

LEVERAGING ON FOOD SECURITY POLICY AS A COUNTERMEASURE AGAINST FOOD TERRORISM: A MALAYSIA EXPERIENCE

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Abstract. This paper delves with the growing necessity to explore the current food security policy in Malaysia especially with the potential of growing threats of food terrorism during a crisis such as a pandemic. It will deliberate on food security, food terrorism as well as ways to leverage on the policy developed during the pandemic to ensure that it is also able to champion threats in the form of food terrorism. Food security policy in Malaysia is largely about ensuring the availability of rice to the society. Significant findings were derived from conducting document analysis on seven (7) food security and food terrorism related national documents and articles including current policy and relevant literature. The data obtained is abductively analyzed via ATLAS.ti24 software. This study identified key themes which are catalyst and execution elements, yielding the need for an all-inclusive food security policy and also sensitization of food terrorism in Malaysia. It is pertinent for countries to raise awareness via sustainable policies pertaining to food security policy. It is hoped that information obtained from this research will benefit the individuals, researchers, institution and community for the advancement of knowledge and future practice.

Keywords: *food security, food terrorism, Malaysia, policy, crisis, pandemic*

Introduction

Food security is a critical component of a nation's stability and prosperity, ensuring that its population has consistent access to sufficient, safe, and nutritious food (Masron et al., 2014). Prior to 2020, the world faced and mitigated numerous crises, predominantly of an economic and geopolitical nature (Kose et al., 2020). A health crisis, specifically a pandemic, has resulted in a significant catastrophe that has impacted individual wellbeing and led to food shortages and insecurity in various countries, exacerbating issues related to food security (Jatav, 2024). The pandemic, known as Novel Coronavirus 2019, was first identified in Wuhan, China, in December 2019 and is considered one of the most devastating events of the 21st century. The World Health Organisation (WHO) classified COVID-19 as a pandemic shortly after its emergence in China, resulting in nearly one billion infections and millions of recorded deaths to date. The pandemic has given rise to other threats towards food security, one of which is in the form of food terrorism which poses a significant challenge to global food systems (Abd Razak et al., 2020). The World Health Organization or WHO in 2002 described terrorist threats to food as food terrorism whereby the action refers to the deliberate contamination, adulteration, or disruption of food supplies with the intent of causing harm, fear, or economic damage (Detwiler, 2014). Such acts can manifest in contamination, sabotage, or cyber-attacks on critical food infrastructure. Khairatun (2022) highlighted the many incidents involving intentional sabotage acts to food akin to

the description of food terrorism activities such as needles found in strawberries in Australia, food tampered with pesticides in Japan and fish pond poisoning in Indonesia to name a few (Khairatun, 2022). The intersection between food security and terrorism presents a multifaceted challenge that demands comprehensive and strategic responses. Cheftel (2011) discussed the evolving threats faced by the world to its food supply chains. As such, there exists a need for proactive and adaptive policies becomes increasingly apparent. To address these threats, a multifaceted approach that integrates security, technology, and policy measures is essential.

Research objective

This study aims to analyse the existing food security policy in Malaysia, particularly in light of the emerging threats of food terrorism during crises like a pandemic. There are two specific objectives in this research, namely: (1) To explain the National Food Security policy and food terrorism threats towards Malaysia; and (2) To analyse the possibility of leveraging on these policies to prevent any threats from food terrorism.

Materials and Methods

This research employed a descriptive qualitative methodology to investigate the possibility of leveraging on food security policy to halt threats of food terrorism in Malaysia. The research methodology is exclusively qualitative, employing document analysis through ATLAS.ti24 software to generate particular codes derived from 7 national documents and articles sourced from online using the keywords "food security in Malaysia" and "food terrorism in Malaysia." Subsequently, all 7 metadata entries from Mendeley were imported into ATLAS.ti24 and established as primary documents. The visual form theme will facilitate the researcher's interpretation of qualitative data. This method aims to visualise and analyse the concepts of food security and food terrorism, offering insights and recommendations for the development of targeted food security policies to counteract the threats posed by food terrorism. The acquired data was analysed with thematic approaches. Thematic Analysis is a systematic approach for detecting, organising, and elucidating patterns of meaning (themes) within data sets (Braun and Clarke, 2006). Data were categorised based on distinct themes to align with the study's aims. Themes are visually represented to facilitate the interpretation of qualitative data by researchers (Soratto et al., 2020). The study's conclusions will highlight two themes derived from the analysis: catalyst and execution elements respectively.

Results and Discussion

Based on the document analysis of the seven (7) documents selected, *Figure 1* extracts the quotes related to this study whereby key themes were identified, namely the Catalyst Element and the Execution Element. The catalyst element can be deemed as occurrences that have prompted and ignited the need to leverage on the food security policy to mitigate food terrorism threats. Meanwhile, the execution element delved with the mechanisms and initiatives of executing the policy effectively.

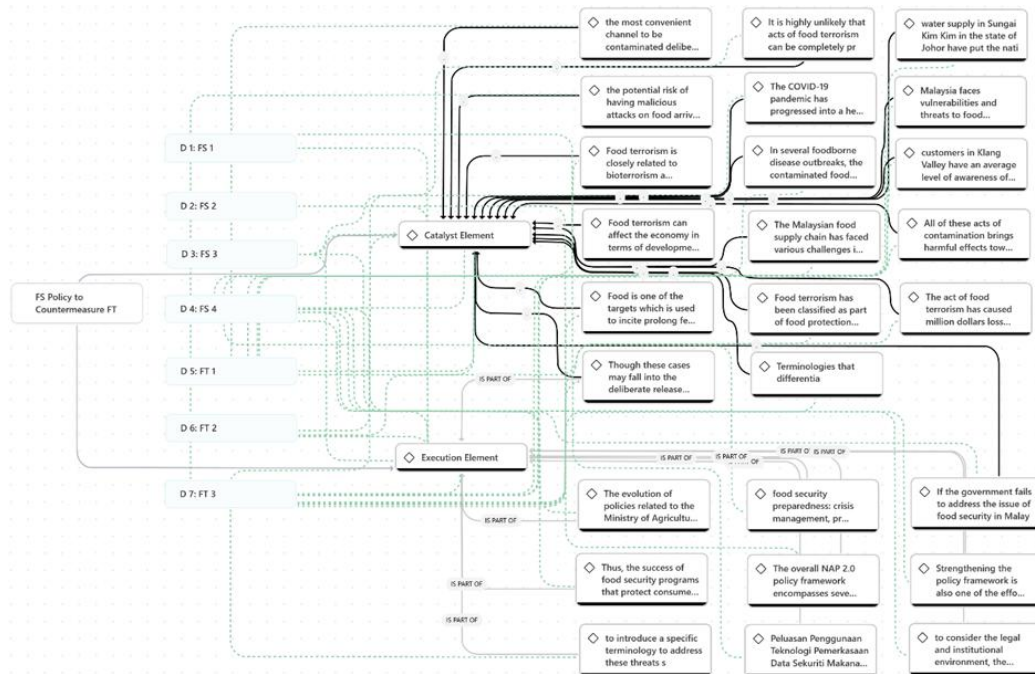


Figure 1. Network diagram of key themes in this study.

Catalyst element

Food security ingrained as a part of human security

The dimension of food security under the realm of human security is often overlooked, especially in developed and developing countries where foods are aplenty and easily sourced (Murtugudde, 2017). Food security is an essential component of human security, affecting personal well-being, community stability, and national resilience. According to the Food and Agriculture Organisation (FAO), food security is defined as the condition in which "all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food," encompassing more than just the availability of food. It includes the accessibility, use, and sustainability of food sources over time (Opazo et al., 2020). This section examines the complex interplay between food security and human security, highlighting its effects on health, socioeconomic development and global stability. Food security can be evaluated through four principal dimensions: availability, access, utilisation, and stability. Availability denotes the tangible availability of food, contingent upon agricultural output, food imports, and food reserves. Access pertains to individuals' economic and physical capacity to get food, influenced by factors such as money, job, and transportation. Utilisation pertains to the consumption and absorption of food by the body, affected by nutritional quality and health condition. Stability refers to the enduring consistency of these elements, safeguarding food security from crises like natural catastrophes or economic recessions (Opazo et al., 2020). Global food security is a critical concern. The FAO reported that around 828 million individuals were undernourished in 2021, with this figure increasing due to reasons including conflict, climate change, and economic instability (Opazo et al., 2020). The COVID-19 pandemic intensified pre-existing vulnerabilities, underscoring the interdependence of health systems, food supply networks, and economic stability. Grasping food security through the lens of human security is crucial for effectively tackling these difficulties.

The COVID-19 pandemic

In Malaysian context, the start of the pandemic unleashed a new complication where the public came face to face with a sudden drop in certain food supply, most notably bread and eggs, causing people to resort to panic buying and emptying shelves in stores nationwide (Omar et al., 2021; Gazali, 2020; New Straits Times Web Portal, 2020; Wang and Na, 2020). Sani et al. (2022) discussed how the pandemic became the epitome of chaos especially towards the country's food security with sudden drop in agriculture and crop production, prompting Malaysia to review its food security policy. Additionally, Le et al. (2024) also elaborated on the effect of COVID-19 pandemic towards all of the dimensions of food security which are availability, accessibility and affordability, sparking concerns on food insecurity not only in this country but globally as well. Prior to the pandemic, Stevens et al. (2020) have discussed on how the public did not understand or have the awareness that the unavailability of attaining food supply was also considered as food insecurity. Additionally, the public did not express any interest more so did not have the knowledge on food security too as most reporting by the media on food security involved terms that are too technical or merely reporting of the government policies via press releases filled with jargon words and not presented in laymen terms. All of the effects brought by the COVID-19 pandemic especially with regards to the food source and food security proved to be a catalyst element for Malaysia to start considering reviewing the food security seriously and hence commenced the National Food Security Policy Plan 2021-2025 as well as the National Agro-Food Policy (NAP) 2.0 respectively.

Food security approach and policy in Malaysia

Malaysia's agricultural policies can be categorised into two distinct phases: pre-independence and post-independence. Dardak (2019) as well as Bakar et al. (2012) examined Malaysia's pre-independence policy, which was structured to serve British colonial interests and primarily focused on export commodities such as rubber, oil palm, and cocoa. During the initial stages of development in Malaysia, Arshad et al. (2014) as well as Courtenay (1987) noted that agricultural policies and programs were implemented to tackle the significant poverty levels in the agricultural sector, inadequate foreign exchange reserves, and issues related to rural development. In the post-independence era, the emphasis has transitioned to guiding the sector's development in two primary domains: domestic agriculture and export crops. The National Agro-Food Policy, as outlined by the Ministry of Agriculture and Food Industry, MAFI, was developed to tackle food security and safety, ensuring food availability, affordability, and accessibility. Enhancing productivity, utilising machinery and automation, intensifying production, and strengthening institutional management, especially at the farmer level, may contribute to achieving this objective. Subsequent to the Prime Minister's statement on December 3, 2022, the Ministry of Agriculture and Food Industry (MAFI) has been rebranded as the Ministry of Agriculture and Food Security. The Post-Cabinet Meeting on December 7, 2022, has resolved to adopt MAFS as the new abbreviation. The name change has shown how serious the Malaysian government is towards ensuring that the nation's food security is well taken care of.

The government has been implementing a comprehensive reform of the agriculture sector since 2018, which encompasses modifications to the land management program.

All government agencies are required to collaborate in addressing food security challenges under the new administration. The previous isolated policies were substituted with a more integrated approach that considered food supply, processing, governance, environmental factors, and the entire life cycle of the food system. The policies establish the conditions and framework necessary to achieve the second Sustainable Development Goal (SDG), which aims to eradicate hunger, ensure food security, and improve nutritional intake. Malaysia's new food security policy supports the United Nations' Sustainable Development Goals. In 2019, the National Security Council of Malaysia emphasised the significance of food security by incorporating it into the National Security Policy under Strategy 17. Following the onset of COVID-19 in mid-2020, the then Prime Minister, Tan Sri Muhyiddin Yassin, along with the Malaysian Cabinet Ministers, adopted the 2021-2025 National Food Security Policy Action Plan (DSMN) as a measure to strengthen food security in the country. *Figure 2* depicts the timeline of Malaysia's agricultural policies and action plans by Dorairaj and Govender (2023). It can be seen here that the start of the pandemic became a catalyst that prompted the government to act proactively in terms of formulating and reviewing its policies on food security.

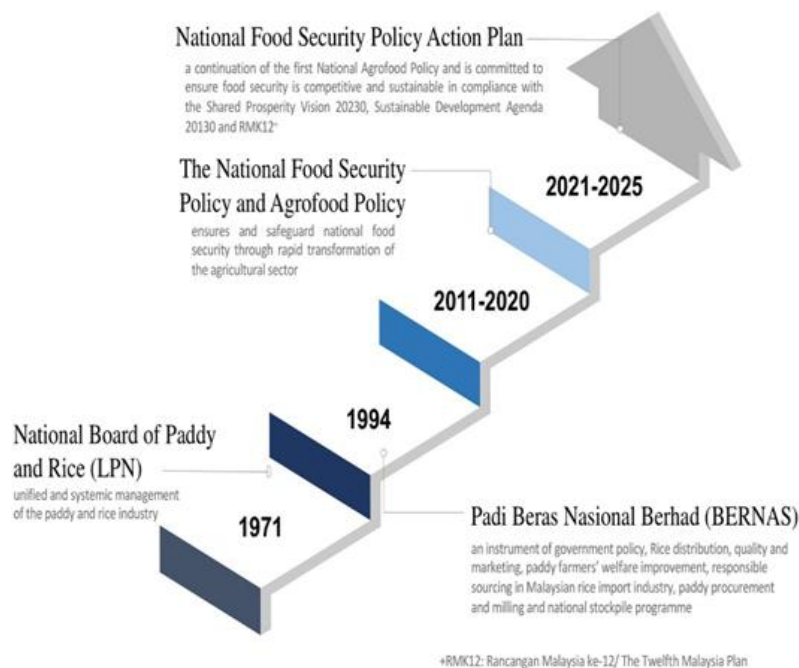


Figure 2. A timeline of Malaysia's agricultural policies and action plans.
Source: Dorairaj and Govender (2023).

Food terrorism threats in Malaysia

Threats to a nation's food security arise from various factors, including both anthropogenic and environmentally induced viruses and pathogens that impact human health, potentially leading to widespread outbreaks akin to the current global experience with the COVID-19 pandemic. The emergence of manmade threats similar to terrorism has introduced the concept of food terrorism, as articulated by Taylor (2008) as well as Yoon and Shanklin (2007). The term "food terrorism" emerged in prominence after the 9/11 terrorist attacks (Abd Razak et al., 2020). Nevertheless, the practice, or more accurately, occurrences of food terrorism may be tracked throughout human history.

The publishing of a guidebook titled "Food Safety Issues: Terrorist Threats to Food" by the WHO in 2002 is indicative of its status as one of the earliest sources of literature and references on food terrorism. In summary, the World Health Organisation (WHO) in 2002 provided a clear definition of food terrorism, as outlined below:

“A deliberate act or threat involving the contamination of food intended for human consumption with biological, chemical, and physical agents or radiological materials, aimed at inflicting harm or death upon civilian populations and/or undermining social, economic, or political stability.”

A study by Khairatun (2022) discussed on food terrorism incidents involving other countries around the world, as described on *Table 1*. Although may be perceived as isolated incidents, these incidents were regarded as food terrorism due to the nature of them being intentional and deliberate acts aimed at causing harm towards targeted people or population. Additionally, despite getting defined and acknowledged over 20 years ago by the WHO, the awareness on food terrorism is still relatively low. In Malaysia, the study by Khairatun (2022) further confirmed this whereby the awareness of food terrorism and its activities among Malaysians remained at a low to average level, prompting concerns on possible threats especially after the pandemic where food insecurity was prevalent. Moreover, a study by Abd Razak et al. (2020) found that food terrorism has the ability to cause negative implication to the consumers and food system. The study cited incidents such as the meat cartel and chemical contamination at Sungai Kim Kim in 2019 (Yusof and Suhaini, 2019) as well as other incidents deemed as isolated thus far. According to the study, eventhough these past incidents in Malaysia were viewed as food contamination (intentional or otherwise), food crime and food fraud, collectively all of these incidents may spark dire consequences, leading to food terrorism threats and incidents.

Table 1. Countries with Food Terrorism Incidents.

Year	Country	Incidents
2020	Indonesia	A fish farmer lost his seven fish ponds due to poisoning by an unknown person.
2018	Australia	A coworker was charged for committing a needle scare on packed strawberries resulted from a workplace revenge.
2014	Japan	A factory worker was sentenced to life imprisonment after tampering with frozen dumpling with pesticide,
2011	USA	A male worker was jailed for contaminating his female coworker's yogurt lunch by injected his semen at the P&G facility.
2008	UK	A hypermarket worker was charged for contaminating the store with his urine and feces which had caused 700K Pound Sterling loss to the company

Source: Khairatun (2022).

Execution element

A conclusive food security policy

Historical evidence indicates that Malaysia has consistently developed policies pertaining to agriculture and food. Paradoxically, the plethora of policies has been inadequate in guaranteeing food security. Previous strategies have demonstrated inconsistency regarding self-sufficiency objectives, and numerous essential food products continue to depend on imported supplements. Food items with self-sufficiency levels of 100% or greater continue to depend on substantial external inputs. The commitment with effective execution of policy remains a critical concern, emphasised

by structural, economic, and governance deficiencies. Bala et al. (2014) as well as Paul (2013) all agreed that Malaysia's food security policy initially focusses solely on rice availability, with the government implementing a protectionist regime to shield the sector from market fluctuations, particularly supply and price shocks, in order to achieve the previously mentioned threefold objectives. The adopted instruments comprise price regulation (both agricultural and retail), subsidies and income transfers, licensing, and import monopolies. Consequently, there is an urgent necessity for authorities to concentrate on formulating innovative policies that prioritise a safe food ecology. The pandemic has sped up such process along with other incoming threats as elaborated by Le et al.(2024). The National Security Policy of Malaysia delineated the security assurance for the country's food supply within Strategy 17, followed by the current National Food Security Policy Action Plan (DSMN) 2021-2025 as well as the NAP 2.0. Le et al.(2024) in a study compared Malaysia's three (3) policies pertaining to food security preparedness and found that the National Food Security Policy Action Plan 2021-2025 or DSMN 2021-2025 to be the most comprehensive and conclusive to date, as it covers the preparedness to counter any threats towards the nation's food security. According to the study, food security preparedness covers crucial components which are crisis management, preparedness, collaboration and agriculture to address and mitigate challenges related to food security, including food terrorism (*Figure 3*).

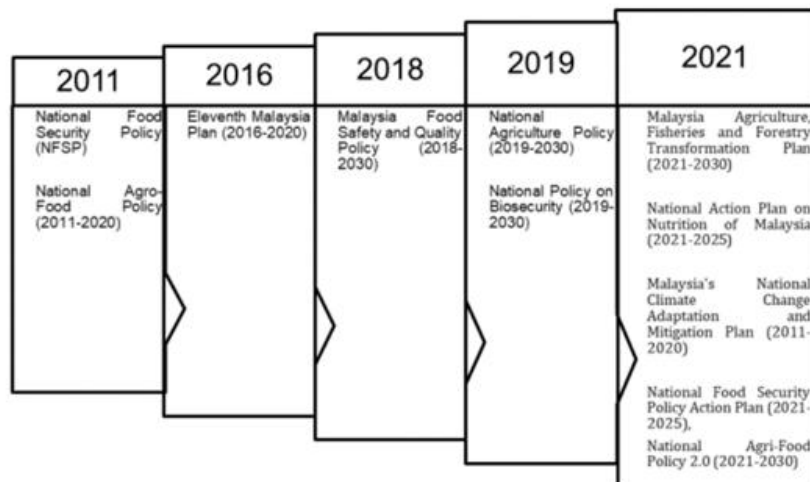


Figure 3. Malaysia's Food Security Policy Evolution.
Source: Le et al. (2024).

Sensitization of food terrorism

Abd Razak et al. (2020) have instantaneously suggested for inclusive food security policy as a comprehensive solution towards food terrorism threats. Additionally, the World Health Organization's (WHO) document on food terrorism also recommended the utilization of the three (3) strategies namely surveillance, preparedness and response as a form of countermeasure against food terrorism (Food Safety Department, 2002). Nevertheless, before all of these suggestions can be materialized, it is much obliged for Malaysians to be firstly sensitized on food terrorism first. This is due to the fact that the awareness of Malaysians on food terrorism threats and activities is still relatively low (Khairatun, 2022). An informed and vigilant public is an indispensable asset in the fight against food terrorism. Governments should invest in having the inclusion of the public

in formulating the policy as well as public awareness campaigns to educate citizens about potential threats, safety measures and the importance of reporting suspicious activities. Creating user-friendly platforms for reporting suspected incidents, such as food contamination or unusual behavior in food production areas, fosters a sense of shared responsibility among citizens and encourages active participation in safeguarding the food supply. Food terrorism may sometimes be confused with food safety, as both encompass similar threats: chemical, biological, physical, radiological, and allergies (Laws of Malaysia, 1983). As such, it must be highlighted of the distinction between the two, which lies in their motivations; ideology characterises food terrorism, while food safety concerns primarily involve incidental contamination rather than deliberate actions. Food serves as a focal point utilised to provoke sustained terror through the anticipation of future peril affecting the entire globe (Kinsey et al., 2006). The intentional contamination, adulteration, or disruption of the food supply chain to cause harm, panic, or socio-political consequences poses a serious threat to public health and national security, and sensitizing the public with food terrorism will create awareness on the threats of food terrorism.

Conclusion

This study examines the possibility of leveraging on food security policy developed during the pandemic as a robust countermeasure against food terrorism by synthesizing and focusing on relevant literature on both food security and food terrorism in Malaysia. In light of this evolving threats, the findings asserted that elements of catalyst and execution initiated the need for the government to leverage on the current policy to prevent any food terrorism threats towards our food security. The catalyst element comprised of the need to constantly review on policies, current and past in line to countermeasure threats towards food security. The COVID-19 pandemic, among others, became a catalyst for the government to always be vigilant of incoming threats which may be in the form of food terrorism. Food terrorism poses a significant threat to global food security, necessitating robust and comprehensive food security policies (Abd Razak et al., 2020). As such, the government must adopt comprehensive food security policies that address vulnerabilities, enhance preparedness, and mitigate the impact of potential attacks (Le et al, 2024). The execution element dealt with strategies for the government to leverage on the current food security policy. A conclusive food security policy is crucial to counter any evolving threats and can be carried out by conducting risk assessments, enhancing surveillance, promoting international cooperation and strengthening food safety regulations, nations can effectively counter food terrorism. Additionally, to sensitize food terrorism in Malaysia, fostering public awareness and education empowers individuals and the community to be vigilant and report any suspicious activities, further bolstering the collective efforts to safeguard food security. It is pertinent for the public to be aware of food terrorism as previous study found that the awareness in Malaysia is still relatively low (Khairatun, 2022). Essentially, implementing these measures requires close collaboration between all namely the government, private sectors, stakeholders and the general public, ensuring a resilient and secure food system that can withstand the challenges posed by food terrorism.

This study offers insights into the prospect of Malaysia's food security policy to be utilized as a form of protection against food terrorism threats. The findings offered valuable depth in terms of the catalyst and the execution elements to aid the government

in developing improved policies whilst enhancing public awareness. This study utilised an exclusively qualitative methodology. As a result, future studies might consider employing quantitative or mixed methods, which could lead to meaningful implications for the government, stakeholders, educational institutions and the public at large. Furthermore, this study offers various suggestions for future research endeavours. For instance, future studies could effectively explore the effectiveness of Malaysia's food security policy in leveraging protection against crises and threats.

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Conflict of interest

The author confirms that there were no conflicts of interest involved with any parties in this study.

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