



One can easily gulp down the contents of a plastic bottle and chuck the container afterwards, but it takes the ocean 450 years to break down the plastic. —AFP

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The scenic Iroise coast in Brittany, France, was a place shrouded in mystery. No one could figure out why pieces of bright orange landline novelty phones in the shape of the famous cartoon cat, Garfield, would constantly wash up on its beaches. After more than 30 years, a local farmer finally solved the mystery.

He led a team of anti-litter campaigners and media to a hidden sea cave where a lost shipping container, which washed up during a storm in the 1980s, was found along with the remaining Garfields. It was reported that the farmer was only a young man when Garfield began making an appearance on the beaches after a storm in the early 1980s.

Despite such a long period of time, the orange tabbies that were found in the destroyed shipping container were in a more complete condition than any found before them. However, the multiple Garfields' conditions were unsurprising given that they are made of plastic - one of the hardest components in the world to break down.

Based on the US' National Oceanic and Atmospheric Administration (NOAA) and Woods Hole Sea Grant, which compiled data showing the length of time for man-made marine debris to biodegrade in the sea, it is found that fishing lines are the worst offender, taking up to 600 years to biodegrade.

Disposable diapers and plastic bottles take 450 years to break down; plastic shopping bags will take up to 20 years; takeaway styrofoam coffee cups take 50 years; and cigarette butts take 10 years to break down.

Meanwhile, the United Nations reports that plastic waste is here to stay. Though it would take anywhere from 20 to 500 years to decompose, it never fully disappears. These plastics just get smaller and smaller - turning into microplastics that are eaten by marine creatures and end up in food ingested by humans. With these scenarios in mind, one cannot help but wonder how much microplastics and other foreign material humans are unknowingly ingesting.

## The path to safe sustenance

Striking a balance between self-reliance and self-sufficiency is crucial for addressing future disruptions and long-term food security and safety



Humans are constantly inhaling and ingesting microplastics through contaminated seafood, including fish and shellfish. —UNSPLASH

### How safe is my food?

The United Nations Development Programme (UNDP) notes that microplastics have become a matter of growing concern for the environment and human health, with recent evidence indicating that humans constantly inhale and ingest microplastic through contaminated seafood, including fish and shellfish. UNDP also points out that microplastics - tiny particles of plastic less than 5 millimetres in size - have been found in tap water, bottled water, and even commonly consumed beverages, such as beer and salt.

Ingesting microplastics can damage human cells, decrease reproductive health and disrupt the endocrine system, according to researchers.

Microplastics also act as a vessel for harmful substances to enter the body as they can absorb chemicals linked to cancers and weakened immune systems. A study titled *Global Pattern of Microplastics in Commercial Food-Grade Salts: Sea Salt as an Indicator of Seawater Microplastics Pollution*, estimates that

the average adult consumes approximately 2,000 microplastics per year through salt.

Currently, there is no hard data on how much microplastics Malaysians are ingesting. However, it is believed that the amount is substantial as Malaysia—whose people's staple includes quite a bit of seafood—is ranked third after the Philippines and India in the list of countries contributing most to marine plastic pollution, according to Dutch academic Lourens J Meijer's study published in 2021.

In another report featuring Universiti Putra Malaysia Associate Professor Dr Sarva Mangala Praveena Appalanaidu, found that microplastic pollution in the environment raises concerns about their accumulation in the marine ecosystem which affects the food chain, with potential health implications for marine life and humans.

To put it simply, food safety is defined as measures taken to ensure that food is free from harmful agents, such as bacteria, viruses,



Stressing on food production is not enough; the problem of food waste must also be addressed. —UNSPLASH

chemicals and is safe for consumption. Food security refers to the accessibility, availability and affordability of a sufficient amount of food to meet the dietary needs and preferences of individuals.

Though differing in concepts, these two are related and require effort from authorities, policymakers and consumers alike in assuring that food is safe from a chemical, physical or biological aspect.

### Taking a holistic approach

Malaysia is ranked moderately in the Global Food Security Index (GFSI), an annual assessment measuring food security through affordability, availability, quality and safety, as well as sustainability and adoption. Malaysia was ranked 41st in GFSI 2022, 39th in 2021, 48th in 2020 and 28th in 2019.

However, the question remains - why are there still Malaysians going to bed hungry? It has also been reported that in some tragic cases, some resort to rummaging through landfills for sustenance.

A World Bank report titled *Agricultural Transformation and Inclusive Growth* stated that Malaysia, in actual fact, does not produce enough food to feed its people and industries, with agricultural productivity being only 45% of the average for high-income countries. This indicates that there are deep-rooted issues that require further intervention from authorities and policymakers. Currently, the government has already put in place a number of initiatives and policies.

Agriculture and Food Security secretary-general Datuk Lokman Hakim Ali shares that to tackle food security issues in the country, the government has been focusing on four pillars outlined by the Food and Agriculture Organization (FAO), in line with the National Food Security Policy Action Plan 2021-2025 and National Agro-Food Policy 2021-2030 (NAP2.0).

NAP2.0 was developed in alignment and support of other national development agenda policies including Vision for Shared Prosperity 2030

(WKB 2030) and Malaysia's Five Year Plan.

He says the ministry believes that the domestic food supply is sufficient to meet domestic needs for eight main commodities namely chicken, meat, fresh milk, eggs, fish, fruit, vegetables and rice. He did, however, acknowledge that Malaysia's dependence on imports has been increasing and the government has incorporated strong policies which include diversifying imports, seeking efficient sources and strengthening growth strategies of rice in Malaysia. This is in addition to conducting pilot programmes, initiatives on crops.

"We have good policies in place to ensure we are able to maintain a sustainable food future for our people. Of course there is always room for improvement and we are seeking to boost access to food," he told StarESG when he attended the Asia ESG Positive Impact Consortium (A-EPIC) launch at the Sime Darby Convention Centre last Friday (June 21) with Prime Minister Datuk Seri Anwar Ibrahim and Natural Resources and Environmental Sustainability Minister Nik Nazmi Nik Ahmad.

Additionally, news reports in early June noted that Lokman Hakim has assured Malaysia has enough rice stock to last five to six months, standing at 1,128,165 metric tonnes up to June 18. Pointing out that the ministry constantly ensures the commercial rice stock exceeds the country's monthly needs, he shares that rice stock in the country at the mill, wholesale and retail levels is 752,447 metric tonnes, with 107,757 metric tonnes being transferred from ships and 67,961 metric tonnes in local paddy.

He adds that the government also has a buffer stock of 200,000 metric tonnes of rice ready to be used for emergencies, like a global food crisis or a state of emergency.

Meanwhile, food waste remains a pressing matter in Malaysia. According to reports, Malaysians waste approximately 16,720 tonnes of food daily (this accounts for 44% of the total waste), with households contributing the largest amount of food waste across the country, followed by night and wet markets, food courts and restaurants, hotels, and food and beverages industry.

All the wasted food will end up in our landfills, where it decomposes slowly and releases harmful substances such as methane—a greenhouse gas that is estimated to be 25 times more potent than carbon dioxide—into the atmosphere.

### Shaping the nation's food future

To advance food security for the nation and her people, the Institute of Strategic and International Studies (ISIS) Malaysia suggests policymakers to strike a delicate balance between self-reliance and self-sufficiency in the context of food systems, boost food resilience and more.

The policy brief titled *Malaysia's long-term food security: The path beyond self-sufficiency ratios and import-dependent ratios* stated that the existing overemphasis on

self-sufficiency ratios and import-dependency ratios could lead to inefficiencies and limited resilience. Comprehensive and holistic food security systems should extend to the dimensions of accessibility, utilisation, stability, sustainability and agency.

The paper also highlights the need to strike a balance between self-reliance and self-sufficiency to address future disruptions. It stated that Malaysia's food security should focus on household financial ability, nutritional status and resilience, rather than solely on national production and self-sufficiency.

"Rather than the current overt reliance on self-sufficiency, which often results in inefficiencies and limited resilience, a more pragmatic approach would be to emphasise self-reliance involving the production of a comfortable or strategic level of self-sufficiency coupled with the ability to strategically source the balance, wherein nations hone their ability to adapt, innovate, and respond to disruptions.

"A more holistic approach to food security is important, recognising that self-sufficiency alone is inadequate to address the growing nutritional needs, especially of Malaysia's lower-income segments.

"The approach of food self-reliance must extend beyond quantity to incorporate nutrition and dietary perspectives, ensuring that the requirements of the people are met comprehensively," according to the brief.

Furthermore, Malaysia is encouraged to leverage on and actively promote and pursue food diplomacy in relation to food security through its membership in selected multilateral and regional frameworks as well as bilateral arrangements.

"Towards this end, key stakeholders in other ministries and the private sector will be increasingly involved in a whole-of-nation effort in pursuit of these strategic arrangements, which will enhance Malaysia's long-term food security. Multiple policies across eight ministries along with varying local-level considerations challenge coordination, policy coherence and effective governance.

"As food systems are multifaceted and multidisciplinary, coordination among government agencies, periodic reviews and improvisation in state-level participation to address varying food security challenges are pivotal," stated the brief.

Separately, independent think-tank Emir Research founder and non-executive chairman Datuk Wira Dr Rais Hussin Mohamed Ariff—an avid strategist with over 26 years of experience—has observed that leading countries in GFSI share a common practice. They place emphasis on efforts in boosting agri-food technology - "all as one place hi-tech farming, precision engineering and circular economy principles as the cornerstone of their national food security strategies".

Rais Hussin notes that other common trends among these countries include:

> Placing food security at the highest priority level by the state admin-



Malaysia is third after the Philippines and India in the list of countries contributing most to marine plastic pollution, according to Dutch academic Lourens J Meijer's study published in 2021. —ZULAZHAR SHEBLEE / THE STAR

istration in the form of explicit national food security strategy and dedicated ministries or agencies.

> Spear-heading national policies towards food self-sufficiency.

> Heavy investment in agri-tech research and development.

> Particular focus on small farmers and local agri-techpreneurs via innovative financing, incentive schemes, and connecting them into extensive networks and e-commerce channels, to allow these small players to collectively bring their produce to the local market to be price-competitive. This addresses the middle-men issues.

> Successful countries build entire vibrant and healthy ecosystems around their agricultural sector infused with tech, including producers, financiers, policymakers, educators and even consumers.

> Irrespective of land and other natural resources size and availability, these countries venture into the area of vertical complete control environment farming.

> Preparing local agri-tech specialists at scale.

> Deploy various strategies to encourage youth to relocate to rural areas and develop rural regions, turning them into attractive places to reside in.

"Spearheading national policies towards self-sufficiency is yet another common trend shared by top league food security performing countries. These countries probably have realised heavy-reliance on imports as a threat to their national security," according to Rais in an opinion piece.

In summary, securing Malaysia's food security and safety would require a substantial amount of funding. Food systems account for around a third of global emissions, and naturally, the agricultural sector itself is a significant contributor to greenhouse gas emissions.

However, The World Economic Forum's paper *Green Returns: Unleashing the Power of Finance for Sustainable Food Systems*, has found that just under 4% of climate finance is allocated to agriculture and food.

To advance the agricultural sector, more funds will need to be injected to get the ball rolling.



Malaysia's food security should focus on household financial ability, nutritional status and resilience, rather than solely on national production and self-sufficiency.