

Food Systems and Nutrition Patterns

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From Science to Practice: Research and Knowledge to Achieve the SDGs

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Box 1. Science to Practice: Research and Knowledge to Achieve the SDGs - About the Project

Scientific research can make a critical contribution to addressing global challenges and achieving the Sustainable Development Goals (SDGs). However, translating the knowledge that comes from research into action remains a complicated task. Research often fails to find its way into policy-making circles due to a number of technical, normative, cultural, political, institutional and financial barriers.

With this in mind, a consortium of Geneva-based institutions has established a new channel through which research and knowledge from International Geneva and its global networks can amplify its impact on national and global policy making and help to achieve the SDGs.

Progress towards the goals is reviewed in July each year at the High-Level Political Forum (HLPF) that takes place in New York. Our process began therefore with a call to organizations to submit research related to three themes, covering the SDGs that will be reviewed at the 2021 HLPF:

- Human well-being and capabilities
- · Sustainable and just economies
- Food systems and nutrition patterns

After receiving around 100 submissions from a broad range of organizations throughout Geneva and their international networks, three synthesis reports were drafted that brought together the research submitted and situated this new evidence against the state of the art.

This report is the first step in a larger process to institutionalize this research-to-practice channel over the long term and bring more knowledge-making bodies into the process, to ensure policy making is informed by relevant, timely, interdisciplinary research.

This task is more important today than ever, as we begin the decade of action to achieve the SDGs in the face of economic, health and environmental crises, typified by the Covid-19 pandemic. Such challenges demand we make use of all the knowledge we have available to us. Carving out a clear path for science to play a central role in policy making is an essential first step.

Summary

Scientific research can make a critical contribution to addressing global challenges and achieving the SDGs. As part of an effort to improve processes of research uptake in policy making, this report synthesizes research submitted by Geneva-based institutions and their global networks to the project From Science to Practice: Research and Knowledge to Achieve the SDGs. The report explores the potential for transforming global food systems and nutrition patterns so that they minimize environmental impacts, are resilient to shocks, and ensure all people equal access to a healthy diet, now and in the future. It considers the various challenges that are driving hunger and malnutrition, and their environmental consequences-including exclusion of smallholder farmers from global value chains, corporatization of agriculture, shifting nutrition systems as a result of increasing urbanization, and unsustainable consumption preferences-and the wavs in which the Covid-19 pandemic has exacerbated existing and brought about new challenges. The report then turns to initiatives across the globe that are providing sustainable alternatives to our broken food system, including community- and solidarity-based food networks, support for smallholder farmers, public investment schemes in sustainable food systems, and the promotion of locally centred consumption. The report highlights the possibilities for scaling up these initiatives through tailored public policy, and the key role that governments, agricultural enterprises, solidarity networks, and scientists and practitioners have to play as agents for sustainable transformation within global food and nutrition systems.

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1. Introduction

The food and nutrition system, one of the most vital and complex components of the human ecosystem, is "the set of operations and processes involved in transforming raw materials into foods and transforming nutrients into health outcomes, all of which functions as a system within biophysical and sociocultural contexts" (Sobal et al. 1998). Today, this system encompasses a range of human activities beyond food production, spread out across the globe and interconnected through complex networks of relationships.

This system is rife with environmentally unsustainable practices, injustice and inequality, making the right to safe and nutritious food unattainable for many. The question of sustainability is associated as much with skewed land relations and rights to the commons, as with current usage of soil and water in agriculture. It is, therefore, an obvious contradiction that despite growing global food availability, more than 800 million people are still hungry. This is not because the world does not have enough food for everyone; rather, it results from a combination of factors: distorted agricultural relations, skewed exchange relations and extractive environmental relations.

The distortions in our food systems and nutrition patterns are also reflected in the triple burden of malnutrition, encompassing undernutrition, micronutrient deficiency, and overnutrition. This again illustrates that the world doesn't only need more food for the hungry; but, it also needs the right kind of food produced and made accessible in a way that can be considered safe and sustainable in a multidimensional way. A considerable proportion of food produced in the world is wasted every year. According to estimates from the Food and Agriculture Organization of the United Nations (FAO), around one-third of food in the world is lost, during both food production and food consumption phases. SDG indicator 12.3.1 targets halving global food loss and waste by 2030. Given that food production involves intensive resource use, including land and water, any wastage of food necessarily implies wastage of these non-renewable resources, thus posing a major sustainability challenge to our current food systems. Unless this realization is taken into consideration in all policies and practices, the world cannot achieve food and nutrition security for all.

This report explores recent evidence as well as key challenges embedded within current food systems and nutrition patterns, draws out lessons with transformative potential towards sustainable and resilient practices within existing food and nutrition systems, and identifies actors and agents that may be mobilized for translating these recommendations into action.

Box 2. Food systems and nutrition patterns: An integrated approach to achieving the SDGs

"Food systems and nutrition patterns" is one of the six entry points identified by the Global Sustainable Development Report (GSDR) 2019 to achieve desired transformation for sustainable development (Independent Group of Scientists appointed by the Secretary General 2019). Many of the SDGs, especially SDGs 1 (no poverty), 2 (zero hunger), 5 (gender equality), 12 (responsible consumption and production), 13 (climate action) and 17 (partnerships for the Goals), are pillars of a sustainable food system. It is important also to consider biodiversity and ecosystems as reflected in SDGs 14 (life below water) and 15 (life on land)—when thinking about the long-term transformation of food systems and diets. In transitioning towards sustainable food systems, the focus must be on enabling more equitable global access to nutritional foods and maximizing the nutritional value of produce while, at the same time, minimizing the climate and environmental impacts of production (Independent Group of Scientists appointed by the Secretary General 2019).

Thus, achieving sustainable food systems and nutrition patterns entails coherent action on other goals and targets; each SDG does not stand alone (Fasoli 2018); there are interdependencies and complementarities between various goals and target areas, due to which a single indicator may serve to measure progress across several goals and targets (Mensah 2019). Clustering the SDGs allows for leveraging these complementarities between closely related goals. Isolated attention on one goal without accommodating its synergies with others may result in uncoordinated action and/or duplication of activities, leading to wasteful, intensive or unsustainable use of resources, thus defeating the very agenda of sustainability.

2. Towards Integrated Food and Nutrition Systems: Conceptual Framework

There is a pressing need for an actionable framework based on an integrated understanding of poverty, hunger and nutrition on the one hand, and climate, environment and gender issues on the other. Such an integrated understanding is central to our ability to address problems in today's food systems and nutrition patterns, such as those described above, and may broadly be considered as the food systems approach. Food systems include a range of activities including production, packaging, processing, transportation, marketing and distribution of the food consumed around the world. They are central to food and nutrition security, and must be socially equitable, meet the nutritional needs of the people who rely on them, make sustainable use of natural resources, and be resilient to shocks (Fanzo and Davis 2019).

Despite unprecedented human capabilities to scale up food production, ensuring food security and nutrition remain challenging today. A major component of this challenge emerges from the sustainability question associated with our current practices. The sustainability challenge, in turn, arises from our narrow approach, and/or activities that fail to accommodate the integrated nature of food and nutrition systems. While the left hand acts to mitigate inequality of hunger and malnutrition, the right hand often acts in ways that reproduce those very inequalities. Consequently, our current food and nutrition systems are marked by inequality and injustice. The global community has signed on to the vision of a world that leaves no one behind, in the 2030 Agenda for Sustainable Development, but hunger and malnutrition are unacceptably high with marked differences between countries, within countries and by population characteristics (Development Initiatives 2020; Choudhary 2017). Even in advanced countries there are dramatic racial, ethnic and socio-economic inequities in undernutrition and over nutrition, as well as in micronutrient deficiency (Neff et al. 2009).

The greatest cost associated with lack of sustainability or imbalance in food systems is often borne by vulnerable groups. This is either because they depend upon nature more directly, or because they have no access to nature at all, as in the case of urban food deserts found in wealthier countries. This vulnerability is magnified due to a lack of access to farm inputs or other support mechanisms required to build up communities' capacities for coping and adaptation. Since poor and vulnerable groups lack private resources, they are unable to ward off negative externalities resulting from activities that degrade the environment. As a result, these groups suffer the most from deterioration in the environmental conditions that are needed for optimal human health such as clean air, drinking water, and the ability to produce, raise, harvest and gather food resources of sufficient and safe quantity and quality (Fanzo et al. 2021); and this, in turn, further exacerbates inequality within the food system. Salm and her co-authors (2020) observe, for example, that climate change interacts with inequality to affect nutrition because the impact of adverse climate shifts on human nutrition itself is not evenly distributed across population groups. For example, due to the gendered division of labour and gender inequality in resource access, women farmers are likely impacted more severely in the wake of any shock as compared to their male counterparts. This is amplified by the fact that women are most often smallholder and subsistence farmers with little access to farm inputs. If we aim to battle inequality in hunger and malnutrition, we can no longer ignore the sustainability question, and vice versa. Building equitable, just and sustainable food and nutrition systems requires an integrated approach to the SDGs, and in particular one that is attentive to SDG 17, which strives towards partnership and cooperation among various stakeholders.



Figure 1. Towards an integrated food and nutrition system: Conceptual framework

Source: Author

3. Context of Crisis: Covid-19 and Mounting Food and Nutrition Challenges

The outbreak of Covid-19 and its aftermath has further compounded the food and nutrition challenge. Recent World Food Programme (WFP) projections indicate that, because of the economic effects of and supply chain disruptions associated with Covid-19, the number of food insecure people may have doubled in 2020, to 265 million people (The Lancet 2020). Estimates of both hunger and severe food insecurity were revised upward in 2020, with the Covid-19 pandemic adding between 83 and 132 million people to the total number of undernourished in the world (FAO 2020). Around 370 million children missed out on school meals due to school closures in spring 2020 in countries both rich and poor. In 2020, the World Food Programme estimated that due to the pandemic, by the end of the year the number of people experiencing extreme hunger would increase by 82% compared to 2019 (WEF 2020), with hunger increasing in existing "hot spots" but also popping up in new ones (Oxfam 2020).

Discuntion in supply chains following Covid-10 lockdowns created threats of agricultural and food

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