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Security, Safety, and Defence: Food for Thought

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The United States continues to be worried about terrorist threats – especially from biological weapons – to its food supply chain. Though the Singaporean government also shares such concerns, fixation on such a threat may blind policymakers to very real and existing threats to the safety and security of Singapore’s food supply.

Fears of a contamination of the food supply by terrorist groups have grown over the past 15 years. The United States – through international agreements such as the APEC Food Defense Initiative – is spearheading the drive for nations to focus on what has been termed “food defence” in order to mitigate threats by terrorists against the food supply chain.

However, an ongoing study into this issue by the Centre of Excellence for National Security (CENS) suggests that the concern exhibited by some corners of the U.S. government to this topic, as well as the approach taken, may not be transferable to the Singapore context. A focus on terrorist threats to the food supply may not only blind decision-makers to but also divert limited resources from more pressing threats to Singapore’s food supply.

Defining Policy

It is first important to unpack the terms *food security*, *food safety*, and *food defence*. Clarity on terminology is necessary when it comes to ensuring the safety and resiliency of the food supply in a globalised economy as different terms leads to different opinions and policy options.

Food security was defined in 1996 at the World Food Summit in Rome as existing “when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.” *Food safety* refers to ensuring that food, at all points along the food chain, is kept safe for consumption in order to reduce food borne diseases. This includes both microbiological and chemical hazards. *Food defence* is defined by the United States government as “protecting the nation's food supply from deliberate or intentional acts of contamination or tampering.” For the United States’ government, these “intentional acts” are largely

framed, as the Bioterrorism Act of 2002 states, around “bioterrorist threats to the food supply.”

While these terms all refer to different areas of public policy, there is a certain amount of interrelationship and overlap. For example, many of the processes used to detect and respond to unintentional contamination can be used to detect intentional contamination, and, the response of health authorities in either instance may be similar. Similarly, large-scale food safety (and, indeed, water safety) problems in a country may contribute to its food insecurity.

The Terrorist Threat to the Food Supply

In much of the literature regarding the bioterrorist threat to the food supply, there is widespread belief that terrorists can easily replicate the large-scale impact of previous food safety breakdowns or the outbreak of zoonotic diseases. However, the ongoing CENS study into historical trends of food defence suggests this is not the case – terrorist attacks against the food supply chain remain uncommon and, when they do occur, their impact is minimal.

The often cited major terrorist case is that involving the Rajneeshees cult in Oregon, USA – it is cited as both the first biological attack in the USA and also an example of a terrorist group targeting part of the food supply chain. In this instance, the Rajneeshee cult attempted on at least three occasions to use *salmonella typhimurium* obtained from a licensed medical supplier to poison various community members. The cult’s most successful attack saw ten restaurant salad bars contaminated, resulting in 751 people becoming ill with food poisoning. However, it should be remembered that the Rajneeshees cult did not achieve its objectives (the disruption of a local election) and while they sickened hundreds, the incident was not detected as being intentional until a year later. Even today this case is not mentioned either in the FBI’s annual *Terrorism in the United States* reports or in the State Department’s *Country Reports on Terrorism*.

In fact, historical incidents where the food chain is employed as a vehicle for intentional harm are sparse, especially when it comes to terrorist involvement. The vast majority of incidents are criminal in nature, committed by individuals against those with whom they had close daily contact (e.g. relatives, neighbours, co-workers), and occur either in the home or workplace, or where food was sold directly to the consumer (e.g. stores, restaurants, food stalls, and so on).

The literature on food defence is also predominantly concerned with the physical security of food and agriculture production and processing facilities. But attacks against food or water production facilities have generally occurred in conflict regions and the attacks have been conventional (i.e. using explosives and bullets) in nature. In cases where food products have been tampered in production facilities, the historical weapon of choice has been physical contaminants (e.g. metal and glass objects).

In the vast majority of these cases, the choice of contaminate were invariably highly toxic rodenticides, pesticides, or insecticides that often contained either arsenic or tetramine. Possibly explaining why China has experienced a rash of fairly high-profile (and highly fatal) criminal food poisoning incidents over the last 10 years, these contaminants are most often found in heavily agricultural regions where such materials are necessary and easily available, either legally, or on the black market. Thallium is another chemical compound often used in food poisoning incidents. While thallium causes an excruciating death and is the weapon of choice by some states for assassinations, its effects are localised and targeted.

The use of biological agents for the deliberate contamination of food is rare, and in most cases perpetrated by discontented highly trained medical professionals. While the number varies from study to study, CENS has found only 9 incidents over the last 70 years using biological agents against food that it could confirm using open sources. One of the worst of these incidents occurred in 1964 in

Japan, where Dr. Mitsuru Suzuki killed four and injured 200 co-workers at a hospital using *salmonella typhi*.

Food Policy in Singapore: Food Defence, Security and Safety

If the terms *food defence, security and safety* are concerned with different issues vis-à-vis food policy, and, since deliberate devastating attacks on the food supply is uncommon, what does this mean for food policy in Singapore?

With regard to food defence, while the capability and intent of terrorist groups to attack the food supply here is unclear, the ongoing CENS study does suggest that, based on historical precedence, an attack on the food supply chain is unlikely. Regardless, to ensure good food safety practises and standards are maintained, continued close private/government cooperation is necessary.

As for food security, given the small size of Singapore's agricultural base and the high reliance on food imports, ensuring food security in Singapore is very important. Increasing demand from places like India and China as well as the global trend of diverting resources towards biofuel production will have an impact on the price of food staples. In this regard, the Agri-food and Veterinary Authority of Singapore's (AVA) policy of diversifying Singapore's food imports as well as its zonal approach to maintain supplies from regions affected by zoonotic diseases should be maintained.

Finally, in regards to food safety, Singapore has an enviable record both in the region and worldwide. Also, its response to food safety breakdowns, as evidenced by the rapid response of AVA and Ministry of Health (MOH) to the PrimaDeli incident in 2007, is also exemplary. The AVA already monitors both the safety of food imports coming into Singapore as well as inspecting facilities overseas. However, as Singapore expands and diversifies its food imports to guarantee its food security, more investment may be needed in funding overseas inspections and in its monitoring and detection capabilities of imports.

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