



## THE FUTURE OF FOOD SAFETY



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#### **People-focussed food safety investment in low-and middle-income countries**

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##### 1. Introduction

This paper discusses food safety in the context of the food system and explains why food safety is integral to sustainable development. We summarise the links between foodborne disease, poor nutrition and inequity and set out principles underpinning the incorporation of food safety in people-focused development initiatives.

##### Food safety and under-nutrition

Food safety affects nutrition through a number of consumption-related pathways. Stunting or extreme shortness currently affects around 150 million children under five resulting in worse health, educational and work-related outcomes. Many studies have shown that the burden of stunting can only be partly prevented by improved nutrition, and foodborne diseases (including diarrhea, upper respiratory and helminth infections) are an important risk factor: in one study, one quarter of stunting was attributed to repeated diarrheal episodes. Microbes and parasites in food have also been associated with environmental enteric dysfunction (EED) a condition characterized by a leaky gut, and strongly associated with stunting. There is likewise a strong association between stunting and exposure to aflatoxin, a toxin produced by fungi contaminating staple crops in tropical and sub-tropical areas.

##### Food safety and non-communicable disease

Noncommunicable diseases (NCD) are responsible for an increasing share of human sickness and death and a major risk factor is overweight and obesity, both rapidly trending up in low and middle income (LMIC) countries and tending to concentrate among the poor. In 2016, the World Health Organisation estimated that more than 1.9 billion adults and 340 million children are overweight or obese. There is increasing evidence that the cycle of foodborne disease and malnutrition predisposes to obesity and its associated comorbidities, leading to a “triple burden of the impoverished gut” whereby children with stunted growth and repeated gut infections are also at increased risk of developing obesity and its associated comorbidities. Another link between food safety and NCD is seen in countries where foodborne disease outbreaks have been associated with consumption of contaminated fresh foods, and this in turn has fostered a shift towards buying highly processed foods, which often contains high levels of fat, sugar and salt, and the consumption of which is associated with overweight and obesity.

## Food safety and equity

Foodborne disease discriminates. Certain groups are biologically more vulnerable to foodborne disease, especially, the young, the old, the malnourished, the pregnant and the immune-suppressed (YOMPI). People in these groups often have other disadvantages which may also make them societally more vulnerable to illness and less able to manage it. In addition, culture affects the consumption of food by different groups exposing them to different risks and benefits. Women are risk managers in the realms of food consumption, preparation, processing, selling and, to a lesser extent, production but are often disadvantaged by less access to support and services such as education and extension

Foodborne disease can also lead to poverty. Illness a major cause of expenditure for the poor and can act as a “poverty trap” that is a self-reinforcing mechanism that prevents people from reaching the threshold needed to escape poverty. Equity also becomes an issue as agri-food systems transform in response to changes in demand. This often involves intensification of production and modernisation of retail. Although this can be associated with improvements in food safety, this is not always the case. And while modern systems can create jobs and improve conditions, there is also a tendency for women and the poor to be excluded. The same phenomenon is seen in export trade, where food safety is an important criterion for reaching lucrative markets and farmers who are poor, less-educated, more remote and female tend to be excluded.

## 2. Enhancing People-focused Food safety investment

Food safety is rising rapidly up the development agenda, and for food safety initiatives to contribute best to people-focused development, certain principles should be followed.

### Integrating food safety into development

Food safety is integral to attaining food security and nutrition and is closely linked with other development objectives including agriculture and value chain support, post-harvest loss reduction, food processing, food trade and climate change mitigation. In particular, food safety is relevant to the food-based approaches to improving nutrition. Animal-source food (ASF) and fresh fruits and vegetables are among the most highly nutritious foods. But these foods are also responsible for most foodborne disease, so if their consumption increased (doubled or tripled) without accompanying action to improve safety then the burden of foodborne disease will increase too. Similarly, climate change adaptation should consider surveillance and management of climate sensitive foodborne disease and mitigation plans factor in benefits from reducing foodborne disease. Recent studies have shown that even when food safety is very relevant to a development objective, it is often managed poorly and not measured. Implementors clearly set out food safety outputs and outcomes, invest to achieve them and measure success in terms of reduced risk of disease or reduced exposure. The Framework for Action issued by the Second International Conference on Nutrition (ICN 2) provides a set of concrete recommendations to help guide investments for improved nutrition and food safety while the United Nations Decade of Action on Nutrition (2016-2025) provides a unique opportunity for stakeholders to strengthen efforts towards eradicating hunger and malnutrition worldwide.

### Enhanced food borne disease surveillance

Many LMICs do not have a systematic or comprehensive approach to foodborne disease surveillance, and even when official notification is required, there is often under-reporting. Better surveillance would help in detection and managing of outbreaks and in prioritising hazards and risks.

### Addressing food safety in domestic markets

Recent studies suggest that most previous investments in food safety in LMICs have focused on export and formal markets. Yet the great majority of the negative health and economic impact of foodborne disease falls on those who purchase fresh foods from informal markets

in LMICs. The limited literature on domestic food safety regulation in developing countries shows that we do not yet have good models for standards and approaches that can work at scale to assure food safety where risks are pervasive, costs of compliance are high and enforcement capacity is weak. However, there are some successful pilots such as initiatives with street food sellers in Africa and Asia and with the traditional dairy sector. More efforts are needed to identify and expand food safety interventions suitable for traditional and modernising food systems

## Food safety strategies and programmes based on holistic analysis

Where food safety is the primary objective, there is likewise a need for a multi-disciplinary approach. Because food safety has broad implications for nutrition, equity, livelihoods and the environment, it is important that interventions to improve food safety take a holistic approach and assess the negative and positive externalities. For example, efforts to make milk safer by enforcing pasteurisation may result in loss of jobs for raw milk vendors and increased price which reduces consumption by children.

## Enabling regulatory environment

Regulatory authorities must support food safety interventions and institutionalisation is needed to support change (such as appropriate standards and regulations). However, regulatory enforcement must not be over-relied on. Developed countries have found that command-and-control approaches relying on inspection and punishment are less effective and affordable than empowering stakeholders to self-regulate, motivated by appropriate incentives. Authorities also have a key role in infrastructure investments which provide the pre-requisites for safe food (e.g. rural roads, electricity, markets)

## Suitable technologies and approaches (for safe and inclusive value chains)

Private sector actors need the tools to deliver safe food. This can include be training, awareness raising and approaches such as hazard analysis and critical control points (HACCP) or improved traceability. A variety of simple innovations have been developed including simple cooling devices, food containers for storage and transport, and water disinfection and these should be promoted and disseminated.

## Motivation and incentives

Because much of the food sold in LMICs is unsafe, largescale behavioural change is needed among all food actors from producers to consumers. Sustained change requires incentives, which have been successfully used but are very context specific. In some cases, simply providing information will suffice. Increased profits can be an incentive for the private sector, but so can a better regulatory environment or social rewards for providing safer food.

## 3. Conclusion

The Sustainable Development Goals (SDGs) aim to end poverty, protect the planet, and ensure prosperity for all by 2030. These goals integrate economic, social and environmental dimensions of sustainable development. Because food is a significant source of disease, it is key to achieving the goal of good-health and well-being and is strongly implicated in goals targeting zero hunger and safe water and sanitation. Food safety both benefits from and contributes to better infrastructure, well-performing economies and equitable livelihoods. Clean environments reduce foodborne disease transmission and safe food systems reduce waste and environmental degradation. Food safety should be actively addressed in targets for and plans to attain SDGs. The Decade of Action on Nutrition is an unprecedented opportunity for action on food security and nutrition, and people-focused food safety investments can make an important contribution to the success of this initiative as well as to achieving SDGs.