

# The Impact of COVID-19: Malaysia's Emergency Mitigation Measures on Ten High-Value Crops

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## Executive Summary

COVID-19 is impacting crop yields and agricultural supply. Malaysia faces annual challenges with the value chain and supply chain of fruits and vegetables, burdening consumers and agricultural producers as produce prices fluctuate and surplus agricultural products can spoil. These difficulties were exacerbated during the COVID-19 outbreak in Malaysia. As we move into the endemic stage, the annual problems suggest that mitigation measures need to be implemented immediately. An oversupply of fruits and vegetables leads to falling prices and a shortage of agricultural products leads to skyrocketing prices.

Therefore, a framework of 10 high-value crops can be illustrated in Figure 1, to facilitate the policymaking process of the sector. The industry can use this framework and its resources to optimize its productivity. General aim of this study is to assess the issues faced by the agricultural producers and the three specific objectives are; 1) To identify the problems face by 10 high-value crop producer relating to value and supply chain of the crops 2) Develop emergency mitigation policies or guidelines to the relevant authority in Malaysia to complement the National Recovery Plan 3) To improve the living standards and economic wellbeing of rural smallholder farmers by easing the value chain and supply chain for the agricultural producers. These objectives are examined through focus group discussion (FGD), surveys, and in-depth interviews with relevant stakeholders.

This study explores the challenges and provides recommendations to mitigate the production issues of ten high-value crops (HVC), namely orchid, vanilla, fig, strawberry, D197 durian, Bentong ginger, MD2 pineapple, Tanduk banana, Harumanis mango, and Matag coconut. For each crop, two general criteria are considered: value chain and crop supply chain. Five crops were found to be unaffected: fig, MD2 pineapple, Bentong ginger, D197 durian, Matag coconut. Agricultural producers of these crops can overcome adversity by changing their farming practices or converting the fresh produce into downstream products. Five other crops such as vanilla, orchid, strawberry, Tanduk banana, and Harumanis mango have been adversely affected by COVID-19. Among the issues raised are inadequate labour, high cost of pesticides, fertilizers, infrastructure setup and planting supplies, and lack of capital, which affect the value chain and supply chain of the crop. On the other hand, farmers' intrinsic issues are explored, such as attitudes and passion, knowledge gaps, age factor, and succession.

Thirteen indicators must be weighted in the crop mitigation policy; short-term and long-term crops risk; crop protection, skills development, capacity building, young growers' crop management, crop outcomes assessment, guidelines for young and advanced growers, costs for growing crop, financial support, cost and revenue of crop production, fair trade, land tenure, and enterprise development. The ten agricultural producers recommended the following: recognition of new crop segment markets, joint-venture among the agencies and stakeholders, establishment of automated referral databases for crops, and extension of agricultural training period inclusive of project management and financial management courses.

Figure 1 focuses on five important elements that are used to examine the research goals: (1) identify problems, (2) identify indicators, (3) select methods to implement, (4) stakeholder collaboration, and (5) effectiveness. Based on this guideline, four major policy recommendations are outlined: (1) to define the context of high-value crops; (2) to implement standard guides and effective management of the 10 crops based on the current findings; (3) to harmonize the supply chain by establishing a real-time database involving multiple stakeholders; and (4) access to credit and understanding the welfare of farmers to encourage consistent crop production. The details of these recommendations are explained in Section 1.5.

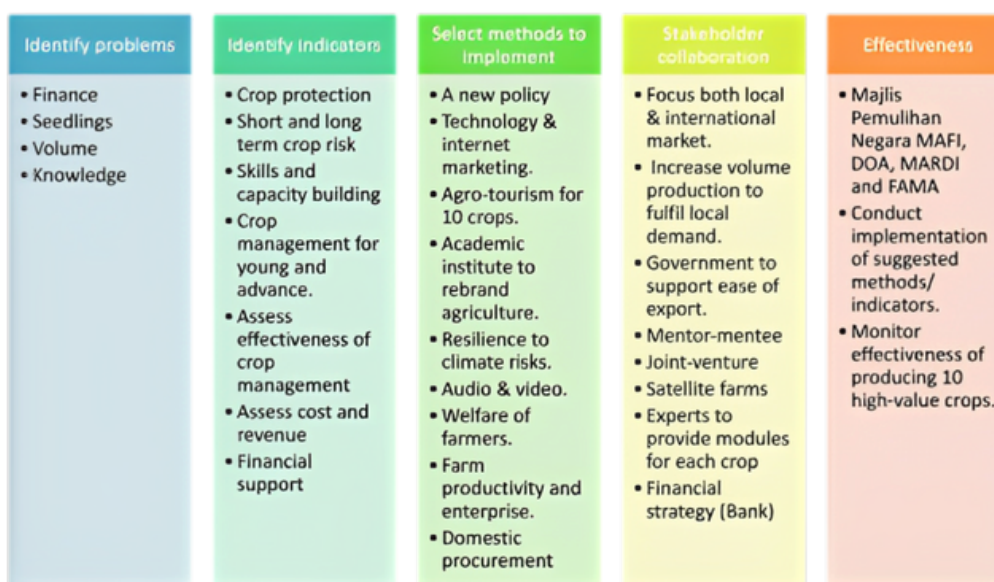


Figure 1: Framework of 10 High-Value Crops

## Key Messages and Recommendations

Recommendation 1: To define and standardize what constitutes high-value crops in all level.

Recommendation 2 : To integrate an efficient management system, standard operating procedures and quality production of HVC.

Recommendation 3: To harmonise the supply chain of HVCs involving multiple stakeholders.

## Introduction & Importance of Problem

In Malaysia, the production of high-value crops and the availability of agricultural products have been affected by COVID-19. Supply and value chain issues for high-value crops in Malaysia plague both customers and farmers as product prices fluctuate and excess produce can be wasted. These issues were frequent during the COVID-19 epidemic in Malaysia. Recurring problems indicate the need for prompt corrective action as we approach the endemic stage. Overproduction of high-value crops leads to falling prices, and shortage of agricultural commodities causes price spikes. Farmers receive various incentives at the government level. However, the incentives do not effectively address the persistent problem of declining production in the market.

Government actions consist of resuming agricultural production and providing subsidies under the National Recovery Plan. Due to the COVID-19 pandemic, farmers are facing expensive fertilizer and seed, labour shortages, logistics and transportation. COVID-19 is adversely affecting food availability, access, use and stability of food in the country's agricultural sector (FAO, 2020). During 2010-2020, Malaysian agro-food imports registered an average annual growth of 6.69%, higher than agro-food exports (MAFI, 2020). This caused the agricultural and food trade deficit to increase by an average annual rate of 5.78% from MYR 12.09 billion in 2010 to MYR 21.22 billion in 2020. This performance shows Malaysia's continued dependence on the global food chain for support of the national agro-food sector.

## Problem Statement

This study is the first step towards mitigating food security in Malaysia using the 10 high-value crops in Malaysia. Business cannot continue as usual as COVID-19 is negatively impacting the food system. FAO proposes that governments engage with the private sector through a multi-stakeholder advisory committee made up of representatives of all participants in the food supply chain. The Malaysian government currently offers financial assistance, subsidies, and moratoriums. But will the value chain and supply chain be the same before and after COVID-19? It is rated on the basis of ten high-value crops, namely D197 durian, orchids, vanilla, fig, strawberry, Bentong ginger, MD2 pineapple, Tanduk banana, Harumanis mango, and Mataq coconut.

## CRITIQUE OF CURRENT POLICY OPTION

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The policies reviewed are Economic Transformation Programme (ETP), National Agrofood Policy 2011-2020 (NAP 1.0), National Agrofood Policy 2021-2030 (NAP 2.0) and 12th Malaysia Plan (RMKe-12) (2021-2025). In 2010, the Malaysian government introduced the Economic Transformation Programme (ETP) under the Prime Minister's Department (PEMANDU). Agriculture is one of the National Key Economic Areas and under this programme 16 Entry Point Projects (EPPs) have been implemented to develop diverse natural herbs into premium herbal products, commercializing unique indigenous seaweeds, accelerate swiftlet nest-production, integrated cage aquaculture systems farming and rearing integrated cattle in oil palm estates. Then in 2011, the Ministry of Agriculture and Agro Based Industry issued the National Agrofood Policy 2011-2020 (NAP 1.0).

NAP 1.0 focuses on the high value commodities, primarily food categories such as livestock, aquaculture, seaweed, herbs and spices, premium fruits and vegetables, etc but lack of strategies for each crop. On the other hand, in NAP 2.0, high-value crops are generally classified as high-value commodities. Among the 10 crops, only durians, coconuts and pineapples are classified as high-value commodities. However, the other seven crops, such as fig, orchid, vanilla, strawberry, Tanduk banana, Bentong ginger, and Harumanis mango are not listed as HVC. Contradiction was observed for guarana, where it was listed as a high-value commodity but at the same time was banned by the Department of Agriculture (Ismail, 2022).

Without a clear definition, correct implementation policies and strategies are distorted. NAP 2.0 identifies three main issues with HVC: low productivity, uncertainty in supply and demand, and a lack of investors. However, there are no issues of inadequate investors (e.g Afta Benefigs Sdn. Bhd. & Buluh Tampin Sdn. Bhd.), and uncertainty in demand and supply for vanilla and figs. Due to the health benefits of consuming fig products, there is a high demand for fig products in the Malaysian market. For example, fig takes 4 months to harvest and generates RM 384 000 per year (RM 32 000 per month). In 2019, fig growers imported 583 tonnes of figs, still not enough to meet local demand in Malaysia. Fig is significant in Malaysian economic development because it generates income to farmers or agricultural entrepreneurs. However, efforts to improve fig farming in Malaysia are futile as figs are not recognized as an important crop in the Malaysian agricultural system.

Concurrently with NAP 2.0, the 12th Malaysia Plan was prepared under the Economic Planning Unit of the Prime Minister Department. Similar to NAP 2.0, out of the 10 crops only durian, coconut and pineapple are classified as high-value commodities for RMKe-12.

The RMKe-12 shows that agricultural sector issues, such as unsustainable financing mechanisms for reforestation, affect the viability of smallholder farmers, low-yield production, inefficient farm management, and dispersed farmland limit the optimal use of land and low adoption of modern agricultural technologies. Unfortunately, no remedial actions are mentioned to fix them. Various strategies have been implemented to increase agro-food production to ensure adequate supply, but the contribution of the agro-food sector to the agricultural sector is still small at 53.3% in 2020 (behind the target of 60%). Moreover, the agricultural sector still lacks the use of new technologies and the welfare of the farmers is neglected. Lack of use of technology utilization needs to be revisited. First, is the implemented technology cost effective? Second, is the basic infrastructure in place, such as power and machinery? Third, is the welfare of the farmers taken into account? Among the strategies considered, a major issue was disagreement among government agencies, reflecting a lack of coordination among government agencies.

This policy brief provides a framework and actions for improvement of the national agricultural sector relating to these 10 high-value crops.



## ANALYSIS AND FINDINGS

**Introduce High-value Crop Act/ Board as the major finding of this study.**

### I. Define what constitutes high-value crops.

Existing policy has a very general definition of high-value crops; consequently, it discourages the development of potential crops at the production level. The results show that industrial producers, government agencies, and farmers have different perceptions about what constitutes a high-value crop. Government agencies consider high-value crops to be high yielding, preferably domestic crops, with export potential. In contrast, industry participants consider high-value crops based on projected income per hectare over a period of time. Some stakeholders have suggested coining the definition of a high-value crop be coined as such; "the crop should be able to produce RM 1 million per hectare in 10-years. Therefore, the first policy implication is to revise the NAP 2.0 definition of high-value crops and potentially meet the definition of HVC.

The following criteria should be considered when defining HVC: (1) the HVC should have high potential value (able to produce RM 1 million per hectare in 10-years) to be developed; (2) able to generate high income within the specified timeframe; (3) producers are willing to produce quality downstream products; and (4) producers receive support from authorities to export and import the crop and funding assistance. Therefore, high-value crops should be defined as "— these are crops other than traditional crops which include, but are not limited to: fruit crops (coconut, coffee, citrus, banana, papaya, mango, strawberry, jackfruit, rambutan, durian, mangosteen, guava, and watermelon), root crops (ginger, potato and tapioca), vegetable crops (chilli, broccoli, cabbage, celery, carrots, cauliflower, radish, tomato, bell pepper, and petola), legumes, vanilla, fig, and cut flower and ornamental foliage plants (chrysanthemum, gladiolus, anthuriums, orchids, and statice)." The MD2 pineapple falls under the prerogative of the Malaysian Pineapple Industries Board.

## II. Integration of an efficient management system, standard operating procedures and quality production of HVC.

This includes two main strategies. First and foremost is an efficient management system for agricultural producers by the service providers. Current evidence indicates that each government agency has a separate system for registering agricultural producers. While this method is convenient for government agencies, it prevents important agricultural knowledge from being passed on to young and rural farmers. There is no specific approach to identify existing producers (both small and large-scale producers) growing a particular crop across Malaysia. Next, the establishment of SOP for HVC and the quality classification for HVC. This new approach will bring agricultural knowledge and opportunities to farmers at a faster rate and reach farmers across Malaysia. Moreover, effective management strategies pursued from multi-stakeholder perspective are essential to solving the problems faced by producers throughout the value and supply chains:

a) Marketing: set and implement standards for grading, sampling and testing and analysis, specifications, nomenclature, units of measurement, codes of practice and packaging, preservation, conservation, and transportation of high-value crops.

b) Technical and infrastructure support: technical support on research and extension, infrastructure development, financial and market information with cooperation between industries, research and development institutes, and relevant government agencies.

c) Good seeds and planting materials: quality-certified seeds and materials readily available to farmers and to ensure a high yield and good quality produce. Agricultural producers are to be allowed to import, free of duties, high quality seeds and planting materials subject to the Malaysian Quarantine and Inspection Services Act 2011 (Act728) and not listed in IUCN Global Invasive Species Database and the Global Register of Introduced and Invasive Species.

d) Provide fiscal incentives for industries engaged in smart agriculture using the integration of cost-effective, environmentally friendly technology to increase the quantity and quality of crops produced.

### III. To harmonise the supply chain of HVCs involving multiple stakeholders

HVCs Act/committee — A committee, composed of representatives from the Department of Agriculture (DOA), Malaysian Agricultural Research and Development Institute (MARDI), representatives of high-value crop farmers, Federal Agricultural Marketing Authority (FAMA), Ministry of Agriculture and Food Industries (MAFI), Ministry of International Trade and Industry (MITI), bank agencies, and retail chain companies to conduct a quarterly meeting to harmonize the value chain and supply chain of the HVCs. This group shall be strengthened to implement, coordinate and monitor the development and progress of the HVCs by;

a) Assist in the marketing and distribution of high-value crops by monitoring and disseminating market information, including identification of the local supply-demand situation, domestic market matching, and foreign market intelligence and promotion of high value crops.

b) Establish links with various government and commercial research organizations to undertake studies and research to promote the cultivation, marketing, and processing of high value crops.

c) Conduct training programmes for farmers with the primary objective of enhancing their understanding of production technology and market potentials and prospects for a variety of high-value crops. Crop Planting and Marketing Modules must be developed by getting input from genuine (advanced) crop producers who have successfully grown and sold their crops to local and international markets. The findings show some crop producers (e.g., those plant orchids, Bentong ginger, MD2 pineapple, Tanduk banana, vanilla and fig) are willing to work together to discuss and produce modules to guide young growers. Further work is needed to identify more experienced producers who are willing to contribute their expertise to the development of this module. Crop growers should work with government agencies such as DOA, FAMA and MARDI to improve the module.

d) Establishment of pilot stations and seed farms to breed varieties adapted to the agro climatic conditions of the region and market while maximizing the added value of high-value commodities; and

e) Regularly collect information on current and future output, prices and trade flows in order to determine and implement a balanced distribution of high-value crops through inter- or intra-trading between established wholesale markets. The online platform allows successful farmers to share their experiences and encourage more young farmers to participate.

#### IV. Access to credit and an understanding of farmer welfare to promote consistent crop production.

Some producers have adequate capital, but have great difficulties in getting financing. Due to certain banking criteria and limited government funding, incentives are only applicable to young farmers under the 'Agropreneur Muda,' 'Geran Agropreneur Muda' and 'Ladang Kontrak' schemes. The potential producers should be assisted with private financial assistance (i.e., agricultural credits with minimum interest rates and crop insurance) to increase their production. Currently, financial institutions do not cover all types of agriculture and the application process is slow. Additionally, the fund's criteria should be reassessed. Many standards are not met due to a lack of financial knowledge, such as account management and financial records required to secure funds.

Established agribusinesses have funds but cannot expand due to land restrictions. Moreover, understanding the needs and welfare of farmers is not listed in existing policies such as NAP 2.0 and RMKe-12. This study highlights trends in ageing farmers with little involvement from the younger generation. Continuous motivation to grow crops is critical to achieving self-sufficient levels (SSL) by crop. However, many growers do not know how to plan, budget, cost, and forecast yield for their crops in a consistent manner. Agricultural training courses must include project, financial and marketing management skills. Farmers need to be equipped with financial literacy and accounting skills. These records are valuable as they need to secure funding for the future.

## Conclusion

High-Value Crops (HVC) is a way forward for the government to consider adopting for brighter agricultural production. The objective to propose for the establishment of a High-Value Crops Development Act/Board is to promote the production, processing, marketing, and distribution of high-valued crops. The scope of this proposed establishment includes indigenous and cultural communities, upland and lowland farm owners, farmers' organizations, associations, and cooperatives; community associations and farmworkers; and government agencies involved in the supply chain of HVCs. The proposed policy will accelerate the growth and development of HVCs, and harmonizing the supply chain of HVCs. For example, in 2020, the Malaysian agricultural land hectarage was 450,000 hectare (excluding rubber and palm oil). With the implementation of HVC, it is possible to produce RM 1 million per hectare in 10-years. Therefore, that will contribute RM450 million within the 10-year period of time. Furthermore, the establishment of the HVCs Act/Board will enable to facilitate farmers in enhancing their upstream and downstream processing output with the close cooperation of the Minister of Agriculture and Food Security of Malaysia. These effort will increase the productivity and incomes of farmers and the rural population. Besides, it will also enhance crop diversification, create additional income and value addition and boost the local food and beverages industry. In addition, it could also enhance the potential applications in medicinal/pharmaceutical sectors thus accelerate the competencies and efficiency of agribusiness. Increase in production could develop high-value crops as export crops that will significantly increase the country's foreign exchange earnings by promoting the production, processing, marketing, and distribution of high-value crops on a national and global platform. Under this establishment, crop insurance and sustainable agriculture practices focusing on HVCs are strongly recommended to protect agricultural producers' welfare, society, and environment. In addition, countries such as the Philippines (Amparo et al., 2017; Briones et al, 2010), Armenia (Asian Development Bank, 2010) and Bangladesh (Dueñas & Maekawa, 2010) have been developing programs and policies to tap the income potential of high value crops and for smallholders to diversify and potentially alleviate rural poverty, respectively.

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