CHAPTER 2

DEVELOPMENT OF AGRICULTURE SECTOR IN MALAYSIA

2.0 Introduction

The agriculture sector in the country had gone through various phases in its development pursuance ever since the country secured Independency from the British colonial in 1957. As the country's economy moves forward in the era of economic globalization and liberalization, this has opened up new inevitable challenge and obstacle to the traditional sector that was already carrying 'extra baggage' during its take-off period. Realizing such reality at hand, this sector bears important strategic element in the economy. The government and policymakers through its long-term policy framework strive to maintain the survival of the sector. As this process continues, the scope and direction of the development of the agriculture sector will somehow be directly or indirectly affected.

2.1 Trend of Agricultural Sector in Malaysia

Since 1980s, the agriculture sector in Malaysia began to show downward trend and this deterioration had sparked the anxieties of the government and those who are involved in the development process of this traditional sector in the economy. The downward trend was due to phenomenon such as continuous decrease in the primary commodity export prices and increasing prices of imported farm inputs. For example, the price of agricultural commodities began to fall in 1982 and as a result, Malaysia's trade balance recorded a deficit of RM1.926 billion which was the largest ever accounted during the

period (Malaysia, 1988). Such undesirable development had forced the government to 'restructure' its agricultural sector undertakings through the establishment of the first National Agriculture Policy (NAP) in 1984, followed by NAP II (1992-2010) in 1992 and the latest development – NAP III (1998-2010) in 1998.

In the wake of the deterioration of the agricultural sector in the 1980s, it had pushed Malaysia to the realization of the importance of focusing and promoting faster growth of the secondary sector in the country. The justification for such move was accommodated by the attractiveness of what the non-traditional sector could offer for the prosperity of the Malaysian economy. Among other things are the creation of new employment, high value-added products and generating new source of national income that could serve as the impetus for further economic development. Such declining and rising trends in the primary and secondary sector are respectively summarized in Table 2.1.

Table 2.1

Malaysia: Percentage of GDP By Industry, 1965-2000

Sector	*1965*	*1970*	*1980*	*1990*	*1995*	*2000**
Agriculture	35.1	33.6	22.2	18.7	13.1	10.5
Mining	9.0	7.2	9.2	9.7	7.3	5.7
Manufacturing	10.4	12.8	20.2	26.9	32.2	37.5
Construction	4.1	3.8	4.5	3.5	4.4	4.8
Retails, Hotel & Restaurants	15.3	13.7	12.6	11.1	12.0	12.7
Finance, Insurance & Real Estate	6.0	6.0	8.2	9.8	10.5	11.9
Government Services	19.1	19.3	13.0	10.8	9.3	8.1
Other Services**	4.6	3.6	10.1	9.5	11.2	8.8
GDP (market price)	100.0	100.0	100.0	100.0	100.0	100.0
Primary Sector	40.5	40.8	31.4	28.4	20.4	16.2
Secondary Sector	14.5	16.6	24.7	30.4	36.6	42.3
Tertiary Sector	45.0	42.6	43.9	41.2	43.0	41.5

Notes:

* Projection by Ministry of Finance (fixed price at 1978 = 100)

** Including transportation services, warehousing and communication; and electric, gas and water.

Source: Economic Report (various years).

Clearly, the economic development through diversification and industrialization policy that began in the 1950s has brought dramatic change in the structure of the economy. Most noticeable is the change in GDP contribution by sector, which is not unusual to any economic regime, whether in the developed or the least developed countries. In relation to such development in Malaysia, the agricultural sector (dominated vastly the Malay community) contribution has declined tremendously. Just within 30 years, the sector's contribution has been left behind if compared to the achievement of the manufacturing and services sectors. For example, the share of traditional sector to the GDP fell from 35.1 per cent in 1965 to only 13.1 per cent in 1995. It was forecasted that a further decline would be expected in the year 2000 to 10.5 per cent of the GDP. In contrast to the agricultural sector, for the same period, the share of manufacturing sector increased from only 10.4 per cent in 1965 to 32.2 per cent in 1995 and its contribution is expected to reach 37.5 per cent in the year 2000 (Table 2.1). Based on this quantitative argument, such phenomenon is believed to prolong in the future as the economy assimilates itself in the inevitable globalization of the world economy.

Table 2.2

Malaysia: Percentage of Employment By Sector, 1965-2000

Sector	*1965*	*1970*	*1975*	*1980*	*1985*	*1990*	*1995*	*2000**
Agriculture	52.1	53.5	49.3	39.7	31.3	27.8	19.1	13.1
Mining	2.5	2.6	2.2	1.7	0.8	0.7	0.5	0.5
Manufacturing	8.3	8.7	10.1	15.7	15.2	19.5	25.6	28.9
Construction	3.5	2.7	2.0	5.6	7.6	6.4	8.1	9.3
Services**	15.6	16.8	18.6	20.5	30.5	32.9	35.5	38.3
Government Services	17.1	15.7	17.8	13.7	14.6	12.8	11.1	9.9
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Notes:
* Projection by Ministry of Finance
**Services including electric, gas and water, transportation, warehousing and communication, retails, hotel and restaurant, insurance, real estate and business services.

Source: Malaysia Plan (various years)

Another interesting development regarding the significant declining importance of agricultural sector in the country can be traced in the decreasing share of employment in the economy. Such trend is parallel with the findings mentioned above. The factors behind the contraction of employment in the sector stemmed from the fluctuation of agricultural products, low wage and income rate and the deterioration of agricultural production and the quality of cropping area.

Table 2.2 indicates that agricultural sector employment dropped from 52.1 per cent in 1965 to 19.1 per cent in 1995 and has been projected to further decline to 13.1 per cent in the year 2000. In contrast, the manufacturing sector which contributed to only 8.3 per cent to the overall employment in 1965, rose to a significant figure of 25.6 per cent in 1995 and was forecasted to reach 28.9 per cent in the year 2000. Within the same period, the services sector increased from 32.7 per cent to 46.6 per cent and 47.2 per cent respectively. However, in the government services witnessed a downward pattern such that the share of employment declined from 17.1 per cent in 1965 to 11.1 per cent (1995) and is expected to drop to only 9.9 per cent in the year 2000. Much of this scenario was due to the implementation of the privatization policy since 1984 with the core objective to reduce government financial burden.

The deterioration of the agriculture sector also stemmed from the sluggish growth in terms of the value-added of such sector in the country. As indicated in Table 2.3, based on 1978 fixed price, the agricultural sector value-added rose marginally from RM 14,827 million in 1990 to RM 16,406 million in 1990 and is projected to reach RM 18,460 million in 2000.

Table 2.3

Malaysia: Agriculture Sector Value-Added, 1990-2000
(RM Million at 1978 price)

							Annual Average Growth Rate (%)	
Sector	*1990*	*%*	*1995*	*%*	*2000*	*%*	*6MP*	*7MP*
Agriculture-Manufacturing Commodity	**10,900**	**73.5**	**11,242**	**68.5**	**11,958**	**64.8**		
Rubber	2,043	13.8	1,745	10.6	1,601	8.7	-3.1	-1.7
Palm oil	5,312	35.8	6,801	41.5	7,948	43.1	5.1	3.2
Timber	2,315	15.6	1,876	11.4	1,569	8.5	-4.1	-3.5
Cocoa	1,230	8.3	819	5.0	840	4.5	-7.8	0.5
Food Commodity	**2,738**	**18.4**	**3,502**	**21.4**	**4,004**	**21.7**		
Rice	600	4.0	666	4.1	599	3.2	2.1	-2.1
Livestock	604	4.1	838	5.1	1,011	3.5	6.8	3.8
Fishery	1,534	10.3	1,998	12.2	2,394	13.0	5.4	3.7
Others	**1,189**	**8.1**	**1,663**	**10.1**	**2,498**	**13.5**		
Total	**14,827**	**100.0**	**16,406**	**100.0**	**18,460**	**100.0**	**2.1**	**2.4**

Source: Sixth Malaysia Plan (1991-1995; Midterm Review Sixth Malaysia Plan, 1993; and Seventh Malaysia Plan (1996-2000).

2.1.1 Agriculture in the National Economy

The agricultural sector is of strategic importance for a number of reasons. First, it provides livelihood to a significant proportion of the labour force. For instance, of the 4.8 million people employed in 1980, 1.9 million or 40 per cent were engaged in agriculture (Malaysia, 1981). The share of agricultural employment to total employment fell from 26.0 per cent in 1990 to 18.0 per cent in 1995 (Malaysia, 1996). Second, the agricultural sector plays a vital role in fulfilling the food requirements of the nation and providing the raw material inputs for the industrial sector. Until today, the country is self-sufficient in oil palm, cocoa products, vegetables, tropical fruits, fish, poultry and eggs. However, the level of self-sufficiency is very low for sugar, beef, mutton and dairy products which constitutes about 10 per cent of the total import bills or worth RM2 - 4 billion. The agricultural development planning consistently accords a high priority on local production of foods as a way to save foreign exchange. Third, the need to enhance the value-added content of agricultural commodities has necessitated a sustained and continuous supply of agricultural raw material. More importantly, the sector is vital for the attainment of national unity as envisaged under the National Development Policy (Malaysia, 1991_a).

The underlying issue concerns the relatively high incidence of poverty in the sector compared to the non-traditional sector. The need to reduce the intersectoral disparity and inequity has been a central theme in all of Malaysia's development plans. Table 2.4 shows the trend in the incidence of poverty in the agricultural sector since 1970.

Table 2.4

Incidence of Poverty in Rural and Urban Sectors, 1970-1990 (%)

Sector	*1970*	*1976*	*1984*	*1987*	*1990*
Rural	**58.7**	**47.8**	**24.7**	**22.4**	**19.3**
Paddy Smallholders	64.7	58.2	43.4	40.0	24.0
Paddy farmers	88.1	80.3	57.7	50.2	30.0
Estate workers	40.0	32.9	19.7	15.0	29.0
Fishermen	73.2	62.7	27.7	24.5	39.0
Coconut smallholders	52.9	64.0	46.9	39.2	27.1
Other agriculture	89.0	52.1	10.0	n.a	n.a
Other industries	35.2	27.3	10.0	n.a	n.a
Urban	**21.3**	**17.9**	**8.2**	**8.2**	**7.3**
National	**49.3**	**42.5**	**34.7**	**26.7**	**17.1**

Note: n.a (not available)

Source: Economic Report (various years)

Despite the general success of poverty alleviation, the fact remained that the incidence of poverty in Peninsular Malaysia, especially in the rural areas which are largely associated with the vast Bumiputera community in agriculture sector recorded the largest number of poor households with an incidence of poverty of 58.7 per cent compared with 21.3 per cent in the urban areas in 1970 (Malaysia, 1991_b). In 1993, the incidence of poverty was reduced, but the disparity between the rural and urban sectors still remained where the former recorded a two-digit percentage in incidence of poverty of 14.9 per cent compared to 4.4 per cent in the latter sector (Malaysia, 1993_a). It may well be that the incidence of poverty among the agricultural target group has risen again over the recent years due to low commodity prices.

Given the government's accent on poverty eradication, the development of the agricultural and rural sector has been accorded high priority in the national plans and should be continued because most of the poor ones located in those sector and area. To fight and eradicate poverty, it should be focused on the roots of the poverty itself in order to achieve what was really meant by economic development. As mentioned by Myrdal (1968: 1241), "*Fundamentally, it is in the agricultural sector that the battle for long-term economic development in South Asia will be won or lost*".

2.1.2 Agriculture in Economic Transformation

Up to the mid-1980s, Malaysia did not have any official agricultural development policy. This does not imply that there was an absence of agricultural planning. On the contrary, agricultural planning had been explicitly embodied in the entire national and five-year development plans. However, this had tended to be predominantly sectoral and had

focused more on the supply side. The launching of the first National Agricultural Policy (NAP) in 1984 marked the beginning of a more comprehensive agricultural planning effort in the country (Malaysia, 1984). This policy provided a framework for the development of the agricultural sector up to the year 2000.

The rapid change in the international regional and national economies had affected many of the guiding principles embodied in the NAP, especially those that were based on predictions about the global commodity markets and prices. This had rendered it ineffective as a planning document. As a result, an alternative planning document in the form of the second National Agricultural Policy (1992-2010) was promulgated. As in the case on the previous policy, the NAP II aimed to maximize agricultural income through an efficient utilization of resources and to enhance the contribution of the sector to the national economy. This would be based on *commercialization, diversification, intensification and mechanization.* Nine strategies have been outlined to achieve all these objectives, namely (a) optimizing resource use; (b) accelerating agro-based industrial development; (c) enhancement of research and development (R&D) efforts; (d) greater role of private sector; (e) reformed marketing; (f) expanded food production; (g) human resource development; (h) development of self-reliant agricultural institutions and (i) greater Bumiputera participation (Malaysia, 1993_b).

Table 2.5

Malaysia: Relative Contribution of Agricultural Sector to the National Economy, 1960-1995 (%)

	1960	*1970*	*1980*	*1990*	*1995*
Real (1978) GDP	33	28	23	19	14
Employment	68	56	40	35	24
Exports	62	55	40	28	13
Taxes	n.a	4	9	1	1

Source: Economic Report (various years)

The role of agriculture in the national economy undoubtedly showed evidence of declining trend that indicated in terms of its proportionate share in total GDP, employment, exports and government revenue (Table 2.5). In absolute terms, however, there has been an increase. For instance, the agricultural GDP had risen from RM3.6 billion in 1960 to RM14.8 billion in 1990, while agricultural employment had increased from 1.5 million to 1.8 million over the same period. The value of agricultural exports likewise expanded from RM2.2 billion in 1960 to RM8.0 billion in 1990. From the perspective of agricultural taxes, the value had risen from RM83 million in 1970 to around RM200 million in 1990. The agricultural sector has traditionally been an important source of revenue to the government. This generated mainly through export taxes on rubber, oil palm, pepper and pineapples apart from indirect taxes on agricultural inputs such as agricultural chemicals. In addition, the government also collects research, re-planting and regulatory cesses from the agricultural sector (specifically on rubber, oil palm and cocoa). However, because these cesses are eventually returned to the agricultural sector, they cannot strictly be regarded as government revenue. The rubber export tax was imposed to raise revenue to meet the expenditure commitments of the government, as a surcharge as well as an anti-inflationary instrument. The export tax imposed on oil palm had also been intended for similar purposes. In the case of pepper, the export tax was intended primarily to provide government revenue; anti-inflationary taxes has never been imposed on pepper. It should also noted that very little export taxes have until now been collected although there is a provision for these in Sabah (Abdul Aziz, 1990_a).

2.1.3 Macro Policy Impact on Agricultural Prices and Incomes

The economic impact of industrialization on the agricultural sector has been studied, among others, by Kelim Sdn. Bhd. (1979), Jenkins and Lai (1989) and Abdul Aziz (1990_b). All of these studies pointed out that the industrial, trade, taxation and pricing policies which have accompanied industrialization since late 1950s have accorded a greater level of protection to the non-agricultural (a proxy for manufacturing) sector *vis-à-vis* the agricultural sector. Conversely, they have tended to "discriminate" agriculture.

The agricultural sector was affected by these policies in two ways, directly through the transmission of the export tax burden (which was shifted to the producers by the exporters or refiners), and indirectly by way of an overvaluation of the local currency stemming from tariff protection of the industrial sector. Table 2.6 provides a measure of the nominal rate of protection (NRP), which gives a measure of the impact of taxation and pricing policies on the incentive to invest. It shows that the NRP for rubber, oil palm and cocoa had not only been negative but had worsened over the 1960s right through to the 1980s. These crops therefore have been accorded less protection compared with non-agriculture. The industrial, pricing and taxation policies, however, have tended to make cocoa production relatively more attractive compared to either rubber or oil palm. There had been little export tax on cocoa. Its producer price had been reduced largely through the appreciation of the local currency brought about by tariff protection. The negative NRP for cocoa stemmed mainly from the tariff policy.

Table 2.6

Malaysia: Total Effects of Pricing Policies Compared to Non-Agriculture, 1960-1988 (Based on relative price)

Year	*Rubber Est*	*Rubber S/h*	*Cocoa Est*	*Cocoa S/h*	*Oil Palm*	*Paddy*
1960	-0.18	-0.23	-0.07	-0.07	-0.15	0.23
1965	-0.16	-0.23	-0.08	-0.08	-0.16	0.18
1970	-0.16	-0.16	-0.09	-0.09	-0.17	0.09
1975	-0.24	-0.26	-0.09	-0.09	-0.31	0.09
1980	-0.35	-0.36	-0.06	-0.06	-0.13	0.06
1985	-0.16	-0.16	-0.08	-0.08	-0.25	0.08
1988	-0.14	-0.15	-0.03	-0.03	-0.18	1.24

Note: Est and S/h mean estate and smallholder respectively. The negative sign denotes a reduction.

Source: Based on Abdul Aziz (1990_a).

Table 2.7

Malaysia: Total Effects of Pricing Policies Compared to Non-Agriculture, 1960-1988 (Based on value added)

Year	*Rubber Est*	*Rubber S/h*	*Cocoa Est*	*Cocoa S/h*	*Oil Palm*	*Paddy*
1960	-0.17	-0.22	-0.05	-0.05	-0.14	0.27
1965	-0.16	-0.24	-0.08	-0.08	-0.16	0.45
1970	-0.18	-0.28	-0.11	-0.11	-0.19	-0.08
1975	-0.29	-0.30	-0.14	-0.14	-0.35	-0.30
1980	-0.36	-0.38	-0.07	-0.07	-0.16	0.18
1985	-0.16	-0.17	-0.08	-0.08	-0.27	2.36
1988	-0.17	-0.18	-0.05	-0.05	-0.22	1.44

Note: Est and S/h mean estate and smallholder respectively. The negative sign denotes a reduction.

Source: Based on Abdul Aziz (1990_a).

Table 2.7 shows the effective rate of protection (ERP) which measures the incentives and disincentives created by the trade and pricing policies on the value-added. The unfavourable effect of these policies on the value-added of agricultural commodities relative to non-agricultural goods over the period is also fairly evident. However, the degree of "discrimination" in this case has tended to be lesser than that of the NRP. This may be attributed largely to the rapid improvement in the productivity of rubber, oil palm and cocoa, which increased the value-added content in their production costs (Abdul Aziz, 1990_a).

Therefore, it was clear that the industrial, trade and pricing policies, which have accompanied industrialization in the country, have accorded a low level of price and value-added protection to agricultural commodity producers compared with non-agricultural producers. Furthermore, it was evident that they have rendered cocoa production much more favourable than either rubber or oil palm production. This could help explain the rapid investment in cocoa, and concomitantly, the significant disinvestment in rubber as well as oil palm for most part of the period mentioned. In addition, the rubber smallholder subsector had been affected much more adversely by these policies than the estate subsector. However, the policies have consistently supported the paddy subsector.

The impact of taxation and pricing on agricultural production has been analyzed by Jenkins and Lai (1989) where the effect of these policies since 1960 were to reduce potential supply of rubber and oil palm in both plantation and smallholder subsectors over the short and long term. In the case of rubber estate, on average, the cumulative direct effect of export taxes was to reduce potential supply by 9 per cent over the same

period. Likewise, on average, the cumulative direct effects of export taxes on the rubber and oil palm smallholder was a reduction in potential output by 16 per cent and 7 per cent respectively during the period.

The industrial, trade and pricing policies have generally tended to sustain the relative profitability of oil palm in 1960s and 1970s. The producer price and income of oil palm producers, however, started to worsen in the 1980s compared to those of cocoa, paddy and non-agriculture product. This accordingly induced the conversion of numerous oil palm areas into cocoa and non-agricultural activities. In comparison, these policies have consistently accorded a relative high price and income protection to cocoa, which explained its attractiveness from the early 1960s right up to the late 1980s.

Tables 2.5, 2.6 and 2.7 and the corresponding arguments indicate that due to such declining trend, the economy has to shift to the non-traditional sectors that could promise the country to grow to its maximum potentials in terms of a more equitable income and wealth distribution? In the developmentalist and public welfare point of view, such shift can be considered as a superior move. But, the exact quantitative and qualitative measurement of the cost and benefit of such structural change in the economy cannot be directly observed and calculated. This matter will not be further elaborated here since it is beyond the scope of this study.

2.1.4 Diversification of the Agricultural Sector

The NAP II (1992-2010) has taken a renewed interest in agricultural diversification. This has been spurred not only by the continuous decline in the agricultural commodity prices but also by the advent of structural constraint in the export crop subsector. Among others

are low private investment, ageing labour force, limited scope and progress of mechanization, increasing labour costs and concomitant competition from low-cost producers and uneconomic farm holdings (Abdul Aziz, 1990_b). The limited success of agricultural diversification until today can be seen from the persistently high proportionate share of export crops in the agricultural export mix (accounting for 75 per cent of total area and 70 per cent of total production in 1990). The policy thrust under NAP II was to provide a more balanced crop and output mix.

Under the NAP II, both horizontal and vertical diversification was pursued, focusing on the promotion and expanded production of industrial crops, food crops, horticulture and field crops apart from livestock, aquaculture and apiculture (Malaysia, 1993_b). Agrotourism was also been encouraged as a means of linking the agricultural sector with the buoyant tourist industry. In the case of paddy, it was produced only in specified granary areas, while the marginal paddy areas were converted into alternative activities. In the case of rubber, re-planting was limited to around 40,000 hectares annually (lower than the target of 60,000 hectares set before the enunciation of the first NAP) and this was undertaken only in selected areas. Vertical diversification was actively promoted under the Industrial Master Plan (UNIDO-UNDP, 1993). Three agro-based processing industries were specially earmarked for rapid development: these are food processing, palm oil industry and rubber products. The need for Malaysia to move up the industrial ladder in consonant with the 'flying geese' model of development has consistently been emphasized. The focus was on becoming the processing centre for commodities in the ASEAN region. To ensure that the agricultural sector benefits from the diversification

strategy, the necessary legal, economic and institutional provisions must be put in place accordingly.

2.1.5 Agricultural Sector in Malaysia: Any Way Forward?

To the Malaysian Government, the agricultural sector, and in particular the export crop subsector, has been a consistent source of revenue. A study by Abdul Aziz (1998), pointed that the imposition of taxes on the export crop subsector – rubber, oil palm and pepper – has had a dampening impact on its production, export, incomes and resources. These taxes, together with tariff protection of the local infant manufacturing industries, have tended to "discriminate" the export crop subsector, rendering it less attractive when compared to the non-agricultural sector. This in turn has become an instrumental factor in inducing the conversion of a significant number of estates and smallholdings into non-agricultural activities.

The unfavourable impact of taxation, industrial and pricing policies on the export crop subsector has been negated to some extent by productivity improvements brought about by research and development. This has effectively increased the value-added content in the input structure of export crop production, thereby deriving more income share in the unit value. The continued provision of social and physical infrastructure to the rural sector has also effectively helped to lessen the adverse impact of these policies on the livelihood of the agricultural population.

The tax burden on producers has been widely claimed as one possible cause for the relatively high incidence of poverty in the agricultural sector in Malaysia. Apart from export tax, the main taxes affecting rubber, oil palm, pepper and coconut include land,

education, drainage and sales taxes. It can be generally claimed that for the producers of these crops, their income and incidence of poverty would be strongly impacted by these taxes. Though taxation may reduce the incomes of agricultural producers, removal of the export and other taxes would certainly not move them out of poverty completely. It may well be that the elimination of these taxes would most likely move only some proportion of them out of poverty. Nonetheless, tax reform may be implemented to benefit the poor producers. For example, smallholdings of a certain size could be exempted from land taxes and the state government could be compensated for any revenue loss by imposing higher tax rates on larger holdings, or direct transfer from the federal government.

The export duty and surcharge on smallholders might well be substantial. A system of rebate could therefore be designed to benefit those who own extremely small farms. Certain complementary changes in the tax system could improve the economic conditions of the poor smallholders and farmers. However, without other programmes, they would probably remain poor. These other programmes include those which could increase their productivity and holding size. The attainment of these objectives probably would entail further analysis of the effects of taxes on incentives, and of the effects of the variables like farm size, yield, prices and extent of immature crop stands on variation in tax burden between classes of farmers, districts and regions.

There are indications that Malaysia is slowly losing its comparative advantage in agriculture, more so in the case of agricultural primary commodities. This has stemmed largely from rising costs of agricultural inputs. The competitiveness of agricultural production can be sustained through productivity increases, including that of labour. Nonetheless, the prospect of further enhancing labour productivity appears challenging,

given the constraints faced by the agricultural labour force. The general consensus is that there is unlikely to be any improvement in the supply of labour, thus necessitating a continued dependence on immigrant labour. This, however, has a number of policy connotations. Foremost, such labour is transient in nature, which makes it a very unreliable source of workforce. The prevailing policy on immigrant is widely claimed to hinder the employment of foreign workers. The imposition of foreign workers' levy, security bond and medical certification coupled with the high recruitment and administrative costs further exacerbate the supply and employment of foreign labour. The plantations have advocated for the exemption of levy on foreign workers. The request that the plantations be permitted to recruit foreign labour directly has already been agreed to by the government. An area which still poses a major problem is the slow administrative process involved in the registration of foreign workers, thus making it time-consuming and costly to employers.

From a different perspective against the backdrop of a continued labour shortage in the future, the need for a greater level of mechanization in Malaysian agriculture becomes critical. Labour-saving and labour-augmenting mechanization are inevitable if this sector is to remain competitive. The possibility for mechanization has to be viewed in the wider context of agricultural development that also takes into account economic considerations. For instance, mechanization cannot be a viable proposition if its costs are greater than the potential benefits. It is also unfeasible if it cannot be readily adapted by a great majority of the producers. It has been widely claimed that the entire mechanization programme in Malaysia has been rather ad hoc and uncoordinated. The mechanization of tree crops has

not made any substantial progress. Until now, Malaysia has still not been able to establish a strong domestic agricultural machinery industry.

Agricultural mechanization programmes should focus on finding alternative, and economically viable, labour-augmenting, labour-saving as well as labour-replacing devices (Abdul Aziz, 1993). This can serve to overcome the constraints imposed by the labour shortage. Given the diverse range of mechanization possibilities for agriculture and the limited R&D resources, there is a dire need to prioritize the areas of mechanization research. There are two areas where mechanization efforts should be emphasized. First, research in mechanization should be focused on areas where the elasticity of substitution of capital for labour can be expected to be high, such as fertilization, irrigation and tractorization. Second, there should be a focus on mechanization of agricultural activities that have a high labour content, such as harvesting, tree maintenance and chemical application. It is important that research in mechanization distinguishes the three modes, namely, labour-saving, labour-augmenting and labour-replacing mechanization. Each has a different set of technical and other requirements and this has to be taken into account. Comprehensive plan for agricultural mechanization needs to be developed as part of the drive towards a more resilient and competitive agricultural sector. This entails, among other requirements, a listing of prioritization of research thrusts, institutional arrangements, commercialization of mechanization research results, and resource allocation. It should also consider the development of indigenous, easily adapted and relatively cheap schemes of mechanization as well as the establishment of a local agricultural machinery industry.

National economic and development planning should factor in the interrelationship between different policies and their relative effects. One useful strategy would be to employ comprehensive input-output analytical frameworks for indicative policies on sectoral growth and development, including that of agriculture. This in turn would allow for the design of appropriate adjustment measures for the individual sectors. From a different perspective, it is vital for economic transformation to be accompanied by a stabilization policy in order to ensure that growth can be attained with stable prices and exchange rates as well as a balance in the trade accounts. This is not only to ensure fair agricultural producer prices and incomes but also to sustain the attractiveness of agriculture.

2.2 NAP III (1998-2010): Formula for Agricultural Sector's Rejuvenation?

During the 1992-1996 period, further structural changes in the economy have led to increasing resource constraints for agricultural development. Furthermore, at the international level, the establishment of the WTO and the rapid liberalization of agricultural trade had opened the agricultural sector to increasing competition and new market opportunities. In addition, the growing concerns for sustainable development and environmental protection have led to the need to conserve and utilize natural resources on a sustainable basis. The recent financial crisis in the country and the Asian region resulting from further liberalization of the financial market has made the currency market highly vulnerable to speculation. The volatility and resultant decline in the exchange rate of the Ringgit Malaysia vis-à-vis major currencies has negatively affected the stability and security of the country's food supply. This instability and insecurity, if left

unchecked, can have serious economic, social and political implications. Under the current exchange rate conditions, the high imports of food will put a serious strain on Malaysia's foreign exchange reserves. In 1997, food trade excluding oil palm experienced a negative balance of RM4.74 billion representing 49 per cent of the current account deficit in goods and services. It is expected that this deficit will increase by about 30 per cent due to the influence of exchange rate alone. In addition, the depreciation of Ringgit Malaysia has resulted in significant increase in the prices of agricultural inputs and food items, which have given rise to high inflationary pressures.

The above developments posed new issues and challenges to the agricultural sector. The formulation of NAP II did not anticipate such rapid and sudden changes in the domestic and international economy and therefore did not adequately address the new issues and challenges. Furthermore, NAP II lacks focus on priority areas of agricultural development, a plan of action and mechanisms for its implementation. This calls for the formulation of new policies and strategies to strengthen the sector's robustness to changes in external factors and enhance its global competitiveness as well as to ensure continuous growth of the Malaysian agriculture sector (Malaysia, 1999).

2.2.1 Approaches in the NAP III

In NAP III (1998-2010), two new strategic approaches are adopted. The first is the agroforestry approach. This approach is aimed at addressing the increasingly scarce resources including land and raw materials availability. In this approach, agriculture and forestry are viewed as mutually compatible and complementary, thereby providing a scope for joint development. The integration of agriculture and forestry is also aimed at

creating a larger productive base for both sectors. As indicated in Malaysia (1999), the approach will:

- allow for a wider range of agroforestry enterprise mix, optimize resource utilization, particularly land and enhance the income generating potential of agroforestry investments;
- allow the production of both agricultural and forestry products on the same land thereby mitigating the demand pressure for new arable land;
- support various symbiotic relationships such as planting of forest species with industrial crops to optimize land utilization and maximize returns; and
- provide avenues for early and continuous returns from the agriculture component of the mixed enterprise and encourage the participation of the private sector in commercial forest plantations, thereby increasing the supply of timber for the wood-based industries.

The second new strategic approach is the product-based approach. This approach is adopted to reinforce and complement the cluster-based agro-industrial development as identified in the Second Industrial Master Plan 1996-2005 through strengthening both inter and intra-sectoral linkages including the development and expansion of intermediate and supporting industries. This approach differs from the conventional commodity-based approach which limits the effectiveness to serve markets that are of higher value and more segmented. The product-based approach emphasizes in satisfying the specific needs

of niche markets and consumers world-wide who are increasingly demanding products that are more specific to their needs and preferences. In this approach, key products and markets are identified based on market demand, preferences and potential. This market demand and preferences are translated into strategies for upstream primary agricultural production to enhance production and marketing of the agricultural produce. In addition, the following approaches are also taken into consideration:

- enable the identification of opportunities for market expansion and deepening through the transmission of market signals and consumer preferences upstream to the farm to enhance the development of agricultural industries;
- encourage the production of high quality and high value produce, facilitate product differentiation and increase value-added of agriculture and forestry products;
- strengthen the strategic role of upstream agricultural and forestry industries in linking and supporting the downstream industries and other sectors of the economy;
- encourage vertical integration and the internalization of value-adding activities such as sorting, grading, packaging and processing at the farm level to increase farm income; and
- widen the scope of agricultural and forestry development and create business opportunities for a wider range of business ventures through a system of linkages (Malaysia, 1999).

2.2.2 New Policy Thrusts and Strategies

Under NAP III new policy thrusts, strategies and implementing mechanisms are put in place to address national concerns on agricultural development and the economy as a whole. These concerns are on food security, productivity, inflation, private sector investment in agriculture, enhancing exports and reducing unproductive imports and conservation and sustainable use of natural resources.

2.2.3 Enhancing Food Security and Combating Inflation

The country's food import bill is continuously increasing. In 1997, total food imports amounted to RM10.0 billion, up from RM4.6 billion in 1990. The high demand for food has led to increases in food prices. In 1997, the increase in food prices accounted for 51.9 per cent of the increase in Consumer Price Index (CPI). The weakening of the Ringgit Malaysia relative to the major world currencies has put further pressure on prices of food and agricultural inputs, in particular imported items (Malaysia, 1999).

The financial crisis has highlighted a more urgent need to enhance food security through expansion in domestic food production and lesser dependence on imports. A new round of import substitution measures will be necessary to encourage domestic food production with special focus on the establishment of integrated cluster of production, processing, marketing and supporting services industries. Where imports are necessary, strategic sourcing will be adopted to secure supply and complement domestic production.

Among the strategies formulated to enhance food security and combat inflation are:

- Focusing production on major food products, which are cost competitive such as fishery products, selected fruits, vegetable and livestock products as well as selective imported food products;
- Zoning of areas specific for food production;
- Provision of special incentives and strengthening of other supporting measures for food production including infrastructure;
- Intensification of R&D to increase yield and reduce post-harvest losses and promote the utilization of good agricultural practices to increase efficiency of production; and
- Strengthening the development of supplier sector and parastatal support institutions to establish stronger linkages with the food sub-sector and facilitate clustering in the sub-sector (Malaysia, 1999).