

AGRICULTURE



Ripe for a reset

Events of the past year have highlighted the vulnerability of our food systems and renewed the focus on food security, accessibility and affordability. The stakes are higher now — limited availability of farming land against the backdrop of climate change and biodiversity loss means that agriculture and food production has to not only be more innovative but also kinder to the land and the people who work on it.

By Sreerema Banoo

THE Covid-19 pandemic and ensuing Movement Control Order (MCO) put in place to stem the spread of the virus has revealed many deficiencies in the country's food systems. One cannot forget the sight of thousands of tonnes of vegetables and fruit being consigned to landfills because of supply chain disruptions. In contrast, the urban poor — lacking in savings and having their incomes disrupted — experienced higher levels of food insecurity and poor nutrition, as a recent United Nations (UN) report reveals.

The issue of food security is once again in the spotlight, and although the country, which derived 7.3% of its gross domestic product from agriculture in 2018, may have moved up in the Global Food Security Index (going from 40th placing in 2018 to 28th in 2019), it still pales in comparison to our neighbour across the Causeway, which remained in pole position despite a negligible agriculture sector.

The various governments of the day have attempted to address food security and the country's neglect of the agriculture sector, most recently with the setting up of a Cabinet Committee on National Food Security Policy chaired by the prime minister.

Head of the Agriculture and Food Policy Studies Lab at Universiti Putra Malaysia's Institute of Tropical Agriculture and Food Security Shaufique F Sidiqie says there needs to be a multidimensional approach to addressing food security. "It's not just about the ability to produce as a country but also to make sure the affordability, accessibility, sustainability, availability and nutritional values of the food produced are looked into carefully." Shaufique is a member of the executive committee assisting the newly established Cabinet Committee on National Food Security Policy.

"Food security is always looked at from the supply side but not from the consumer side," he says, adding that subsidies on "cheap, easy food such as rice" need to end.

"Paddy is the most subsidised food crop in this country. Globally, more than 50% of plant-based food comes from maize, paddy and wheat, and because of subsidies, these are cheap calories, which lack micronutrients. The (over) consumption of these simple carbohydrates then leads to a whole host of health problems such as obesity, diabetes and hypertension, and in a pandemic, people become more vulnerable because of these food-related illnesses," he points out.

Khazanah Research Institute's (KRI) discussion paper, *Achieving Food Security for All Malaysians*, published in July last year, says the country should reconsider its commitment to achieving rice self-sufficiency (RSS). "The current official commitment to achieving 70% rice self-sufficiency by 2020 in the *Dasar Agromakanan Negara* (National Agro-Food Policy) and the long-standing preoccupation with rice self-sufficiency is due to a limited and distorted interpretation of what 'food security' implies," wrote the authors, Jomo Kwame Sundaram, Tan Zhai Gen and Jarud Romadan Khalidi.

World Bank Group in its report, *Agricultural Transformation and Inclusive Growth: The Malaysian Experience*, says RSS is viewed as key to political stability and food security. "As in much of the rest of Asia, Malaysia views adequate availability of rice as central to political stability, and the achievement of a high RSS level as virtually synonymous with food security."

High levels of RSS are equated with being food-

secure as rice occupies a central place in the diets of low-income households. It also advances the government's goal of poverty reduction and ensures price stability, thereby achieving social peace.

But Malaysians pay heavily for the RSS approach as taxpayers and consumers. According to the report, in 2017, 45% of the total budget of the Ministry of Agriculture and Agro-based Industry went to supporting rice production. "If one adds to these costs what consumers pay through trade policy (which raises domestic prices) and what taxpayers pay through subsidies, and compares the total with the total production value of rice, the cost is also high," says the World Bank report.

In 2017, the single commodity transfer for rice (the measure of the transfers from consumers and taxpayers) in Malaysia was 73%. This was higher than in other developing and emerging economies, and even higher than that in Japan, where the rice regime is considered the most protectionist in the world. And if the expenditures on granaries are added to the total, then the single commodity transfer in 2017 rises to 86%.

It is worth noting that despite the measures to increase rice production, paddy farmers remain in the B40 group. KRI's report, *The Status of the Paddy and Rice Industry in Malaysia*, published in April 2019, found that in 2016, the household income of farmers under the management of the Muda Agricultural Development Authority — the country's rice bowl, producing 38% of the nation's paddy output — was RM2,527 a month, while the national mean was RM6,968 a month.

"So it's a situation where the farmers are providing food security but they themselves are not food-secure," says Shaufique. "But isn't it important to ensure that farmers' incomes are not at the subsistence level and, at the same time, they have the opportunity to participate in downstream activities?"

The authors of KRI's discussion paper point out that food security can be more effective — in terms of efficiency and cost — by implementing various measures such as reliable long-term supply

contracts and diversification of supply sources for particular food items. "The current policy of increasing rice production for self-sufficiency has not secured national food security. Malaysian food policies have not only compromised food affordability, especially for rice and many imported foods, but also contributed to micronutrient deficiencies and diet-related non-communicable diseases."

What's gone awry?

Malaysia's agri-food sector is beset with various challenges owing to policy neglect relative to the tree crop subsector. PWD Smart Farmability founder and CEO Billy Tang Chee Seng points out that only 8% of Malaysia's agriculture land is used for the production of food crops, the rest having been converted to monocropping cash crops such as oil palm, rubber and cocoa.

The World Bank Group's report notes that this relative policy neglect has contributed to key structural weaknesses, including uneconomic sizes of farms (which constrain mechanisation), tenancy problems on most fruit and vegetable farms, limited access to research and development (R&D) and infrastructure, and inadequate institutional support from cooperatives because of a lack of entrepreneurship.

"Compared with our neighbours in Southeast Asia, Malaysia's awareness and advancement in agriculture is relatively far behind. The interest in agriculture is not cultivated in schools, and we do not have modules to help local farmers keep up with global trends. Moreover, our top-quali-

Photo by Haris Hassan/The Edge



Shaufique believes that the financing ecosystem for farmers needs to be more robust



Photo by Haris Hassan/The Edge

The young team at Babylon Vertical Farms ... from foreground, Hussein Alkaff, Eshon Thomas, Stuart Thomas, Joel Tan and Abang Dzulqarnaen

ty food produce are mostly exported to countries with stronger currencies, while we keep the lower-grade produce for our own people," says Tang.

In Malaysia, there is also the lament that there is not a clear agriculture policy and sufficient research on what to plant and where to plant. Zenxin Organic Food executive director Tai Seng Yee says there is a lack of understanding in terms of the land available for agri-food production. "We don't seem to have studied what grows well and where to grow it as well as the demand for such produce. Oftentimes, it's a case of farmers observing what the neighbouring farmers are planting and growing the same thing. There is no understanding of market demand, whether the produce can withstand the time taken to bring the produce to market, and the wastage incurred. Farmers seem to keep trying and failing," he says.

Then, there is the impact of the Green

Revolution. Although it lifted millions out of poverty, the Green Revolution style of farming, with its dependence on irrigation, chemical pesticides and fertilisers, and hybrid seeds bred for disease resistance and high yield, has also taken its toll on the environment. Monocropping has not only led to deforestation and biodiversity loss but planting the same crop in the same place year in, year out has led to degradation in soil health.

The rise in the use of chemical inputs has had an adverse impact on the environment and the health of farmers, farm workers and consumers. A substantial portion of pesticide residues ends up in the environment.

Reset long overdue

The UN Food and Agriculture Organization (FAO) says the food sector is already responsible for nearly a third of global greenhouse gas emissions. By 2050, it estimates the world must produce 50% more food to feed the projected global popula-

tion of 10 billion. Meeting this demand without contributing to climate change, further eroding biodiversity and causing yet more damage to ecosystems, calls for urgent solutions. A reset of the agriculture sector is certainly long overdue.

Sunway Group chief innovation officer and Sunway iLabs director Matt van Leeuwen believes that although a complete reset is not possible, the country needs to find ways to start producing agricultural products in a more sustainable way. “One thing is for sure, we have to start embracing more technology and precision farming methods to increase yield and feed a growing population.

“As the area of farmable land continues to decline, we need to be looking at more sustainable methods of farming. Bringing farms closer to the consumer is a good starting point. Urban farming methods such as hydroponics and vertical farming can now enable members of the public to take charge of what goes

onto their plate,” says van Leeuwen, who heads Sunway Group’s urban farming project, FutureX Farms.

He adds that developments in food technology have put forward the idea of alternative proteins such as insect proteins, which require less resources than traditional livestock. In addition, there is a need to diversify the types of food being grown in the country. “Controlled-environment farming methods, including indoor greenhouses, will enable us to grow crops that previously could not survive in the local climate.”

The National Agro-Food Policy (NAFP) 2.0, which is being fine-tuned by the Agriculture and Food Industries Ministry, is said to include the ramping up of the utilisation of modern technology and encouraging automation, as well as mechanisation adoption.

One argument for technology, through the use of precision farming, big data analytics and artificial intelligence, is that it



Photo by Langit Collective

Every August, paddy is planted in a community or gotong-royong session by the farmers of Long Semadoh, Sarawak



Co-founder of Langit Collective Melisa Lim with harvest from the pineapple fields of Puneng Trusan, a village in Long Semadoh

would attract the younger generation to farming. This is certainly true in the case of Stuart Thomas, founder and CEO of Babylon Vertical Farms in KL.

Intrigued by the promise of controlled-environment agriculture, the 26-year-old made his foray into agriculture when he was still a college student. The vertical farming venture, which he started in 2016, grows Australian baby kale for upmarket grocers and some restaurants.

“We see this as a sustainable way to grow food because we are able to grow more in a smaller space. Being in the city, it means that our produce has lower food miles, and the shorter the distance the food travels, the healthier it is. We see a lot of potential here,” he says.

Shaufique believes that the financing ecosystem for farmers needs to be more robust. “There just isn’t enough financing for agriculture production. There has to be better access to financing for farmers,” he says.

Modernisation of agriculture can help reduce the sector’s dependence on foreign labour, he adds. Modernising the sector means that the government needs to be serious about regulating the sector, which can be done via certification schemes such as the Malaysian Good Agricultural Practice (myGAP) scheme.

R&D also needs to consider the needs of smaller-scale farmers. “In the case of paddy farmers, for example, look at how to produce artisanal mills to suit

the needs of small farmers. Paddy farmers with a small plot of land are unable to survive unless they are able to mill their own paddy, so you need smaller and cheaper machines,” Shaufique says.

Agroecology as a long-term sustainable solution

Although technology and innovation have their merits, Tang, a strong advocate of soil health, believes these are secondary to soil health restoration. “I think we are not panicking hard and fast enough because climate disasters suggest that the world is likely heading for another agricultural disaster, just like how the Dust Bowl of the 1930s in the US led to the hunger and misery that was the Great Depression.

“We have about 60 years of farmable

Photo by Third World Network



Lim says R&D should move away from conventional and top-down approaches to one that is more farmer-centric, including working with farmers and tapping into their knowledge and experience

soil left, the rest having been depleted owing to unethical agricultural practices on a global scale. So, the big reset for agriculture involves shifting focus away from capital returns towards soil regeneration. In this post-Covid 19 era, agriculture is no longer about farming. It’s about feeding. It’s no longer about harvesting, but sustaining,” he adds.

So, how can Malaysia move towards a more sustainable and resilient path in transforming the country’s agricultural and food systems?

Third World Network’s agriculture programme coordinator Lim Li Ching suggests a two-pronged approach. “The first prong addresses steps to move away from conventional approaches to agriculture that depend heavily on synthetic inputs such as chemical pesticides and fertilisers. The second prong involves support to farmers to transition to agroecology and other sustainable approaches such as organic agriculture.”

The FAO defines agroecology as an integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of food and agricultural systems.

It seeks to optimise the interactions between plants, animals, humans and the environment while taking into consideration the social aspects that need to be addressed for a sustainable and fair food system.

Closer to home, Langit Collective, a social enterprise that works with indigenous communities in Sabah and Sarawak, notes the success of the communities’ agroecological practices. One of the founders of Langit Collective, Chan Zi Xiang, points to the traditional farming methods of the Lun Bawang farmers in Long Semadoh, Sarawak, that are founded on soil health, heirloom seeds — basically healthy and resilient seeds that have best adapted to the environment and soil conditions — and diverse cropping.

“They very cleverly leverage the environment and circumstances that they are in. They do not till their fields, but release the buffaloes into them after the paddy has been harvested. The buffaloes will graze on the remaining paddy stalks and grasses.



Traditional farmers such as Ribed Balang and Liun Basar have a lot of knowledge on agroecological farming practices that have been passed down for generations, says Zi (right)

They will also trample around the field, defecating as they go. This effectively turns the soil and fertilises the field, while clearing it to be ready for next season's planting.

"This practice has been passed down for generations and has been providing the community with not just sustenance but abundance. This method requires almost no effort from the farmers and it is nature-positive without having to rely on any artificial farm inputs," he says, adding that the indigenous ways of farming are also very biodiverse.

"In the mainstream narrative of agriculture, technology and precision agriculture is seen as a panacea for all the challenges that the industry is grappling with. No one bothers to look at the age-old wisdoms of these indigenous communities, often simply dismissing these as backward," says Zi.

Political will to effect change

Lim, who has researched and written ex-

tensively on agroecology at the global level, says the transition has to be addressed at various levels, for instance, through policies and laws to effect the phasing out of chemical pesticides and to have a law on agroecology or organic agriculture.

Third World Network, a policy research and advocacy NGO, suggests the removal of subsidies that may perversely incentivise synthetic inputs.

Lim stresses that R&D should move away from conventional and top-down approaches to one that is more farmer-centric, including working with farmers and tapping into their knowledge and experience. Farmer involvement, as in the case of the Lun Bawang farmers, is crucial.

"Farmers need to have control over resources, such as seeds and land, in order to invest in sustainable agricultural approaches. There need to be policies and laws to support this, as well as to address those that undermine them," says Lim.

"There has to be political will in order to effect change. Resistance to change could come from corporations, for example, companies that sell and distribute pesticides because agroecology entails the non-use of such chemicals in the farming system. Changing incentives, resource allocation and research priorities towards agroecology can also be difficult," she adds.

Ultimately, there needs to be consistent awareness-raising on the multiple benefits (environmental, health, socio-economic) of agroecology to all stakeholders, from the government to academics, media and the communities.

At the end of the day, consumers too, have a role to play. "Consumers can demand for food that is produced in a sustainable way, for food that is safe and healthy, and that gives fair returns to farmers. These can be important factors in encouraging the shift towards agroecology and organic farming," Lim says. ♦