

# Direction of Food Defence in Post COVID-19 Era for Malaysia's Halal Ecosystem

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## ABSTRACT

*The pandemic of COVID-19 has stricken the world economy significantly since its first outbreak. This also affected the Malaysian economy where many businesses have halted their operation due to the outbreak as well as movement restriction order (MCO) issued by the government. Nevertheless, the condition in Malaysia is seemingly improved since the vaccination programme set by the government has reached a 78.9% vaccination rate of the total population by the first quarter of the year 2022. Currently, the Malaysian government has now in the transition from the pandemic phase to endemic phase and relaxed the imposition of restrictions that were previously enforced. This allows business operation to regain their grip in the post COVID-19 era. Despite the fragility of the supply chain particularly within the halal ecosystem, a vital aspect that is almost neglected is the encroaching food crime incidents, and the food defence approach which encompasses the protection of food supply chain against intentional contamination is still on high alert. The incidence of meat cartel in late 2020 has warned that food crime is not seizing nor hindered its operation. Therefore, a robust approach needs to be addressed to defend the food supply chain, and more importantly the halal ecosystem. Therefore, this study is carried out*

*to examine the future direction of food defence in the post COVID-19 era in Malaysia. This study utilizes library research to collect the data by using online databases such as Google Scholar, Emerald, Science Direct and SCOPUS. This study also presents strategies for reinforcing the integrity of the food supply chain against the threat of intentional contamination from the perspective of the halal ecosystem.*

**Keywords:** Food Crime, Food Defence, Halal Ecosystem, Intentional Contamination, COVID-19

## INTRODUCTION

Securing food supply chain is a vital component for the stability of a country. Keeping food supply chain intact will ensure a nation has continuous, uninterrupted supply of food nationwide. Resiliency of a food supply chain has become the top priority to be protected since there are a lot of risks and potential risks that can jeopardize the food supply chain. Failing to secure food supply chain integrity would cause instability of a country because food shortage occurred as it is the basic necessity for living. With the advent of the COVID-19 pandemic, preserving the food supply chain has become more challenging. This is because the pandemic itself is unprecedented and left many nations caught off-guard in crisis. Both conventional and unconventional risks are needed to be taken into account when it comes to protecting the food supply chain. Halal ecosystem, as a major part of the supply line also affected due to the COVID-19 pandemic in Malaysia (Jaafar, 2020).

COVID-19 pandemic caused a severe impact towards the global economy as well as in Malaysia (Lim, 2020). One of the impacts that so affected many people is the food supply chain. Lockdown initiatives, for example, have led to the disruption of the food supply chain in several countries. The call for a transition from the pandemic phase to the endemic phase has been echoed to maintain a viable economy (Camoens, 2022) is a clear proof that the economy is at stake. In Malaysia, although the authority reassured that the food supply is stable, however, it is still alarming because the pandemic is still ongoing and not to be halted any time soon due to the emergence of new variants of “omicron” (Muthiah, 2022). The vaccination program is still catching up with the rising of daily cases as of February 2022 in Malaysia. Furthermore, Malaysia has also been affected by the 2022 flash floods across the country which severely impact the country’s economic powerhouses such as the Klang Valley (IFRC, 2021). This further worsens the

situation of the country that still struggling to revive the economy. Therefore, if no careful strategy is implemented, the nation will be exposed to unimaginable risks because the COVID-19 pandemic has shown considerable impacts towards the food supply chain. Therefore, a new and holistic approach needs to be put forward to mitigate risks because the idea of “one-size-fits-all” is not a very good idea to fully protect the food production ecosystem. It requires careful planning and choosing the right tool is essential to defend the halal food ecosystem.

The state of unpreparedness should give many parties a new outlook and better judgement in dealing with the crisis. However, because of the emerging risks and threats such as food crime, necessitates effective and long-term solutions to ensure that the food supply distributed is adequate, safe, and halal for Muslim consumers in Malaysia. Therefore, this paper intends to elaborate on the relationship of food defence, as the way forward during the pandemic era in Malaysia in particular, with the halal food ecosystem.

## **METHOD**

This study aimed to elaborate on three objectives; first, to explain the concept of food defence; secondly, to identify types of risks towards the food supply chain during the COVID-19 pandemic in Malaysia, and thirdly to present a new approach on how to mitigate the food supply chain risks for post COVID-19 within Malaysian perspective. Therefore, to achieve these objectives, this study utilizes fully library research for data collection. Furthermore, data obtained from databases including Google Scholar, Emerald, Science Direct and SCOPUS, will be analyzed using content analysis. The approach employed in this study is the qualitative method.

## **RESULT AND DISCUSSIONS**

### **Concept of Food Defence**

The term food defence was introduced by Food and Drug Administration (FDA) United States in the late 2016. It was introduced under the new amendment of the Food Safety Modernization Act (FSMA) to provide several new authorities to FDA for the objective to protect against any possible attack on the food system (Steele et al., 2016). The initiatives are mainly to curb terrorist threats that target the food supply chain. Food defence is defined as an effort to protect food from intentional acts of adulteration where there is an intent to cause wide-scale public health harm (FDA, 2018). It is focusing on

the mitigation strategy for the threats of intentional contamination in food. Although food defence has some resemblance with the concept of food safety, it is designed for a specific purpose-protecting food supply chain from deliberate attacks including (1) food terrorism, (2) food crimes such as EMA (Economically Motivated Adulteration) or food fraud (Manning, 2019). Food safety, however, is designated to provide protection against unintentional contamination which occurs due to negligence and improper hygiene and sanitation practices. Intentional contamination is a deliberate act that the perpetrator is aiming to cause disturbance in terms of public health, economy and socio-political stability of a country. In the Malaysian context, the food safety issue is more highlighted compared to food defence. Nevertheless, many food-related incidents have brought some light that the threats of food crime are becoming apparent.

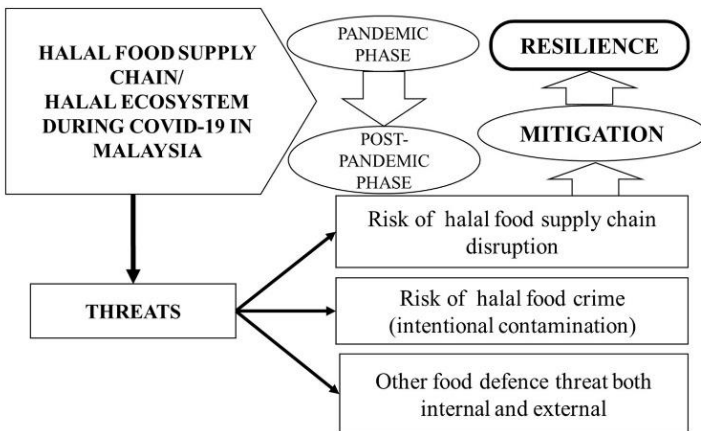
Food defence system is designed to protect food production from intentional contamination. Intentional contamination involves motivation-driven; usually for economic, political or ideological reasons. The act of contaminating food deliberately is carried out mainly with malicious intentions. Since the medieval era, food source and supply chain has become the target due to hostile relationship or as part of war tactics (Abd Razak et al., 2020). This means that the idea of food defence may predate the FSMA but is further improved with the introduction of new and modern threats. In modern times, several incidences have been categorized as food defence threats; such as food terrorism, although the term ‘food safety’ is more comprehensible when referring to food contamination. The urge for introducing food defence according to FSMA commenced due to potential threats that tapped targeting food supply by the terrorist organization. Some other cases, mostly cult-driven motives such as Aum Shinrikyo in Japan (Sobel et al., 2002) and the Rajneeshee incidents of food poisoning (Keremidis et al., 2013), also fit the criteria of food defence threats – food terrorism.

Since the introduction of food defence in FSMA, the discourse on food defence also changes especially in distinguishing which scope it would cover within the food protection mechanism. For some scholars, food defence includes any involvement of intentional contamination, whether it is politically and ideologically motivated or economically motivated. Economically Motivated Adulteration (EMA) or food fraud is also considered part of the food defence scope such as (Manning, 2019). This school of thought took a broader definition of food defence. Recently, however, FDA publishes new updates on the definition of food defence under the final rule “Mitigation Strategies to Protect Food Against Intentional Adulteration” – it focuses on

any intentional contamination that is meant to cause public health harm specifically, rather than highlighting the taxonomy of the food crime itself. The updated guideline not seemingly detaches EMA or food fraud or any other form of food defence threats (such as disgruntled employees), but only to narrow down the scope as national security policy.

### Emerging Threats in Halal Food Ecosystem during COVID-19

Generally, COVID-19 impacted Malaysia’s economy. Although the food supply chain is assured by the government (Idris, 2021), the experience of the COVID-19 pandemic has revealed some weak points within the halal food supply chain or the halal food ecosystem. The condition of the pandemic itself has stationed the country itself in vulnerability to risks. Recent concern that arises is on the aspect of the adequacy of food supply. Two commodities that are essential for Malaysian are the chicken and beef supply (Ibrahim, 2022). In the late year 2020, a national polemic broke when a fake halal meat cartel has been busted by the authority – an incidence of a food crime, i.e., an imminent food defence threat. This indicates that the halal food ecosystem is so much exposed to multi-fold of risks. This can be broken down into: (1) risk of halal food supply chain disruption, (2) risk of food crime threats and (3) other threats both external and internal.



**Figure 1:** Multi-fold risks of Halal Ecosystem post COVID-19 Pandemic in Malaysia  
(Source: Author’s analysis)

Food crimes are one of the prevalent threats towards food industry. It is considered as the ‘underworld’ of food business models that utilize illegal

methods and pathways against regulation to increase profit. Even though the halal industry, as well as halal certification, is relatively new, it is not spared by the criminals exploiting the halal branding for economic gain. Several cases of food crimes have been identified such as the ‘Halal Smokie Trade’, the Halal meat scam, as well as horsemeat scandal, which are top-of-the-line for halal food crime issues (Pointing & Tenaz, 2004). A deliberate mixture of halal and non-halal, using fake halal credentials in meat products has vividly occurred in today’s halal ecosystem. This issue can be considered systemic and requires readjustment and realignment of policies, enforcement and also detection mechanism.

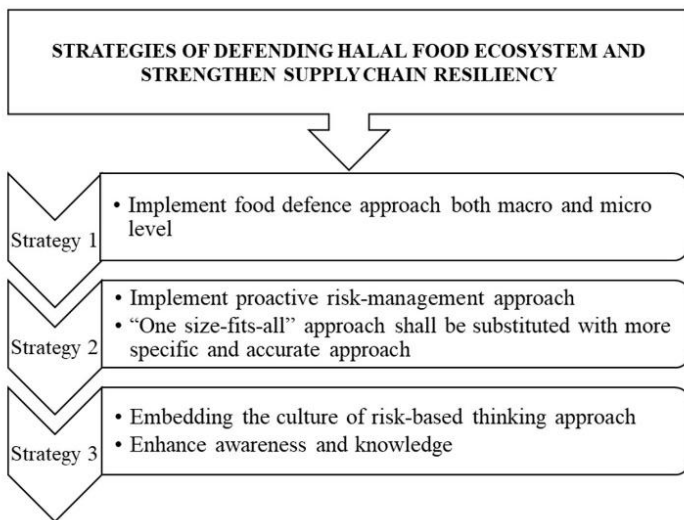
In Malaysia’s context, the fake halal-labelled meat scandal that sparked in the late year 2020 causes a heavy blow towards the halal ecosystem. The incident also revealed systemic loopholes within the halal supply chain, since the confiscated amount of forged halal meat is skyrocketing derailing consumers’ trust and perception towards halal certification itself. To date, it can be considered one of the biggest incidences of food crime in Malaysia’s history that caught international attention after the case of Cadbury in 2014 (Musa et al, 2016).

## **Strategies to Defend Halal Food Ecosystem**

From the COVID-19 experience, many inputs can be learned and further improve the halal ecosystem in future. Post COVID-19 will be much more challenging than ever before because it has changed many aspects of our daily life. As for the mitigation strategy for halal food crime that can shatter the halal food ecosystem, three main strategies can be implemented to ensure preparedness towards non-conventional threats. These strategies will involve all key components of the halal food ecosystem to work hand-in-hand, therefore the issue can be tackled effectively. This includes the governments, industry players, and consumers as well. The government has the most responsibility to curb food crimes and other food defence threats. This is because the halal food ecosystem is one of the important contributions to the nation’s income. Moreover, halal food is critical for the sustenance and livelihood of the majority Muslim population in the country, so it is invaluable to be protected.

The first strategy to defend the halal food ecosystem is to implement a food defence approach in addition to the existing food protection mechanism such as food safety and halal implementation. Food defence approach shall be implemented both on the national level or state level (macro) and individual

level (micro) since all components are essential and interlinked. This approach means that the consideration of threats is more wide-scale and encompasses types of threats that are overlooked by the system such as Hazard Analysis Critical Control Points (HACCP) (Pedersen et al, 2016). This is because food defence is designed to detect unconventional threats or intentional contamination that do not usually screen in HACCP. The individual level is referring to the industry player that needs to re-evaluate their food defence plan within their premises or manufacturing plant. Existing food safety, as well as halal implementation, are the pre-requisite for establishing a food defence approach because it is the extension of the risk management plan that doubles the line of defences for food production from both unintentional and intentional contamination. Food products, especially meat and meat-based products are considered “high-risk” starting 1st January 2021(Ramli, 2022) necessitates a food defence approach due to the vulnerability based on the 2020 meat cartel scandal (Ramli & Abd Razak, 2021).



**Figure 2:** Direction of food defence for the post COVID-19 era in Malaysia. (Source: Authors)

Secondly, it is the right time to implement a food defence approach because it is considered a proactive method of managing risks, instead of a reactive approach which is a lot less passive. This is because the type of threats or food crime is becoming more complex and systemic within the ecosystem. The preparedness of safe food production should reinforce with multiple lines of defences, maximizing the effectiveness of the food protection mechanism to reduce and eliminate risks of food crime and other threats. Thirdly, instilling

‘risk-based thinking’ or “Risk-Based Decision Making” (RBDM) (Morgan et al., 2021) as a culture is also good among workers as well as consumers. Industry players or the workers that work in manufacturing are the front-liners of food crime. On the consumers' counterpart, awareness, and knowledge transfer on the importance of safe products and the adversities of food crime shall be initiated. This is because food crime is known to flourish because of the existence of demand. An ethical and aware consumer would not be participated or contributed to this business model as it would impact the whole ecosystem at large. The COVID-19 pandemic or endemic experiences should have made us more prepared in terms of the risk management plan and mitigation strategy because we learned a lot from past mistakes and mankind is innately improving the way of life for the better.

## **CONCLUSION**

Post COVID-19 is expected to be a more challenging era in terms of protecting the halal food ecosystem. Emerging threats has seemingly become more complex and unprecedented and can lead to negative implication towards a nation. Threats that emerged include the risk of halal food supply chain disruption, the risk of halal food crime or intentional contamination and other threats both internal and external. To combat these risks, it is the right time to implement an additional line of defence by using a food defence approach. Furthermore, strategies such as embedding risk-based thinking culture and awareness will catalyse the solid resiliency of the halal food ecosystem as well as the halal food supply chain.

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## **CONFLICT OF INTERESTS**

The authors declare no competing interests such as financial or personal relationships with regard to the writing of this article.

## **AUTHORS' CONTRIBUTIONS**

Muhamad Afiq Abd Razak was assigned to conceptualization, gathering the



literature and writing. Mohd Anuar Ramli analysed the results and inspect the data as well as conceptualization.

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