



MINISTRY OF AGRICULTURE AND FOOD INDUSTRIES
MALAYSIA

NATIONAL PATHWAY FOR FOOD SYSTEMS TRANSFORMATION

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Chapter 1: Country Context

With the global economy evolving into a more dynamic and competitive landscape, as well as the stresses of a global pandemic that has disrupted and will continue to disrupt economic activities as well as individual livelihoods, food security is now one of the focal points that will have a significant impact on a country's long-term development. Malaysia's food system is based on the agrofood sector, which is characterised by a complex web of interaction between various actors, each with their own set of profiles, responsibilities, interests, and skills. The economic and social impact of the industry is evident where in 2019 the industry employs approximately 500,000 people (~4.00% of total workforce), contributes ~3.50% to the total national GDP, and has a total land use of 5.63 million Ha accounting for approximately 17% of total land area of Malaysia.

This national pathway is consolidated and inline with the National Agrofood Policy (NAP) 2.0, the National Nutrition Policy of Malaysia (NNPM) 2.0, the Twelfth Malaysia Plan and the National Fourth Industrial Revolution (4IR) Policy. It is designed to look into certain aspects of Food Systems Transformation in order to enhance national economic development, competitiveness, and sustainability, as well as resistance to global shocks. On the other hand, assuring commitment towards 'End Hunger' and achieving food security and improving nutrition for Malaysians by making agriculture more nutrition-sensitive. Current food systems are being increasingly challenged to provide adequate, safe, diversified, and nutrient-rich food that contributes to healthy diets due to resource scarcity and environmental degradation, unsustainable production, and an unhealthy food environment.

Malaysia's commitment to assuring food security is a joint effort of many agencies with two (2) main ministries, namely the Ministry of Agriculture and Food Industries (MAFI) and the Ministry of Health (MOH). The Food Safety and Quality Division (FSQD) and Nutrition Division of the MOH are tasked with ensuring food is safe and nutritious, whether produced locally or imported. The Food Safety and Quality Division (FSQD) under the Ministry of Health (MOH) is mandated as the competent authority for food safety in Malaysia and is responsible for conducting official control of all food premises and food operators involved in manufacturing, storage, distribution and transportation. Food is not food if it is not safe and nutritious. The National Food and Nutrition Security Council has been working in this regard in close collaboration with various stakeholders in the country's effort to ensure people receive safe, wholesome and nutritious food.

Malaysia is intensifying the efforts to ensure food and nutrition security for the population as one of the transformations in the food system. Sustainable food production and agriculture are both fundamental to assuring an adequate and stable supply of affordable, healthy food for the population. In this regard, the Nutrition Division of MOH is responsible for ensuring plan of actions and strategic initiatives regarding nutrition and healthy diets in the country are established, implemented, monitored and evaluated according to the National Food Nutrition Policies. Therefore, to help address and sustain food and nutrition security in Malaysia, the National Nutrition Policy of Malaysia (NNPM) 2.0 was formulated which emphasizes elevating nutritional status, reducing diet-related non-communicable diseases (NCDs) and strengthening food and nutrition security as the missions. The NNPM 2.0 is a mandate which gives impetus to maintaining, enhancing and achieving the well-being of the population. One of the strategies in NNPM 2.0 is strengthening the health systems to effectively address the double burden of malnutrition as well as food and nutrition security with adequate resources and capacity strengthening. All the strategies in NNPM 2.0 are translated into action via the National Plan of Action for Nutrition of Malaysia (NPANM) which outlines nutrition specific and nutrition sensitive strategies and activities to sustain food systems to promote healthy diets.

Chapter 2: Challenges of Food Systems in Malaysia

1. Issues in Production Cost and Production Efficiency
2. Natural Resources Scarcity
3. Demographic Changes and Shifting Dietary Trends
4. Double-burden of malnutrition
5. Climate risk and infectious diseases
6. Globalization of food supply chains, lack of awareness among traditional/informal market and changes to consumer habits resulting in higher risk of unsafe food
7. Ensuring safe and nutritious food for all
8. Impact of Covid-19 on the Agrofood Industry
9. Low Involvement of Youth in the Agrofood Industry

10. Unconducive Business Environment
11. Limited Financial Assistance for Farmers
12. Issues in High Value Commodities (HVC)

Chapter 3: National Pathway for Food Systems Transformation

Pathway 1: Improve the livelihood of smallholder farmers and food producers

Smallholders are the most important stakeholders in Malaysia's agrofood business, accounting for nearly 76 percent of the industry's players. However, average household income in households where the head of home is working in agriculture has been shown to be around 40% lower than the national average. Increasing income levels and improving the well-being of smallholder farmers and food producers are critical.

Specific steps to address this set of food producers are required, which can be accomplished through the provision of a variety of support mechanisms, such as services to boost production, efficient post-harvest management, and increased market access. Furthermore, stronger collaboration between smallholders and larger companies is required to instill trust and provide assurance among smallholders, as well as to stimulate the adoption of technology to innovate and progress up the value chain.

Pathway 2: Increase productivity towards a more sustainable food systems

Productivity is still an important aspect in ensuring the long-term viability of food systems. Adoption of technology, research and development (R&D), and creative methods could help food producers better manage farm activities, minimise reliance on manual labour, promote natural resource conservation, and adapt to climate change effects. These elements would improve the plant and animal stock, as well as the soil.

Pathway 3: Supply-chain Agility and Resiliency

Agile and resilient value chains are critical for the agrofood industry to maintain smooth operations and remain competitive under distressed conditions such as climate change, a global pandemic, and other crisis, where

disruptions could impact value and supply chains. In addition, an agile and resilient value chain is capable of accelerating the speed in increasing product customization levels based on needs of consumers. Such agile and resilient value chains could contribute in driving businesses to penetrate new market space and capture customers whose special or personal needs could not be met by standard products or existing offerings.

In addition, food safety has been increasingly a global challenge to national food security policy, corresponding with the expanding dimensions of food supply chains that pose crucial trade and political implications. In a larger international context, food movement by means of import and export commerce across borders slowly reduces borders to a virtual concept. However, these progressions also introduce foreign food hazards into the national sovereign that are often difficult to detect. The complex food supply chain requires multi-agency concerted efforts and responsibility instead of a single agency. In addition, the occurrence of food safety incidents such as BSE and melamine in infant products calls urgently for tighter and more comprehensive national food safety control to protect the citizenry from food hazards.

Pathway 4 : Provide Safe and Sustainable Food in the Future for All

Food safety and food security are two complementing elements of our sustainable future. In the long run, the aims of food safety and food security must be aligned to achieve the United Nations' sustainable development goals. The four (4) main dimensions of food security include Stability, Availability, Access and Utilisation. Access to safe food is a basic human right, and food safety can be ensured as a part of well-functioning and sustainable food systems. Hence, it is important to ensure and enhance the food and nutrition security of all people especially the vulnerable groups, via sustainable food systems, including national preparedness and response during emergencies and disasters. An effective food safety system is essential to protect the health of consumers and achieve the SDGs.

Pathway 5: Responsible consumption and production

Food Systems should be made more productive and less wasteful and need to be pursued from a holistic and integrated perspective. For Malaysia, this means that the supply of food in Malaysia must be safe, hygienic and efficiently produced, processed, distributed and consumed within the recommended dietary intake based on Malaysian Dietary Guidelines and with

minimal wastage. Quality and efficiency of handling and processing food products/produce must be embedded in the entire value chain.

Chapter 4: Key Priorities for collective action and partnership

4.1 Adoption of digital technologies for sustainable agriculture systems

Technology has the potential to accelerate and considerably contribute to a growth in crop production quality and quantity, hence enhancing productivity. Food producers can have better control over pests and disease challenges using various smart agriculture technology and products currently accessible, making the process of production such as rearing livestock and growing crops more predictable and efficient. Apart from that information on nutrient content in local crops can be easily access through the Web-based of Malaysia Food Composition data. Furthermore, human error and wastage in the agrofood business can be reduced with the help of technology.

Mechanisation allows for increased production, which translates to cheaper costs and higher profits for food producers, resulting in more cash available for investment. Technology would encourage farmers to improve their farming operations in order to boost production, which would enable food producers earn a better profit margin and increase their household income. In addition, food producers must receive adequate training in technology skillsets as well as support services to ensure successful technology implementation.

Consistent with the move to Industry 4.0, at the manufacturing stage, the take up of enabling technologies for manufacturers could offer improvements and better efficiency in food production. This includes digitalisation of the food supply chain, such as new technology and innovation in food storage and transportation. Smart, effective, innovative, and environmentally-friendly storage and transportation systems can assure agriculture produce and food products are not only safe and able to maintain freshness and nutritional value, but also support a sustainable food system.

4.2 Improve Domestic Market and Strengthen International Trade

The importance of strengthening and diversifying exports is pivotal as this not is beneficial not only to the agrofood industry but also to the national economy through the creation of spillover effect to other various sectors.

Among the ways to achieve this is by increasing productivity and competitiveness of agrofood products in the global market as this can translate into higher exports and greater trade value leading to current account surpluses for Malaysia. Moving forward, the focus on intensifying high value-added activities and investment in targeted areas with high growth potential could be amongst the key drivers of growth to boost competitiveness and the growth of income for the workforce.

In the context of food safety, Malaysia further emphasizes the need to support traditional and informal markets in producing safe food and growing. The traditional market and informal markets are two important segments of the food business in Malaysia that support the needs of Malaysians. Food poisoning cases in Malaysia occur mostly in school settings, food obtained from open bazaars, home-based food businesses and food service outlets. Studies have shown that the main reason for food-borne illnesses in Malaysia is insanitary food handling procedures, which contribute to 50% of the cases (MOH, 2007) such as using contaminated raw materials, cross contamination during handling, preparing food too early before serving (more than four hours before serving time) as well as temperature abuse during processing, transportation, sales and storage. The incidence of food poisoning in Malaysia has significantly increased and involved some mortality cases (A'aishah, 2014).

Considering that the informal food business is one of the resilient modes of resolution for many that are affected by the COVID19 pandemic, authorities have the responsibility to support this business community to get to know regulatory requirements, understand food safety risks, improve production approaches and implement hygienic practices accordingly. Authorities are committed to supporting the informal market community through maximizing and streamlining existing resources to provide affordable and accessible tools for a sustainable food system. Outreach programs, continuous sharing and engagement, providing tools for self-assessment, creation of support groups (icons) and specific initiatives for these industry segments could help the informal market to strengthen their operations in accordance with the requirements gradually, and eventually upgrade themselves into a formal establishment.

These programs will not only result in a better state of knowledge about food safety among small businesses and reduce food poisoning incidence, but also help the economy in the long run. We must be able to foster our industry to be competitive enough in meeting the standards or requirements of importing countries and especially of international standard-setting bodies.

4.3 Developing the knowledge, skills and talent of human capital in Food Systems.

Human capital development in the agrofood business is crucial for long-term growth since it has the power to boost productivity and efficiency, drive increased revenue and income, and influence innovation and the ability of players to advance up the value chain.

Improving and upgrading the capabilities of all actors in the agrofood industry's value chain remains a top priority for moving the industry ahead. Training programmes and an education system that address current and future skill shortages in the agrofood business could help the industry develop a strong workforce. The potential and prospects created by technological advancements have shown to be limitless; hence, the capacity to unlock the potential of technology and harness the opportunities presented by its adoption could have a significant impact on the agrofood business. Furthermore, in understanding the linkages between agriculture and nutrition, the nutrition-sensitive agriculture training is fundamental to endeavors the improvement of nutrition outcomes of the Malaysian.

To capitalise on the advancement of technology, relevant education and training programmes must be designed and provided according to targeted groups to enhance their technology and digital skills. Building strong talents in the agrofood technology and other related sectors can set a strong foundation towards a stronger agrofood industry that is able to adapt faster to modern technology and produce food in greater quantity and quality to meet food security and safety goals in Malaysia.

Youth and women play a significant role in facing the challenges of access, availability, and use of food in the face of a growing population, climate change, urbanization, and globalization, or even during natural disasters. The recent pandemic showcases young people and women using their potential and knowledge of agriculture and food production to sustain their livelihoods, which ultimately contributes to continuous domestic food supply at an affordable price during this challenging period. Apart from prepackaged food manufactured by established manufacturers, the traditional and informal markets in the form of food bazaars, home-based food businesses, street vending represent a considerable chunk of the domestic food supply for Malaysians. The rise of social media also creates demand for informal food businesses that are often trending and are significant, especially for younger consumers. Thus, engagement with youth and women is critical in a food security-food supply chain-employment interconnection where training programs can be customized

to capitalize on the available tools and resources; and their talent results in synergized results towards ensuring safe and nutritious foods in the market.

4.4 Accelerate the sustainability shift for Agricultural Practices and Food Systems

In order to achieve the aim of food security, the agrofood business must adopt sustainable practises in order to protect the delicate balance of the environment and ecosystem, taking care not to pollute or degrade the environment in the process. The following are some of the things that should be considered when farming in a sustainable manner.

- (1) strategies and processes for increasing soil productivity while reducing negative impacts on climate, soil, water, air, biodiversity, and human health;
- (2) minimising the use of non-renewable and petroleum-based inputs and replacing them with those derived from renewable resources;
- (3) ensuring that the basic nutritional requirements of current and future generations are met based on the Malaysian Dietary Guidelines;
- (4) reducing the agricultural sector's vulnerability to adverse natural conditions (e.g. flooding), socioeconomic factors (e.g. economic downturn) and other risks; and
- (5) reducing use of non-environmental friendly pest control chemicals and encourage the practice of responsible pest control management that take into account the food safety and environment after-effect.

An additional concern for food security is food loss and waste. Globally, 14 percent of food is lost during the manufacturing process before it reaches the retail level. Reducing food loss and waste could help to relieve some of the pressure from rising food demand.

4.5 Conducive Business Ecosystem and supportive Regulatory Framework

To persuade food producers, investors, and the private sector to continue participating in the agrofood industry, the business ecosystem must be conducive to these various stakeholders operating and conducting their businesses in the industry.

Land tenure and property rights; regulatory matters such as norms, rules, and regulations; financial services; physical infrastructure and digital connectivity, as well as end-to-end value chain linkages, particularly

between the upstream and downstream segments, are key areas of the ecosystem in the context of Food Systems. Continuous engagement and transparency between all the players and authorities are pertinent in creating this conducive ecosystem.

The digitalisation of the food supply chain also brings about changes in how regulations and procedures within the regulatory framework are being implemented. A technology-based online monitoring system bridges the gap between businesses and regulators, which results in improved service delivery, shorter waiting times, and encourages real-time monitoring and communication. For example, the Food Safety Management System (FoSIM) that started its operation in 2003 has enabled smooth operation of control and monitoring of imported food in a faster and more transparent way. The system also enables surveillance and monitoring of food produced domestically and it consists of valuable data that supports food safety programs. The updated version of FoSIM that went live in March 2021 also includes facilities for electronic certificates which will further allow application and issuance of export certificates in a shorter time. Malaysia will continue to strengthen its commitment to ensuring food system management runs in tandem with the digitalisation of business and trade globally.

4.6 Engaging everyone in shaping the future safe food

It is everyone's right to have access to safe food in any part of the world and everyone can contribute to making food safe. Food producers, distributors and retailers, as well as the government, all have a responsibility to meet consumer expectations and ensure that food produced and offered for consumption is safe. At the end of the chain, consumer as well can make a difference whether the food is safe or otherwise. Without proper handling at consumer end, safe food can turn harmful.

Improving levels of food safety globally requires the development of new technologies and sustainable commitments among all stakeholders. The cross-sectoral and inter-regional approach to food safety among all stakeholders will ensure that the right food safety knowledge, risk management and interventions are successfully applied across the global food supply chain.

In line with the World Food Safety Day that was launched in July 2019 after being adopted in 2018 United Nation General Assembly, food safety is everyone business. Everyone involved in food supply chain –

from producers to distributors and retail – must ensure preventive measures are implemented to prevent hazards which are significant for food safety from primary production to final consumption. Additionally, good processing, storage and preservation help retain nutritional value and food safety as well as reduce post-harvest losses.

Ultimately, governments, national economic bodies, development agencies, trade organizations, consumer and producer groups, academic and research institutions and private sector entities shared the responsibility to ensure food safety and must work together on issues that affect us all, globally, regionally and locally. Collaboration is needed at many levels – across sectors within a government and across borders.

Chapter 5: Concluding Remarks

- The National Pathway promotes more cohesive collaboration and contribution to thriving in the ever-shifting global landscapes that have a substantial impact on the situation of food security by bringing all stakeholders together to traverse across the identified trends.
- The food system must be advanced to a stage where it is well-prepared against future disruptions and shocks, improves nutrition, achieves rapid technological progress, is highly innovative and competitive, uplifts the economic status of its players, strongly connected to the global export value chain, and environmentally sustainable.
- The value of global food systems will not be simply defined by whether more food is produced, but rather by whether critical food safety deficiencies are effectively managed along the supply chain so as to provide access to safe, affordable and wholesome food products.
- The National pathway reflects the commitment of the Malaysian Government to continue its pursuit for the greater benefit of the nation by focusing development efforts on sustainable, resilient, and technology driven food systems.