



## Economic Consequences of Nutritional Food Safety in Food System

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### DESCRIPTION

Diets must include foods that are both nutrient-dense and risk-free they must allow people to achieve their nutritional needs while protecting them from foodborne illness. For the majority of the world's population, this is not the situation at the moment. One in three persons suffers from some type of malnutrition, which has annual economic consequences of up to \$3.5 trillion USD. Diet-related risk factors account for roughly 22% of adult fatalities. The yearly economic consequences of foodborne diseases are estimated to be \$110 billion USD, with 600 million illnesses caused each year, many of which affect consumers with lower incomes and small children in low-income nations. The food system should be required to ensure that everyone has access to wholesome food; at the moment, this is not happening. Synergies that aim to increase access to nutrient-dense foods while also increasing their safety are necessary for efficient and successful food systems action to promote nutrition and minimize foodborne disease. The two problems, though, are frequently treated separately. Whether it is through regulation, advice, measurement, or study, they are not observed, examined, or dealt with collectively. In this perspective, we will look at how food security and nutrition are intricately intertwined and argue that these connections need further consideration in research, policy, and programming on nutrition, food security, and food systems. Further than the chronic and acute impacts of either a foodborne illness or hunger alone, the physiological connections between food safety and nutrition are the most clear. It is becoming easier to comprehend many mechanisms that have previously been classified as either foodborne disease mechanisms or malnutrition mechanisms as interrelated physiological reactions within the human body. For instance, a foodborne illness can raise the possibility of malnutrition. Numerous foodborne illnesses cause acute gastrointestinal discomfort, which can result in decreased nutrient intake or absorption, whether it is acute or chronic. This distress often includes decreased appetite, vomiting, or diarrhoea. Stunting has been linked to environmental enteropathy, a complicated disease characterised by intestinal inflammation and epithelial destruction. An acute foodborne illness depletes the organism and

can require more nutrients while recovering. Exposure to specific foodborne dangers may harm metabolic functions linked to optimal nutrition use or to developmental effects. The gut microbiota may be disturbed by illness and by persistent exposure to bacteria, which could have an impact on nutrition metabolism and absorption. The gut microbiome may also be disturbed by medications used to treat foodborne illness, which may affect nutrient intake, absorption, or metabolism. Additionally, foodborne illness can affect long-term health results. For instance, certain foodborne illnesses or prenatal exposure to dangers can hinder foetal growth or survival. While it is contested, aflatoxins may inhibit growth.

### Nutrition and food safety can be integrated in food system

Consideration of these interconnected food safety and nutrition processes, located within a larger framework of relevant dynamics, is made possible by using a framing focused on the food system and creating policies and programming appropriately. All players and actions involved in the production, processing, distribution, preparation, and consumption of food are referred to as "food systems." They consist of consumer behaviours, food surroundings, and food supply networks. Recent food system models discuss food safety, but usually briefly, and frequently omit or fail to explain how it relates to nutrition. For instance, the widely used High-Level Panel of Experts' food system framework refers to "safety" solely in reference to diets and food environments, without explicitly tying the two together or going into great detail about food safety current food policy framework food safety is mentioned in the backdrop of the paper on food systems for children, but in the framework it only functions as a "influencer" inside the food surroundings and is not reflected in other areas, such as supply chains. Although safety is mentioned as a cross-cutting concern in the FAO recommendations on food systems, links to nutrition are not specifically discussed. Last but not least, food safety is barely or never mentioned in two prominent recent worldwide studies on sustainable food systems.

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