



# STRENGTHENING AGRICULTURE AND THE AGRO-BASED INDUSTRY

# 3

## I. INTRODUCTION

3.01 The agriculture sector registered favourable growth during the Eighth Plan period. Export earnings of the sector expanded significantly due to the increase in export volume and better prices of agricultural industrial commodities. The sector continued to provide the raw materials required by the domestic agro-based industries and part of the nation's food demand.

3.02 During the Ninth Plan period, the agriculture sector will be revitalised to become the third engine of growth. The emphasis will be on *New Agriculture* which, will involve large-scale commercial farming, the wider application of modern technology, production of high quality and value-added products, unlocking the potential in biotechnology, increased convergence with information and communications technology (ICT), and the participation of entrepreneurial farmers and skilled workforce. The functions of agricultural agencies will also be streamlined to enhance service delivery and efficiency.

## II. PROGRESS, 2001-2005

3.03 During the Eighth Plan period, the performance of the agriculture sector improved in terms of production, value added and exports, driven by the utilisation of new technologies, shift to large-scale commercial production, wider adoption of the group farming system, increased market accessibility and better commodity prices. Emphasis was given to the redevelopment of alienated agricultural land, particularly to expedite modernisation and improve productivity. The improved output of the agriculture sector contributed to better income and standard of living, particularly for farmers in rural areas.

### Growth Performance

3.04 The agricultural value added grew at an average rate of 3.0 per cent per annum during the Plan period, higher than the target of 2.0 per cent, as shown in *Table 3-1*. The higher growth was due to better performance of the agricultural

industrial commodities subsector, particularly oil palm and rubber. The share of the sector to gross domestic product (GDP) decreased slightly from 8.9 per cent in 2000 to 8.2 per cent in 2005. Nevertheless, total agricultural value added increased from RM18.7 billion in 2000 to RM21.6 billion in 2005. The value added of agro-based industry grew at an average rate of 4.5 per cent per annum to reach RM16.9 billion in 2005. The combined value added of the agriculture and agro-based industry was RM38.5 billion or 14.7 per cent of GDP in 2005. Total agricultural and agro-based export earnings also increased by an average rate of 9.5 per cent per annum, as shown in *Table 3-2*.

TABLE 3-1  
VALUE ADDED OF AGRICULTURE AND  
AGRO-BASED INDUSTRY,  
2000-2010

Commodity	RM million (in 1987 prices)			% of Total			Average Annual Growth Rate (%)		
	2000	2005	2010	2000	2005	2010	8MP		9MP Target
							Target	Achieved	
<b>Agriculture</b>	<b>18,662</b>	<b>21,585</b>	<b>27,517</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>2.0</b>	<b>3.0</b>	<b>5.0</b>
<b>Industrial Commodities</b>	<b>11,033</b>	<b>13,278</b>	<b>15,521</b>	<b>59.1</b>	<b>60.6</b>	<b>56.4</b>	<b>0.7</b>	<b>3.8</b>	<b>3.2</b>
Oil Palm	5,860	7,915	10,068	31.4	36.7	36.6	3.4	6.2	4.9
Forestry and Logging	3,055	3,016	2,761	16.4	13.0	10.0	-5.6	-0.3	-1.7
Rubber	1,868	2,264	2,554	10.0	10.5	9.3	1.1	3.9	2.4
Cocoa	250	83	138	1.3	0.4	0.5	0.1	-19.8	10.8
<b>Food Commodities</b>	<b>7,629</b>	<b>8,308</b>	<b>11,996</b>	<b>40.9</b>	<b>39.4</b>	<b>43.6</b>	<b>4.0</b>	<b>1.7</b>	<b>7.6</b>
Fisheries	2,493	2,389	3,875	13.4	12.6	14.1	4.1	-0.9	10.2
Livestock	1,520	2,089	2,483	8.1	8.1	9.0	6.0	6.6	3.5
Padi	590	632	988	3.2	3.4	3.6	2.7	1.4	9.4
Other Agriculture <sup>1</sup>	3,026	3,198	4,650	16.2	15.2	16.9	3.2	1.1	7.8
<b>Agro-Based Industry</b>	<b>13,584</b>	<b>16,928</b>	<b>22,221</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>4.0</b>	<b>4.5</b>	<b>5.6</b>
Vegetable and Animal Oils & Fats	2,526	3,639	5,614	18.6	21.5	25.3	6.3	7.6	9.1
Other Food Processing, Beverages & Tobacco	4,010	4,790	6,333	29.5	28.3	28.5	2.0	3.6	5.7
Wood Products including Furniture	2,934	2,972	3,761	21.6	17.6	16.9	0.6	0.3	4.8
Paper & Paper Products, Printing & Publishing	2,293	2,640	3,275	16.9	15.6	14.7	3.4	2.9	4.4
Rubber Processing & Products	1,821	2,887	3,238	13.4	17.1	14.6	4.7	9.7	2.3
<b>Total Agriculture and Agro-Based Industry</b>	<b>32,246</b>	<b>38,513</b>	<b>49,738</b>				<b>2.7</b>	<b>3.6</b>	<b>5.2</b>
<b>Gross Domestic Product at Purchasers' Prices</b>	<b>210,558</b>	<b>262,029</b>	<b>351,297</b>					<b>4.5</b>	<b>6.0</b>

Source: Department of Statistics and Economic Planning Unit

Notes: <sup>1</sup> Includes coconut, vegetables, fruits, tobacco and pepper.

TABLE 3-2  
**AGRICULTURE AND AGRO-BASED MANUFACTURED EXPORT,  
 2000-2010**

Commodity	RM million			% of Total			Average Annual Growth Rate (%)	
	2000	2005	2010	2000	2005	2010	8MP Achieved	9MP Target
<b>Agriculture Exports</b>	<b>22,892</b>	<b>37,421</b>	<b>54,992</b>	<b>48.1</b>	<b>50.0</b>	<b>47.5</b>	<b>10.3</b>	<b>8.0</b>
% to Total Exports	6.1	7.0	6.8					
Industrial Commodities	18,428	31,509	37,244	38.7	42.1	32.2	11.3	3.4
Palm Oil	9,948	19,036	26,735	20.9	25.4	23.1	13.9	7.0
Rubber	2,571	5,787	5,156	5.4	7.7	4.5	17.6	-2.3
Sawlogs	2,489	2,465	2,100	5.2	3.3	1.8	-0.2	-3.2
Sawntimber	3,020	4,051	2,995	6.3	5.4	2.6	6.0	-5.9
Cocoa	33	50	128	0.1	0.1	0.1	8.8	20.5
Pepper	367	120	130	0.8	0.2	0.1	-20.0	1.6
Food Commodities	4,464	5,913	17,748	9.4	7.9	15.3	5.8	24.6
<b>Agro-Based Manufactured Exports</b>	<b>24,686</b>	<b>37,442</b>	<b>60,660</b>	<b>51.9</b>	<b>50.0</b>	<b>52.5</b>	<b>8.7</b>	<b>10.1</b>
% to Total Exports	6.6	7.0	7.6					
Food	4,509	8,627	15,803	9.5	11.5	13.7	13.9	12.9
Beverages and Tobacco	1,207	1,755	2,446	2.5	2.3	2.1	7.8	6.9
Wood Product	6,801	9,665	13,909	14.3	12.9	12.0	7.3	7.6
Furniture and Parts	6,077	8,454	14,335	12.8	11.3	12.4	6.8	11.1
Paper and Paper Product	1,397	2,018	2,799	2.9	2.7	2.4	7.6	6.8
Rubber Product	4,695	6,923	11,368	9.9	9.3	9.8	8.1	10.4
<b>Total Agriculture and Agro-Based Exports</b>	<b>47,578</b>	<b>74,863</b>	<b>115,652</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>9.5</b>	<b>9.1</b>
% of Total Exports	12.7	14.0	14.4					
<b>Total Exports</b>	<b>373,270</b>	<b>533,790</b>	<b>803,163</b>				<b>7.4</b>	<b>8.5</b>

Source: Department of Statistics and Economic Planning Unit

3.05 Employment in the agriculture sector continued to contract at an average rate of 0.2 per cent per annum to 1.4 million in 2005, as shown in *Table 3-3*. However, labour productivity improved, as reflected by the increase in value added per worker from RM13,120 in 2000 to RM15,750 in 2005, at an average rate of 3.7 per cent per annum. The Agricultural Census 2005<sup>1</sup> identified a total of 816,813 individuals or 7.2 per cent of the total labour force who was involved in the agriculture sector. Of this total, 52.8 per cent was agricultural operators, 37.2 per cent workers and 10.0 per cent unpaid family workers. In terms of age profile, 43.8 per cent was in the age group 55 and above while only 25.3 per cent was in the 15 to 40 year age group.

1. The Agricultural Census 2005 covered:
- (i) Occupations involved in primary agriculture activities including agricultural services;
  - (ii) worked at least three months in the sector; and
  - (iii) smallholdings.

TABLE 3-3  
**EMPLOYMENT AND VALUE ADDED PER WORKER IN  
 AGRICULTURE AND AGRO-BASED INDUSTRY,  
 2000-2010**

	2000	2005	2010	Average Annual Growth Rate (%)		
				8MP		9MP Target
				Target	Achieved	
<b>Agriculture Employment</b>						
Number ('000)	1,423.0	1,405.7	1,323.8	-1.4	-0.2	-1.2
% of Total Employment	15.3	13.3	10.9			
Value Added Per Worker (RM in 1987 prices)	13,115	15,752	21,299	4.5	3.7	6.2
<b>Agro-Based Employment</b>						
Number ('000)	844.0	981.9	1,110.2		3.1	2.5
% of Total Employment	9.1	9.3	9.1			
Value Added Per Worker (RM in 1987 prices)	16,107	17,002	19,688		1.1	3.0
<b>Total Employment in Agriculture and Agro-Based Industry</b>	<b>2,267.0</b>	<b>2,387.6</b>	<b>2,434.0</b>		<b>1.0</b>	<b>0.4</b>
% of Total Employment	24.4	21.9	20.3			

Source: Department of Statistics and Economic Planning Unit

### Land Utilisation

3.06 Agricultural land use increased from 5.9 million hectares in 2000 to 6.4 million hectares in 2005, largely due to the expansion in the hectareage of oil palm, coconuts, vegetables and fruits. Of the total land area, 4.0 million hectares were under oil palm followed by 1.3 million hectares under rubber. During the Plan period, a total of 163,000 hectares of agricultural land remained idle. Efforts to optimise the utilisation of idle land were hindered by several constraints, particularly absentee landlords, ageing landowners and farmers as well as difficulties in consolidating native and customary land.

### Agricultural Production

3.07 During the Plan period, production of agricultural commodities except sawlogs, cocoa and pepper, continued to record positive growth. The increase in production was attributed to higher prices and market expansion as well as the effective implementation of programmes and projects to improve productivity and quality of outputs.

### *Agricultural Industrial Commodities*

3.08 Crude *palm oil* (CPO) production increased at an average rate of 6.7 per cent per annum due to improvements in yield, higher oil extraction rate (OER), expansion in matured areas as well as higher palm oil prices. The palm oil industry benefited from the tight world supply of edible oils and fats, which resulted in palm oil prices rising to its highest level of RM1,610 per metric tonne during the Plan period.

3.09 The production of *rubber* increased at an average rate of 3.9 per cent per annum, attributed mainly to increasing demand for natural rubber, particularly from The People's Republic of China, which resulted in higher rubber prices. The higher production was also due to increased tapping and wider adoption of the Low Intensity Tapping System (LITS) among smallholders. These contributed to an increase in the average monthly income of smallholders from RM500 to RM2,000.

3.10 *Cocoa* bean production declined to 28,000 metric tonnes in 2005, in tandem with the reduction in planted area due to protracted low prices of cocoa beans. The production of *pepper* declined to 19,100 metric tonnes in 2005, largely due to low prices and high production costs. The implementation of the grower-curer system, upgrading of irrigation and drainage facilities and better support services contributed to an increase in the production of *tobacco* to 14,000 metric tonnes in 2005.

3.11 With the continued commitment to conservation of natural forests and the implementation of sustainable forest management, the annual allowable cut rate (ACR) was reduced to 272,800 hectares per year during the Plan period. In addition, selective harvesting contributed further to the reduction in loggable areas. As a result, the production of *sawlogs* declined at an average rate of 1.6 per cent per annum.

### *Food Commodities*

3.12 During the Plan period, the production of food commodities recorded positive growth as a result of the aggressive implementation of programmes and projects to increase food production and exports. Subsequently, self-sufficiency levels of almost all food items improved. In addition, export of food grew at an average rate of 8.7 per cent per annum, higher than that of imports at 7.9 per cent.

3.13 Further consolidation of *padi* smallholdings through the group farming concept in the eight granary areas and the implementation of the Ten Tonnes Per Hectare Project, enabled the greater adoption of the Good Agriculture Practices (GAP) and better farm management. As a result, *padi* production increased at an average rate of 2.3 per cent per annum.

3.14 The expansion in hectareage for *fruit* cultivation led to an increase in production at an average rate of 9.8 per cent per annum. Production was concentrated on 15 types of fruits with potential for commercialisation. *Coconut* production increased at an average annual rate of 4.8 per cent, particularly due to greater utilisation of higher yielding clones, namely *kelapa matag* and *kelapa pandan*, as well as expansion in cultivated areas and increase in demand.

3.15 The production of *vegetables* grew at an average rate of 13.8 per cent per annum attributed to the expansion in cultivated areas, intensive implementation of estate-based activities and higher productivity from good farming practices as well as improvements in post-harvest handling. The production of organic vegetables was further promoted with the introduction of the Malaysian Organic Scheme, which enabled growers to sell their produce at premium prices. At the end of the Plan period, a total of 132 hectares of organic vegetable farms was certified under this scheme.

3.16 *Fish* production increased at an average rate of 1.6 per cent per annum to reach 1.6 million metric tonnes in 2005. This was due to the increase in marine catch as well as expansion in aquaculture, particularly by the private sector.

3.17 *Livestock* production recorded positive growth during the Plan period. *Mutton* registered the highest growth, averaging 10.8 per cent per annum followed by *beef* at 10.2 per cent per annum. The increase was largely contributed by the rearing of cattle and goats in oil palm and rubber plantations as well as feedlot cattle rearing by the private sector. The *poultry* industry, including production of eggs, remained resilient despite the outbreak of the avian bird flu in 2003. This was due to the expansion in the application of the closed-house system. *Pork* production, which recovered from the outbreak of the Nipah virus, increased at an annual growth rate of 5.5 per cent.

#### *New Sources of Growth*

3.18 The development of new sources of growth, particularly *ornamental fish*, *seaweed*, *tuna* and *floriculture* was continued during the Plan period. The production of ornamental fish increased from 306 million tails in 2000 to 438 million tails in 2005 with a market value of RM103 million. With regard to seaweed, production increased at an average annual rate of 73.7 per cent, to reach 65,000 metric tonnes in 2005, as a result of intensive cultivation based on the estate concept in the offshore areas of Sabah. The first integrated tuna fishing port was constructed in Batu Maung, Pulau Pinang under the privatization concept to promote the development of the tuna industry. The performance of the floriculture industry improved with the production of flowers increasing to 126 million stalks in 2005. The nursery and landscape industry was further developed to take advantage of the increasing demand for nursery products and landscaping services.

## Agro-Based Industry

3.19 The agro-based industry grew at 4.5 per cent per annum. Total export earnings of the agro-based industry increased significantly by 8.7 per cent per annum to reach RM37.4 billion in 2005. The processing of end-products from agricultural industrial commodities such as palm oil, rubber and cocoa increased during the Plan period.

3.20 The processing of food commodities continued to be encouraged and to support small producers, the products were marketed, particularly under the brand name *Agromas* and *Olemas*. Towards this end, the Ministry of Agriculture and Agro-Based Industry (MOA) provided extension services to 14,883 entrepreneurs. The Malaysian Agricultural Research and Development Institute (MARDI) developed 44 food products and 200 processing technologies, particularly to facilitate the activities of small and medium-scale enterprises (SMEs).

## Agricultural Programmes

3.21 During the Plan period, agricultural programmes were focused on transforming traditional farming into modern and commercial farming to increase the income and productivity of farmers as well as improving their competitiveness. In this regard, efforts were intensified to encourage agricultural entrepreneurs, farmers and smallholders, particularly among the Bumiputera, to adopt new agronomic and modern farm management practices, increase mechanisation and familiarise them with GAP.

3.22 *Replanting.* The replanting programme under various agencies, which comprised replanting of rubber to rubber as well as rubber to oil palm, achieved 77.6 per cent of its target. Of this total, 74 per cent was replanted with rubber and the balance with oil palm. The performance of this programme was affected by the high rubber prices, which led smallholders to delay replanting.

3.23 *Land Consolidation and Rehabilitation.* A total of 31,332 hectares of land was consolidated and rehabilitated whereby FELCRA Berhad managed to consolidate 10,200 hectares. *Lembaga Pertubuhan Peladang* (LPP) rehabilitated 4,433 hectares including idle land for commercial farming of food commodities, which benefited 3,159 farmers.

3.24 *Permanent Food Production Parks.* During the Plan period, large-scale commercial production of food was undertaken through the establishment of Permanent Food Production Parks in various states including in Pahang, Selangor and Johor. These parks were aimed at creating entrepreneur farmers with a minimum income of RM3,000 per month. In this regard, 28 parks were established, involving 2,007 hectares of land and 319 entrepreneur farmers.

3.25 *Forest Development.* To provide adequate and sustainable supply of timber and rubber wood for the local furniture industry, measures were undertaken to convert degraded forest and idle land into forest plantations including rubber forest plantations. About 3,400 hectares of rubber forest plantations were developed in Peninsular Malaysia.

3.26 *Marketing Services.* Marketing services, particularly in the food subsector was further improved with the setting up of the FAMAXchange in 2004 and the expansion of Agribazaar portal. In addition, other portals were also developed including *Ikan Online*, SIRIP and Padi Net.

3.27 The regional offices of Malaysian Palm Oil Board (MPOB) Technical Advisory Services Units continued their efforts to increase market acceptance and consumption of palm oil. The Malaysian Rubber Board (MRB) continued its efforts to encourage local and foreign direct investments in rubber product manufacturing and promote the products to local and overseas consumers.

3.28 Efforts to penetrate hypermarkets were intensified through the arrangement of more agricultural products supply contracts by the government agencies. Marketing of marine fish was enhanced through the increased involvement of fishermen associations as wholesalers from 15 in 2002 to 43 in 2005. In addition, the sale of agriculture produce under the brand names of *Malaysia's Best*, *Agromas* and *Olemas* was further promoted. The introduction of the farm accreditation schemes and development of food safety standards enabled greater access of local agricultural products to international markets.

3.29 *Research and Development.* Agricultural research and development (R&D) continued to be emphasised to further improve competitiveness of the sector. During the Plan period, of the total 535 R&D projects undertaken by the agricultural research agencies, 90 were commercialised while another 30 were ready to be commercialised.

3.30 *Training and Extension Services.* Focus was given to commercialisation of agricultural activities, modern farming practices, post-harvest handling, processing and marketing. By the end of the Plan period, a total of 260,930 entrepreneurs and farmers was trained. In addition, four agricultural training institutions conducted the National Agricultural Skills Training Programme based on the National Occupational Skills Standard (NOSS) beginning 2004. Since its introduction, a total of 564 trainees was enrolled in courses related to fisheries, horticulture, livestock, food processing and marketing.

3.31 *Agriculture Credit.* The disbursement of credit for agricultural projects by the banking sector during the Plan period amounted to RM56.3 billion. This represented only 2.5 per cent of the total loans disbursed by this sector. Bank Pertanian Malaysia (BPM) disbursed a total of RM3.4 billion to increase farm mechanisation, promote Bumiputera participation, encourage the involvement



of graduates in commercial farming as well as provide micro-credit for food production and financial assistance to agricultural-related SMEs. Specific funds were also established to provide financial assistance to farmers, smallholders and fishermen. Towards this end, *Dana Nelayan* with a total fund of RM63 million benefited 3,074 fishermen while the *Kumpulan Wang Pinjaman Pertubuhan Peladang* provided loans totalling RM79.6 million to farmers' organisations. A total of RM88.6 million was also disbursed to 642 farmers and entrepreneurs under the *Skim Pembiayaan Ekonomi Desa* (SPED). The fund was utilised to assist entrepreneurs involved in agriculture, manufacturing, services and rural tourism activities for the setting up and expansion of businesses.

3.32 *Drainage and Irrigation*. A total of RM453 million was expended on various agricultural drainage and irrigation, and water resources projects to improve flood control and water supply. These included the construction of new drainage and irrigation facilities, farm roads and crossings, covering a total of 70,000 hectares of agricultural land as well as the Beris Dam in Sik, Kedah.

### III. PROSPECTS, 2006-2010

3.33 During the Ninth Plan period, the focus will be on developing *New Agriculture*. This will entail further expanding large-scale commercial farming and venturing into high quality and value added primary and processing activities as well as unlocking the potential in biotechnology. The productivity, efficiency, and the income and wealth generating potential of the sector will be enhanced through the wider application of modern farming methods and ICT, strengthening R&D and innovation, improving marketing capability, and promoting increased participation of the private sector including entrepreneurial farmers and skilled workers. Optimisation of land use as well as land consolidation and rehabilitation will be given priority. The agriculture sector is expected to grow at a higher average annual rate of 5.0 per cent. With the inclusion of the agro-based industry, the growth rate is expected to be 5.2 per cent. The issues related to the prevalence of pockets of poverty among small-scale farmers, the slow transformation of smallholdings into modern farming and agricultural land constraints will also be addressed.

#### Policy Thrusts

3.34 During the Plan period, the overall policy thrusts of the agriculture sector will focus on its reorientation towards greater commercialisation and the creation of high-income farmers as well as promotion of greater private sector investment including foreign investment. In this regard, the policy thrusts will be as follows:

- ❑ *increasing agricultural production including by venturing into new sources of growth with greater private sector participation;*
- ❑ *expanding agro-based processing activities and product diversification;*

- ❑ *strengthening marketing and global networking;*
- ❑ *enhancing incomes of smallholders, farmers and fishermen; and*
- ❑ *improving the service delivery system.*

### **Increasing Agricultural Production**

3.35 During the Plan period, efforts will be undertaken to increase agricultural production through new land development, replanting, land consolidation and rehabilitation as well as greater utilisation of high yielding clones and breeds, farm mechanisation and good agronomic practices towards productivity improvements. The private sector and the government-linked companies (GLCs) will be further encouraged to increase agricultural investments through better incentives and support measures.

3.36 The production of *palm oil* is expected to increase at an average rate of 5.5 per cent per annum with the expansion in planted area and higher OER, as shown in *Table 3-4*. The development of the *rubber* subsector will be focused on accelerating efforts to consolidate and rehabilitate rubber smallholdings to increase productivity. In this regard, an optimum area of 800,000 hectares will be maintained as rubber zone by 2020 to meet the requirement of the domestic rubber processing industries. *Cocoa* production will be increased to supply raw materials for local downstream processing. Production of *pepper* is expected to increase through productivity improvements and promotion of good agricultural practices among pepper farmers. The *tobacco* growing industry will be further restructured in line with the commitment to the Framework Convention on Tobacco Control. The production of *sawlogs* will continue to be based on sustainable forest management. In this regard, the ACR will be set at 266,940 hectares per annum.

3.37 The food commodities subsector is expected to grow at an average rate of 7.6 per cent per annum through improvements in efficiency and productivity as well as expansion in hectarage. Exports of food commodities will be increased to achieve a positive food trade balance, as shown in *Table 3-5*. The production of *padi* will be increased to meet the target of self-sufficiency level of 90 per cent, as shown in *Table 3-6*. The production of *fruits* will be undertaken on a large-scale in the fruit production zones using the cluster development approach and concentrating on nine fruit species which have export potential. The production of *vegetables* will focus on high value varieties for local consumption and selected export markets. The Green Book Programme to promote cultivation of food crops at the community level will be reactivated.

3.38 *Fish* production will focus on expanding aquaculture and deepsea fishing activities. Aquaculture including marine fish farming will focus on high value species such as humpback seabass, six-banded grouper and tiger prawns. The development of the *livestock* industry will centre on various activities along the value chain including production of breeders and animal feed. To cater for the increase in demand for animal feeds and to reduce imports, efforts will be

TABLE 3-4  
**PRODUCTION OF AGRICULTURAL COMMODITIES,  
 2000-2010**

Commodity	Metric Tonnes ('000)			Average Annual Growth Rate (%)		
				8MP		9MP Target
	2000	2005	2010	Target	Achieved	
<b>Industrial Commodities</b>						
Rubber	928	1,124	1,293	4.0	3.9	2.8
Crude Palm Oil	10,842	14,961	19,561	6.1	6.7	5.5
Palm Kernel Oil	1,384	1,868	2,570	5.0	6.2	6.6
Sawlogs <sup>1</sup>	23,074	21,334	19,475	-5.3	-1.6	-1.8
Cocoa	70	28	57	-5.7	-16.7	15.5
<b>Food Commodities</b>						
Padi	2,141	2,400	3,202	0.2	2.3	5.9
Fisheries	1,454	1,575	2,071	7.2	1.6	5.6
Marine	1,286	1,325	1,409	5.9	0.6	1.2
Aquaculture	168	250	662	18.3	8.3	21.5
Livestock						
Beef	17.5	28.5	45.0	18.0	10.2	9.6
Mutton	0.9	1.5	2.3	11.0	10.8	8.9
Pork	159.8	209.0	241.0	6.6	5.5	2.9
Poultry	714.3	980.1	1,295.0	4.7	6.5	5.7
Eggs	399.0	443.0	600.0	4.0	2.1	6.3
Milk <sup>2</sup>	29.5	41.1	68.4	8.9	6.9	10.7
<b>Miscellaneous</b>						
Pepper	24.0	19.1	30.0	5.9	-4.5	9.5
Pineapple	265.7	407.6	1,106.0	2.0	8.9	22.1
Tobacco	7.4	14.0	12.0	13.6	13.6	-3.0
Flowers <sup>3</sup>	120.4	126.4	147.3	3.3	1.0	3.1
Fruits	993.0	1,586.9	2,555.7	3.1	9.8	10.0
Vegetables	404.0	771.3	1,133.3	0.6	13.8	8.0
Coconut	475.7	602.0	660.0	0.6	4.8	1.9

Source: Ministry of Agriculture and Agro-Based Industry and Ministry of Plantation Industries and Commodities

Notes: <sup>1</sup> Measured in thousand cubic metres.

<sup>2</sup> Measured in million litres.

<sup>3</sup> Measured in million stalks.

TABLE 3-5

## EXPORTS AND IMPORTS OF FOOD, 2000-2010

Commodity	RM million			% of Total			Average Annual Growth Rate (%)	
	2000	2005	2010	2000	2005	2010	8MP Achieved	9MP Target
<b>Exports</b>	<b>5,268.6</b>	<b>7,986.8</b>	<b>15,501.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>8.7</b>	<b>14.2</b>
Live Animals	357.4	425.1	467.0	6.8	5.3	3.0	3.5	1.9
Meat & Meat Preparations	64.6	85.9	2,895.0	1.2	1.1	18.7	5.9	102.1
Dairy Products	410.2	413.2	520.0	7.8	5.2	3.4	0.1	4.7
Vegetables	278.4	491.6	614.0	5.3	6.2	4.0	12.0	4.5
Fruits	512.4	471.9	2,153.2	9.7	5.9	13.9	-1.6	35.5
Sugar, Sugar Preparations & Honey	353.7	479.2	474.6	6.7	6.0	3.1	6.3	-0.2
Cereal & Cereal Preparations	610.8	916.6	576.5	11.6	11.5	3.7	8.5	-8.9
Fish, Crustaceans, Molluscs & Preparations thereof	1,263.3	2,265.9	4,624.7	24.0	28.4	29.8	12.4	15.3
Feeding Stuff for Animals	375.3	547.1	531.0	7.1	6.9	3.4	7.8	-0.6
Others	1,042.5	1,890.3	2,645.0	19.8	23.7	17.1	12.6	6.9
<b>Imports</b>	<b>10,543.5</b>	<b>15,435.0</b>	<b>14,276.9</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>7.9</b>	<b>-1.5</b>
Live Animals	154.6	177.4	127.0	1.5	1.1	0.9	2.8	-6.5
Meat & Meat Preparations	771.4	1,054.6	1,262.0	7.3	6.8	993.7	6.5	3.7
Dairy Products	1,176.5	1,745.1	1,533.0	11.2	11.3	121.5	8.2	-2.6
Vegetables	1,023.6	1,620.2	670.0	9.7	10.5	43.7	9.6	-16.2
Fruits	561.6	694.9	812.1	5.3	4.5	121.2	4.4	3.2
Sugar, Sugar Preparations & Honey	1,085.2	1,406.0	1,216.0	10.3	9.1	149.7	5.3	-2.9
Cereal & Cereal Preparations	1,839.1	2,267.1	1,464.8	17.4	14.7	10.3	4.3	-8.4
Fish, Crustaceans Molluscs & Preparations thereof	1,085.8	1,851.9	841.0	10.3	12.0	5.9	11.3	-14.6
Feeding Stuff for Animals	1,928.4	2,838.2	4,303.0	18.3	18.4	30.1	8.0	8.7
Others	917.3	1,779.6	2,048.0	8.7	11.5	14.3	14.2	2.8

Source: Department of Statistics and Ministry of Agriculture and Agro-Based Industry

undertaken to increase the utilisation of feedrice and local forage including *kenaf*, oil palm fronds as well as its by-products. The output of livestock products, particularly poultry and eggs will be further increased using more modern production systems to meet local and export demand.

3.39 *New Sources of Growth.* The development of new sources of growth in the agriculture sector will be accelerated during the Plan period. In this regard, large-scale production of tuna, ornamental fish and plants, floriculture, herbs and seaweed will be encouraged through the provision of extension services, incentives, basic infrastructure, marketing facilities and the promotion of downstream processing activities. The completion of the Malaysian International Tuna Port in Batu Maung, Pulau Pinang will enable larger tuna landings and accelerate

TABLE 3-6  
**SELF-SUFFICIENCY LEVELS IN FOOD COMMODITIES,  
 2000-2010**  
 (%)

<i>Commodity</i>	2000	2005	2010
Rice	70	72	90
Fruits	94	117	138
Vegetables	95	74	108
Fisheries	86	91	104
Beef	15	23	28
Mutton	6	8	10
Poultry	113	121	122
Eggs	116	113	115
Pork	100	107	132
Milk	3	5	5

Source: Ministry of Agriculture and Agro-Based Industry

tuna processing activities. In addition, R&D on agronomic practices and product development as well as the commercialisation of products from biomass and new products from biotechnology will be accelerated further. Measures will also be undertaken to further promote the nursery and landscape industry.

3.40 Sanitary and Phytosanitary (SPS) as well as biosecurity measures will be further enhanced to reduce risk and losses of agricultural production and enhance the country's potential in expanding exports of food products. Specific eradication programmes to control and contain diseases of economic and zoonotic importance such as Foot and Mouth Disease (FMD), Highly Pathogenic Avian Influenza (HPAI), citrus greening and white spot virus, will be strengthened and disease-free zones established during the Plan period. Emergence and entrance of new diseases into the country will be minimised through more effective risk management and capacity building.

3.41 Production of *halal* food will be further promoted to take advantage of the vast potential of the *halal* export market. This will include processing and packaging of meat, fisheries and other food-based products. In addition, Malaysia will be developed as the centre for the certification of *halal* products and the *Jabatan Kemajuan Islam Malaysia* (JAKIM) *halal* certification will be promoted worldwide.

3.42 *Financing.* Financial institutions will be encouraged to provide adequate funds for investments in agricultural production, processing, agro-based and other related agricultural activities. Measures will be undertaken by the Bank Negara Malaysia to ensure easier access to credit. BPM will be restructured to strengthen its capacity and capability in providing loans. The Fund For Food will be continued, particularly to finance medium- and large-scale food production projects including deepsea fishing. To facilitate the participation of small farmers and fishermen in various projects, micro-credit will be provided.

#### *New Land Development*

3.43 New land development will concentrate on expanding oil palm cultivation by the private sector. In addition, large-scale production and precision farming systems will be implemented in new production zones for fruits, vegetables, aquaculture and livestock. A more orderly development of these zones will be undertaken through four major approaches, namely Modern Farm and Permanent Food Production Parks (PFPP) for large-scale production by the private sector as well as Agricultural Concentrated Development Area (ACDA) and Area Specific Development Project (ASDP) for small-scale entrepreneurs and farmers. The development of Modern Farm will involve acquisition of large state land by the Federal Government to be leased by the private sector to undertake modern agricultural project while PFPP involve gazetting of state land for the same purpose. The development of PFPP is expected to cover an additional 2,380 hectares involving 600 entrepreneurs in various states. The ACDA and ASDP involve redevelopment of existing non-productive and fragmented farmer's land and will be done on a smaller scale. A total of 13 ACDAs and eight ASDPs will be established during the Plan period. Agricultural land use is expected to increase at an average rate of 1.5 per cent during the Plan period, as shown in *Table 3-7*.

#### *Replanting Programme*

3.44 The replanting programme for rubber and oil palm involving 383,010 hectares will be implemented mainly by Rubber Industry Smallholders Development Authority (RISDA) and Federal Land Development Authority (FELDA), as shown in *Table 3-8*. In this regard, high yielding clones will be promoted. Replanting of rubber using latex timber clones for rubber wood will be intensified. To reduce the extraction of timber from natural forests, the implementation of forest plantations, including rubber forest, will be expedited. Efforts will be undertaken to achieve an annual target of 25,000 hectares of forest plantations through the planting of fast growing and high value timber species.

#### *Land Consolidation and Rehabilitation*

3.45 Land consolidation and rehabilitation will be continued on a larger scale to accelerate the modernisation of smallholdings as well as increase productivity,

TABLE 3-7  
**AGRICULTURAL LAND USE,  
 2000-2010**

Crop	Hectares ('000)			Average Annual Growth Rate (%)		
				8MP		9MP Target
	2000	2005	2010	Target	Achieved	
Oil Palm	3,377	4,049	4,555	3.2	3.7	2.4
Rubber	1,431	1,250	1,179	-2.7	-2.7	-1.2
Padi <sup>1</sup>	478	452	450	-0.5	-1.1	-0.1
Fruits	304	330	375	5.1	1.7	2.6
Coconut	159	180	180	-0.6	2.5	0.0
Cocoa	76	33	45	-2.4	-15.2	6.2
Vegetables	40	64	86	4.2	9.9	6.1
Tobacco	15	11	7	2.5	-6.0	-7.4
Pepper	13	13	14	2.1	0.0	0.6
<b>Total<sup>2</sup></b>	<b>5,893</b>	<b>6,383</b>	<b>6,891</b>	<b>1.5</b>	<b>1.6</b>	<b>1.5</b>

Source: Ministry of Agriculture and Agro-Based Industry and Ministry of Plantation Industries and Commodities

Notes: <sup>1</sup> Based on padi parcel.

<sup>2</sup> Excludes areas for other crops like tea, coffee and herbs as well as aquaculture.

particularly of rubber, padi, fruits, vegetables, cocoa, pepper and sago. Farmers in the padi growing areas outside the granaries will be encouraged to cultivate high quality padi varieties as well as to convert their land to other uses that provide better income.

**3.46 Agricultural Infrastructure.** During the Plan period, agricultural infrastructure, particularly drainage and irrigation facilities, farm roads and crossings will be further upgraded and expanded to support the greater use of modern technology and mechanisation. The existing drainage and irrigation density averaging 20 metres per hectare will be further increased to 50 metres per hectare to achieve a higher padi yield. In addition, good water resource management practices will be adopted including the use of the Decision Support System and automation of control gates to ensure equal water distribution and support the implementation of the 'water on demand' concept.

#### *Enhancing Productivity*

**3.47** Efforts to enhance productivity will be undertaken through the utilisation of high yielding clones and improvements in agronomic practices among smallholders and plantations as well as increased mechanisation. In addition, the provision of adequate support services and infrastructure in the agricultural production areas is expected to further improve productivity in the sector, as shown in *Table 3-9*.

TABLE 3-8

**REPLANTING, LAND CONSOLIDATION AND  
REHABILITATION PROGRAMMES BY AGENCY,  
2001-2010**

Programme/Agency	8MP			9MP	
	Target (hectares)	Achieved (hectares)	% Achieved of Target	Target (hectares)	% of Total
<b>Replanting</b>	<b>306,019</b>	<b>237,603</b>	<b>77.6</b>	<b>383,010</b>	<b>78.9</b>
Federal Land Development Authority	148,747	126,618	85.1	116,484	30.4
Rubber Industry Smallholders Development Authority	138,742	101,350	73.0	225,000	58.7
FELCRA Berhad	15,000	6,052	40.3	35,526	9.3
Sabah Rubber Industry Board	3,530	3,583	101.5	6,000	1.6
<b>Land Consolidation and Rehabilitation</b>	<b>50,649</b>	<b>31,332</b>	<b>61.9</b>	<b>102,663</b>	<b>21.1</b>
FELCRA Berhad	25,000	10,203	40.8	50,000	48.7
Department of Forestry Sarawak	7,500	4,228	56.4	-	-
Department of Agriculture Peninsular Malaysia	6,500	5,837	89.8	12,000	11.7
<i>Lembaga Pertubuhan Peladang</i>	4,377	4,433	101.3	6,597	6.4
Sabah Rubber Industry Board	3,750	4,053	108.1	20,000	19.5
National Tobacco Board	2,000	1,838	91.9	3,000	2.9
<i>Lembaga Kemajuan Kelantan Selatan</i>	1,523	740	48.6	11,065	10.8
<b>Total</b>	<b>356,668</b>	<b>268,935</b>	<b>75.4</b>	<b>485,673</b>	<b>100.0</b>

Source: Ministry of Rural and Regional Development, Ministry of Agriculture and Agro-Based Industry, Ministry of Natural Resources and Environment, Ministry of Plantation Industries and Commodities and FELDA

3.48 Productivity will also be increased through wider application of the latest technology and knowledge-based production systems. To ensure quality control and high standards in oil palm plantations as well as improve productivity, efforts will be geared towards encouraging plantations to adopt international standards. In addition, to achieve Vision 35:25, a target of 35 metric tonnes of fresh fruit bunch (FFB) per hectare and 25 per cent OER, plantations will be encouraged to use quality oil palm seedlings. Adequate credit facilities will be provided to encourage smallholders to replant oil palm trees, which are over 25 years old with high yielding clones.

3.49 Efforts will be intensified to further increase the productivity of padi in the eight granary areas to achieve the yield target of 10 metric tonnes per hectare. This is a pre-emptive measure to increase competitiveness of local growers to sustain their position with the implementation of ASEAN Free Trade Area (AFTA).



TABLE 3-9  
**PRODUCTIVITY OF AGRICULTURAL COMMODITIES,  
 2000-2010**  
 (%)

Commodity	2000	2005	2010
<b>Industrial Commodities</b>			
Oil Palm FFB (metric tonnes/hectare/year)	19.1	22.5	25.0
Rubber (metric tonnes/hectare/year)	1.2	1.3	1.7
Pepper (metric tonnes/hectare/year)	2.1	1.5	1.8
Cocoa (metric tonnes/hectare/year)	0.9	1.2	1.6
Tobacco Grower-Curer System (metric tonnes/hectare/season)	1.1	1.4	1.5
<b>Food Commodities</b>			
Padi (metric tonnes/hectare/season)			
Granary	3.8	4.5	6.5
Non-Granary	2.2	5.0	5.0
Aquaculture (metric tonnes/hectare/cycle)			
Freshwater	0.4	0.4	0.5
Brackish Water	1.0	1.1	1.1
<b>Miscellaneous</b>			
Pineapple (metric tonnes/hectare/cycle)	16.9	21.1	22.1
Flowers (thousand stalks/hectare/season)	155.6	162.9	190.4
Fruits (metric tonnes/hectare/season)	3.3	4.8	6.8
Vegetables (metric tonnes/hectare/cycle)	10.1	12.1	13.2
Coconut (metric tonnes/hectare/year)	3.0	3.3	3.7

Source: Ministry of Agriculture and Agro-Based Industry and Ministry of Plantation Industries and Commodities

3.50 Construction of artificial reefs and fish shelter to enrich coastal marine resources and the development of community-based large-scale marine fish farms will be undertaken to boost coastal fish production. Productivity in marine fisheries will be further enhanced by upgrading the capacity of fishing vessels and equipment. Investments in aquaculture, including intensive on-shore marine fish aquaculture activities using new technologies and management systems will be further promoted. To increase deepsea fish landing including tuna and to support the growth of upstream and downstream fisheries-based activities, a national fisheries consortium, *Konsortium Perikanan Nasional Berhad* (KPNB) driven by the private sector will be established.

3.51 *Research and Development.* R&D activities will be strengthened further to improve productivity. In this regard, R&D activities will be market oriented and concentrated on generating high yielding seeds and breeds, pest and disease control, post-harvest handling and mechanisation. Intensive efforts in

developing more advanced cultivation technologies will also be undertaken while the dissemination of information on new technologies to the target groups will be accelerated.

3.52 *Human Capital Development.* During the Plan period, labour productivity is expected to increase by an average rate of 6.2 per cent per annum. Emphasis will be given to the provision of training to change the mindset and attitude of farmers and fishermen as well as the younger generation including those with higher education to participate more effectively in modern and commercially-oriented agricultural activities. These efforts will create job opportunity, particularly among the unemployed graduates. A total of 657,720 entrepreneurs and farmers is expected to be trained during the Plan period, as shown in *Table 3-10*. In this respect, several agricultural training institutions will be upgraded to implement the National Agricultural Skills Training Programme in line with the NOSS. In addition, institutions of higher education will review existing programmes and develop new curricula to meet market requirements. Skills will be developed in areas such as deepsea fishing, aquaculture, ornamental fish breeding, seaweed cultivation and agro-based processing. Extension workers will also be retrained to deliver effective services to target groups.

TABLE 3-10  
**AGRICULTURAL TRAINING BY AGENCIES,  
2001-2010**

Agency	Number of Participants	
	8MP	9MP
Department of Agriculture Peninsular Malaysia	102,500	376,900
LKIM	28,900	35,400
Department of Fishery	17,900	76,715
FAMA	16,900	18,600
Department of Agriculture Sarawak	12,200	13,800
MARDI	10,700	11,500
BPM	10,500	16,100
LPP	38,828	50,000
RISDA	8,800	18,300
Department of Veterinary Services	6,000	20,100
FELCRA Berhad	4,800	14,600
MPOB	2,100	3,700
Forest Research Institute of Malaysia	800	2,000
<b>Total</b>	<b>260,928</b>	<b>657,715</b>

Source: Ministry of Agriculture and Agro-Based Industry, Ministry of Plantation Industries and Commodities and Ministry of Natural Resources and Environment

3.53 In line with the policy to turn agriculture into a viable business, more vigorous efforts will be undertaken to develop new agricultural entrepreneurs, strengthen existing small and medium-scale entrepreneurs as well as promote agricultural exporters. This will include agricultural entrepreneurship programmes to develop more competent Bumiputera agricultural entrepreneurs. In this regard, special training, credit facilities and technical assistance will be provided. Efforts will also be undertaken to develop entrepreneurs among the new generation of FELDA settlers and participants of other land development projects.

### Expanding Agro-Based Processing and Product Diversification

3.54 During the Plan period, agro-based development will focus on increasing utilisation of agricultural produce in the production of high value added products as well as processing activities. Efforts will be enhanced to increase private sector investment in agro-based processing activities including from agriculture-related GLCs, subsidiary companies of the agricultural agencies as well as farmers' and fishermen associations and cooperatives. Focus will also be given to increasing participation of individual farmers and fishermen in agro-based processing activities. The processing of end-products from agricultural industrial commodities is expected to increase further, as shown in *Table 3-11*.

TABLE 3-11  
**LOCAL PROCESSING AND UTILISATION OF  
AGRICULTURAL INDUSTRIAL COMMODITIES,  
2000-2010**

Commodity	Metric Tonnes ('000)			Average Annual Growth Rate (%)	
	2000	2005	2010	8MP Achieved	9MP Target
Sawlogs Production ('000 cubic metre)	23,074	21,334	19,475	-1.6	-1.8
Sawlogs used for End-products	16,590	15,450	14,748	-1.4	-0.9
% of Sawlogs used for End-products	71.9	72.4	75.7	0.1	0.9
Palm Oil Production	10,842	14,961	19,561	6.7	5.5
Palm Oil used for End-products	1,018	1,189	2,061	3.1	11.6
% of Palm Oil used for End-products	9.4	7.9	10.5	-3.3	5.8
Rubber Production	928	1,124	1,293	3.9	2.8
Rubber used for End-products	364	401	500	2.0	4.5
% of Rubber used for End-products	39.2	35.7	38.7	-1.9	1.6
Cocoa Production	70	28	57	-16.7	15.3
Cocoa used for End-products	8	3	7	-19.1	20.1
% of Cocoa used for End-products	11.5	10.0	12.3	-2.8	4.2
Pepper Production	24	19	30	-4.5	9.5
Pepper used for End-products	2	4	6	11.8	11.4
% of Pepper used for End-products	8.3	18.3	20.0	17.1	1.8

Source: Ministry of Plantation Industries and Commodities and Economic Planning Unit

3.55 *The Rubber Processing and Rubber Products Industry.* Efforts will be undertaken to promote the further development of downstream industries in the rubber processing and rubber products industry as it possesses the potential for producing a wide range of high value added products, both for the domestic and export markets. Greater investment in industrial rubber goods (IRG) that cater for a variety of industries will be encouraged.

3.56 Initiatives will be undertaken to develop quality marks and certification for selected rubber products under the General Rubber Goods (GRG) and IRG categories. In addition, R&D efforts on the development of advanced materials as well as processing and manufacturing technologies to generate new products for the rubber-based subsector will be intensified. R&D activities will also focus on developing new rubber products through the utilisation of biotechnology.

3.57 *The Palm Oil Industry.* During the Plan period, the palm oil industry is expected to benefit from greater downstream product diversification. To accelerate the development of the palm oil downstream industry, palm oil industrial clusters (POICs) will be established in the transborder areas of Eastern Johor-Southern Pahang and Southern Kelantan-Northern Terengganu as well as Sabah and Sarawak. The POICs will act as a catalyst in creating the value chain of the palm oil industry as well as assist in the development of related supporting industries. Efforts will also be intensified to develop Malaysian brands of palm oil products, particularly in the oleochemicals derivatives industry, as well as build upon international networking to penetrate new markets.

3.58 The palm oil industry will be encouraged to expand its activities overseas, particularly in countries with high demand for palm oil and derivatives. Collaboration between the palm oil industry and research institutions will be further intensified to accelerate the commercialisation of R&D findings to widen the base for new product development and improve manufacturing processes. Commercialisation of oil palm biomass products and biofuel will be expedited through greater private sector participation. Research on palm oil will focus on the utilisation of advanced oleochemical technology and biotechnology including nutraceutical and pharmaceutical products.

3.59 *The Wood and Wood Products Industry.* The furniture and furniture components manufacturers will be encouraged to focus on innovative product design and quality and expand their product range to include high-end niche products while improving existing activities. Measures will be undertaken to aggressively promote exports of high quality products in compliance with eco-labelling requirements to sustain market share as well as diversify into new markets.

3.60 *The Biotechnology Industry.* In line with the National Biotechnology Policy, the application of biotechnology to agriculture will be further promoted and intensified to harness the potentials of the agriculture sector in creating new

wealth, particularly through the production of higher yielding clones, better animals breeds and fish fries as well as new high value added products. To accelerate R&D activities in biotechnology, research institutions including institutions of higher education will be equipped with the requisite facilities and equipment. In addition, public researchers will be trained in the field of advanced biotechnology including biodiversity through attachment programmes and greater collaboration with the private sector.

3.61 *The Food Manufacturing Industry.* The food manufacturing industry will be encouraged to leverage on Malaysia's strong credentials in *halal* certification to tap the growing global *halal* market. In this regard, efforts will be intensified to develop Malaysia as a regional hub for *halal* food. While upgrading the existing infrastructure and facilities for *halal* food production, a number of new *halal* food parks will be established. Greater attention will also be given to promote the country's image as a source of safe and quality *halal* food products as well as to position the country's *halal* certification standard MS1500:2004, General Guidelines on the Production, Preparation, Handling and Storage of *Halal* Foods, as a premium standard for *halal* food.

3.62 The market for convenience and functional foods is expected to grow rapidly in view of the changing consumption patterns and greater awareness of healthy lifestyles. In this regard, the production and supply of ready-to-use seafood, livestock products and vegetable-based convenience food will be promoted as new areas of investment. In addition, the programme 'Malaysia the Truly Asian Kitchen' will be implemented. The manufacture of fruit and vegetable-based foods including high fibre products, spreads and fruit juices as well as food additives and ingredients also represents a potential area of new investment. Palm oil and cocoa-based food ingredients will be further developed in terms of product range and quality. Existing programmes to assist industries will be strengthened to facilitate the application of modern processing technologies, innovative packaging and branding to meet varying consumer preferences and market demand at home and abroad. Emphasis will also be placed on facilitating small and medium-enterprises to network with multinational companies in order to penetrate new export markets.

3.63 *Research and Development Activities.* R&D in the agro-based industry and commercialisation of R&D findings will be strengthened through greater participation of the institutions of higher education and the private sector. Commercialisation of R&D findings related to product development will be expedited through the provision of incentives and involvement of agriculture-related GLCs. Private sector participation in agricultural R&D and commercialisation of findings will also be increased through venture capital.

3.64 Programmes such as provision of incubators will be implemented to accelerate the commercialisation of research findings and develop new entrepreneurs. The Agropolis will be established in Serdang, Selangor to serve

as a food valley hub as well as the centre of excellence for biotechnology-based food production and processing. It will also undertake agricultural R&D through greater collaboration between public R&D institutions, local higher education institutions and the private sector.

### **Strengthening Marketing and Global Networking**

3.65 During the Plan period, focus will be given to improving the efficiency of marketing delivery services and strengthening the global network through strategic alliances. Towards this end, efforts will be undertaken to strengthen traditional markets and diversify into new markets. Promotional programmes will be intensified to increase consumption of foods with high nutritional value and create greater awareness among Malaysians on the safety of food products.

3.66 To further strengthen the marketing of food and food-based products, efforts will be undertaken to ensure compliance with international requirements. Efforts will be intensified to roll out the adoption of farm accreditation schemes and product standardisation. In this regard, a one-stop centre will be established to facilitate accreditation of farms and certification of standards for food products. The marketing functions of Federal Agricultural Marketing Authority (FAMA), LPP and *Lembaga Kemajuan Ikan Malaysia* (LKIM) will be reviewed to enhance coordination. In addition, the Malaysian Quarantine and Inspection Services (MAQIS) will be established to ensure imports of food products comply with national and international food safety standard.

3.67 Steps will also be undertaken to improve collection, grading and marketing of local agricultural produce and food-based industrial products through the establishment of National Food Terminals (TEMAN) as well as new collection centres and distribution centres in selected locations, including in Sabah and Sarawak. In addition, FAMA will increase contract farming arrangements, particularly with wholesalers, hypermarkets, supermarkets, hotels and resorts.

3.68 The mechanism to access market information as well as to conduct trading of food products using ICT will be upgraded through the expansion of the Supply and Demand Virtual Information (SDVI) system, e-trade through FAMAXchange and Agribazaar portals. In addition, the establishment of an additional 170 *Medan InfoDesa* facilities in the rural areas is expected to increase the accessibility of rural folks to the Agribazaar portal. LKIM will further strengthen its fish marketing programme through greater involvement of the fishermen associations.

3.69 The marketing of agricultural industrial commodities, particularly palm oil will be focused on creating and strengthening niche markets by establishing a chain of production processes in strategic locations around specific regions and relocating manufacturing sub-processes to consuming countries, as part of the

efforts in market penetration. The Malaysian Criteria and Indicators for Forest Management Certification (MC&I), which is recognised as a tool for sustainable forest management, will be expanded to meet the requirements of importing countries, particularly Europe, the United States of America and Japan.

3.70 Agricultural consuls will be posted to selected countries having high export market potential to promote food products. In addition, the Malaysia External Trade Development Corporation will increase its efforts in promoting Malaysian agriculture produce and agro-based products.

### **Enhancing Income**

3.71 More effective measures will be undertaken to increase incomes of smallholders, farmers and fishermen through productivity improvements within the agricultural subsectors. Ageing smallholders and farmers will be encouraged to participate in exit schemes through land consolidation and rehabilitation as well as group replanting programmes. Incomes of rubber and oil palm smallholders will be enhanced through replanting programmes using high yielding clones based on the mini-estate and group farming concepts as well as mixed farming including integration of livestock in plantations, aquaculture and off-farm economic activities. Cocoa, pepper and sago smallholders, particularly in Sabah and Sarawak will be provided with financial assistance to rehabilitate their farms through estate-based concept as well as encouraged to participate in the related agro-based processing activities. In addition, sustainable income-generating activities will be promoted and training provided to improve the quality of life of subsistence farmers and the forest dependent communities.

3.72 Padi farmers will be encouraged to participate in mini-estates and group farming activities which will be implemented by the LPP and the Department of Agriculture as well as Integrated Agricultural Development Projects (IADPs). An estimated 25,000 padi farmers will benefit from this programme, with their average income increasing from RM3,900 to RM7,800 per hectare per year. Emphasis will also be given to increasing their participation in the Ten Tonnes Per Hectare Project. In addition, padi farmers will be encouraged to participate in food processing activities, including producing rice-based products.

3.73 Efforts will be undertaken to improve incomes and standard of living of FELDA settlers and the new generation. In this regard, selected areas in FELDA land schemes will be developed as new growth centres which consist of downstream industrial activities and equipped with improved infrastructure and social amenities. In addition, the participation of the settlers and the new generation in non-farm activities including agro-based industrial activities and in the handicraft industry will be increased further. A total of 9,390 new entrepreneurs is expected to be created with an income of at least RM3,000 per month.

3.74 The quality of life of coastal fishermen will be improved through socio-economic programmes. The capabilities of coastal fishermen will be enhanced through the upgrading of boats, engines and fishing equipment. They will also be encouraged to undertake fish-farming activities and fisheries-based processing activities to stabilise their income. Income of small-scale livestock farmers will be increased through participation in contract farming. Inefficient tobacco growers will be encouraged to gradually replace tobacco with alternative crops to ensure sustainable income through contract farming arrangements.

3.75 To improve incomes of poor households in the agriculture sector, the *Skim Pembangunan Kesejahteraan Rakyat* (SPKR) and a special programme to diversify the incomes of farmers, livestock breeders and fishermen will be further expanded to benefit more households. A total of 70,000 poor families is expected to benefit from these programmes which include capacity building and provision of free housing for the hardcore poor as well as income generating activities where participants earn a minimum supplementary income of RM500 per month. A mechanism will be established to closely monitor the effectiveness of these programmes on the target groups.

### **Strengthening the Service Delivery System**

3.76 The restructuring of agricultural agencies, particularly those involved in the development of food commodities will be undertaken to improve the delivery of services and facilitate the achievement of the growth target of the sector. Various agricultural activities will be managed and monitored on an integrated basis to eliminate duplication of functions and target groups as well as optimise utilisation of resources. The integrated approach will also facilitate the development of value added activities along the value chain including agro-based processing.

3.77 The placement of officers and staff of various agricultural agencies will be based on the zoning of production areas. This will include rationalizing and consolidating of branches of agencies in areas of low priority. Subsidiary companies of these agencies will be reviewed to improve their effectiveness in agricultural development. In addition, the marketing activities of FAMA will be streamlined with the National Agriculture and Food Corporation (NAFC). In this regard, FAMA will focus on assisting the marketing of agricultural products of small farmers and entrepreneurs as well as undertake regulatory functions. The marketing and distribution of agriculture produce and agro-based products on a larger scale including for exports will be undertaken by the NAFC. The role of LPP will be enhanced in promoting the involvement of farmers' organisations in various agricultural related activities along the value chain, commercialisation of smallholdings as well as in contract farming and nucleus estates.



3.78 The development of the pepper industry will be facilitated through the restructuring of the Pepper Marketing Board to take over the responsibility of the Department of Agriculture Sarawak pertaining to pepper production and R&D. To accelerate the development of *kenaf* and herbal industries, the MOA will be given the responsibility to oversee the development of these industries. Professionals from the private sector will be appointed on a pilot basis to manage agricultural projects in selected areas.

#### IV. INSTITUTIONAL SUPPORT AND ALLOCATION

3.79 The transformation of the agriculture sector into a modern, viable and dynamic venture will be led by the MOA, the Ministry of Plantation Industries and Commodities (MPIC) and the Ministry of Rural and Regional Development (KKLW). The MOA will be responsible for the modernisation of the food subsector focusing on programmes such as training, marketing, credit, skills development and dissemination of knowledge on modern agriculture to farmers, fishermen and livestock rearers as well programmes to develop entrepreneur farmers in the agro-based industries. The MPIC will facilitate the development of agricultural industrial commodities through the transfer of new technologies to smallholders and R&D on product diversification. Efforts towards developing smallholders and improving the standard of living of the rural population will be undertaken by the KKLW, mainly through capacity building as well as poverty eradication programmes.

3.80 In line with the new emphasis on agriculture and its contribution to economic growth, a total allocation of RM11.4 billion will be provided to implement various agricultural programmes and projects, as shown in *Table 3-12*. This represents an additional amount of RM4.7 billion or 70.0 per cent higher than the allocation provided in the previous Plan. A total of RM4.4 billion will be allocated for the modernisation of agriculture, mainly for projects in the regional development areas, as well as replanting and land consolidation and rehabilitation programmes while another RM2.6 billion for support services and RM1.5 billion for agricultural irrigation programmes.

#### V. CONCLUSION

3.81 During the Eighth Plan period, the agriculture sector achieved a higher rate of growth than targeted and contributed towards economic growth and export earnings. There was increased involvement of the private sector in large-scale commercial food production and agro-based industry. During the Ninth Plan period, the development of the agriculture sector will be intensified to serve as the third engine of growth. The emphasis will be on *New Agriculture*, entailing

TABLE 3-12

**DEVELOPMENT EXPENDITURE AND ALLOCATION FOR AGRICULTURE,  
2001-2010**  
(RM million)

<i>Programme</i>	<i>8MP Expenditure</i>	<i>9MP Allocation</i>
Modernisation of Agriculture	2,689.6	4,368.6
IADPs	497.4	605.3
Replanting Scheme	650.2	1,150.8
Land Consolidation and Rehabilitation Programmes	482.1	857.6
Projects under RDAs <sup>1</sup>	1,059.9	1,754.9
Forestry	199.6	251.5
Fishery	663.8	798.8
Livestock	202.8	519.8
Support Services	1,305.8	2,558.0
R&D	529.7	614.0
Marketing	172.1	392.7
Training	480.9	551.3
Credit	123.1	1,000.0
Irrigation for Agriculture	780.00	1,458.1
Entrepreneur Development <sup>2</sup>		511.9
Agro-Based Development		361.8
Others <sup>3</sup>	366.3	606.5
<b>Total</b>	<b>6,207.9</b>	<b>11,435.0</b>

Source: Ministry of Finance and Economic Planning Unit

Notes: <sup>1</sup> Agricultural related projects in regional development authorities (RDAs) areas.

<sup>2</sup> Entrepreneur development were assumed under the various programmes during the 8MP.

<sup>3</sup> Includes physical infrastructure, buildings, facilities and ICT components as well as poverty eradication programmes.

large-scale commercial farming and participation in high quality and value adding activities leading to enhanced productivity and higher incomes. Target specific policies and strategies will be implemented to expedite the transformation of the agriculture sector into a modern, dynamic and competitive sector including with respect to agro-based processing activities and agricultural entrepreneur development.