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Food Safety in ASEAN: Pitfalls of Complacency

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Synopsis

ASEAN food safety regulators may think it conservative to stick to testing for hazards in food, neglecting the need to base control in the notion of risk. This mindset however has a number of pitfalls, which can end up making the region more vulnerable to 'unknown unknowns' in food safety.

Commentary

TO THE average person, 'hazard' and 'risk' may seem synonymous, both implying a threat that needs to be addressed. But they are substantively different when viewed from the lenses of food safety. A 'hazard' refers to any microbiological or chemical agent in food that may cause an adverse health effect; in contrast, 'risk' refers to the probability of an adverse health effect caused by a hazard in food.

Therefore, a hazard can be present in food in a concentration so low it will never cause disease, i.e. a hazard is present, but without any risk. For example, Staphylococcus aureus is a well-known hazard that can cause disease in food when in high concentration. In low concentrations it never causes disease and is therefore allowed in low concentrations, thus: hazard present, but no risk. Food safety assessments in ASEAN have so far focused predominantly on guarding against hazards, neglecting the risks. What are the potential implications of failing to transition from hazard- to risk-based approaches to food safety in ASEAN?

Stalled Transition towards Risk-based Food Safety Assessments

Food safety assessments can take two forms: the hazard-based approach, and the risk-based approach. The former is a rather black-white approach wherein a food

item is deemed unsafe for consumption, and therefore banned, if the amount of a harmful ingredient exceeds a pre-determined Maximum Limit (ML). The latter is, in contrast, graduated, and a commodity can still be allowed to enter a country even if a hazard is present, as long as the level of risk is found to be negligible.

Over the previous decades, an international movement has started shifting from hazard- to risk-based assessments. For instance, 25 years ago, the OECD's standards for evaluating food safety for products from modern biotechnology (1993), defined food safety as 'a *reasonable* certainty that no harm will result from intended uses under the anticipated conditions of consumption' (emphasis ours).

Similarly, 20 years ago, the World Trade Organisation's sanitary and phytosanitary measures (SPS) called for an 'appropriate level of health protection' (emphasis ours), and 15 years ago, the United Nations system adopted principles which clearly stipulate the need for a risk-based approach.

Yet, today, hazard-based assessments are still being used in ASEAN institutions for specific commodities, and there is a slow rate of adopting risk-based assessments. In fact, it was only in 2016 that the ASEAN Risk Assessment Centre (ARAC) was established. And we are still waiting for the first assessment from ARAC.

As such, one can observe that ASEAN has lagged behind countries in the west in shifting from hazard- to risk-based approaches to food safety.

Transition is Problematic

By itself, a hazard-based approach may seem like a harm-free operating principle, and in fact, is favoured by food safety regulators because of the impression it creates of being a more conservative approach: in the absence of complete information on a product, better ban than allow it to enter a country. However, this can lead to a false sense of complacency.

What is problematic is the way it is presently implemented. It can be observed, for instance, that the same food product or ingredient, can have different hazard assessments, and in turn, reach their MLs across countries.

On one hand, MLs may differ because the probability of disease depends on a wide range of location-specific factors, and the way these factors are controlled. In terms of biology and physiology, there can be different breeds of plants, herds, or flocks, each having their own thresholds for susceptibility to the infection a pesticide/treatment is aimed at controlling. At the ecological/environmental level, certain temperature levels could permit a disease to emerge, and its spread is impacted by the level of humidity.

However, the other reason why MLs vary, is more contentious. Not all countries comply with the call to harmonise food safety assessment methodologies, as vetted by the larger international scientific community. Status quo, incoherent food safety assessment methods prevent comparison of data across countries.

These in turn prevent analysis of underlying factors shaping the impact of a hazard. The result is that countries will more likely get caught off-guard by 'unknown unknowns', such as new foodborne, human diseases, as well as re-emerging diseases from bacteria's evolution and their development of resistance to antibiotics (the very substances meant to control human infections).

Way Forward: Addressing Shortcomings

Moving the region away from complacency in hazard-based assessments, and towards risk-based assessments should be considered an immediate, critical priority.

Such an approach will be substantively different, not only in the shift in analysis from hazards to risks, but also in the way it is implemented. The scientific rigour required by the risk-based approach requires a coherent method for food safety risk assessment, as well as data-sharing across countries.

It allows for understanding the underlying factors, and in turn, for greater foresight so that society will less be likely to get caught off-guard by emerging and re-emerging diseases, and 'unknown unknowns'.

These changes cannot happen, though, without first acknowledging that sticking to its hazards-based approach is not the truly conservative approach after all, as it can make ASEAN more vulnerable to future uncertainty. This, as well as pressure from consumer interest groups, could potentially push national governments to be less complacent and be more receptive to a risk-based approach.

The region will also need to overcome the inertia that may keep it from investing in laboratories, equipment, and manpower, to make this shift. Countries will thus need to collaborate with the private sector to support these new technologies.

This can be done by highlighting that, apart from reduced negative health impacts, calibrating the food safety standards and limits based on a risk-based approach may also provide more societal benefits, such as having greater food access, given that a larger variety of risk-free – or risk-reduced - food products can be made available, at cheaper/more competitive prices.

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