

## COMMENT

# Food safety and food security

**TRADE-OFF:** A major concern for emerging economies is the financial implications of maintaining food safety

**T**HE challenge of food security is to ensure that all people have access to enough food to lead productive lives, but an integral part of food security is ensuring that the food is safe from a chemical, physical or biological risk. Food safety is thus receiving more attention as the links between food and health are increasingly recognised; at the same time, as food trade expands throughout the world, food safety has become a shared concern among developed and developing economies.

Efforts to improve food safety in emerging economies, however, must be evaluated in terms of their impact on additional costs and returns to farmers, risk reduction, demand by middle-class consumers, food security, poverty alleviation, export earnings, economic gains for the domestic industry and positive spillovers for food safety in the domestic food system. This will require policymakers to develop better capacity for evaluating policy trade-off as they seek to enhance food security or to expand food trade.

A major concern for the emerging economies, including Malaysia, is the financial implications of maintaining acceptable levels of food safety. The negative effect of food safety, however, can be substantial in terms of loss of export market, fall in domestic sales, changes in consumption, large expenditure and cost of changes in farm practices. Thus, there is a trade-off between safety and costs. How much safety can be expected? There must be an optimum level of safety, which is at the socially acceptable level of optimality.

It would be, however, impossible to provide a risk-free food supply. Since there are costs associated with increasing food safety, society must decide how much it is willing to spend on food safety and where this expenditure will have the greatest impact. The optimum level for food safety would be where the marginal cost of creating one more unit of food safety equals its marginal benefit. The marginal costs would be the costs to food processing plants to meet new food safety plans and the cost of government programmes aimed at educating consumers, retailers and food service workers about safe food handling. The marginal benefits are the reduced illness and mortality associated with a safer food supply.

There are several factors in which a market economy can "fail" in providing the optimum — asymmetry in knowledge of risks, aspects of food safety which are public goods, existence of externality, social costs of food safety, and maybe the divergence between scientific evidence and consumer perception.



Customers at a supermarket in Jakarta. The demand for highly valued products, such as meat, fish and horticultural products, will increase the returns to improved food safety for domestic producers and consumers. Reuters pic

Supply and demand analysis is also further complicated by the fact that safety attributes are not usually directly observable by consumers, and often are either not observable to producers or observable by them only at a cost.

There are also potentially significant externalities associated with the impact on human health. These health effects will be dependent on the safety of the product, on one hand, and any potential beneficial effects on health (for example, the nutritional value of the food) on the other. The key issue here is the extent to which the costs associated with human disease, for example, healthcare and loss of productivity, are borne by society as a whole rather than the individual consumer. To the extent that these costs are borne by society, it is unlikely that the supply and demand functions will fully embody the economic consequences of the consumption of the food.

Currently, the market provides few incentives for producers to provide levels of food safety beyond those mandated by government regulations, or to offer the public other than the most rudimentary information about the safety of their food product. The cost of having products linked to outbreaks of food-borne illness, both to reputation and sales, provides some incentive for producers to ensure the safety of their products. However, the complexity of the process whereby food travels from farm to table makes warranting food safety risky business for producers. The liability associated with claims of perfect safety, if proven false, is a significant disincentive for producers to advertise their food as "safe". Constrained

from advertising "safe" food and thus reaping market rewards, producers have no vested interest in making information about the safety of their food product more available to consumers.

Most government regulations will have some type of economic effect on producers and consumers. Regulations governing how food products, for example, meat and poultry, are produced can raise cost of production. Regulations require resource commitments which, in turn, may raise costs and product prices. On the other hand, the regulations, which improve the safety of the food supply, will generate benefits for consumers by reducing the number and severity of food-borne illnesses.

Consumers would be more willing to buy the food products since they are now getting safer goods for their money. This represents a shift out of the demand curve, with consumers now willing to buy more of the safer food and to pay a higher price. However, the individual consumer is not able to capture all of the benefits of having the safer food; some of these benefits go to society. Therefore, in some cases, consumers may not be willing to pay as much as it costs for the product to meet the most socially beneficial safety standard. In such cases, the net effect would be a decrease in sales with a higher price, although this higher price better represents the true cost of supplying the food product with the higher level of food safety. Thus, from the economic perspective, with market failure, there is convergence to the social optimality with appropriate government interventions.

Food safety issues are also becoming increasingly important in international trade. As countries begin to

lower agricultural tariffs and become increasingly integrated into world markets, they purchase more food from abroad. With the improvement in consumers' income, they also focus more on the attributes of their food, its safety, nutrition and environmental friendliness. Increased income is translated into willingness to pay for such characteristics. With this trade development, food safety presents a challenge to food suppliers in developing countries to have access to export markets. The process of adaptation by the developing countries to standards and expectations originally set for developed country consumers, however, could potentially bring benefits in emerging economies.

Looking to the future, the growth in demand within developing countries for highly valued products, such as meat, fish and horticultural products, will increase the returns to improved food safety for both domestic producers and consumers. The perishable high-value food products that most often give rise to safety concerns will become important building blocks of South-South trade. But, the benefits from food safety improvement will only be captured if policymakers in developing countries understand both food safety risks and their impact on public health, and the synergies between development of the domestic food system and food export industries. In addition, developing countries must establish processes for food safety policy development that are inclusive, in that they take into account the interests of many different groups, and competent, in that they are based on the best available

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**Food safety issues are also becoming increasingly important in international trade.**



# Govt initiatives ensure higher levels of food safety

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information about the magnitude and distribution of benefits and losses.

Governments can take a number of policy initiatives to induce producers to provide higher levels of food safety. Governments could, in theory, tax unsafe food, raising the firm's costs of providing unsafe food, and therefore creating an incentive to provide safer food. However, this assumes that the amount of unsafe food that is sold can be measured, which would be difficult. Most governments, therefore, turn to regulations, setting minimum

safety standards that food producing firms have to meet before they can sell their products. Basically, this is an attempt to increase the amount of food safety provided by the market, as the market alone will usually not provide the socially desirable level of food safety. Regulations can specify particular processes that a firm must use to produce food, or they can simply specify a level of safety for the final food product. The latter is generally considered more efficient, as it allows the firm to select the least expensive method of arriving at the desired product. As the food system has grown complex, however, safety


can no longer be managed solely through reliance on command and control regulations. There is also a desire to rely more heavily on performance standards and other approaches that allow firms flexibility in how they achieve public health, economic and trade objectives. Thus, increasingly, it is recognised that several stakeholders have a role to play in the successful implementation and operation of a food safety control system. These include agricultural producers, food industry, importers and exporters, industry organisations, academic and research institutions.

Other measures that emerging

economies can initiate include capacity building to participate in the international forum that allows them to engage in and influence regulations governing food safety and negotiate market access. Investments in infrastructure, which is a public good, such as the development of rural sanitation and water supply infrastructure that support better hygiene at the beginning of the food supply chain as well as marketing infrastructure can also improve food safety. These kinds of public sector investments can also set the stage for better export market performance.

In conclusion, the food safety ini-

tiatives, due to the externalities, seem to be a divergence from social optimality, implying that there is a trade-off between improvement in safety and costs. However, the benefits from food safety in terms of public health, economic returns and trade market access, with regulated markets, there is a convergence between food safety and costs, implying that the food safety initiatives are socially optimal.

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