

UN Food System Summit: Innovation Lever of Change, Policy Brief

Overview

Global food systems have played a huge part in decreasing hunger but have become unsustainable for both people and the planet. They leave billions of people inadequately nourished, operate at a high environmental cost, waste large amounts of what is produced and leave many of their producers at or below the poverty level. Business as usual and current operating models are falling short and failing the most vulnerable stakeholders, although food systems have been.

Achieving the Sustainable Development Goals (SDGs) by 2030 requires a deep and bold transformation to produce food systems that are inclusive, resilient, sustainable, efficient, nutritious and healthy¹. With 2030 already on the horizon and food systems globally reeling from the impacts of COVID-19, achieving this transformation will depend on our ability to innovate in a way that is broad, inclusive and encompasses all of society.

To innovate is to improve towards the 2030 goals through how we collaborate and work with different stakeholders, including the most vulnerable; how businesses and governments operate and with whom they engage; and how we use existing and new knowledge and technologies be they scientific, indigenous, or other.

Improvements will come from creating open processes that enable partnerships across the public and private sector. These collaborations will create value that no single organization can create alone. Some solutions will be novel. Others will come from scaling and adapting existing technology or knowledge solutions, business models or societal inclusion practices into different contexts. These solutions should be linked to standards that can drive local, regional

and global scale. Innovation must be understood in this broad, inclusive way for countries and communities to change food systems in ways that are effective and improve the scale, quality and equity of the systems.

Acknowledging innovation as a key enabling factor to food systems transformation, the UN Food Systems Summit (FSS) created an Innovation Lever of Change. The Innovation Lever has developed four key areas that ensure innovation crosscuts the five Action Tracks (AT) emerging out of the FSS. The areas relate to societal and institutional, national, and regional, data and digital, and knowledge and technological innovation.

Fig. 1. Four Innovation Areas for Food System



These areas give guidance on how the ATs can use innovation to achieve their outcomes, with clear alignment to three key coalitions: #6 – Rising to the Challenge: Enabling National Pathways, #8 – Applying Innovation to Food Systems Transformation and Innovation Hubs, and #27 – Food Systems Data Coalition.

¹ [Global Sustainable Development Report 2019 | Multimedia Library - United Nations Department of Economic and Social Affairs](#)

How to Innovate for Success

If we are to transform food systems at a country-level and beyond, actors across sectors and disciplines will need to work together using shared innovation principles. The following principles can help meet the needs of various stakeholders within the food system.

1. Innovate while also protecting and respecting the right of all stakeholders, particularly the most vulnerable and those on the cusp, to participate fairly in decision-making around food systems.

Innovation must feature inclusive and participatory decision-making, involving a diverse set of stakeholders - be they smallholder farmers, women, youth, indigenous communities, community-based organizations, consumers, entrepreneurs, or others - in partnerships, collaborations, and coalitions. Stakeholders should be able to engage in an equitable manner that will enable greater success in creating a robust and sustainable food system transformation;

2. Innovate for food systems transformation to have positive social and environmental impacts by adopting nature-positive and sustainable approaches while ensuring equitable livelihoods.

Innovation in the food system needs to ensure that meeting the increased demands for food does not compromise our natural environment and biodiversity nor lead to social and economic exclusion;

3. Innovate to build a vibrant, agile, consumer-centric approach, to empower the development of a more just and inclusive innovation ecosystem at scale.

Innovation should encourage open-access solutions, joined-up collective action and differentiated knowledge sharing. Key innovations can be scaled out effectively by reducing barriers that allow new entrants to gain access to financing and technical support, facilitating economies of scale, promoting open-source approaches, developing complimentary infrastructure, and supporting learning-by-doing coalitions that enable the co-creation of solutions;

4. Innovate digital tools, technologies, and data platforms that include last-mile farmers and all consumers in the food system ethically.

Digitisation, guided by ethical and inclusive standards, can create new interactions and networks to reconfigure value chains and marketplaces in ways that lead to more efficient, climate-smart food systems that produce healthy and nutritious food for all, and collaboratively identify the most critical gaps that need to be filled by new, interoperable data collection, reduce inherent biases, ensure equitable access, include protection for consumers, and actively innovate to reduce unintended consequences. Clarity on the last mile applicability of the intended use cases, the associated incentive models to support their rollout and adoption, and the co-creation of proposed solutions, are all critical enablers to success;

5. Build ecosystems that allow for the reconfiguration of: associated policy, incentives, financial and de-risking tools, innovation ecoservices, socio economic services - in order to promote innovation uptake that is both accelerated and self-sustaining whilst supporting prioritised food system transformation outcomes.

Food systems have a unique set of context-specific needs that vary depending on markets and regions, which need to be accounted for and developed accordingly. The growing interconnectedness of the market across the globe also means that whilst providing for local needs there is need to ensure for interconnected ecosystem development across regions. Likewise aligning food systems ecosystems with those of other sectors such as health, environment, consumer protection and education can be beneficial to both food and the adjacent systems in parallel;

6. Innovate using different forms of knowledge.

Transforming food systems at a local and global level that is inclusive, participatory and nature-positive will require using and trusting different forms of knowledge, from scientific and technological to indigenous and localised;

7. Innovate to build resilience in fragile settings.

Support the building of innovation ecosystems to identify and scale solutions which enable the functionality and resilience of food systems in areas particularly vulnerable to systemic and compounded risks and stressors (e.g., climate extremes, disasters, conflict, instability, economic shocks, pandemics, consequences of migration).

Four Innovation Areas to Transform Food Systems

An array of public, private, and non-profit actors have collaborated to define technical, organizational, institutional and political interventions across the four areas, to guide member states and communities to fast-track food systems transformation by fostering innovation.

National and Regional Ecosystems Innovation

To improve how we innovate nationally and regionally:

- 1 Develop food strategies at national level** that foster collaboration and align initiatives between departments, including those of energy, health, trade, climate and agriculture.
- 2 Develop implementation pathways for Food Systems Transformation at national level and ensure innovation is a top-priority in government agenda** stimulating 3-5% of GDP agri-food spend into Food Systems Innovation, with clear set KPIs and outcome measures in place.
- 3 Create, facilitate, and fund Food Innovation Hubs that are precompetitive, multi stakeholder and neutral** that can link universities, NGO's, (local) governments, startups, mid-large size companies and venture capital which fosters public-private partnerships with coherent initiatives to bring innovation to scale, drive new breakthrough initiatives and share the learnings & knowledge internationally.
- 4 Ensure adequate, long-term, and responsible investment, by both private and public actors at all levels** into food systems innovation, with three pillars (i) knowledge development; (ii) R&D and innovation; (iii) physical infrastructure. This should include support for early stage and scale-up phase innovation solutions.
- 5 Review regulatory barriers that prevent the testing, adoption and scaling up of agri & food systems innovations** and encourage the use of new technologies through regulations & incentives, whilst paying careful attention to ensuring innovation is meaningful and respects current consumer and end consumer protections
- 6 Recognise innovators with awards and support through targeted catalytic financing.** Establish and reinforce catalytic SME/startup's financing facility to transform food systems
- 7 Communicate and adopt food systems innovation, through ensuring that innovation is accessible to both farmers and consumers.** Educational institutions have a key role to play, notably to link Food Systems & Entrepreneurship in their curriculum.

[Click here](#) for more guidance on national and regional innovation.

Societal and Institutional Innovation

To improve how we collaborate to transform food systems:

- 1 Develop a shared understanding of the key issues to be addressed, taking into account long-term outcomes.** Ask yourself: Have you analysed the problem? Have you checked with other stakeholders?
- 2 Collaboration should be context specific, locally owned and aligned with country and global goals, with an effort to keep food consumption as a driver.** Ask yourself: Does the effort support national priorities? Are you working with local champions?
- 3 Establish multi-stakeholder structures that are accessible and inclusive to different people from the beginning.** Ask yourself: Are you involving affected people in decision-making? Are you reducing barriers for marginalised communities and supporting them to participate? Who is missing? Are there other groups working on the same issue?
- 4 Design for an inclusive and adaptable journey that addresses emerging trends, power imbalances and challenges from different perspectives.** Ask yourself: Are you starting with questions or answers? Have you addressed power imbalances between the group and/or others you work with? Will you review partnership strategies? Are you monitoring to ensure you are helping those you intend to?
- 5 Proactively promote and reinforce the Right to Effective Participation and to think differently about implementation.** Ask yourself: Are all actors able to have a say and input into solutions?
- 6 Gauge and manage risk in multi-stakeholder dialogues.** Ask yourself: Have you created a safe space? What are the risks? Are risks of misuse of power being addressed?
- 7 Develop common and agreed upon food-related policies that balance different interests and goals.** Ask yourself: Are public and private actors involved? How will this affect other areas of the food system? Are you promoting a common approach across the public sector?

[Click here](#) for more guidance on societal and institutional innovation.

Knowledge and Technological Innovation

To improve knowledge systems and technologies:

Accelerate 10 times the pace and scale of farmer-centered ecosystems for net-zero, nature-positive knowledge and technology access and adoption by 100 million farmers:

- 1 **Develop a trusted collaboration framework** for knowledge ecosystems to reach economies of scale, to reduce fragmentation and reinvention, and scale with speed.
- 2 **Support farmer-led exchange platforms** through directing research and support towards networks, communities of practice and/or (social) media formats that are *locally relevant* and most conducive to foster the creation and exchange of *context-specific* knowledge and technology.

Empower 10,000 entrepreneurs in support of 100 million farmers, ensuring a pipeline of nature-positive innovation, aligned with strategic prioritization of national priorities:

- 3 **Open the entrepreneur innovation funnel** through strategic incubators, by creating a network of collaborators from NGOs, farmer networks, established food companies and government entities that will attract farmers as entrepreneurs, excite youth engagement, and crowd-in further innovators from beyond the food-space.
- 4 **Maintain the entrepreneur innovation funnel** by ensuring proper financing, supporting pre-competitive platforms, and incentivising entrepreneurs to come up with innovative business models.

Unleash 10 times more finance to support 100 million farmers and to make the 'un-bankables' bankable by addressing *finance data lock-ins* including simplification, interoperability, minimizing monitoring costs, risk-sharing:

- 5 **Unlock investor confidence** by defining KPIs that have delivered on proof-of-concept for net-zero, nature-positive financing to scale projects while minimizing the complexity of burden-of-proof for the producer.
- 6 **Leverage AI**, in a manner that aspires to openness and independent assessment, for the enablement of GHG and nature baselines and sequestration potential, in support of low-cost monitoring, reporting and verification of practice changes and GHG reduction/mitigation.
- 7 **Design to support the most vulnerable, least-connected farmers**, leveraging technology and data to create the business model for new income streams, whilst ensuring systems of redress and feedback exist for people in the system to highlight problems and find solutions

[Click here](#) for more guidance on knowledge and technological innovation.

Data and Digital Innovation

To improve and integrate data and digital systems:

1 Innovate, iterate, and invest in accessible digital services for food systems transformation: Concerted effort and investment is needed to support and scale up new business models for sustainable and equitable food production, value chains, and informed, interactive consumer and farmer services that close the digital divide (in terms of access to technology, as well as capacity (e.g., digital literacy) to drive nutritious outcomes.

2 Supporting climate-smart digital solutions that encourage data innovation and equitable access: Fostering scalable and replicable digital solutions requires early ideation and prototyping, scaling, more patient capital, and blended financing models, as well as tailored support to the needs of the data and digital solution.

3 Enable data agency, control, and protection: The sector needs dynamic digital security and safety solutions to protect agency and manage consent from data originators at all levels, while enabling the use of data to unlock analytics and services that can benefit people and nature by driving food system transformation.

4 Mobilize data for food system enablement: Timely, accurate, ethically garnered and used data on food system flows, equitable access to services, nutrition outcomes, ecosystem health and environmental sustainability is fundamental for guiding our joint efforts across highly varied environments.

5 Align data standards, policies, and open infrastructures: Interoperable data and digital infrastructures built to open standards, that protect the rights of people, and enable data sharing, create the foundation for public, private, and non-profit collaboration, and investment, scaled innovation, and equitable, sustainable, and informed farm production and consumer participation.

6 Build agile governance for collective action: Agile digital and data coalitions, linked by guiding principles and a commitment to timely, responsible, open, and inclusive action are needed to guide institutions and develop policies

7 Create foundational, public-good data: so that global connectivity can be leveraged as an opportunity to deploy large-scale food system services able to reach even the most vulnerable populations.

[Click here](#) for more guidance on data and digital innovation.

Call for Collective Action: Fast-Tracking Food Systems Transformation

To catalyse food system transformation, countries must innovate across all four areas identified by the Innovation Lever. **This holistic view of innovation is designed to ensure that food systems transformation takes place at the local, national, and global levels, through inclusive and participatory multi-stakeholder approaches that leave no one behind.** This call for collective action directly speaks to achieving the AT's objectives, with clear alignment to three key coalitions: #6 – Rising to the Challenge: Enabling National Pathways, #8 – Applying Innovation to Food Systems Transformation and Innovation Hubs, and #27 – Food Systems Data Coalition. In preparation for the FSS, countries can begin to implement this innovation agenda by making the below commitments that put into practice the four innovation areas:

- 1. Commit to changing how decisions are made and how we collaborate so that all stakeholders enjoy their right to participate in decision-making.**

Improving our existing approaches and models of collaboration will help us to make more equitable and better informed decisions, by drawing on a broader pool of knowledge, technologies and expertise, producing better business, data and technical solutions. **Get behind the [Governance Solution Cluster](#)**, which provides guidance on how to implement changes through inclusive and participatory means. **Engage in the [Future of Food Systems Collaboration](#)**, a post-summit partnership that aims to collectively champion, frame and support stakeholders on the how. Offering practical tools, capacities and collaborative methods that can be customized to contexts and interests.
- 2. Commit to actively fostering and championing innovation at a local and national level. Join the network of national and regional [Food Innovation Hubs](#)**, which collectively aim to stimulate innovation through collaborative multi-stakeholder action leveraging knowledge, technology, data and institutional capacity to develop local innovation ecosystems to meet local needs in addressing food system challenges. The national and regional Food Innovation Hubs will: (1) Foster and cultivate food systems innovation for localized impact, (2) Support delivery and adoption of technology innovations at scale, and (3) Develop a community of practice to share innovation learnings and build capacity.
- 3. Commit to a nature-positive and net-zero transformation.**

To achieve the goal of environmentally sustainable food systems, change must be inclusive and harness existing and new forms of knowledge and technology. **Support the [100 Million Farmers initiative to ensure that the farmer is at the center of a sustainable and inclusive transformation](#)**. The initiative has three objectives: (1) Demonstrate the ability of food systems to shift away from significant emissions and nature degradation towards climate mitigation, adaptation and nature restoration, (2) Catalyse a global, scalable transition that incentivises 100 million farmers to adopt regenerative and climate-smart practices, while empowering 1 billion consumers to demand and support this type of agricultural production, and (3) Facilitate collective action to deliver net-zero commitments and maximise co-benefits that achieve 'carbon+' outcomes for healthy people and a healthy planet.
- 4. Essential to all three initiatives above is to develop a data and digital ecosystem that is less fragmented, more open and inclusive.**

Data and digital systems must integrate across geographies, within and beyond country borders, and across the public, private, and non-profit sectors. **Adopt the [Fair Future Food Marketplace reference model](#)**, a transparent, inclusive, sustainable scale model enabling all actors, from smallholder farmers to consumers, to build more efficient, interactive, climate-smart markets for healthy and nutritious food. **Facilitate the [One Map](#)** development and **join the [Digital Data Cornucopia](#)** consortium, to achieve global food systems transformation at the intersection of digital technologies with the natural and social sciences