

# The Importance of Food Security

by Ms. Reika Kua Kee Eng

**ACCORDING** to the Food and Agriculture Organisation (FAO) of the United Nations, though the world produces enough to feed its entire population of over 6 billion people, one in eight of our fellow humans do not get enough to eat each day. However, despite the fact that there has been a decrease in the proportion of the global population that is chronically undernourished, the actual number has changed little since the World Food Summit, and stands at around 850 million people. Despite this gloomy backdrop, FAO believes that it would still be possible to achieve the Millennium Development Goal (MDG) 1 and the target of the World Food Summit (WFS) of reducing the proportion and number of undernourished by half, between 1990 and 2015, through stronger commitment and a sharper focus on direct actions that can have immediate impact on improving the situation.<sup>i</sup>

To realise the above aim, FAO has developed some strategies and one of them is the National Programme for Food Security (NPFS) which is part of its broader national efforts to achieve the MDGs and the national objectives such as equitable economic growth and sustainable agricultural, poverty reduction and rural development.<sup>ii</sup> In order to take an in-depth look at food security issues in Malaysia, *JURUTERA* sought the views of our Minister of Agriculture and Agro-Based Industry, Y.B. Datuk Seri Noh bin Omar, in a recent interview.

defined by FAO, “Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”

“Food availability, food accessibility, food affordability and nutritious food, are the four important elements in food security. In order to achieve food security, all four of these elements must co-exist and work together,” said Y.B. Datuk Seri Noh.

## MOA CONTRIBUTION IN FOOD SECURITY

The Ministry of Agriculture and Agro-Based Industry (MOA) has always been planning and implementing various efforts to ensure sufficiency in food supply. For instance, under the *Dasar Agromakanan Negara* (DAN), MOA has highlighted three main objectives, namely ensuring sufficient supply of food that is safe for consumption; enabling the agro-food industry to become a competitive and sustainable industry; and increasing the income level of agro-based entrepreneurs. Some of the measures to achieve these objectives include optimal development of agricultural land through intercropping on re-cultivated land of oil palm plantation and integration of livestock breeding with oil palm cultivation, as well as introduction and utilisation of economical modern technology and mechanisation in agriculture, livestock farming and fisheries to ensure sufficient food supply.

Apart from these measures, focus will be on research and development of competitive food production (which includes development of breed and its variety, production of seeds, production of food from livestock and aquaculture), biotechnology and bioprocesses, automation and mechanisation, production system under a modified environment, disease analysis, standards and grades for farm produce, green technology and conservation of green resources.

As rice is one of the main staples of Malaysians, MOA has paid consistent attention to its production. Under the *Dasar Agromakanan Negara* (DAN) 2011 – 2012, MOA aims to increase the productivity and quality of paddy and rice through the preparation of irrigation and drainage infrastructure, the use of high quality seeds, the adoption of agricultural technology as well as competent agronomical management.

“The opening and exploration of 4 new paddy cultivation areas, namely Rompin and Pekan (Pahang), Kota Belud (Sabah) and Batang Lupar (Sarawak), was one of the initiatives taken by MOA. In addition, large-scale cultivation through centralised management under EPP 10 and EPP



Y.B. Datuk Seri Noh bin Omar, Minister of Agriculture and Agro-Based Industry

## WHAT IS FOOD SECURITY?

According to the Minister of Agriculture and Agro-based Industry, Y.B. Datuk Seri Noh bin Omar, Malaysia is currently adopting the concept set forth by the Food and Agriculture Organisation (FAO) of the United Nations. As

<sup>i</sup> <http://www.fao.org/fileadmin/templates/tc/spfs/pdf/VisionEnglishfinalApril.pdf>

<sup>ii</sup> *Ibid*

11 has also been implemented,” remarked Y.B. Datuk Seri Noh. He also mentioned that developing and cultivating abandoned paddy fields under EPP 9, improving the irrigation and drainage system to allow paddy cultivation twice a year, reducing harvesting and post-harvesting losses through the use of contemporary technology, and introducing new varieties of paddy seeds are among some other measures taken by MOA.

### HANDLING SHORTAGE OF AGRICULTURAL LAND

When the Minister was asked how MOA was addressing the issue of agricultural land shortage, he replied, “MOA consistently tries to identify new areas which are appropriate to be developed and cultivated for agricultural activities; for instance, through the creation of *Taman Kekal Pengeluaran Makanan* (TKPM) and Aquaculture Industrial Zones (*Zon Industri Akuakultur*). However, the approval of opening land for agricultural purpose lies in the hands of the State Governments.”

According to Y.B. Datuk Seri Noh, MOA has also taken the initiative to develop privately-owned abandoned land totalling 8,986 hectares. This involves 7,431 participants from Peninsular Malaysia and East Malaysia, and the cultivation of vegetables, pineapple, sugar cane, watermelon, banana, roselle, corn and various fruits such as jackfruit and mangoes.

“In addition, MARDI also plays an important role in research involving agriculture, livestock breeding, biotechnology, food technology, strategic resources as well as automation and mechanisation. Various studies have been constantly carried out in these fields, such as the research on agricultural nutrigenomics to maximise the use of bio-diversified resources, and research on the impacts of climate change on the environment and agriculture,” commented Y.B. Datuk Seri Noh.

### INTERNATIONAL COLLABORATION TO INCREASE FOOD SUPPLY

Throughout the years, Malaysia has been actively fostering various forms of joint effort both locally and internationally. The holding of seminars, workshops and conventions, and establishing memoranda of understanding (MoUs) between the relevant ministries, agencies, private firms, tertiary education institutions and other relevant stakeholders, are some of the initiatives of such joint efforts.

“Regionally, Malaysia has taken a proactive step through its participation in the ASEAN Food Security Reserve Board (AFSRB) to ensure the sustenance of the national food supply,” said Y.B. Datuk Seri Noh. He added, “AFSRB serves as a platform for the exchange of ideas and information related to the national food policy on basic food commodities, especially rice, among the ASEAN members”.

MOA has also signed the ASEAN Plus Three Emergency Rice Reserve (APTERR) agreement on 7 October 2011 in Jakarta, Indonesia, joining other ASEAN members and the

People’s Republic of China (PRC), Japan and the Republic of Korea in the formation of a regional cooperation scheme to stock up rice for emergency use or to overcome rice shortages within the countries of ASEAN. This agreement was ratified on 11 January 2012 and enforced from 12 July 2012. “Signing APTERR was one the Government’s initiative to avoid a food crisis and to ensure that the welfare of our citizens is taken care of,” explained Y.B. Datuk Seri Noh.

Internationally, as part of the joint effort with the United Nations FAO, he said that Malaysia shares expertise with the member countries of the UN in identifying collaboration and investment activities which can provide potential benefits to the participating countries in terms of food and agriculture. FAO is also a platform to align issues related to food security globally, regionally and nationally.

Y.B. Datuk Seri Noh also pointed out that a ‘Reverse Investment’ (RI) programme has been recently introduced overseas by the Government as a supplementary measure to increase food supply and to strengthen its sustenance in Malaysia. In line with our national food demand, the focus of such investment is placed on 2 types of food commodities, namely meat from livestock and also feeding materials for livestock (especially corn and soya). “MOA helps investors by facilitating the preparation of bi-lateral agreements between governments and also determining the right methods to market the agricultural products which are brought back to our country,” explained Y.B. Datuk Seri Noh.

Two of the RI projects which are closely monitored by MOA are the collaboration between Markmore Group (Malaysia) and Paragon Corporation (Cambodia) as well as between Taj Mahal Agro Pvt. Ltd. (India) and NAFAS (Malaysia), which involve the cultivation of corn and soya as forage for livestock in Cambodia and in Chennai, India, respectively. About 340,000 hectares of land in Cambodia has been identified during the signing of MoU, and 10,000 hectares from it is currently undergoing fertility tests. The first phase of corn cultivation will begin in March 2013 and the first produce is estimated to be harvested in July 2013. The total investment under this programme is about RM100 million. Meanwhile, 30,000 hectares of land has been identified in Chennai for the cultivation of corn, where the contractual farming concept will be applied. Currently, there are about 7,000 local farmers involved in this programme, with an estimated production of 8 tonnes of corn per hectare and a total investment of RM100 million in October 2012.

“The commodities brought back to Malaysia through this RI programme will be treated as local produce with the condition that the overall products are made from the investment and not from purchase or procurement from any third party” Y.B. Datuk Seri Noh emphasized, “This will help decrease production cost of forage, reduce the dependence on import of forage which will relatively decrease the production cost of meat within Malaysia, and finally reduce the retail price for end users.”

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### DEALING WITH THE 2008 FOOD CRISIS

Following the 2008 food crisis, MOA had implemented *Dasar Jaminan Bekalan Makanan* (DJBM) to increase the production and productivity of the agro-food sector to satisfy the level of self-sustenance, and ensure adequate quality of food supply which is safe for consumption. Concurrently, DJBM also ensures that agricultural entrepreneurs receive reasonable income so that the production of food can be seen to be an attractive proposition.

Some of the strategies of DJBM include increasing the production of rice which involves the maintenance of irrigation and sewerage infrastructure, levelling of paddy fields, providing additional NPK fertiliser, farm mechanisation, improving mechanisation output, subsidising of paddy price, and giving incentives for increase in crop yield.

"Another notable measure to counter the food crisis was the *Program Bumi Hijau* which aims to create awareness and encouragement within the community to produce and enhance food supply, and also to cultivate interest in agriculture via the concept of edible landscape or kitchen garden," said Y.B. Datuk Seri Noh. He further elaborated, "Agricultural kits containing selected vegetable seeds, fertilisers, and cultivating guidelines were distributed to the rural population as a gesture to help them grow their own food."

At the same time, MOA also tries to increase the production of food via *Program Taman Kekal Pengeluaran Makanan*, aquaculture and livestock breeding. Local farmers are offered Agriculture Produce Incentive (*Insentif Pengeluaran Hasil Pertanian*) to lessen their financial burden which indirectly helps to increase food production.

### CHALLENGES IN ACHIEVING FOOD SECURITY

Unrestricted human activity can cause various negative effects to the earth and its population, such as global warming, floods, droughts, increase in temperatures, changes in rainfall patterns and a rise in sea levels. Such phenomena would greatly affect the lives of the earth's inhabitants and their activities, especially agriculture. For instance, the reduction of rainfall and the increase in temperature can easily affect the growth of all kinds of plants.

According to a study done by MARDI, an increase of 10°Celsius in temperatures could reduce crop output by 9% to 10%. Meanwhile prolonged drought will delay the schedule for the seeding of paddy, which affects the production of rice, and hence could undermine national food security. Heat stress due to extremely high temperatures will also affect productivity and breeding in aquaculture.

Y.B. Datuk Seri Noh also pointed out several challenges in maintaining adequate food supply. The main challenge is the shortage of land for agriculture. "Competition for the use of land between the agricultural sector and other sectors has greatly jeopardised our efforts to commercially develop and expand the agricultural sector on a larger scale". He continued, "The available reserve of agricultural land has decreased from 999,300 hectares in year 2000 to 922,000 hectares in year 2010. Land for the production of food is estimated to drop further, to about 841,000 hectares by year 2020, due to conversion of food farming areas into oil palm plantations as well as development of more residential and industrial areas."

According to MOA, the productivity of the agro-food sector is still considered very low as production is mostly done on a smaller scale and lacks the use of technology, which leads to low competitiveness of the overall agro-food industry. Further, entrepreneurs or farmers in this sector still rely heavily on expensive imported seeds as the local supply of quality seeds is still insufficient. This, in turn, increases the production cost which burdens the farmers and leads to lower profit margins.

"In terms of manpower, there is a high dependency on foreign workers in the agricultural sector. The number of foreign workers in this sector has seen a tremendous five-fold increase from 45,000 workers in year 2005 to 233,400 workers in year 2010," quoted the Minister of Agriculture and Agro-Based Industry. He attributed this growing dependency on foreign workers to the perception held by our local population that farming involves hard laborious work requiring much physical strength.

Lack of interest and low involvement of the private sector in agriculture and the agro-food industry as well as the low level of commercialisation and transfer of research and development are some other challenges that will need to be addressed in order to develop and expand the agro-food industry.

### THE ROLE OF AUTOMATION AND MECHANISATION

Automation and mechanisation play a very important role in addressing the main issues such as dependency on foreign workers, and reduction of operational cost, as well as in encouraging more small-scale farmers to own and use machines, particularly small machinery and equipment, to increase agricultural produce. The Automation and Mechanisation plan was implemented by agencies under MOA such as LPP, MADA, KADA and the Agriculture Department of Sarawak (*Jabatan Pertanian Sarawak*) through grants such as *Geran Pembiayaan and Geran Pemadanan*.

Since the implementation of *Rancangan Malaysia ke-9*, some improvements have become evident. From year 2007 to 2011, there has been an increase in the possession of machinery, namely tractors from 243 to 620 units, representing an increase of 155%. Meanwhile, the size of sown land has increased from 43,974 hectares to 55,398 hectares, representing an increase of 26% during the same period. The possession of harvesting machines also recorded an increase of 90.5%, i.e. from 105 to 200 harvesting machines, which contributed to a rise in total harvested area from 31,167 to 41,487 hectares, reflecting an increase of 34.3%.

“Indeed, automation and mechanisation acts as an enabler which speeds up the process of seeding and shortens the time required to harvest the crops as compared to manual seeding and harvesting. However, the increase of agricultural produce does not solely rely on automation and mechanisation, but is also influenced by other factors such as the use of high quality agricultural components (fertilisers and seeds), and the adoption of Good Agricultural Practices (GAP) which include the control of diseases, upgrading of infrastructure (such as irrigation, sewerage, and roads within the farms) and so forth,” concluded Y.B. Datuk Seri Noh. ■

*Data of PPN 4-Wheel Tractor Machinery in Operation from Year 2007 – 2011*

No.	Category	Year 2007	Year 2008	Year 2009	Year 2010	Year 2011
1	Number of Tractor in Operation (unit)	243	267	407	626	620
2	Total Ploughed Space (hectare)	43,974	53,338	60,673	60,785	55,398

*Data of PPN Harvesting Machine in Operation from Year 2007 – 2011*

No.	Category	Year 2007	Year 2008	Year 2009	Year 2010	Year 2011
1	Number of Harvesting Machine in Operation (unit)	105	107	151	176	200
2	Total Ploughed Space (hectare)	31,167	34,776	36,058	40,747	41,847

*Achievement of the Food Supply Assurance Policy (DJBM) 2008 – 2010*

Commodity	Year 2008 (metric tons)	Year 2010 (metric tons)	Growth (percentage)
Fruits	1.598 million	1.767 million	10.62%
Vegetables	490,963	534,370	8.84%
Rice	2.353 million	2.548 million	8.29%
Beef / Buffalo Meat	38,250	46,500	21.57%
Mutton	1,960	2,390	21.94%
Chicken / Duck Meat (Broilers)	1.163 million	1.296 million	11.44%
Eggs Production from Chicken / Duck Poultry	479,000	540,400	12.82%
Cow's Milk Production	56.49 million (litres)	67 million (litres)	18.61%

Commodity	Year 2008 (metric tons)	Up to June 2010 (metric tons)
Aquaculture – Freshwater	95,850	89,470
Aquaculture – Brackish Water	258,580	170,840

*Total Participants and Small Machinery for the Matching Grant Programme of Small Agricultural Machinery under LPP*

No.	Year	State	Number of Recipients	Quantity of Machine (units)
1	2008	14	2,670	2,767
2	2009	14	3,342	3,534
3	2010	13	2,377	2,521
4	2011	7	6,668	7,052
5	2012	12	267	267
<b>TOTAL</b>			<b>15,324</b>	<b>16,141</b>