Executive summary

Food systems delivering better health

A new narrative to guide policy and practice for better human, ecosystem and animal health and well-being

World Health Organization

Food lies at the heart of human, ecosystem, and animal health and well-being. *Our health and well-being are affected by our food systems – the way we Our health and well-being are affected by our food systems – the way we grow, harvest, process, transport, market, consume and dispose of food – through multiple, interrelated pathways. Today, our food systems are making us ill, driving climate change and undermining the health of ecosystems and the essential services on which our health and well-being depend. COVID-19 and climate change are exacerbating this heavy health burden and are continuing to drive health inequality.*

Food systems affect health in many ways. For example, worldwide **690 million people are hungry**, **2 billion people** have **micronutrient deficiencies** and there are **677.6 million adults with obesity**; **each year zoonoses** are responsible for **2.5 billion cases** of **human illness** and **2.7 million human deaths worldwide**; at least **700 000 people die due to drug-resistant diseases**; **44% of farmers** are **poisoned by pesticides**; and at least **170 000 agricultural workers** are killed.

Considerations of health impacts have rarely been central to decisions about food systems, and new narratives and thinking are required that place health (of people, the planet and animals) at the heart of a transformation of food and health system policy and practice. This will require:

- ***"big picture" and systems*** thinking about the many different ways in which food systems affect health and taking this into account in decision-making;
- ***a shift in the focus*** to ensure that food has health benefits for all, everywhere, moving from the production and consumption of energy-dense foods to foods that contribute to healthy diets and are nutrient rich, diverse, sustainably produced and equitably distributed;
- ***policy and practices*** to address the physical, economic, commercial and ecological determinants of the nexus between food and health;
- ***system changes*** to ensure that food systems transform and result in better health outcomes by mainstreaming the concept of healthy, sustainable diets, with democratic, transparent, accountable governance frameworks and conducting accessible, credible, interdisciplinary research in this area; and
- ***recognizing*** the human right to safe, nutritious foods.

This ***"health narrative"*** outlines the main ways in which food systems influence health and proposes principles and practices to guide action. It is directed to all those involved in the food system to inform their thinking and decision-making.

How food systems affect human health

The narrative builds on the report of the International Panel of Experts on Sustainable Food Systems entitled "*Unravelling the Food-Health Nexus*".[1] It addresses five interconnected, interrelated pathways through which food systems negatively affect health (Fig. 1) and the factors that influence the pathways, internally within food systems and externally through social, economic, environmental and commercial determinants of health (Fig. 2). When food systems are directed towards profit and productivity, they can create a vicious cycle of disease and sickness that affects mainly the most vulnerable in society. By addressing the determinants and critical points along the five pathways, however, food systems can positively affect health and well-being.

The five pathways are:

Unhealthy diets and food insecurity. This pathway comprises the aspects of food systems that lead to unhealthy diets or food insecurity and therefore contribute to malnutrition in all its forms. Malnutrition and hunger pose the highest risks to human health in terms of death and illness and include obesity, micronutrient deficiencies, stunting, wasting, communicable and noncommunicable diseases and mental illness.

Zoonotic pathogens and antimicrobial resistance. This pathway comprises the ways in which farmed, ranched and wild caught animals in food supply chains and the use of antibiotics result in zoonotic diseases and antimicrobial resistance, which further result in communicable and noncommunicable diseases in humans.

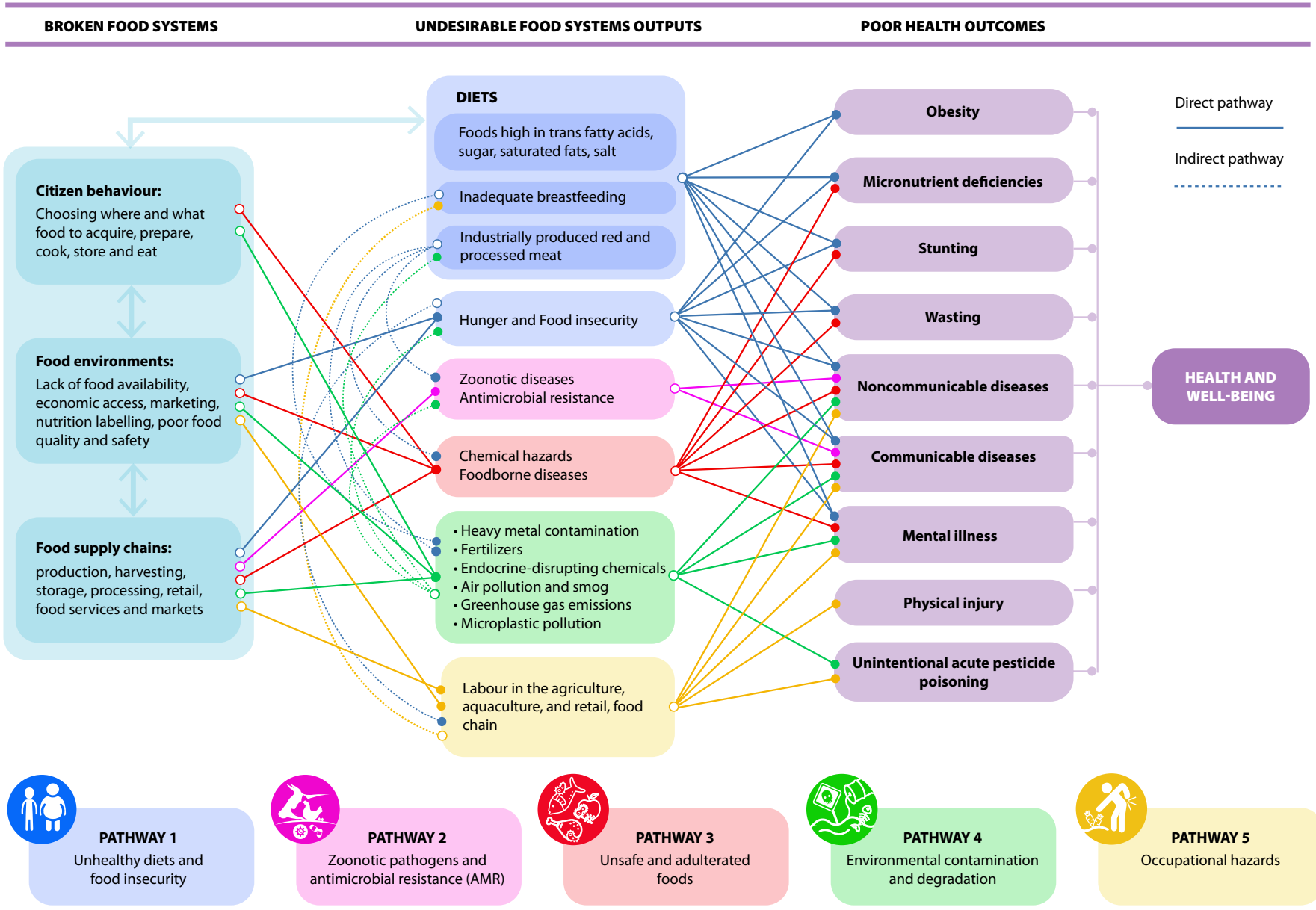
Unsafe and adulterated foods. In this pathway, food systems are the cause of various diseases and illnesses (e.g., micronutrient deficiency, stunting, wasting, communicable and noncommunicable diseases and mental illness) when foods and water contain infectious or toxic hazards, microbial pathogens, such as bacteria, viruses and parasites, or chemical residues, contaminants or biotoxins. These contaminants can occur in unsafe food supply chains or unhealthy environments or due to unsafe behaviour.

Environmental contamination and degradation. This pathway comprises contamination of the environment by use in food supply chains and food environments of fertilizers, manure, products containing heavy metals, endocrine-disrupting chemicals or hormone-growth promotors, which can cause various conditions, such as mental illness and other noncommunicable and communicable diseases. It includes the ways in which food production, food environments and citizen behaviour degrade the environment by emitting air pollution, greenhouse gases and microplastics, which affect our health and well-being.

Occupational hazards. This pathway comprises the many physical and mental health effects on people working in the food system (e.g., farmers, fishermen, agricultural workers and people working in food retail, processing and other sectors of the food chain) due to the nature of their work or their working conditions. The effects include heat and cold stress, injuries, exposure to chemicals through the use of pesticides, fertilizers and insecticides, biological risks such as snakebites, infectious and parasitic diseases, zoonoses, ergonomic risks and psychosocial risks leading to stress and mental illness, including suicide.

[1] Global Alliance for the Future of Food, International Panel of Experts on Sustainable Food Systems. 2017. Unravelling the food–health nexus: addressing practices, political economy, and power relations to build healthier food systems. Brussels.

Figure 1. The five interconnected and interrelated impact pathways through which food systems negatively affect human health



Transforming food systems to deliver better health

To change the narrative and thinking of decision-makers to ensure better health outcomes through food systems, changes must first be made in food systems governance. Policy and practices should address the physical, economic, commercial and ecological determinants of health (Figs 2 and 3). Systemic changes for better health could be based on three pillars: mainstreaming the concept of healthy, sustainable diets; democratic, transparent, accountable governance frameworks; and accessible, credible interdisciplinary research (Fig. 3).

Figure 2. Key determinants impacting human health through food systems

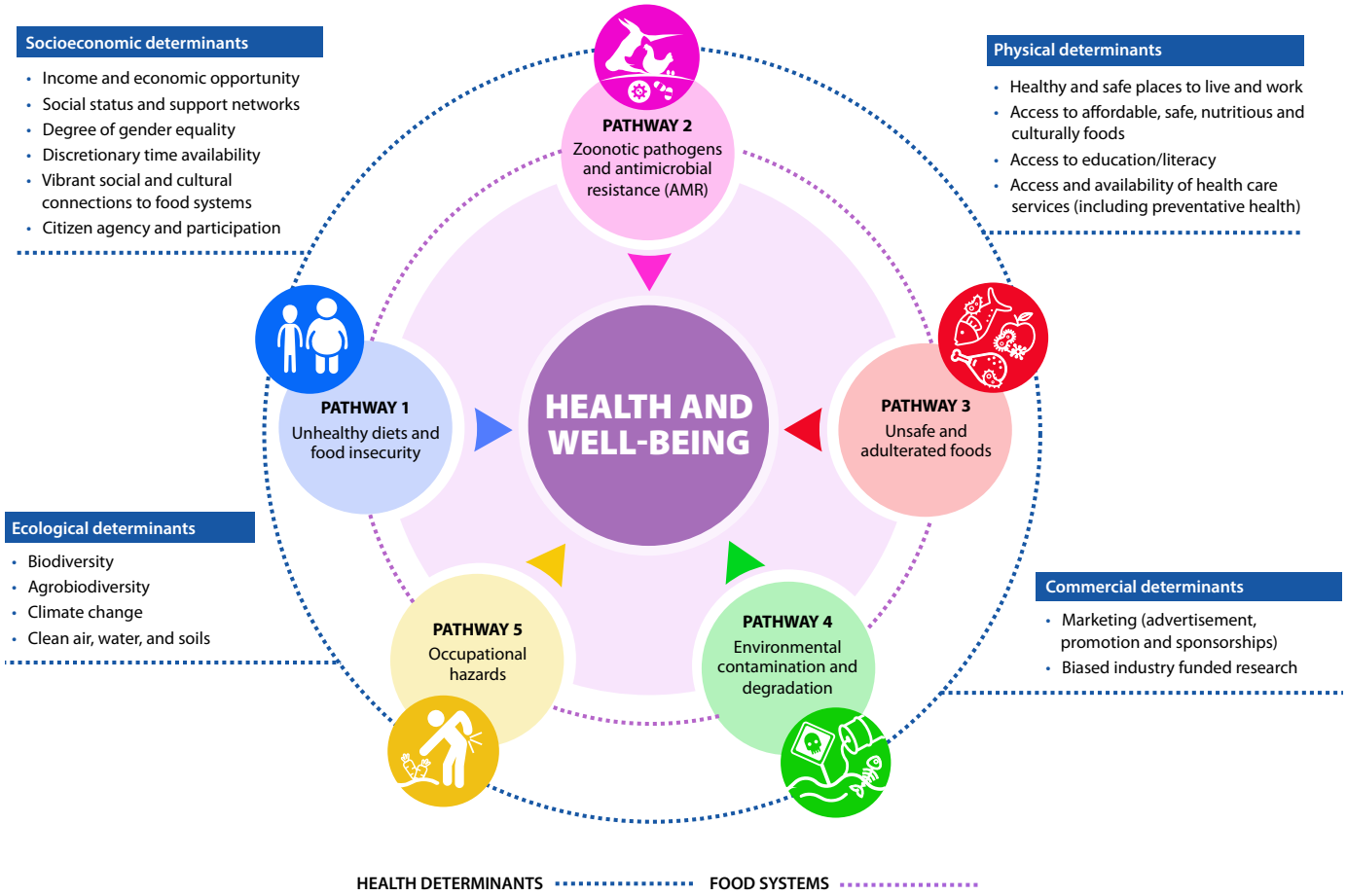
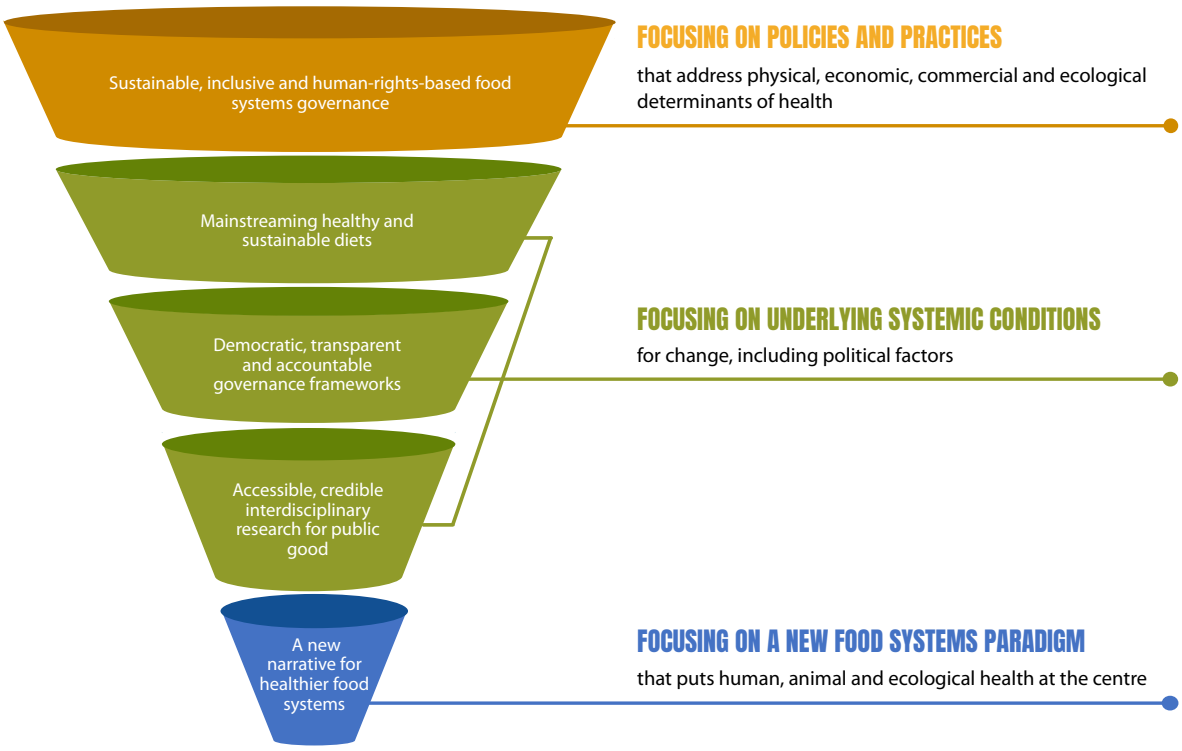


Figure 3. New thinking for healthier food systems



The actions that can be taken to transform food systems include the following.

Mainstreaming the concept of healthy, sustainable diets

- **Agree on definitions and metrics of affordable, healthy, sustainable diets,** with an agreed definition of ultra-processed foods.
- **Adopt policies to improve access to affordable, healthy, sustainable diets.** A comprehensive package of policies to tackle malnutrition in all its forms and support a sustainable transition towards good nutrition and health for all should be a priority for governments. There is no "silver bullet" solution. The policy package could include fiscal incentives, food-based dietary guidelines, nutrition labelling policies, public food procurement policies and/or restrictions on marketing of foods and beverages high in saturated fats, sugars and/or salt, with consumer education. These will differ for different contexts.
- **Define the role of animal products, particularly meat, in a healthy, sustainable diet.** Governments could develop national, regional or territorial dietary guidelines with specific guidance on meat to prevent micronutrient deficiencies and diet-related noncommunicable diseases in a sustainable way.
- **Establish nutrition-sensitive agriculture systems.** Agricultural production systems should be diversified and better aligned with dietary guidelines, and the availability of diverse, culturally appropriate, sustainable, nutritious crops should be increased.
- **Link the international food trade with health.** As 80% of the world's population depends on imports to meet at least part of their food and nutritional requirements, trade policies that promote food safety, food security, health and sustainability are crucial. COVID-19 has exposed the fragility and vulnerability of food systems to external shocks, and shown that many countries should grow much more fresh, nutrient-dense foods locally to ensure their freshness and nutrient quality and to reduce wastage of fresh produce.

Democratic, transparent, accountable governance frameworks for food systems

- **Redress power imbalances, build agency and give all actors an equal voice.** Governments and other decision-makers should use a human rights-based approach and put into practice the principles that everyone has the right to adequate food and that every child should have access to adequate nutritious foods and drinking-water, as recognized in international human rights law. Meaningful participation is essential to ensure transparency and accountability and to build trust in decision-making.
- **Break down siloed approaches to reforming food systems and preventing malnutrition in all its forms.** Governments and donors should foster coordination and coherence of policy among ministries, sectors and agencies and among levels of governance (local, national, regional, global) in order to align and harmonize policy measures and actions in the human, ecosystem and animal health sectors and to avoid disjointed or inconsistent policies.
- **Establish effective, active, integrated monitoring and surveillance and early warning systems.** Governments, working closely with intergovernmental organizations should strengthen national surveillance systems so that they provide early warning of the range of human and animal diseases outlined above, including the underlying ecological conditions that drive disease emergence.

Accessible, credible interdisciplinary research for public good

- **Bridge the science–policy interface.** Research is often disconnected from those whom it is intended to benefit. Local, community and village leaders, young people and women, indigenous groups, farmers and disadvantaged groups should be engaged to ensure that research is aligned with the public interest and the public good and to safeguard the essential knowledge and culture that is at the heart of many sustainable production practices. Importantly, such research should be used in policy development.
- **Manage the power and influence of the private sector.** The role of the private sector in implementing change includes funding research. It should be recognized, however, that partnerships with stakeholders with interests that run counter to improving human and ecosystem health can result in damage and mistrust. New models for private–public sector funding will be required to avoid conflicts of interests and ensure impartiality, accountability and transparency.
- **Favour interdisciplinary research.** Interdisciplinary research is imperative to address global health and food systems challenges and to advance scientific understanding of the determinants of healthier food systems. More collaboration should be ensured among researchers working on the human, ecosystem and animal dimensions of health.
- **Develop positive health indicators.** There is little understanding of positive indicators of health, which