

FOOD SECURITY IN MALAYSIA FROM ISLAMIC PERSPECTIVE

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Abstrak

Isu keselamatan makanan semakin mendapat perhatian masyarakat dunia pada masa kini. Pertambahan populasi yang semakin meningkat tidak dapat diimbangi dengan peningkatan pengeluaran makanan negara sehingga menyebabkan kebanyakan negara dunia ketiga menghadapi ancaman keselamatan makanan. Di Malaysia, isu keselamatan makanan menjadi objektif utama dalam Dasar Pertanian Negara (DPN). Pelbagai dasar dan usaha telah dilaksanakan untuk meningkatkan pengeluaran produk makanan negara sejak DPN1 (1984-1991) sehinggalah DPN3 (1998-2010). Bagaimanapun, atas beberapa alasan, Malaysia masih gagal mencapai tahap saradiri (SSL) yang efektif. Artikel ini membincangkan isu-isu keselamatan makanan dari perspektif Islam dan senario keselamatan makanan di Malaysia. Seterusnya beberapa polisi diutarakan untuk mengatasi masalah keselamatan makanan di Malaysia.

Introduction

The rapid population growth in many parts of the world, and in particular, the Third World countries, has called for greater concern for food security. The Special Programmed for Food Security (SPFS) aims to help those living in developing countries,

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particularly the low-income food deficit countries (LIFDCs). This program helps to improve their food security through rapid increases in food production and productivity.

Many regions of the Third World are still unable to increase their food production level to meet their fast increasing demand. Many are still constrained with low food self-sufficiency levels. Today around 20 percent of their total population in developing countries are chronically undernourished. With a growing world population, the present figure of 5.7 billion is expected to rise to 8.3 billion by the year 2025 and this situation will worsen unless very determined and well-targeted actions are taken to improve food security.¹

Food security has been defined as “secure access at all times to sufficient food for a healthy life”². Food security has three dimensions which are availability of sufficient quantities of food, access to adequate resources and utilization of food. Meanwhile, food insecurity has been defined as the lack of capability to produce food and to have access by all people at all times to enough food for an active and healthy life. Food and Agriculture Organization (FAO) has further identified three major components of food security namely, adequacy in food production, stability in food supplies and physical and economic access to food by the vulnerable sections of the population.³

At the national level, food security is translated into the maintaining of stable and reliable supplies of food to domestic markets. At the household level, they are able to access sufficient foods including the nutritionally adequate and safe foods.⁴ Basically, food security for a country can be achieved either through: (i) 100 percent domestic food production; or (ii) 100 percent food imports; or (iii) a combination of domestic production and food imports. As for Malaysia, we maintained our food security for most of the food items by a combination of domestic food production and imports, but there also food items (milk, beef and mutton) which are mostly imported because of

¹ Globalization and Food Security (2000), *IBON Special Release*, p. 49.

² Maxwell, S. and Frankenberger, T. (1992), *Households Food Security: Concepts, Indicators, Measurements. A Technical Review*. New York and Rome : UNICEF and IFAD , p. 8.

³ Pazim @ Fazim bin Othman. (2000), “Food Security in Malaysia”, *Proceedings of the Asian Productivity Conference*. Tokyo : Asian Productivity Organization, pp. 204-221.

⁴ Parikh, K.S and W. Tims (1989) “Food Consumption, Dietary Status and Chronic Hunger : An Assessment of its Extent and Policy Options”, *Proceedings of World Food Conference (Food and agricultural policies and programs of major countries and regions)*. Iowa City: Iowa State University Press, pp. 3-42

the very low domestic production. In addition, there are countries such as Brunei Darusalam and Singapore, which totally rely on food imports because of their inability to produce domestically, but they have sufficiently large amount of foreign exchange to resolve their food import bills. In fact, there are many more of such countries that totally rely on the imports of food commodities, but these countries have developed the other sectors such that they are able to raise sufficient foreign exchange to pay for the food import bills.

Food insecurity and malnutrition are principally because of low productivity in agriculture coupled with inequitable distribution of food supplies. It is frequently caused in parts by policy, institutional and technological constraints. The high seasonal and year-to-year variability in food supplies, often the result of unreliable rainfall and insufficient water for crop and livestock production, would be one of the reasons. The lack of off-farm employment opportunities, contributing to low and uncertain incomes and purchasing power in urban and rural areas, is quite often the major contributor. In its totality, food insecurity and poverty are inextricably interlinked.

This paper attempts to understand the food security from the Islamic perspectives, review the past and current food security position in the country and propose recommendations for future action with the view of producing sufficient food for the growing population.

Food Security: Who's Obligation?

Food security obligation lies on everyone's shoulder including government, producers, consumers, processor, distributors or others. It is everyone's responsible to ensure access that enough and good foods are reachable. For instance, the government plays an important role in ensuring the availability, adequate and utilization of food in the country. It can be done through the various policies and agencies. The government needs to focus on managing a safe food supply to the nation.

From the Islamic perspective, it is the government's responsibility to ensure that every individual in the country has enough food to eat. This obligation will also be shouldered by other parties including producers, distributors, and consumers. Based on the Islamic teachings, the State (Government) is obliged to appropriately plan and monitor the food supplies (domestic production and food imports). It is an obligation of every Muslim to take good care of his/her families, relatives, friends and the rest of the society around him/her locality. The Holy Quran, revealed to our Prophet Muhammad (S.A.W) some 1400 years ago, clearly spelt out important principles to be observed by all Muslims, especially pertaining to securing enough food by every citizen. More importantly, some

of these principles are imposed on the rich, and are to a large extent, targeted at helping the poor and the destitute to secure sufficient food for them and their family members. These include: (i) *zakah* (tithes) on agriculture products (selected food items and animals), individual income, business profits, and gold; (ii) *kifārah* – payment of fines for certain misconduct (in terms of food items only); (iii) ‘*aqīqah* and *qurbān* (in terms of selected animals only - cow, buffaloes, camel, goats and sheep), and other forms of alms-giving. Another classic example was the incidence which occurred during the era of Prophet Yussuf (A.S) when he was made the King of Egypt. He predicted that the first seven years of good bumper crops will be immediately followed by another seven years of long dry spell which would result in poor harvest, food shortages, famine and hunger. So he cautioned his people and advised them to save enough food from their good harvest for the bad times. His prediction really came through but as his followers had strictly adhered to his advice, they were able to sustain themselves during the seven years of hardship mainly because of the food they had saved. These examples point to the fact that the State is fully responsible for the planning, monitoring and implementing effective measures to achieve and maintain food security for the people.

The government, through the implementation of policies, should ensure that the producers produce enough food and at the same time produce a good food which is *halal* and safe. The producers or distributors should adhere to the government enforcement and produce good and safe food to eat (e.g., vegetables free of chemicals and pesticides). Meanwhile, the consumers must understand and aware of issues pertaining to food safety from the Islamic perspectives. We all very well know that food is important for human development as the food taken would be our ‘flesh and blood’ for us and for our future generations. Good generations come from good food, which is not only food of good quality but it must also be safe and *halal*. This means that Islam strictly prohibits Muslims from consuming meat of dead animals, blood, wine, pork, carnivorous (e.g., tigers and lions), and drugs (such as *dadah*). Therefore, as required by Islam, we must ensure that the food is *halal*, safe and in good quality. It is consistent with the verses of the Al-Quran:

“O ye people! Eat of what is on earth, Lawful and good...”

Surah al-Baqarah (2): 168

Food Security in Malaysia

Food security has been an integral national policy objective in Malaysia's development objectives since 1956. Various policies has been designed and implemented to achieve the food security objective. The government's efforts to revitalize the agriculture sector as the third engine of economic growth was specifically highlighted in the 2005 annual budget. To this effect, an increase in the allocation of RM1.5 billion (USD0.39 billion) in 2005 to the Ministry of Agriculture and Agro-based Industry was aimed at transforming and modernizing the agriculture sector. During the outbreak of economic crisis in 1997 the role of agriculture sector started to become more important to the Malaysian economy. This sector remains as an important contributor to the food production besides acting as a major source of supply of raw materials to the domestic agro-based industries. At the same time, the sector continues to play a major role in ecological and environmental conservation for ensuring sustainable development.

Following the general trend of many other developing countries, the Malaysian agriculture has been experiencing declining percentage share to the gross domestic product (GDP), employment, and export earnings. With rapid economic transformation towards industrialization, the sector's share to GDP declined from 33.6 percent (1970) to 22.2 percent (1980) and to only 8.5 percent (2004).⁵ For many obvious reasons, Malaysia has not been able to meet its self-sufficiency level for many of her food items. Hence, as far as domestic food production is concerned Malaysia is undoubtedly still facing food insecurity.

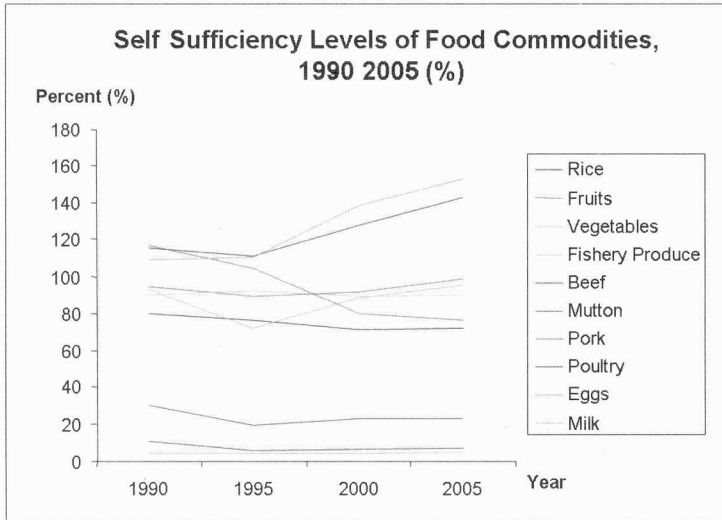
Food Self-Sufficiency Level

The production of sufficient food for population was made the main agenda of the First National Agricultural Policy (NAP1), 1984-1991 and it was reinstated in the Third NAP3 in 1998. As stated in NAP1, it was aimed at achieving and maintaining at least 80 percent SSL in major food items. However, the SSL of rice, the staple food for the country, decreased from 91 percent in 1972 to 72 percent in 2005. The use of modern techniques of paddy planting such as the direct seeding, modern mechanism of ploughing and the use of combine harvesters for harvesting, have only contributed to a minimal increase in its productivity.⁶ As shown in Figure 1, the SSL of food sub sectors such as

⁵ Government of Malaysia (2000), *Eighth Malaysia Plan 2000-2005*. Kuala Lumpur: Percetakan Negara, p. 194.

⁶ Pazim @ Fazim bin Othman (2000), *op.cit.*

Figure 1: Self-Sufficiency Levels of Food Commodities, 1990-2005 (%)



Source: Eighth Malaysia Plan (8MP), 2001-2005

beef, mutton, pork and fisheries products dropped at 7 percent, 3 percent, 30 percent and 1 percent from 1990 to 2005, respectively. The SSL for vegetables showed an increase from 93 percent in 1990 to 95.6 percent in 2005. Meanwhile, the SSL for fruits rose from 94 percent in 1990 to 98.6 percent in 2005. The increase in the production of both fruits and vegetables was mainly due to the expansion in planted areas, the provision of basic infrastructure and inputs as well as the promotion of organized and commercial cultivation. Hence, the major focus of NAP3 was to increase domestic food production and sourcing of food strategically to ensure the adequate supply of and accessibility to safe, nutritious and high quality food at affordable prices.⁷ The Malaysian government placed a strong effort to enhance the agricultural sector through various projects such as agro-product, agro-business, agro-tourism and etc. to improve the trade balance as well as strengthen the food security situation in the country.

Food Production

The major thrusts of the agricultural programs were to improve the competitiveness of agricultural industrial commodities, expand the production of food commodities, and promote the cultivation of agricultural produce such as flowers, fruits and vegetables

⁷ Government of Malaysia (2000), *op.cit.*, p. 212.

as well as aquaculture and livestock products. Despite the increase in the production of many food items, the production of coconuts however recorded a significant drop from 1,257,000 million units (1990) to only 824,000 million units (2005).⁸ This is due to the decline in land use for coconuts from 298,740 hectares (1995) to 201,000 hectares (2005). There was also a decrease in the production of cash crops from 86,000 tones to 57,000 tones in 2003. The decline in land use allocated for food sector has led to the decline in the production of major food items. Nevertheless, the production of major food commodities experienced only a slight increase in 2005.⁹

1. Rice

Paddy production increased from 2.0 million tones in 1990 to about 2.8 million in 2005 (Table 3). However, the SSL of rice decreased from 91 percent in 1972 to 72 percent in 2005. The planted area of paddy dropped from 693,040 hectares in 1993 to 674,080 hectares in 2004. The harvested area also dropped from 705,040 hectares in 1993 to 666,090 hectares in 1995. Meanwhile the yield showed an increase from 3,035 kg/ha in 1993 to 3,235 kg/ha in 2004. During the economic crisis in 1997, Malaysia experienced a significant dropped in the rice yield from 3,251 kg/ha in 1997 to only 2,883 kg/ha in 1998, probably because of the inability of farmers to purchase sufficient farm inputs such as fertilizers and pesticides.

2. Livestock

Livestock farming includes the production of meat, milk and poultry and eggs. The production of beef and mutton increased from 13 percent and 0.8 percent to 40 percent and 1.5 percent respectively from 1990 to 2005 (Table 3). However, the SSL for beef, mutton, pork and fisheries products dropped at 7 percent, 3 percent, 30 percent and 1 percent respectively from 1990 to 2005, respectively. The poultry and eggs industry continued to be the main source of growth for the livestock sub sector. The production of poultry and eggs increased by 244 percent and 82 percent respectively in 2005 (Table 3).

⁸ *Ibid.*, p. 210.

⁹ *Ibid.*

Table 3: Selected Agricultural Production ('000 Tones)

Commodity	1990	1995	2000	2005	Average Annual Growth Rate (%)	
					7MP	8MP
Food Commodities						
Paddy	2,016	2,127	2,235	2,813	1.0	4.7
Fruits	1,531	1,020	1,376	1,982	6.2	7.6
Vegetables	694	718	1,019	1,390	7.2	6.4
Coconuts ¹	1,257	1,389	550	824	-16.9	8.4
Fisheries	951	1,241	1,511	1,860	4.0	4.2
Marine	-	1,108	1,256	1,360	2.5	1.6
Aquaculture	-	133	255	500	14.0	14.4
Livestock						
Beef	13.0	17.0	28.0	40.0	10.5	7.5
Mutton	0.8	0.8	1.0	1.5	5.2	5.9
Pork	227.9	283	150	183	-11.9	4.0
Poultry	385.9	687	1,050	1,329	8.8	4.8
Eggs ¹	5,505	6,242	8,221	9,974	5.7	3.9
Milk ²	28.9	37.0	50.0	65.0	6.1	5.5

Note: ⁱ Measured in million units

ⁱⁱ Measured in million litres

Source: Eighth Malaysia Plan, 2000-2005

3. Vegetables

The production of vegetables continues to increase from 694,000 tones in 1990 to 1,390,000 tones in 2005. This is due to the expansion of harvested area of vegetables from 42,000 hectares to 51,400 hectares. Moreover, vegetables export increased by 124 percent from 1998 to 2005.

4. Fruits

Fruits productions increased from 1,531,000 tones in 1990 to 1,982,000 tones in 2005. This is due to the expansion of planted area, the provision of basic infrastructure and inputs as well as the promotion of organized and commercial cultivation. Local fruits

¹⁰ *Ibid*, p. 214.

such as bananas, papayas, watermelons, pineapples, star fruits, mangoes, durians, rambutans, guava and citrus fruits were promoted for commercial and export.¹⁰

5. Fisheries

Fisheries production, which involved about 81,547 fishermen, increased from 1.3 million tones (1998) to 1.6 million tones (2004). This was, to some extent, contributed by the production of the aquaculture sub sector which increased from 133,700 tones (1998) to 209,500 tones (2004). The potential of medium and large scale aquaculture, both inland and open sea will be harnessed by establishing more production areas and greater participation of the private sector. The ornamental fish rearing has been actively promoted as a new source of income and export of this sub sector (Table 4).¹¹

Table 4: Main Information on Fisheries Sub Sector, 1998-2004

Item	Year					
	1998	2000	2001	2002	2003p	2004e
Productions ('000 Tones Metric)	1,348.9	1,453.6	1,408.5	1,463.9	1,502.0	1,577.10
<i>Landings of Marine Fish</i>	1,215.2	1,285.7	1,231.3	1,272.1	1,311.6	1,324.8
<i>Aquaculture Production</i>	133.7	167.9	177.1	191.8	190.4	209.5
<i>Number of Fishermen</i>	81,547	81,994	84,496	84,702	87,895	88,421
<i>Number of Aquaculturists</i>	21,700	21,774	22,108	21,164	22,234	23,346

p provisional

e estimate

Source: Kementerian Pertanian, <http://agrolink.moa.my/>, 10 November 2005

Food Trade Performance

Food trade has important implications on the food security issue. Malaysia has been highly dependent on food imports while the food exports have been relatively lower. We spent about RM12.43 billion on imported food as compared to only RM7.42 billion worth of food exports for 2005.¹² As can be seen in Table 6, all food commodities showed significant increases in food imports except for cereals and sugar. Total import of meat, dairy products, cereals, vegetables, fruits and sugar are always exceeding the total exports for the respective years (1998-2003). The total imports of live animals,

¹¹ *Ibid.*

¹² *Utusan Malaysia*, 14 February 2005.

meat and fruits increased by 85 percent, 49 percent and 35 percent respectively for the period, 1998 -2003. This reflects an insecurity of food in Malaysia, unless the country can effectively make up the balance through food imports. Various efforts must be taken to reduce food import as well improve the food trade balance.

Table 6: Food Trade Performance, 1998-2004 (RM'000)

Commodities	Year											
	M 1998	X 1998	M 2000	X 2000	M 2001	X 2001	M 2002	X 2002	M 2003	X 2003	M 2004	X 2004
Live Animals ¹	128,867	673,772	154,553	357,379	192,746	389,277	226,940	385,238	228,985	382,864	167,717	307,974
Meat and Meat Preparations	535,866	88,123	771,355	64,563	833,301	83,229	879,474	119,919	798,488	144,130	964,885	125,244
Dairy Products	1,003,534	214,275	1,167,607	226,873	1,433,648	239,113	1,186,076	228,691	1,193,072	314,185	1,551,125	402,877
Birds' Egg	5,906	138,651	8,881	183,246	9,291	138,101	10,698	164,747	10,398	164,244	12,548	169,139
Fish, Crustaceans, Molluscs and Preparations ²	851,653	1,143,290	1,085,753	1,263,290	1,191,519	1,248,278	1,217,425	1,293,481	1,334,467	1,522,038	1,935,041	2,072,950
Cereals and Cereal Preparations	1,959,052	410,923	1,839,101	610,824	1,736,690	563,083	2,644,838	619,337	1,465,658	651,606	2,361,512	763,390
Vegetables	986,844	205,934	1,023,596	278,411	1,121,877	312,194	1,187,786	358,944	1,172,404	393,734	1,518,455	462,785
Fruits	451,840	432,635	561,594	512,418	596,158	497,215	616,308	523,633	607,945	513,557	657,719	482,833
Sugars, Sugar Preparations and Honey	1,155,844	259,323	1,085,154	353,678	1,232,017	383,242	1,152,567	473,449	1,084,647	487,506	1,218,450	441,221
Coffee, Cocoa, Tea, Spices and Manufacturers	709,628	1,221,503	813,873	1,153,877	869,751	1,131,651	1,110,812	1,389,442	1,631,188	1,671,503	2,022,224	2,187,277
Feeding Stuff for Animals	1,831,883	405,555	1,928,394	375,378	1,889,987	416,637	1,103,324	536,719	2,080,395	567,692	2,608,047	572,569
Miscellaneous Edible Products and Preparations	873,124	955,812	919,346	1,042,500	1,134,257	1,121,336	1,099,749	1,329,735	1,079,263	1,534,582	1,536,773	1,941,272
Race Horses, Pets and Zoo Animals	6,874	6,278	10,967	2,855	17,199	3,618	12,098	3,898	13,640	3,942	48,442	3,535
Ornamental Fish	13,288	37,544	24,938	45,013	19,348	54,987	22,499	67,352	32,440	73,448	37,218	81,948
Floriculture	3,541	28,573	3,226	54,256	3,002	56,094	4,106	99,034	5,120	100,913	11,986	132,284
Hides and Skin	196,213	335,298	281,969	87,764	313,796	72,700	599,796	79,923	338,384	123,001	613,369	10,151

Source: Kementerian Pertanian, <http://agrolink.moa.my/>, 10 November 2005.

¹³ Fatimah Said, Saad Said, & Azmah, Othman (2005), "Malaysian Agrarian Reforms, Agricultural Productivity and Rural Poverty" (Conference paper of Research Workshop on Linking Rural Poverty and Environment : Formulating Resource Use, Governance and Sustainable Development Policies, UKM, Bangi, 22-23 February 2005), pp. 39-45.

Agricultural Growth

The average annual growth rate of agriculture production decreased from 8.2 percent (1966-1970), to 5.1 percent (1971-1990) to only 0.3 percent (1990-2000).¹³ The annual average growth rate of population at 2.0 percent is higher than that of the agricultural output, hence indicating the tendency for the agricultural production to be facing an inadequate supply of food to meet the growing domestic consumption, unless supported by food imports. This may present a serious food problem in the future due to increasing reliance on imported food, unless the country can raise sufficient revenues to pay for the growing food import bills. Table 7 indicates a marked decrease in the growth rates for the agricultural inputs (land, labor, fertilizer and machinery) for the period 1966-2000 with even a negative growth for labor (1991-2000).¹⁴

Table 7: Average Growth Rates of Agricultural Output and Inputs, 1996-2000 (percent per annum)

Period	Output	Land	Labor	Fertilizer	Machinery	Population
1966-1970	8.2	2.3	0.9	14.4	13.3	2.7
1971-1990	5.1	2.2	0.4	8.8	9.8	2.6
1991-2000	0.3	1.1	-2.7	4.8	5.4	2.5

Source: Fatimah, Saad & Azmah, 2005, p. 39-45

Agriculture Value-Added

During the Eighth Malaysia Plan (8MP) period, measures were taken to increase the contribution of the agricultural sector to the national economy. This innovative effort was aimed at enhancing domestic food production through encouraging large scale and organized farming, intensifying land use, improving agronomic practices as well as using modern technologies and management practices. Through this effort, the total value added of agricultural sector, in absolute terms, continued to increase significantly from RM14,827 million (1990) to RM16,406 million (1995). Palm oil remained as the most significant contributor to the growth in value added accounting for a growth of 7.9 per cent exceeding that of the 7MP target which was set at 4.2 percent. Other sub

¹⁴ *Ibid.*

sectors also showed a significant increase such as, paddy (0.2 percent), livestock (1.3 percent), fisheries (3.8 percent), fruits and vegetables.

Table 8: Agricultural Value Added, 1995-2005 (RM million in 1987 prices)

Commodity	1995	%	2000	%	2005	%	Average Annual Growth Rate (%)	
							7MP	8MP
Rubber	2129	12.4	1178	6.5	1025	4.9	-11.2	-2.7
Palm Oil	4235	24.7	6199	34.1	7364	35.0	7.9	3.5
Forestry & Logging	4139	24.2	3395	18.7	3038	14.5	-3.9	-2.2
Cocoa	1225	7.3	1159	6.4	1192	5.7	-1.6	0.6
Paddy	516	3.0	532	2.9	673	3.2	0.6	4.8
Livestock	953	5.6	1109	6.1	1454	6.9	3.1	5.6
Fisheries	1964	11.5	2375	13.1	2998	14.3	3.9	4.8
Miscellaneous	1924	11.2	2207	12.2	3274	15.6	2.8	8.2
Total	17,115	100.0	18,154	100.0	21,018	100.00	1.2	3.0

Note: Includes coffee, tea, coconuts, tobacco, pepper, vegetables, fruits, herbs and others.

Source: Eighth Malaysia Plan, 2001-2005.

Population

The population in Malaysia increased from 15.9 million (1985) to 25 million (2003) and is estimated to reach 26 million in 2005 with 2 percent annual growth (Table 9). This will obviously lead to an increase in the demand for food. But with declining domestic food production and low SSL for many of the food items our food security situation will be severely affected. The deficits, as in the normal practice, can be overcome through food imports but the rising food import bills will obviously lead to a drawdown of the foreign exchange earnings. For instance, the experience during the economic crisis of 1997-1998 which saw food import bills increasing from RM10.75 billion (1997) to RM11.11 billion (1998) has already become a major concern for the country such that prompted the government to take immediate steps by encouraging households to beef up food production through the hydro-phonic activities. But more importantly, the crisis itself was the major factor that led to the termination of the NAP2 followed by immediate launching of NAP3 with various new objectives and strategies to further develop the agriculture sector and address future external shocks.

Table 9: Population, 1985-2005

Year	Total Population Million	Population density persons per square kilometer	Population annual change, %
1985	15.88	48	2.8
1990	18.10	55	2.5
1995	20.68	63	2.7
1999	22.89	69	2.5
2000	23.49	71	2.6
2001	24.01	73	2.2
2002	24.53	74	2.1
2003	25.05	76	2.1
2004	25.58	78	2.1
2005*	26.26	-	2.0

* Third quarter 2005

Source: Asian Development Bank, <http://www.adb.org/>, 10 November 2005

Policy Implication

Food security in Malaysia has always been placed high on the agenda of economic development. In view of strengthening and maintaining food security, the policy implications for the future development of the agriculture sector are important. Hence, to ensure that in the process of economic growth, the economic policies that are oriented towards achieving and maintaining of food security for all individuals are indeed important. The policy implications suggested are:

- a) The image of the agriculture sector as a food provider to the country should be revisited. The agriculture sector must be transformed into a modern sector, dynamic and competitive in line with the strategies of NAP3 as well as for commercialization of agriculture. In addition to food production, food processing activities are highly encouraged. By utilizing natural resources, adaptation of sustainable growth concepts, environmental-friendly activities and promoting the linkages activities within the sector such as manufacturing and agro business, agro-tourism, agro-industrial ecotourism, agro-processing, agro-marketing and others, it would have some rooms for improvement.
- b) The agriculture sector requires not an ad-hoc but a holistic approach to the future planning of the economy. By adopting a holistic approach, the agriculture sector would be strengthened. Empowerment farmers program should be taken

to expand farmer's knowledge not only in planting but also in overall product processing chains. Moreover, assistance to the small-scale agro-based production especially in the rural areas is needed to improve their competitiveness in the global markets and increasing exports of value added agriculture products. It also requires efforts towards expanding the knowledge, strengthening support services, improving the delivery mechanism, increasing the accessibility of credits and encouraging the involvement in downstream activities (processing). These activities are expected to beef up agricultural outputs, value-added and export earnings.

- c) The loss of prime agriculture lands capable of producing food to the modern sector, purely based on its competitiveness, should be immediately checked and reduced. Industrialization in Malaysia, for instance, has led to a substantial loss of land for agricultural production. The conversion of land from agriculture to other uses such as industrial, commercial and construction can result in a decrease of agricultural output and thus may lead to the decline in food production. The lack of policies and programs to protect agricultural lands resulted in a significant reduction in agricultural production capacity. Hence the conversion of agricultural to industrial, commercial and construction projects should be illicit. Moreover, we must encourage intensifying land use by enhancing a wider crop-mix, integrating food production with plantation crops and promoting agro-based activities.
- d) There is a need to initiate a special package of incentives to enhance the direct involvement of private sector in the agriculture and food production. The effective and continuous linkages between government, private sector and farmers should be encouraged such as collaborations between the agriculture sector, universities, NGO's, and R&D institutions. R&D project should be encouraged as it will invariably play a major role in shaping the destiny of agriculture sector in future. Continued provision of support services and training, recognizing the variation in agricultural circumstances and practices by location, the optimal use of on-farm inputs and the minimal use of external inputs, optimal use of local natural resources and management of renewable energy sources, and the establishment of networks that deal with the exchange of information on alternative forms of agriculture would be highly recommended.
- e) Enhancement of food processing activities. The agro-processing industries associated with hi-tech agriculture will also be encouraged. With the global markets including the market for agriculture products getting increasingly

professionalized in terms of its consistency in quality of agriculture products, an urgent need is being felt to ensure that more agriculture products will be produced. Hence, the awareness and training programmes for entrepreneurs, managers, bankers and traders in rural servicing and small-scale agro-processing techniques must be taking place.

- f) Greater awareness for environmental conservation and rehabilitation. It is recommended that efforts should be geared towards promoting greater public awareness of the role of nation in sustainable agriculture and rural development.

