Food: Imperative to ensure self-sufficiency in food supply

Policy commitment and agricultural innovation are urgently needed for Malaysia to secure its food supply, especially in the face of an impending climate emergency and increasingly volatile geopolitical landscape.

The country remains vulnerable to food insecurity because of a confluence of factors, including its reliance on imports to maintain its food supply, especially rice. Meanwhile, food items with a self-sufficiency level (SSL) of more than 100% still rely on significant external inputs, say observers.

“Malaysia, like other nations, also faces challenges from food inflation, which contributed to the increase in the cost of living. This is linked to elevated global commodity prices, supply constraints and increased cost of production for things such as feedstock and fertilisers,” says Abdul Mui’zz Morhalim, an economist at MIDF Research.

“Stability of food supply needs to be improved and sustained in the long run to ensure food security. A proper execution to strengthen the food supply will reduce over-reliance on subsidies to keep food affordable, especially for the low-income groups.

“[As a net importer of food,] Malaysia is vulnerable to external shocks such as the war in Ukraine and the global supply crunch. If this is not addressed, Malaysia will be exposed to the global inflation risk, commodity price fluctuations and other future shocks.”

In June, Malaysia temporarily banned chicken exports, citing domestic shortages and price spikes as the reason — even though domestic chicken SSL was at 113.5%, according to the **Department of Statistics Malaysia’s (DOSM)** 2020 data.

The ban on chicken exports was attributed, among other reasons, to the soaring price of fertilisers, which has risen nearly 30% since the start of Russia’s invasion of Ukraine in February, states the World Bank in its Commodity Markets Outlook in May.

Russia is the world’s biggest exporter of nitrogen, phosphorus and potassium (NPK) fertilisers, but its war with Ukraine has disrupted shipping and driven up prices of natural gas, a key ingredient of fertiliser manufacturing.

Since the start of the Russia-Ukraine war, more than 25 countries have imposed export restrictions in various forms, resulting in a cascading effect that has created panic in global markets.

“For nitrogen, we have Petronas, which produces urea, but this is mostly exported to the overseas market to earn foreign exchange. If need be, Malaysian farmers can get some nitrogen fertilisers from the local market. For phosphorus and potassium, however, we need to import from overseas suppliers. We don’t have phosphate rocks and potash deposits in Malaysia,” says Dr J Shamshuddin

Jusop, Universiti Putra Malaysia soil mineralogy expert and a fellow of the Academy of Sciences Malaysia.

“Chicken production is related to the cost of buying its feed at the marketplace. For their carbohydrates and protein requirements, we have to feed them grain corn and soya bean. The agricultural commodities are grown on land that requires application of sufficient amounts of phosphorus and potassium fertilisers,” Shamshuddin says.

To be able to weather future systemic shock, Shamshuddin urges supply chain diversification, stressing the importance of looking for alternate sources of phosphorus and potassium input.

“We all have to think seriously about it or else we will face a serious problem that will be hard to overcome. There may be something in the country (for example, chemical plant waste or agriculture industry produce) that we had forgotten about because we wanted it easy by sourcing phosphorus and potassium fertilisers from the world market.”

On the other hand, Abdul Mui’zz says there needs to be better oversight, modern technology and highly efficient infrastructure in food production.

He says: “Improved food safety and nutrition is part of the food security that will contribute to the well-being of the rakyat. Lack of food security will contribute to worsening malnutrition, which typically affects the poorer segments of society.

“Proper governance and monitoring also help reduce the risk of supply disruption. For example, the use of data will help local farmers to better prepare for adverse weather conditions and climate change.”

Teetering on a tipping point

The war may be only a precursor of things to come, with climate change on the horizon. On top of being affected by policy inefficiencies and supply disruption, the global food system is one of the major drivers of climate change, as it is responsible for one-third of global greenhouse gas (GHG) emissions, biodiversity loss and depletion of freshwater resources, owing mainly to decades of unsustainable production.

Citi GPS in its “Food and Climate Change: Creating Sustainable Food Systems for a Net Zero Future” report published in July notes that countries will not be able to solve food insecurity without reducing the impacts of climate change, pointing out that rising temperatures will have a devastating impact on food production, constraining supply and affecting the most vulnerable.

To mitigate the looming crisis, Citi GPS proposes implementing regenerative agriculture, low-carbon livestock, halting deforestation, reducing food waste, investing in low-carbon technologies and investing in innovation.

Shamshuddin concurs, highlighting the need to lessen soil degradation “at all costs” to prevent food insecurity and better livestock management, among others. “We need to fully understand the process of food production, either in the tropics or temperate regions of the globe. We know full well that soils in Malaysia and other countries in the tropical regions are low in nutrients for various reasons,” he says.

“In their dreams of getting high crop yield to get maximum profit, farmers applied certain fertilisers in excess. In the end, the extra nutrients may end up in waterways or lakes, causing environmental damage.

“Do not discount the possibility of having this condition in the present scenario of a shortage of phosphorus and potassium fertilisers. It happened in the past; it can still happen in the future. Low-quality land affects soil and crop productivity negatively.”

Moreover, overgrazing is equally bad for the environment, says Shamshuddin. For instance, cattle emit GHG, which hasten global warming, which in one way or another threatens food security. Likewise, open burning on farms to prepare land for the next crop season should be reduced. Open burning slowly but surely emits carbon dioxide into the atmosphere, which in turn increases global warming.

“The oil palm industry has done it. The industry insists that oil palm estates must practise zero burning during replanting. In that way, nutrients present in the biomass will be put back in the soils. The practice can help reduce the application of fertilisers significantly. This is a cost-saving agritech in palm oil production,” he says.

A similar practice should be extended to rice cultivation as well, says Shamshuddin, suggesting that rice husks be processed to obtain useful products or buried in rice fields. “This way, the silicon in the rice husk will be returned to the soils. Rice needs silicon in order to stand upright and the presence of silicon in rice plants can prevent the outbreak of certain diseases (rice blast) that reduce its yield significantly.”

With the rollout of the National Food Security Policy Action Plan 2021-2025, the government has emphasised the need for a digital transformation to secure the nation’s future food systems.

While the latest policy on achieving self-sufficiency targets appears to be comprehensive, Abdul Mui’zz says issues such as abrupt and prolonged supply disruption, overdependence on foreign labour, and increased protectionism globally ever since the Covid-19 pandemic started need to be addressed.

“Legislation can be considered a possible approach to achieving food security. We need to be more proactive to ensure the stability of food supply and, therefore, food security,” he says.

“Some structural changes may be hard to achieve unless there is proper legislation and enforcement. For example, phasing out foreign workers is one of the structural reforms that require strong political will.”

Although the return of foreign labour is expected to help improve production activity, the government will have to persuade local businesses to eventually innovate and change, reducing their dependence on cheap foreign labour and increasing the adoption of automation and technology, stresses Abdul Mui’zz.

“Once Malaysians understand the gravity of the situation and that it is required by law to sustain food security, but not at the expense of environmental damage, they will abide by it. With the legislations put in place, federal and state officials will have no choice but to work together to make it happen,” says Shamshuddin.

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