emphasized, with greater focus given to the promotion of Malaysian brand names with the view to differentiating Malaysian products and services in the market place. The new markets include countries in Central Asia, Middle East and South America. At the same time, ongoing efforts will continue to be

undertaken to retain and further enhance Malaysia's market share in the traditional markets as well as introduce new products to these markets. Training in the field of export marketing, procedures and documentation will also be intensified to enable more SMEs to export their products and services. Efforts will also be undertaken to further intensify ICT applications in export promotion, particularly using e-commerce as a tool to promote products and services. Towards this end, the Malaysia External Trade Development Corporation (MATRADE) will establish a trade information portal to enhance the content and delivery of services in trade promotion. The trade information portal will provide a comprehensive range of services such as bringing together potential partners offering facilities for virtual exhibitions and facilitate entry of the export community to e-commerce.

Enhancing Competitiveness Through Productivity Improvements

9.57 Productivity and quality enhancement is crucial in achieving greater efficiency in the production of goods and services. Active promotion of productivity will continue to be undertaken to increase awareness and understanding of the importance of productivity and quality. In this regard, programmes such as the productivity and quality (P&Q) awards and quality networks will be intensified at the industry level. P&Q training and systems development programmes will continue to be undertaken based on productivity strategic plans developed to promote productivity improvements. The Government will also encourage benchmarking by companies against best practices in the industry and globally, in order to instil the need for productivity improvements. Industries will be encouraged to adopt higher technology utilization and R&D, which are critical factors to enhance P&Q. Increasing ICT applications will also contribute to efficiency gains, particularly for development and access to information as well as speed of transactions.

Increasing the Use of Information and Communications Technology

9.58 Malaysian enterprises will urgently need to enhance their ICT-based competitive edge in order to take advantage of the opportunities of a borderless market. With the Government's objective of developing the knowledge-based economy, it will be vital for enterprises to enhance the use of ICT in every aspect of their business activities such as procurement, production, advertising and marketing. The manufacturing sector will need to improve productivity and competitiveness through increased manpower training focusing on ICT in order to meet the demands of the knowledge-based economy.

9.59 The Government will continue to enhance the implementation of the World-wide Manufacturing Web and Borderless Marketing to provide a conducive environment for value-added manufacturing using ICT. The advantage of the World-wide Manufacturing Web and Borderless Marketing is that they provide high-technology networking across boundaries, allowing multinational corporations and local companies to access integrated on-line business operations. Through these flagship applications, the Government is expanding the potential of manufacturing companies to use advanced ICT in manufacturing.

Developing Resilient SMEs

9.60 The adverse impact of the recent recession on the SMEs and the globalization of the world economy underscore the need for SMEs to become more resilient and competitive. Towards this end, the Government will continue to provide support in strengthening the SMEs as a means of encouraging domestic investment. The Small and Medium Industry Development Plan (SMIDP) will chart the future development of the SMEs to provide the critical linkage in the development of a broad-based, globally competitive industrial sector. It will enhance the transformation of SMEs from being labour intensive to that based on capital, knowledge and technology, including the ability to innovate, design and develop new products and processes. The SMIDP provides the development focus for each of the industrial clusters and an action plan to operationalize the strategies and targets set. In ensuring that the action plans will be effectively implemented, SMIDEC will be strengthened to serve as a single point of contact or a one-stop agency for the SMEs.

9.61 The implementation of the SMIDP will require the concerted efforts of the SMEs themselves with the Government providing the facilitative environment. In this respect, the Government will continue to provide financial assistance, infrastructure facilities and support services. The Government will undertake a review of these facilities with a view to consolidating and streamlining them for greater efficacy in delivering assistance to the SMEs.

9.62 The Government will continue with the provision of industrial sites at affordable prices to SMEs. During the Plan period, the Government will provide RM131.9 million as soft loans to State Economic Development Corporations to

develop SME Industrial Parks. Emphasis will also be given to developing the entrepreneurial skills of SMEs so as to build up their capabilities and competitiveness. In this regard, more aggressive promotional efforts will be undertaken to encourage SMEs to participate in training programmes in view of the low take-up rate of the training fund during the Seventh Plan period. In the effort to create greater access to markets for SMEs, the widespread adoption of e-commerce applications will be promoted.

9.63 During the Plan period, the Government will continue to promote and upgrade Bumiputera SMEs. Existing programmes such as the Vendor Development Programme will be expanded. Integrated assistance packages, which may include financial support, training components and other support services, will be designed to meet the varied and specific needs of Bumiputera SMEs.

9.64 More focused efforts will be undertaken to enhance the competitiveness of SMEs in rural industries, particularly the handicraft and food products industries. New investments by the private sector will be required to modernize the SMEs and improve the quality and design of products. The Government will provide support by giving feedback on market information, training, R&D on products and infrastructure assistance. Large companies will be encouraged to supply simple machine tools to the SMEs to undertake contract manufacturing of small parts and components, thereby augmenting incomes in the rural areas. For the handicraft industry, existing craft centres will be used as a platform to strengthen the development of the industry through concomitant efforts on product innovation, promotion and marketing. In addition, selected villages will be identified as craft centres for the mass production of handicrafts for the local market as well as for exports.

IV. ALLOCATION

9.65 The development allocation to support industrial development in the Eighth Plan is RM2.6 billion, as shown in *Table 9-7*. The allocation will be utilized to enhance the competitiveness of industries and complement the efforts of the private sector. The development thrusts will focus on technology development, expanding industrial infrastructure and skills upgrading. In addition, programmes will be implemented to strengthen SMEs.

TABLE 9-7

DEVELOPMENT ALLOCATION FOR INDUSTRIAL DEVELOPMENT, 2001-2005
(RM million)

Programme	*7MP*		*8MP*
	Allocation	*Expenditure*	*Allocation*
Industrial Estates Development	591.7	534.7	248.0
Development of Industrial Infrastructure	126.7	88.3	95.0
SME Development	458.1	394.6	1,091.8
Domestic Investment Fund	319.0	288.2	670.0
Rural Industries	133.3	130.1	140.0
Training & Consultancy Services	120.8	109.3	241.0
Investment in Heavy Industries	331.5	310.0	24.2
Implementation of Action Plan for Industrial Technology Development	92.2	82.2	78.5
Wafer Fabrication Project Fund	11.5	10.0	10.0
Total	**2,184.8**	**1,947.4**	**2,598.5**

V. CONCLUSION

9.66 The enhancement of Malaysia's efforts to increasingly use knowledge-based processes and applications will necessitate the growth of high-technology industries. Enterprises will have to strengthen their operations and improve their capabilities in a trading environment that is becoming more liberalized and globalized. To sustain industrial development, the private sector will need to continuously enhance competitiveness and productivity in the manufacturing sector and related services. To support the efforts of the private sector, the Government will formulate industrial policies, strategies and programmes to promote the resilience and long-term competitiveness of the manufacturing sector. This will include further streamlining of administrative procedures and providing a conducive environment for investments.