



ENHANCING HUMAN CAPITAL

11

I. INTRODUCTION

11.01 During the Eighth Plan period, the economy maintained full employment and recorded growth in labour productivity. Employment expanded in line with economic growth, which was mainly contributed by the services and manufacturing sectors. The quality of the labour force improved with the increasing supply of educated and skilled human resource. Various initiatives were undertaken including the implementation of several training and retraining programmes to reduce skills mismatch and enhance the employability of labour, particularly graduates.

11.02 The quality of the nation's human capital will be the most critical element in the achievement of the National Mission, and thus human capital development will be a key thrust in the Ninth Plan period. Human capital development will be holistic; encompassing the acquisition of knowledge and skills or intellectual capital including science and technology (S&T) and entrepreneurial capabilities as well as the internalisation of positive and progressive attitudes, values and ethics through education, training and lifelong learning.

11.03 Capacity building will be strengthened to develop knowledgeable, skilled and innovative human capital to drive a knowledge-based economy. Emphasis will also be given to develop human capital that is progressive in thinking and attitude with strong ethics and universal values as espoused by *Islam Hadhari*. The implementation of lifelong learning programmes will be accelerated to encourage skills upgrading among all segments of society. Education and training delivery systems will be expanded, particularly in vocational and technical fields. National schools will be strengthened to become the *school of choice* for all Malaysians. Measures will be undertaken to enhance the quality of education and training to be at par with international best practices. Programmes will be implemented to develop human capital that is innovative and has high capability in S&T as well as strong entrepreneurial skills.

II. PROGRESS, 2001-2005

Population

11.04 The Malaysian population increased to 26.75 million in 2005, as shown in *Table 11-1*. The population growth rate continued to decline as a result of the decrease in total fertility rate to 2.76 in 2005. The life expectancy at birth of the population improved with male life expectancy increasing from 70.0 years in 2000 to 70.6 years in 2005 and female life expectancy from 75.1 years to 76.4 years.

TABLE 11-1
POPULATION SIZE AND AGE-STRUCTURE, 2000-2010
(million persons)

	2000	%	2005	%	2010	%	Average Annual Growth Rate (%)	
							8MP	9MP
Total Population	23.49		26.75		28.96		2.6	1.6
Citizens	22.08	100.0	24.36	100.0	26.79	100.0	2.0	1.9
Bumiputera	14.35	65.0	16.06	65.9	17.95	67.0	2.3	2.2
Chinese	5.76	26.1	6.15	25.3	6.52	24.3	1.3	1.2
Indian	1.70	7.7	1.83	7.5	1.97	7.4	1.6	1.4
Others	0.27	1.2	0.32	1.3	0.35	1.3	2.6	2.2
Non-Citizens ¹	1.41		2.39		2.17		11.0	-1.8
Age Structure								
0-14	8.00	34.0	8.72	32.6	9.18	31.7	1.7	1.0
15-64	14.56	62.0	16.88	63.1	18.42	63.6	3.0	1.8
65 and above	0.93	4.0	1.15	4.3	1.36	4.7	4.3	3.4
Dependency Ratio (%)	61.4		58.5		57.2			
Median Age (years)	22.4		23.3		24.2			
Total Fertility Rate	2.88		2.76		2.48			
Bumiputera	3.38		3.18		2.80			
Chinese	2.25		2.19		2.04			
Indian	2.46		2.34		2.15			
Urban (%)	62.0		63.0		63.8			
Rural (%)	38.0		37.0		36.2			

Source: Department of Statistics and Economic Planning Unit

Notes: ¹ This includes permanent residents, foreign workers with work permits, expatriates and foreign students.

Labour Force

11.05 The labour force increased to 11.3 million in 2005, as shown in *Table 11-2*. The quality of the labour force improved with the share having educational

TABLE 11-2
EMPLOYMENT BY SECTOR, 2000-2010
('000 persons)

Sector	2000	%	2005	%	2010	%	Average Annual Growth Rate (%)	
							8MP	9MP
Agriculture, Forestry, Livestock & Fishing	1,423.0	15.3	1,405.7	12.9	1,323.8	11.1	-0.2	-1.2
Mining & Quarrying	41.7	0.4	42.7	0.4	44.7	0.4	0.5	0.9
Manufacturing	2,565.8	27.7	3,132.1	28.7	3,594.7	30.0	4.1	2.8
Construction	752.2	8.1	759.6	7.0	764.7	6.4	0.2	0.1
Electricity, Gas & Water	75.0	0.8	93.0	0.8	103.5	0.9	4.4	2.2
Transport, Storage & Communications	461.6	5.0	631.2	5.8	701.5	5.9	6.5	2.1
Wholesale & Retail Trade, Hotels & Restaurants	1,582.9	17.1	1,927.2	17.7	2,171.0	18.0	4.0	2.4
Finance, Insurance, Real Estate & Business Services	500.2	5.4	732.3	6.7	826.8	6.9	7.9	2.5
Government Services	981.0	10.6	1,052.8	9.7	1,109.8	9.3	1.4	1.1
Other Services	891.2	9.6	1,118.2	10.3	1,335.5	11.1	4.6	3.6
Total	9,274.6	100.0	10,894.8	100.0	11,976.0	100.0	3.3	1.9
Labour Force	9,571.6		11,290.5		12,406.8		3.4	1.9
Local Labour	8,820.6		9,512.9		10,864.3		1.5	2.7
Foreign Labour	751.0		1,777.6		1,542.5		18.8	-2.8
Foreign Worker with Work Permit	732.6		1,742.1		1,500.0		18.9	-2.9
Expatriate	18.4		35.5		42.5		14.0	3.7
Unemployment	297.0		395.7		430.8			
Unemployment Rate (%)	3.1		3.5		3.5			
Labour Force Participation Rate (%)	65.7		66.7		67.3			
Male	85.7		86.6		87.4			
Female	44.7		45.7		46.3			

Source: Economic Planning Unit

attainment at tertiary¹ level increasing from 13.9 per cent in 2000 to 20.0 per cent in 2005. The economy registered full employment with the unemployment rate at 3.5 per cent in 2005. Labour shortages, especially for the low skilled, resulted in the increased employment of foreign workers. Foreign workers with work permits increased to 1.7 million in 2005 with the manufacturing sector as the largest employer, accounting for 31.0 per cent. The number of expatriates increased to 35,480, of whom 52.6 per cent were in the services sector.

Employment

11.06 Employment increased at an average rate of 3.3 per cent per annum with 1.6 million new jobs created, as shown in *Table 11-2*. The services and the manufacturing sectors generated 1,062,800 jobs and 566,300 jobs, respectively. Employment in the agriculture sector contracted by 17,300 jobs in 2005 due to the increased use of labour-saving technologies and better farm management. The structure of employment by major occupational categories reflected the increased demand for highly skilled human resource, as shown in *Table 11-3*.

Labour Productivity

11.07 During the Plan period, labour productivity improved in all sectors of the economy. Labour productivity in the agriculture sector increased, attributed among others, to good agricultural practices, utilisation of new technologies and the shift towards integrated farming and large-scale commercial production activities. In the manufacturing sector, growth in labour productivity was due to improvements in the quality of the workforce and better organisational management as well as increased labour efficiency. In the services sector, wider utilisation of information and communications technology (ICT) such as e-banking and e-commerce as well as implementation of innovative work processes, mergers and acquisitions, particularly in banking and telecommunication subsectors, contributed to productivity growth.

Human Capital Development

Education Programmes

11.08 *Pre-school and Primary Education.* Enrolment of pre-school children aged four to six increased to 702,897 in 2005, as shown in *Table 11-4* with the public sector accounting for 51.3 per cent. To ensure quality, the adoption of the National Pre-school Curriculum for children aged five to six years was

¹ Refers to those with degree, diploma, *Sijil Tinggi Persekolahan Malaysia*, matriculation, A-level and post-*Sijil Pelajaran Malaysia* certificate.

TABLE 11-3
EMPLOYMENT BY MAJOR OCCUPATIONAL GROUP¹, 2000-2010
('000 persons)

Occupational Group	'000 persons			% of Total			Average Annual Growth Rate (%)	
	2000	2005	2010	2000	2005	2010	8MP	9MP
Senior Officials & Managers ²	639.9	871.6	1,018.0	6.9	8.0	8.5	6.4	3.2
Professionals ³	537.9	680.9	778.4	5.8	6.2	6.5	4.8	2.7
Technicians & Associate Professionals ⁴	1,112.9	1,430.5	1,580.8	12.0	13.1	13.2	5.1	2.0
Clerical Workers ⁵	890.4	991.4	1,018.0	9.6	9.1	8.5	2.2	0.5
Service Workers & Shop & Market Sales Workers ⁶	1,205.6	1,558.0	1,892.2	13.0	14.3	15.8	5.3	4.0
Skilled Agricultural & Fishery Workers ⁷	1,391.2	1,376.0	1,344.9	15.0	12.6	11.2	-0.2	-0.5
Craft & Related Trade Workers ⁸	844.0	1,263.8	1,604.8	9.1	11.6	13.4	8.4	4.9
Plant & Machine Operators & Assemblers ⁹	1,493.2	1,568.9	1,628.7	16.1	14.5	13.6	1.0	0.8
Elementary Occupations ¹⁰	1,159.5	1,153.7	1,110.2	12.5	10.6	9.3	-0.1	-0.8
Total	9,274.6	10,894.8	11,976.0	100.0	100.0	100.0	3.3	1.9

Source: Economic Planning Unit

- Notes: ¹ This classification is based on Malaysia Standard Classification of Occupations 1998.
² Includes general managers, department managers and senior government officials.
³ Includes graduate teaching professionals, accountants and auditors and computer system designers and analysts.
⁴ Includes non-graduate teachers, supervisors and engineering and computer support technicians.
⁵ Includes administrative clerks, accounting and finance clerks and telephone operators.
⁶ Includes cooks, travel guides and waiters.
⁷ Includes farm workers, plantation workers and forestry workers.
⁸ Includes mechanics and fitters, carpenters and tailors.
⁹ Includes equipment assemblers, drivers and machine operators.
¹⁰ Includes street vendors, domestic helpers and cleaners and construction and maintenance labourers.

made compulsory at all pre-schools beginning 2003. Enrolment in primary schools increased to 3.0 million in 2005. The construction of 9,930 new classrooms contributed to the improvement in the class-classroom ratio from 1:0.90 in 2000 to 1:0.92 in 2005.

11.09 To encourage greater participation and improve the performance of students in primary schools, various educational support programmes such as the Textbook Loan Scheme, boarding facilities, *Skim Baucer Tuisyen* and *Tabung Kumpulan Wang Amanah Pelajar Miskin* were provided to students, particularly from low-income households, remote areas and the Orang Asli. Enrolment of Orang Asli at the primary level increased from 21,704 in 2000 to 26,210 in 2005 while at the secondary level from 5,971 to 8,490. In addition, the *Program Pembangunan Pendidikan Luar Bandar Sabah dan Sarawak* provided integrated infrastructure and facilities to rural and remote schools.

11.10 In order to inculcate moral and ethical values as well as nurture responsible citizens, various programmes were introduced. The j-QAF² programme was introduced in 2005 to Muslim students at the primary level, starting with Year 1. The *Sivik dan Kewarganegaraan* subject was also introduced in 2005 to students in Year 4 primary and Form 1 secondary schools to create consciousness regarding their roles, rights and responsibilities towards society as well as to inculcate patriotism.

11.11 *Secondary Education.* Enrolment in Government and Government-assisted schools increased to 2.1 million in 2005, as shown in *Table 11-4*. Enrolment in the vocational and technical schools increased to 72,827 in 2005. With the construction of 9,936 classrooms, the class-classroom ratio improved from 1:0.83 in 2000 to 1:0.85 in 2005. The proportion of science stream students increased from 32.2 per cent in 2000 to 45.6 per cent in 2005.

11.12 *Special Education.* The Special Education Integration Programme was expanded to integrate children with special needs into the normal school environment. Under this programme, the national curriculum was adopted for visually and hearing impaired children in primary and secondary schools. An adaptive curriculum was used for children with learning disabilities.

11.13 *Quality Improvement.* The *Kurikulum Bersepadu Sekolah Rendah (KBSR)* and *Kurikulum Bersepadu Sekolah Menengah (KBSM)* were reviewed to strengthen the adoption of the student-centred learning approach. The teaching of Science and Mathematics in English, commenced in 2003 was extended to students in Year 1 to Year 3, lower secondary and Form Six as well as in matriculation colleges in 2005.

² Refers to the objective of mastering *Jawi* reading and writing, mastering and completing *Al-Quran* recitation, acquiring skills in Arabic language and strengthening as well as internalising the practice of *fardhu ain*.

TABLE 11-4

STUDENT ENROLMENT¹ IN PUBLIC EDUCATION INSTITUTIONS, 2000-2010

Level of Education	Number of Students			% of Total			Increase (%)	
	2000	2005	2010	2000	2005	2010	8MP	9MP
Pre-school² (4-6)	539,469	702,897	784,200	9.8	11.6	11.9	30.3	11.6
Primary	2,907,123	3,044,977	3,195,977	52.6	50.0	48.3	4.7	5.0
Lower Secondary	1,256,772	1,330,229	1,425,231	22.7	21.9	21.6	5.8	7.1
Government & Government-aided Schools	1,251,466	1,322,212	1,412,235					
MARA Junior Science Colleges	5,306	8,017	12,996					
Upper Secondary	707,835	763,618	881,247	12.8	12.6	13.3	7.9	15.4
Government & Government-aided Schools (Academic)	637,292	678,646	774,550					
MARA Junior Science Colleges	10,118	12,145	21,470					
Government & Government-aided Schools (Technical & Vocational)	60,425	72,827	85,227					
Post-secondary	94,544	199,636	277,904	1.7	3.3	4.2	111.2	39.2
Government & Government-aided Schools	48,035	144,194	202,904					
Pre-Diploma & Pre-University Courses	46,509	55,442	75,000					
Teacher Education	23,740	34,672	45,899	0.4	0.6	0.7	46.0	32.4
Total	5,529,483	6,076,029	6,610,458	100.0	100.0	100.0	9.9	8.8

Source: Ministry of Education

Notes: ¹ Enrolment refers to total student population in that particular year.

² Includes private pre-schools.

11.14 *Teacher Development.* The teacher training curriculum and co-curriculum were strengthened to develop teachers as competent managers of the teaching and learning process and capable of utilising ICT to create innovative teaching techniques. The implementation of the *Program Pensiswazahan Guru* was continued to increase the number of teachers with degree qualifications.

11.15 *Tertiary Education.* The capacity of existing universities was expanded to provide greater access to higher education. In addition, new universities, university colleges, branch campuses, polytechnics as well as community colleges were established, as shown in *Table 11-5*.

11.16 Enrolment at all levels of study in public and private tertiary education institutions increased to 731,698 in 2005, as shown in *Table 11-6*. At the post-graduate level, enrolment for masters and doctor of philosophy (PhD) programmes accounted for 16.2 per cent of enrolment at all degree levels in public institutions

TABLE 11-5

TERTIARY EDUCATION INSTITUTIONS¹, 2000 & 2005

<i>Institution</i>	<i>2000</i>	<i>2005</i>
Public:		
University	11	11
University College	0	6
Polytechnic	11	20
Community College	0	34
Total	22	71
Private:		
University	5	11
University College	0	11
Branch Campus	3	5
College	632	532
Total	640	559
TOTAL	662	630

Source: Ministry of Higher Education

Notes: ¹ Refers to university, university college, branch campus, college, polytechnic and community college.

of higher education³ and 3.8 per cent in private institutions of higher education. The total output from public and private tertiary education institutions at all levels of study increased from 130,161 in 2000 to 252,730 in 2005, of which 58.5 per cent was from private tertiary education institutions. In 2005, there was an estimated 11,900 Government-sponsored students enrolled in institutions of higher education abroad.

11.17 To facilitate access to higher education, a total of RM7.9 billion was disbursed by the *Perbadanan Tabung Pendidikan Tinggi Negara* (PTPTN) during the Plan period, benefiting 678,467 students. In addition, government agencies, government-linked companies, state governments as well as private organisations such as companies and banks also provided financial assistance.

11.18 *Improving the Supply of S&T Human Resource.* Students enrolled in science and technical-related programmes at first degree and diploma levels in public and private tertiary education institutions increased from 229,014 in 2000 to 291,546 in 2005. At post-graduate level, enrolment in science and technical-related programmes increased from 12,602 to 18,910.

³ Refers to university, university college, branch campus and college.

TABLE 11-6
ENROLMENT IN TERTIARY EDUCATION INSTITUTIONS
BY LEVELS OF STUDY, 2000 - 2010

Level of Study	Number of Students						Average Annual Growth Rate (%)						
	2000			2005			2010		2001-2005		2006-2010		
	Public	Private	Total	Public	Private	Total	Public	Private	Public	Private	Public	Private	
Certificate	23,816	81,754	105,570	37,931	94,949	132,880	141,290	143,480	284,770	9.8	3.0	30.1	8.6
Diploma	91,398	117,056	208,454	98,953	131,428	230,381	285,690	188,680	474,370	1.6	2.3	23.6	7.5
First Degree	170,794	59,932	230,726	212,326	110,591	322,917	293,650	134,550	428,200	4.4	13.0	6.7	4.0
Masters	24,007	2,174	26,181	34,436	4,202	38,638	111,550	5,770	117,320	7.5	14.1	26.5	6.5
PhD	3,359	131	3,490	6,742	140	6,882	21,410	270	21,680	15.0	1.4	26.0	14.0
Total	313,374	261,047	574,421	390,388	341,310	731,698	853,590	472,750	1,326,340	4.5	5.5	16.9	6.7

Source: Ministry of Higher Education

11.19 The increase in enrolment for post-graduate studies, especially in the science and technical-related fields as well as the expansion of post-doctoral fellowships, contributed to increased research and development (R&D) activities in public universities and university colleges. R&D grants of RM676.1 million were allocated to enhance research activities. A total of 1,631 R&D projects was undertaken under the Intensification of Research in Priority Areas (IRPA) programme. This programme enabled 92 and 338 students at Ph.D and masters level, respectively to obtain their degrees by research. During the Plan period, 27 institutes were established such as Institute of Gerontology, Institute of Space Science and Institute of *Halal* Food to become centres of excellence.

11.20 *Quality Enhancement.* Efforts were undertaken to enhance the quality of education in public and private institutions of higher education. The Malaysian Qualification Framework (MQF) was developed for assuring the standards of qualifications and quality of delivery. New programmes were designed in consultation with industry while institutions of higher education were required to review their curricula every three to five years. Academic programmes were restructured to allow students to study for double major, major-minor, double and joint award degree.

11.21 *Lifelong Learning.* Lifelong learning programmes with flexible entry requirements were provided by community colleges as well as by public and private institutions of higher education such as the Open University of Malaysia (OUM) and University Tun Abdul Razak (UNITAR). Community colleges offered short-term courses while institutions of higher education provided extension education programmes.

11.22 *Regional Centre of Educational Excellence.* Measures were undertaken to promote Malaysia as a regional education hub as well as a centre of educational excellence. These included the implementation of a quality assurance system, promotional activities and the establishment of education promotion offices in Beijing, Dubai, Ho Chi Minh City and Jakarta. With these efforts, enrolment of foreign students in education institutions increased to 50,380 in 2005. Of this total, 82 per cent were in institutions of higher education, mainly from East Asia and Pacific, followed by ASEAN countries.

Training Programmes

11.23 *Skills Training.* The capacity of public training institutions for pre-employment training was expanded with the establishment of 20 skills training institutions and the upgrading of 10 institutions. As a result, the output from public training institutions increased to 38,765 in 2005, as shown in *Table 11-7.*

TABLE 11-7

OUTPUT OF SKILLED AND SEMI-SKILLED HUMAN RESOURCE BY COURSE, 2000-2010

Course	Number of Trainees						Average Annual Growth Rate (%)					
	2000		2005		2010		2001-2005		2006-2010			
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private		
Engineering	16,428	9,730	31,633	17,337	48,970	56,330	44,627	100,957	14.0	12.2	12.2	20.8
Mechanical	9,606	2,232	17,380	4,866	22,246	30,966	10,608	41,574	12.6	16.9	12.2	16.9
Electrical	5,234	7,378	11,677	12,221	23,898	19,828	33,498	53,326	17.4	10.6	11.2	22.3
Civil	1,588	120	2,576	250	2,826	5,536	521	6,057	10.2	15.8	16.5	15.8
Building Trades	1,417	547	2,566	1,200	3,766	4,232	2,633	6,865	12.6	17.0	10.5	17.0
Information & Communications Technology	903	7,520	1,016	11,844	12,860	1,853	12,886	14,739	2.4	9.5	12.8	1.7
Others	2,133	928	3,550	2,730	6,280	9,379	1,630	11,009	10.7	24.1	21.4	-9.8
Total	20,881	18,725	38,765	33,111	71,876	71,794	61,772	133,566	13.2	12.1	13.1	13.3

Source: Manpower Department, Ministry of Youth and Sports, National Vocational Training Council, Ministry of Agriculture and Agro-Based Industry, Majlis Amanah Rakyat and Construction Industry Development Board Malaysia

11.24 Intake into courses at *Sijil Kemahiran Malaysia* Level 4 and diploma in advanced public training institutions increased to 7,110 in 2005. In addition, state skills development centres (SDCs) also expanded their capacity to train more skilled workers with intake for pre-employment courses increasing to 11,060 in 2005. Under the *Pembangunan Sumber Manusia Berhad* (PSMB) Apprenticeship Scheme, a total of 2,735 trainees was trained. During the Plan period, a total of 286,669 skilled workers was produced.

11.25 The Government introduced the double-shift training programme in 2005 to increase training opportunities for school leavers as well as the supply of skilled human resource. A total of 49 training institutions involving public training institutions and SDCs conducted the programme. During the Plan period, the Skills Development Fund disbursed financial assistance totalling RM644.6 million, benefiting 135,496 trainees.

11.26 *Quality Improvement.* To improve and standardise the quality of training for instructors, the National Occupational Skills Standards (NOSS) for instructors was developed and retraining programmes under the Skills Development Programme for Instructor and Vocational Training Officer and the Look East Policy were conducted. Beginning 2005, NOSS was developed based on a new format to improve the quality of training. In addition, the National Dual Training System (NDTS) was launched in July 2005 to strengthen the training delivery system and ensure that the training provided was in line with industry requirements.

11.27 *Retraining and Skills Upgrading.* The PSMB intensified its efforts to encourage more employers to retrain and upgrade the skills of their employees. In this regard, the coverage of the Human Resource Development Fund (HRDF) was expanded to include firms in manufacturing-related services such as logistics and market support. The Government continued to provide financial assistance in the form of matching grants to small and medium enterprises (SMEs). Financial assistance was also provided under the Small and Medium Industries Development Corporation (SMIDEC) Skills Upgrading Programme.

III. PROSPECTS, 2006-2010

11.28 With increasing competition in the global market, the economy will have to further strengthen its competitiveness and venture into new growth areas. This will require world class human capital that is knowledgeable and highly skilled, flexible and creative as well as imbued with positive work ethics

and spiritual values. Therefore, during the Ninth Plan period, capacity building will be accorded high priority. Towards this end, comprehensive improvement of the education, training and lifelong learning delivery systems will be undertaken. Emphasis will also be given to the development of entrepreneurial skills at all levels of education and training to facilitate the creation of an entrepreneurial society. Lifelong learning programmes will be expanded to provide greater opportunities for individuals to improve and add value to themselves through continuous acquisition of knowledge and skills.

Human Capital Development Policy Thrusts

11.29 Investment in human capital will be given greater emphasis during the Plan period to sustain economic resilience and growth, drive a knowledge-based economy as well as foster a community with an exemplary value system. This will be achieved through greater collaboration between the Government, the private sector and the community. In this regard, the human capital policy development thrusts are:

- ❑ *undertaking comprehensive improvement of the education and training delivery systems;*
- ❑ *strengthening national schools to become the school of choice for all Malaysians to enhance national unity;*
- ❑ *implementing measures to bridge the performance gap between rural and urban schools;*
- ❑ *creating universities of international standing and ensuring that tertiary institutions meet the needs of employers;*
- ❑ *providing more opportunities and access to quality education, training and lifelong learning at all levels;*
- ❑ *nurturing an innovative society with strong S&T capabilities and the ability to acquire and apply knowledge;*
- ❑ *strengthening national unity and developing a society with a progressive outlook, exemplary value system and high performance culture as well as with an appreciation for tradition and heritage; and*
- ❑ *enhancing the forum of engagement and consultation between the Government, private sector, parents and community in human capital development.*

Population

11.30 During the Plan period, the population is projected to increase to 28.96 million in 2010, growing at an average rate of 1.6 per cent per annum, lower than during the Eighth Plan period, as shown in *Table 11-1*. The lower rate is due to the decline in total fertility rate to 2.48 in 2010, which can be attributed to more Malaysians pursuing higher education and career advancement leading to delayed marriages as well as having smaller families.

11.31 The population in the working age group of 15-64 years will account for 63.6 per cent of total population while those aged 65 years and above will increase to 4.7 per cent in 2010. The increasing share of the aged indicates the need to increase support and facilities for the elderly. With the share of the population living in urban areas projected to increase to 63.8 per cent in 2010, demand for infrastructure and housing facilities as well as education and employment opportunities is expected to increase.

11.32 Life expectancy at birth is expected to improve to 71.0 years in 2010 for male and 77.1 years for female. This is largely attributed to improvements in accessibility to health and medical services as well as increased emphasis on preventive care services.

Labour Force

11.33 The quality of the labour force will be improved with the increasing share of the labour force with educational attainment at tertiary level to meet the demand of a knowledge-based economy. Recognising the potential of women in increasing the supply of local labour, greater female participation in the labour force will be encouraged. Overall labour force participation rate (LFPR) is expected to be 67.3 per cent in 2010 with the LFPR for male at 87.4 per cent and female LFPR at 46.3 per cent in 2010. The labour force is estimated to increase to 12.4 million in 2010.

11.34 In line with the policy to shift to technology-intensive and higher value added activities, there will be judicious employment of foreign workers. The number of foreign workers will be reduced gradually to provide greater employment opportunities to local workers and to reduce administration costs as well as the outflow of foreign exchange. Local labour, particularly graduates, will have to change their mindset so as not to be too choosy in selecting occupations.

11.35 A review of the labour legislation will be undertaken to promote a conducive environment for productivity improvement and enhancement of

competitiveness. The review will also ensure that the industrial relations practices keep pace with the emerging business environment as well as contribute to social stability and facilitate labour mobility and flexibility in working arrangements.

11.36 Strategic measures to attract and retain knowledge workers who are highly mobile will be undertaken to increase the supply of knowledgeable and highly skilled human capital. Among the measures to source global talents will include encouraging Malaysians to return as well as collaborating with foreign scientists to increase indigenous R&D capability and capacity.

11.37 Efforts will be intensified to enable persons with disabilities to engage in productive economic activities and to be self-reliant. These include providing more vocational training programmes, particularly in skills demanded by the industry.

Employment

11.38 Employment is expected to grow at an average rate of 1.9 per cent per annum, contributing 1.1 million jobs during the Plan period, particularly those requiring tertiary education. The economy is expected to maintain full employment with the unemployment rate at 3.5 per cent in 2010.

11.39 The services and the manufacturing sectors will create 693,400 and 462,600 jobs, respectively. In the services sector, the wholesale and retail trade, hotels and restaurants subsector will be the largest contributor to employment at 18.0 per cent, growing at an average rate of 2.4 per cent per annum. In the manufacturing sector, the expected increase in global demand, particularly for electrical and electronics as well as for wood products, will contribute to employment growth. The demand for labour in the agriculture sector is expected to contract by 1.2 per cent per annum due to greater utilisation of modern technology, precision farming and mechanisation.

11.40 The demand for knowledge workers, which comprise senior officials and managers, professionals, technicians and associate professionals categories, is expected to grow at an average rate of 2.5 per cent per annum. The demand for workers in the professionals category is expected to be 97,500, as shown in *Table 11-3*.

11.41 Recognising the importance of self-employment in employment creation and economic growth, efforts will be intensified to create more self-employment opportunities. Business opportunities for self-employment and entrepreneurship including in petty trading, SMEs, agriculture and services will be promoted.

The inculcation of entrepreneurial values and changing the mindset so as to view self-employment as a viable alternative to salaried employment will be intensified including in institutions of higher education. In addition, a special entrepreneurship training programme will be implemented for unemployed graduates.

11.42 *Labour Market Information.* The implementation of Electronic Labour Exchange (ELX) will be improved for effective placement of jobseekers as well as dissemination of labour market information to ensure efficient functioning of the labour market. In this regard, education and training institutions will provide information on their graduates to the ELX including their employment status to facilitate job placement. Effective measures will be undertaken to disseminate information on ELX to stakeholders including employers, students and jobseekers. Employers will be encouraged to make regular use of ELX to register job vacancies and provide feedback on placement. A mechanism will be established to monitor and ensure optimum utilisation of ELX. In addition, greater efforts will be undertaken to facilitate graduates, particularly those who have participated in Government-sponsored education and training programmes to secure employment.

Accelerating Lifelong Learning

11.43 The implementation of lifelong learning programmes will be accelerated to enable all segments of society to continuously learn and acquire knowledge and skills. Lifelong learning infrastructure such as community colleges will be expanded and upgraded. The use of schools and community centres for lifelong learning will also be encouraged. In addition, e-learning and distance education will be further promoted to increase accessibility. In order to change the attitude and mindset of individuals towards continuous learning, measures to inculcate a learning culture will be implemented at all levels of society.

11.44 Public institutions of higher education will establish centres for continuing education and continue to offer more places with flexible entry requirements up to 10 per cent of intake at diploma and degree levels. The OUM and UNITAR will be encouraged to offer more programmes at masters and Ph.D levels to cater to the needs of working people. A National Council for Lifelong Learning will be established to provide policy direction and coordinate lifelong learning activities. Private education and training providers as well as non-governmental organisations (NGOs) will also be encouraged to provide lifelong learning programmes. In addition, employers will be encouraged to promote lifelong learning among their employees.

Retraining and Skills Upgrading

11.45 In order to enhance competitiveness and economic resilience, labour productivity will be increased through efficient utilisation of labour, skills upgrading, improving management capabilities, intensifying R&D and innovation activities as well as increasing utilisation of technology and ICT in all sectors of the economy. Firms will also be encouraged to implement the productivity-linked wage system. In this regard, the PSMB will widen the coverage of the HRDF to include industries such as port services, multimedia industries, automotive industries as well as accounting and audit firms. In addition, PSMB will develop modular training programmes, which can be conducted at the workplace. Employers, especially SMEs, will also have to undertake measures to accelerate training and retraining of their employees due to rapid technological changes and increasing need for skilled workers.

11.46 The capacity and capability of public training institutions will be strengthened to meet the training needs of public sector employees. Existing training programmes will be continued and new programmes will be offered with special emphasis on values and ethics. Towards this end, *Institut Tadbiran Awam Negara* (INTAN) will expand their training programmes to include courses such as developing high performance employees, customer services and Islamic finance. To facilitate the development of lifelong learning among civil servants, INTAN will lead the implementation of e-learning initiatives based on the Public Sector e-Learning Blueprint. To further enhance the management skills and professionalism of education personnel, *Institut Aminuddin Baki* will intensify its training efforts.

11.47 Training in specialised areas such as customs, safety and security, health, property evaluation, diplomatic relations, and professional and technical fields will continue to be provided by the respective training institutions. These institutions include *Akademi Kastam DiRaja Malaysia*, *Akademi Bomba dan Penyelamat Malaysia*, *Akademi Imigresen Malaysia*, *Institut Kesihatan Umum*, *Institut Penilaian Negara*, Institute of Diplomacy and Foreign Relations and the IKRAM Training and Infrastructure Development Institute.

11.48 Private training institutions will continue to provide management and other specialised training to meet the demand for highly competent managers to ensure industries become more resilient and competitive in the global market. In this regard, institutions like the Malaysian Institute of Management, Institute of Bankers, FMM Institute of Manufacturing and Malaysia Institute of Human Resource Management will be encouraged to expand and strengthen their

training programmes. The National Productivity Corporation will also expand their training capacity.

11.49 During the Plan period, the entrepreneurial training programmes will be intensified to promote greater self-reliance and competitiveness, particularly among Bumiputera entrepreneurs. Entrepreneurial training will be expanded, among others, by increasing the capacity of the *Institut Keusahawanan Negara*. As a coordinating agency for entrepreneurial training, the institute will enhance the quality of and standardise the entrepreneurial training programmes. The training programmes will also emphasise positive values and ethics. In addition, programmes will be undertaken to change the perception of society, particularly school leavers and graduates, on self-employment. To encourage and facilitate school leavers and graduates in self-employment and foster entrepreneurship, integrated information on self-employment will be provided.

11.50 During the Plan period, with the greater focus on agricultural development, agricultural agencies will expand their retraining and skills upgrading programmes for farmers and entrepreneurs as well as their employees. The existing training programmes offered by various agricultural agencies will be reviewed with the objective, among others, to strengthen commercialisation and management skills, improve environmental management as well as place greater emphasis on ethics and positive values. To intensify and strengthen the provision of training in agricultural-related areas, agricultural training institutions will offer part-time training programmes and conduct short-courses. Towards this end, training needs analysis will be conducted to measure the skills gap as well as identify the types and level of skills required in the agriculture sector.

Education Programmes

11.51 *Pre-school Education.* Pre-school education programmes will be expanded to provide full coverage for children in the five to six years age group. Greater focus will be given towards pre-school teacher training programmes including those from other agencies in order to enhance the quality of teaching and learning as well as to meet the increasing demand for trained teachers. To ensure the provision of quality pre-school education, assistant pre-school teachers will be deployed to all Government-assisted pre-schools. In addition, early childhood development programme for children aged four and below will be introduced.

11.52 *Primary and Secondary Education.* The main focus of primary and secondary education will be to further increase access to quality education, particularly in Sabah and Sarawak as well as in rural areas. In addition, greater emphasis will be given to developing a strong foundation in Mathematics,

Science and the English language as well as to instil good ethics and discipline among school children. In line with the policy of compulsory primary education, enrolment is expected to increase to 3.2 million in 2010, as shown in *Table 11-4*. Enrolment at the secondary education level will increase to 2.3 million. Measures will also be undertaken to reduce and eventually eliminate the incidence of school drop-outs to ensure that all students complete at least 11 years of schooling.

11.53 *Special Education*. Educational opportunities for children with special needs will be expanded by opening special classes in regular schools to enable these children to adapt to the normal school environment. To improve the quality of teaching and learning, more teachers will be trained and the curriculum for special education will be further improved.

11.54 *Quality Improvement*. National schools will be strengthened to become the *school of choice* for all ethnic groups to enhance national unity. Towards this end, language subjects, namely Mandarin and Tamil, will be made available. The j-QAF programme will be expanded for Muslim students in primary schools and moral education provided to Muslim and non-Muslim students to imbue them with religious knowledge and high moral values. *Sivik dan Kewarganegaraan* subject will also be expanded to Year 5 and Year 6 in primary schools and secondary schools.

11.55 The implementation of the school-based assessment system will be accelerated to enable continuous evaluation and support the development of creativity as well as analytical and problem-solving skills. The KBSR and KBSM curricula and co-curricular activities will be improved in consultation with educationists, community, parents as well as those from the industry to keep pace with changing needs. The KBSM curricula and co-curricular activities will incorporate programmes and activities for early exposure to the world of work and career options as well as involvement in community services and charity work to produce students with a more balanced outlook.

11.56 During the Plan period, the *Program Pempbestarian Sekolah* refers to the process of leveraging on all existing ICT initiatives such as the smart school project, computerisation project, utilising ICT in the teaching and learning of Science and Mathematics in English, SchoolNet and MySchoolNet to enhance the quality of education. *Program Pempbestarian Sekolah* will be implemented in all primary and secondary schools to enable teachers to integrate ICT in teaching, learning and management.

11.57 Measures will be undertaken to bridge the performance gap between students in rural and urban schools, especially in Mathematics, Science and the English language. All dilapidated schools will be replaced to provide a

conducive teaching and learning environment. In addition, experienced teachers will be deployed to schools in rural areas while there will be compulsory posting for newly recruited teachers to rural areas for a specified period. An allocation of RM690 million will be provided for teachers quarters with RM143 million for the construction of teachers quarters in the remote areas of Sabah and Sarawak. Quality teaching and learning materials will be provided including upgrading and maximisation of school library resources to enrich and enliven lessons in classrooms. Public library infrastructure and services will be upgraded and expanded to all districts, *mukim* and villages to enable students and the public to have greater access to reading materials.

11.58 *Teacher Development.* The implementation of the *Program Khas Pensiswazahan Guru* will be accelerated to increase the quality and professionalism of teachers and to achieve the target of making all secondary school teachers and 25 per cent primary school teachers as graduate teachers by 2010. The teacher training curriculum will be reviewed to improve subject content, enhance pedagogical skills and enable greater application of ICT in education. The teaching school concept will be introduced to provide greater opportunities for lecturers and trainees to experiment with teaching and learning innovations in an actual classroom environment and to conduct collaborative research. In addition, advanced training programmes in various aspects of education will be implemented to encourage teachers to continuously enhance their professionalism.

11.59 *Tertiary Education.* Greater access to tertiary education will be provided to achieve the target of 40 per cent participation rate of the age group 17-23 years in 2010. Enrolment at the post-graduate level will be expanded to meet the target of 25 per cent of the total enrolment at degree levels in 2010. A special programme will be implemented to increase the enrolment of post-graduate students, particularly in S&T programmes. During the Plan period, enrolment in tertiary education institutions at all levels is expected to increase to 1,326,340 in 2010 with 32.3 per cent at first degree and 35.8 per cent at diploma levels. To cater for the projected increase in demand for associate professionals and technicians, more courses, particularly at the diploma level, will be offered.

11.60 *Financing of Education.* The PTPTN will continue to provide financial assistance to facilitate students to acquire higher education at public and private institutions of higher education, particularly in critical areas. Recognising that the provision of education is not the sole responsibility of the Government and the rising cost of higher education, parents will be further encouraged to save for their children's education.

11.61 *Enhancing Quality.* Measures will be undertaken to enhance the quality of public and private institutions of higher education to be at par with world renowned universities. Towards this end, the quality of institutions of higher education will be benchmarked against international standards to enable these institutions to become globally competitive. Institutions of higher education will continuously audit their quality through a rigorous rating system to nurture competition in the pursuit of excellence. To support the implementation of the MQF and to establish a unified quality assurance system, the Malaysian Qualifications Agency will be established.

11.62 Institutions of higher education will design their academic programmes and develop their curricula based on market requirement to ensure the employability of graduates. These programmes will be implemented with greater collaboration and active support from industry and employer associations. In addition, students will be given early exposure to workplace environment through a minimum of four months internship and structured attachment programmes. The quality of academic staff will be improved through more staff development programmes in order to enhance their knowledge and skills including pedagogy and assessment skills. The number of academic staff with PhD qualification in public universities will be increased to achieve the target of 60 per cent of total academic staff by 2010. Private education providers will also be encouraged to employ more academic staff with PhD qualification and upgrade the qualifications of their staff.

11.63 Institutions of higher education will undertake measures to increase the proficiency of students in English and enhance their ability to access knowledge and undertake research. Languages such as Mandarin, Tamil and Arabic as well as other foreign languages will be offered to undergraduates to encourage multilingualism in order to be competitive in the global market.

11.64 Public institutions of higher education and their academic and non-academic staff will increase global outlook and international engagement with renowned international institutions to enable them to benchmark with best practices globally. The public university governance system will be reviewed to create an environment that encourages, among others, institutional diversity, creativity and innovativeness in the pursuit of excellence. The use of ICT and technology-mediated methods will be intensified to facilitate intellectual engagement as well as discovery and application of knowledge.

11.65 *Improving Capability in S&T.* The research and innovative capability of local institutions of higher education will be strengthened to develop indigenous capacity building, particularly in key technology areas and to nurture an innovative

society with a strong S&T capability. Towards this end, the enrolment of students in S&T programmes at all levels will be increased to facilitate the creation of a critical mass of research scientists and engineers (RSEs). This will provide the potential source for R&D activities and to meet the targeted ratio of 50 RSE per 10,000 labour force in 2010.

11.66 Greater collaboration in research will be undertaken between public institutions of higher education and the local industry and research institutes as well as with reputable foreign research institutions, universities and firms. Private institutions of higher education will be encouraged to collaborate in research with public institutions of higher education. *Universiti Malaya, Universiti Putra Malaysia, Universiti Kebangsaan Malaysia and Universiti Sains Malaysia* will be designated as research universities. These universities will be further developed to be at par with world renowned universities.

11.67 *Developing Regional Centre of Excellence for Education and Training.* Efforts will be intensified to develop Malaysia into a regional centre for excellence in education and training through smart public-private partnership. A dedicated agency will be established to promote and export higher education through more strategic marketing and branding of educational products in order to attract a target of 100,000 foreign students at all levels including the school level by 2010. Private education and training providers will be required to enhance their quality as well as specialise and offer more high-end courses with competitive fee structures to attract foreign students.

Skills Training Programme

11.68 An adaptable, trainable and multi-skilled workforce is required as industries leverage on technological advancements, new management systems and production methods to increase their competitive edge in the global market. Such a workforce is also a prerequisite to enhance Malaysia's competitiveness in attracting foreign direct investment and encourage reinvestment. During the Plan period, the capacity and efficiency of the training delivery system will be enhanced by expanding public training institutions, increasing the number of advanced training courses offered, strengthening quality assurance and encouraging greater private sector participation.

11.69 *Increasing Accessibility.* Access to industrial skills training will be increased to expand the supply of highly skilled human resource, particularly at diploma and advanced diploma levels. The capacity of advanced training institutions will be expanded and upgraded and training programmes will be redesigned to meet the increasing demand for skilled workers with entrepreneurial skills. Private training providers will continue to complement Government efforts through the provision of quality training.

11.70 The implementation of the NDTs will be intensified to double the intake of trainees each year through increased participation of industries, particularly SMEs. The coverage of the NDTs will also be expanded to include new courses.

11.71 *Quality Improvement.* The quality of industrial skills training will be enhanced through accelerating the development of market-driven curriculum, which is based on the new NOSS, strengthening collaboration with industry, improving the quality of instructors, reviewing the accreditation procedure of the training providers and assessment method for trainees and expanding the application of e-learning. In addition, to improve the planning, designing and implementation of training programmes, the management information system in training agencies will be strengthened and the National Advisory Council on Education and Training will be established.

Holistic Human Capital Development

11.72 *High Performance Culture.* As the nation progresses to become a developed nation as envisioned in Vision 2020, efforts will be intensified to develop knowledge workers who are competitive, flexible, dynamic and performance-oriented. Creating an environment that supports the development of such individuals is equally crucial. During the Plan period, the development of a high performance culture in all spheres, from schools to the workplace, will also be emphasised. More performance-based elements will be incorporated including in public sector employment, entrepreneur development programmes and R&D grants.

11.73 *Progressive Outlook, Strong Moral and Ethics.* Human capital development programmes that emphasise ethics, moral and spiritual values will be implemented. *Islam Hadhari* will be promoted to nurture a progressive developmental outlook in society. Programmes to develop a moral and ethical society will be made an integral and critical part at all levels of development planning to complement the physical development programmes as well as enhance national unity. In this regard, values of tolerance and moderation as well as a sense of belonging and pride in the nation, which are crucial in a multi racial country will be given emphasis.

11.74 Programmes to internalise moral and ethical values will be wide in coverage encompassing all segments and age groups in society. The implementation of these programmes will also be broad-based involving family and religious institutions, educational and training institutions, the workplace and community as well as media. Employers will be encouraged to develop a corporate code of ethics and design a suitable implementing mechanism to give effect to the code. In addition, greater emphasis will be given to enhance appreciation for tradition and heritage.

IV. INSTITUTIONAL SUPPORT AND ALLOCATION

11.75 The development of human capital will be undertaken by the Ministry of Education (MOE), Ministry of Higher Education (MOHE), Ministry of Human Resources (MOHR), Ministry of Entrepreneur and Co-operative Development (MECD) and Ministry of Youth and Sports (MOYS). The MOE will be responsible for providing greater access to quality pre-school, primary and secondary education while the MOHE will be responsible for increasing access to quality tertiary education. Training programmes to enhance skills of the labour force will be undertaken by the MECD, MOHR as well as MOYS.

11.76 In line with the greater focus on human capital development, a total of RM45.1 billion will be allocated during the Ninth Plan period to implement the various education and training programmes, as shown in *Table 11-8*.

TABLE 11-8

DEVELOPMENT EXPENDITURE AND ALLOCATION FOR EDUCATION AND TRAINING, 2001-2010 (RM million)

<i>Programme</i>	<i>8MP Expenditure</i>	<i>9MP Allocation</i>
Education	37,922.0	40,356.5
Pre-school	215.7	807.3
Primary Education	5,369.3	4,837.3
Secondary Education	8,748.1	6,792.8
Government & Government-aided Schools (Academic)	7,931.2	5,549.1
MARA Junior Science Colleges	433.1	614.5
Government & Government-aided Schools (Technical & Vocational)	383.8	629.2
Tertiary Education	13,403.9	16,069.0
Teacher Education	1,368.1	577.7
Other Educational Support Programmes	8,816.9	11,272.4
Training	4,450.9	4,792.6
Industrial Training	3,930.6	4,103.6
Commercial Training	158.6	179.5
Management Training	361.7	509.5
Total	42,372.9	45,149.1

Source: Economic Planning Unit

V. CONCLUSION

11.77 During the Eighth Plan period, the quality of the labour force improved with the increasing supply of educated and skilled human resource due to the expansion in the capacity of education and training institutions. During the Ninth Plan period, human capital development will be one of the main thrusts as envisaged in the National Mission. Greater focus will be given to holistic human capital development encompassing knowledge and skills, progressive attitude as well as strong moral and ethical values. Lifelong learning programmes will be expanded. The inculcation of entrepreneurial values will be intensified to promote self-employment. Measures will be undertaken to upgrade S&T capabilities to drive innovation. Smart partnerships and collaboration among stakeholders in education, training and lifelong learning will be intensified. Greater private sector participation in the provision of quality education and training will be encouraged. The education, training and lifelong learning delivery systems will be improved to enhance the quality of human capital and produce the towering individuals needed to meet the challenges of development and drive a knowledge-based economy.