

Ecological agriculture: Farming the smart way

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The growth of agricultural activities in Malaysia has always been supported by the country's environment and favourable climate.

Major agro-products that drive the economy are palm oil, rubber and cocoa. Besides these commodities, there are others like padi, tropical fruits and vegetables.

Demand for agro-products increases with global population growth, which is projected to reach 9.8 billion by 2050.

For this reason, technological advancements in agriculture are necessary to increase productivity, quality and food security. Most importantly, sustainable practices must be adopted so that the environment continues to be preserved (hifz al-bi'ah) while fulfilling human needs.

The progress of modern agro-based industry in Malaysia is related to the implementation of the National Agricultural Policy (1998-2010). The policy was formulated shortly after the 1997 financial crisis.

Since its implementation in 2006, it has been strengthened by the Ninth Malaysia Plan (9MP), which positively led to the increased value of agricultural commodities in 2008.

Hence, the agricultural sector is once again becoming one of the options to confront world economic crises.

During Tun Abdullah Ahmad Badawi's premiership, he advocated the inter-compatibility concept between Islam, the economy and technological development. He led the revival of the country's agricultural sector, especially during the economic crisis in 2007 and 2008.

This measure was intended to propel the country's economy as he noticed that Malaysia had been ingrained with agricultural practices.

He also expressed concern for development of agriculture in rural areas, which are predominantly populated by Muslims, so that they would not be left behind.

Recently, Prime Minister Datuk Seri Najib Razak has reshaped Malaysia's economic focus in its National Key Economic Areas (NKEA) by constructing new strategies through the Economic Transformation Programme (ETP), and incorporating them into the 11th Malaysia Plan (11MP).

In effect, 11MP's agricultural activities will be focusing on modern farming techniques, building agropreneurs and creating market access.

This latest strategy promises to deliver the following output — improving productivity and income of farmers and fishermen, building capacity of agricultural cooperatives and associations along the supply chain, promoting training and youth agropreneur development, strengthening institutional support and extension services, improving market access and logistics support, and scaling up access to agricultural financing.

In addition, there is financial support from Agrobank, a government-owned full-fledge Islamic bank under the Finance Ministry that offers syariah-compliant financing for agricultural projects and relevant sectors.

The recent progress in Malaysia's agricultural agenda is the increasing use of emerging innovative technology, namely the Internet of Things (IoT) and big data, to initiate smart agricultural practice.

This measure aligns with the current global trend of automation technology in the latest industrial revolution, the so-called "Industry 4.0".

As one of the country's focus, smart agriculture practice could be the springboard to increase the quantity, quality, sustainability and cost-effective production.

By leveraging the IoT, farmers can remotely manage and control their irrigation equipment. It can also help to monitor soil moisture, crop growth and the level of livestock feed without the need of their presence. This technology revolutionises farming activities and it may be the key to developing sustainable agriculture.

Smart agriculture is expected to address a number of issues that modern agricultural industries are facing today, including biodiversity degradation and environmental pollution (fasad).

From the writer's point of view, we should now look for more ecological farming practices with the assistance of smart agriculture technology that encourages sustainability.

Ecological farming introduces symbiotic farming species. It regenerates the following "ecosystem services" (mizan): the prevention of soil erosion, water infiltration and retention, carbon sequestration in the form of humus, and increases biodiversity rate. It enables the production of healthy food without compromising the environment, public health, communities and animal welfare.

In this regard, we should learn from the wisdom of Prophet Yusuf's (pbuh) agricultural management system.

He established an office for agricultural products that stocked food supplies in abundance and distributed them to the public during food scarcity.

He also taught a crucial aspect of food sustainability through systematic food production planning. There are verses in the Quran (12:43-49) that already revealed a cultivation strategy that is based on Prophet Yusuf's interpretation of the Egyptian king's dream.

The strategy, as Professor Abdul Hamid Mar Iman called “The Seven-Year-Cultivation Rule of Thumb”, described the agricultural cycle programme of crop rotation, food rationing and stockpiling surplus production, which are believed to be the early contributing sources of ecological farming.

The above story highlighted that ecological farming entails a systemic approach that recognises the environmental natural disposition (fitrah) of life sustenance. It signifies the system’s view of life and nature, and should be seen as a syariah-compliant technique.

Therefore, the writer recommends that technological advancement has to be synergised with an ecological farming system, in order to establish a “smart and sustainable agriculture” that would eventually serve the wellbeing of both humankind and the environment.

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