



PROF DATUK
DR MAD
NASIR
SHAMSUDIN

FOOD SECURITY

SECURING FOOD FROM PLOUGH TO PLATE

The new government should invest big in sustainable agricultural production and consumption to ensure food security

A PROMISE by the new government to guarantee the basic food needs of the nation and to safeguard the welfare of farmers is indeed timely. This is consistent with the United Nations Sustainable Development Goals (SDGs) that focuses explicitly on food by seeking to “end hunger, achieve food security and improved nutrition and promote sustainable agriculture”.

To achieve this, the government needs to address issues and challenges agriculture and food security present from the supply and demand side of the equation.

On the supply side, Malaysia's agricultural sector is divided into two sub-sectors: commodity and food. In general, commodity crops, such as palm oil, have grown rapidly and have contributed significantly to national development.

For instance, in 2016, our agriculture sector contributed 8.1 per cent of the gross domestic product (GDP) with oil palm alone contributing 43.1 per cent of the GDP of the agriculture sector, followed by other agriculture (19.5 per cent), livestock (11.6 per cent), fishing (11.5 per cent), forestry and logging (7.2 per cent) and rubber (7.1 per cent). Commodity crops such as oil palm are dominated by plantation sector with good management practices.

But, the food sub-sector consisting of food crops, livestock and fisheries is yet to match the commodity crop performance and faces many issues that prevent it from developing rapidly. At present, the country is still facing production shortfall: rice (72 per cent), vegetables (72 per

cent), beef (23 per cent), goat meat (8.0 per cent), and milk (5.0 per cent). This has led Malaysia to record a trade deficit for some years now. And the deficit is on the uptrend.

For example, in 1990, the food trade deficit was RM1.1 billion. In 2006, it increased to RM8.5 billion due to higher import growth, and in 2016, the trade deficit was RM16.5 billion. Some of the causes for the food sector's underperformance are underinvestment in agricultural research, small scale farms with low level of technology, agro-entrepreneurship, climate change, and depleting resources.

On the demand side, Malaysia has seen a greater variety and volume of higher value and higher protein food (such as meat, fish and milk). The demand for staple food among the lower quintile of the population, however, has increased as the income elasticity of this group is high. Consumers also demand new food products, new packaging, more convenience, new delivery systems, and safer and more nutritious foods.

Other than supply and demand parameters, global mega trends are also affecting the domestic landscape of agriculture and food security. These include accelerating urbanisation, climate change and resource constraints, demographic shifts and income growth, technology breakthrough, knowledge exploitation and techno-entrepreneurship, and changing food distribution system.

RAPID URBANISATION — Urbanisation has shown to have a significant effect on food consumption in terms of dietary



Norwegian fish farming technology at work. An idea that may need big investment. FILE PIC

habits and food preferences. Since urbanisation is expected to proceed rapidly in a number of developing countries, including Malaysia, over the next decades projections of future global food supply and demand balances need to take such structural changes into account. Domestically, this has placed an increasing pressure on the existing food production systems as well as food quality and safety from plough to plate.

CLIMATE CHANGE AND RESOURCE CONSTRAINTS — Climate change poses challenges for all sectors of the Malaysian economy, but particularly those sectors dependent on natural resources such as agriculture. Despite technological advances in biotechnology, climate is still a key factor in determining agricultural productivity.

DEMOGRAPHIC SHIFTS AND POPULATION AND INCOME GROWTH — This will affect consumers' tastes and behaviours in terms of concern for safety and quality of food and nutritional change of Malaysian society.

TECHNOLOGICAL BREAKTHROUGH — The development of the Fourth Industrial Revolution (4IR) that emphasises virtual reality technology without much use of manpower will affect the input structure of the agricultural sector, especially in terms of automation, drones and robotics.

EXPLOITATION OF KNOWLEDGE AND TECHNO-ENTREPRENEURSHIP — The function of tertiary institutions has evolved from focusing only on teaching and learning to exploitation and commercialisation of knowledge. The university is also seen as a trigger for new entrepreneurial activities by utilising the knowledge of their research findings.

DISTRIBUTION SYSTEM — The advent of 4IR will alter the food distribution system as we know it. With footfalls gone from supermarkets, they will turn into ware-

houses and distribution centres.

Our agriculture sector needs to transform, and at good speed, too. For starters, the sector needs to leverage on sustainable production and consumption, safety nets, and environment services.

SUSTAINABLE PRODUCTION — the food sector requires much more investments in agro-entrepreneurship, innovation as well as extension services. The innovation in agriculture and food has to be stepped up and the opportunities of biotechnology, nanotechnology, information and communication technology and other advanced technology applications should be the main research and development agenda particularly on sustainable agricultural practices. Automation and mechanisation are the partial solution to high wages and limited land availability.

Agro-entrepreneurship development can be achieved, among others, through entrepreneurship incubation programme as is being done in Universiti Pertanian Malaysia. Participants are selected mainly from fresh graduates in agriculture and related disciplines who have inclination towards entrepreneurship. They are “incubated” for a certain period and at the end of the incubation where at the end of the incubation participants would have their own companies to run.

Compared to the industrial sector, agriculture is exposed to many more unpredictable risks and uncertainties. Market risk management is critical to the success of agriculture, and yet there is a lack of tools used to manage risks as well as a lack of understanding of the tools themselves.

Market-based instruments for managing agricultural market risks are a practical and non-intervening alternative for managing commodity price volatility.

>> Turn to Page 16

“Our agriculture sector needs to transform, and at good speed, too. For starters, the sector needs to leverage on sustainable production and consumption, safety nets, and environment services.”