World Health Organization

TECHNICAL BRIEF

Transforming food systems to reduce global inequality and improve food safety and health

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Food lies at the heart of human, ecosystem and animal health and well-being. The way food is harvested, processed, transported, marketed, consumed and disposed of contributes significantly to malnutrition and disease, and is unsustainable.

Food systems negatively affect health through unhealthy diets and food insecurity, animal–human disease transmission, increased antimicrobial resistance, unsafe and adulterated foods, environmental contamination and degradation, and occupational hazards (see Figure 1). In turn, food systems are affected by and respond poorly to shocks. The COVID-19 pandemic, climate change and the war in Ukraine have exacerbated inequalities in access to healthy and safe food, worldwide. Therefore, to achieve universal health coverage, food systems must be transformed as a matter of urgency.

Key messages

- **The food system is failing to provide equitable access to healthy and safe diets for the world's population.** Inequities within food systems restrict access to healthy diets leading to inequalities in diet, nutrition and health. Food insecurity and wasting have risen, foodborne diseases are widespread, and unhealthy diets and malnutrition are among the main causes of disease.
- **Multiple problems within food systems negatively affect health**. Unhealthy diets, zoonotic pathogens (that spread between animals and humans), antimicrobial resistance, unsafe and adulterated foods, environmental contamination and degradation, and occupational hazards are interconnected pathways that can increase communicable and non-communicable diseases *(1)*.
- **The food system is draining planetary resources**. Food production uses more than one third of the planet's landmass. Agriculture also accounts for nearly 25% of global greenhouse gas emissions and 70% of freshwater use. In addition, biodiversity loss drives transmission of pathogens from animals to humans.
- **The food system is vulnerable to multiple shocks**. Climate change, the COVID-19 pandemic, and the war in Ukraine are affecting access to, and prices of, food globally and the incidence of foodborne and zoonotic diseases.
- **Universal health coverage requires the transformation of food systems to prioritize health**. Shifting from the production and consumption of energy-dense foods to foods that are nutrient-rich, safe, diverse, sustainably produced and equitably distributed will lead to improved health outcomes, reduce the risk of disease outbreaks, and lessen the stress on, and cost of, health services.
- **Universal health coverage cannot be achieved without ensuring that everyone has access to safe and high-quality foods, produced in a sustainable way.** If food systems are transformed, they can become a powerful driving force to end hunger, food insecurity and malnutrition in all its forms.

Background and challenges

A food system encompasses all elements (environment, people, inputs, processes, infrastructures, institutions) that relate to the production, processing, distribution, preparation and consumption of food, and the outputs of these activities, including socioeconomic and environmental outcomes *(2)*. Urbanization, globalization, trade liberalization, and the way people access, purchase and consume food are rapidly changing the global food system.

Inequities within the food system result in unequal outcomes ranging from poor food availability and unaffordability to an overabundance of food of low nutritious quality and limited access to healthy foods *(3)*. Today, almost 3.1 billion people cannot afford a healthy diet, leading to increased prevalence of hunger and obesity. Since the outbreak of the COVID-19 pandemic in 2019, 150 million more people have suffered from hunger, bringing the global total to 828 million *(4)*. Sub-Saharan Africa and Southeast Asia suffer from the highest degree of food insecurity, and have the highest prevalence of wasting in children and anaemia among women.

Rising food prices are also driving the consumption of low-cost foods that are high in energy, fats, sugar and sodium. A poor diet is responsible for an estimated 26% of preventable mortality among adults worldwide, and is a leading cause of disease, particularly related to obesity and non-communicable diseases *(3,5)*. Furthermore, 600 million people fall ill every year after consuming contaminated food, and 420,000 people die; this includes 125,000 children under the age of 5 *(6)*.

In addition to impacting human health, food production has a substantial environmental and economic cost. Growing crops and raising livestock are the primary causes of ecosystem loss and degradation. Today, more than one-third of the planet's landmass, and almost half of the world's vegetated land, is used to produce food. Agriculture accounts for nearly 25% of global greenhouse gas emissions and 70% of all freshwater withdrawn from rivers, lakes, and aquifers *(7)*. Globally, land use change, as well as wildlife hunting and trade, is a major cause of biodiversity loss, and also drives the transmission of pathogens from animals to humans *(8)*.

Food systems are fragile. Increasing temperatures, changing precipitation patterns, and greater frequency of some extreme events affect crop and animal yields and the geographic distribution and persistence of foodborne pathogens, parasites and contaminants. They also contribute to the spread of zoonotic hosts and vectors (that transmit pathogens from one organism to another), increasing exposure to vector-borne diseases. Rising temperatures further stimulate the rate of reproduction of both pathogens and vectors *(8)*.

And the COVID-19 pandemic, which reduced income and disrupted services, increased hunger to levels not seen for a decade and led to an estimated 9 million new cases of wasting *(9)*. In addition, the war in Ukraine is reducing food security by affecting the availability and the price of staple crops, fertilizers and fuels *(10)*. Low- and middle-income economies are the most vulnerable to these shocks, which have exacerbated existing inequities within food systems.

Key actions and policy recommendations

- Governments and global networks should adopt a new paradigm for food systems – that puts human, animal and ecological health at its centre. Such a paradigm is needed to deliver safe, sustainable and healthy diets, that are affordable and build on and respect local culture, culinary practice and knowledge.
- Governments must create robust regulatory and policy frameworks, including fiscal instruments, to support the production and consumption of, and access to, healthier and safer diets. In particular, governments should consider policy actions recommended by WHO to improve the nutritional quality of food along the food supply chain and create healthier food environments (Figure 2). These interventions are highly cost-effective and evidence-based. They are implemented already by many countries and are thus scalable and replicable. The interventions are continuously monitored by WHO and, when implemented as a package, contribute to addressing the double burden of malnutrition and inequalities caused by foodborne diseases and reduced health *(11)*. The interventions are:
  - o Implementing fiscal policies for healthy diets *(12)*.
  - o Protecting children from harmful marketing of food and beverages *(13)*.
  - o Ensuring clear and accurate nutrition labels, and reducing the levels of salt, sugars and harmful fats in processed food and drink products *(14)*.
  - o Fortifying staple foods by adding extra vitamins and minerals *(15)*.
  - o Ensuring that nutritious foods for healthier diets are served or sold in schools, hospitals and other public places *(16)*.
  - o Strengthening national food control systems and surveillance to prevent and improve responses to foodborne diseases *(17)*.

- Food and agricultural policies can be repurposed to improve the affordability of healthy diets, by shifting fiscal subsidies from consumers to producers and promoting price incentives *(4)*. This also ensures a fair price for the producer while diminishing the environmental footprint.
- Global, national and local actors across multiple sectors including food and agriculture, trade, social and environmental protection, and education should act in a coordinated manner, with leadership from the health sector, to implement policy actions.
- All stakeholders, including governments, industry, consumers and civil society, must act simultaneously through different entry points of the food system to ensure a systemic response to risks posed to food safety and quality.

Figures

Figure 1. Five interconnected and interrelated impact pathways through which food systems negatively affect health *(1)*

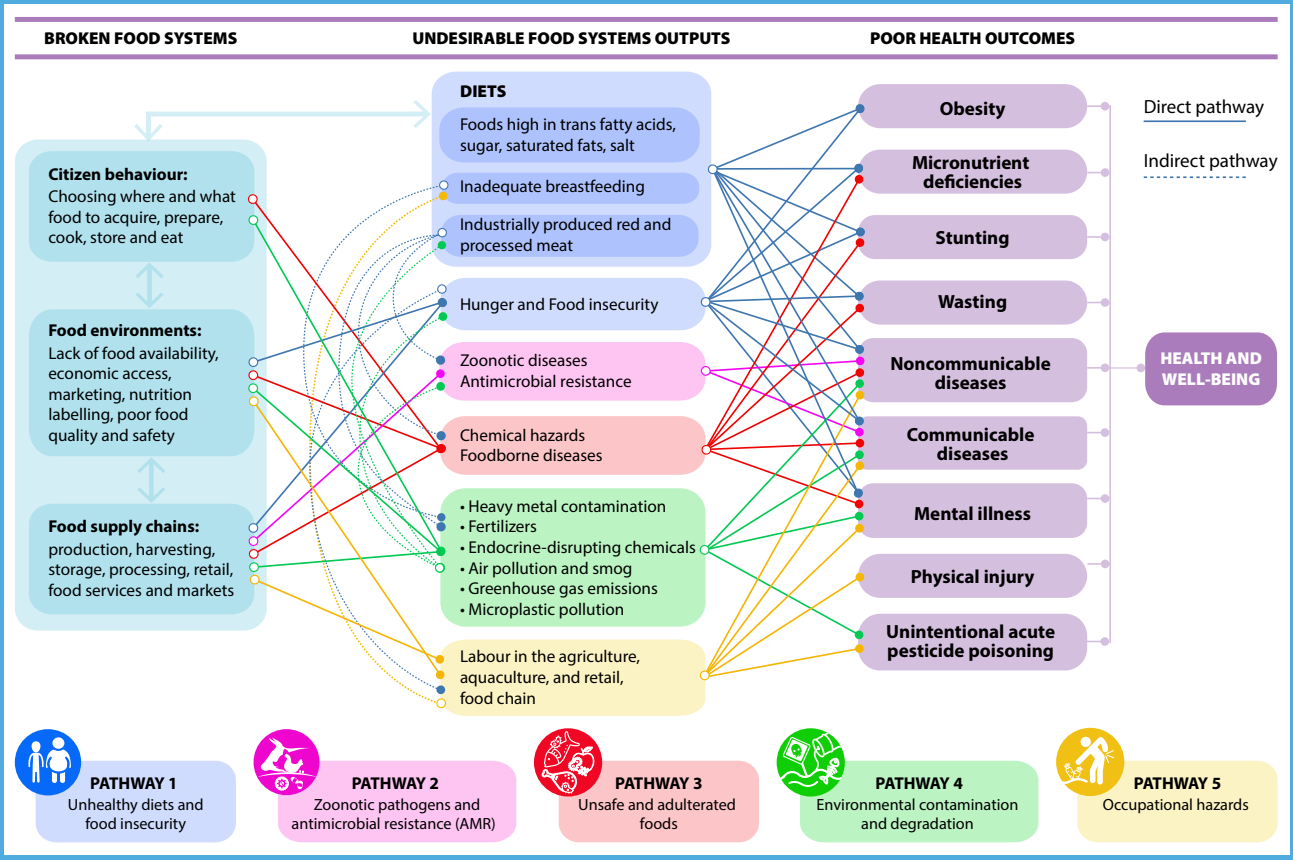
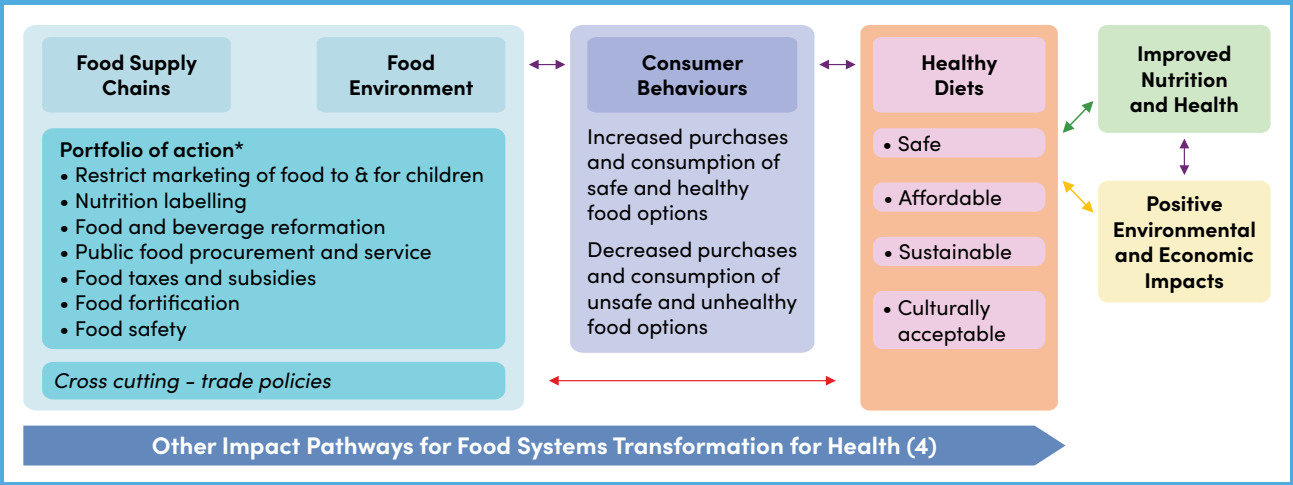


Figure 2. Portfolio of action for food supply environments to deliver healthy diets *(11)*



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