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# SCIENCE AND KNOWLEDGE FOR THE UN FOOD SYSTEMS SUMMIT 2021

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The UN Food Systems Summit as a whole must become a game changer. The equivalent of the 1.5-degree global warming goal is our goal of zero hunger by 2030, including healthy diets within a sustainable food system. **Science, technology and innovation can and must play a pivotal role in the necessary transformation of food systems.** To get there, accelerated science investments and the resulting complex set of innovations need to be one of the priority actions of the Summit. The undernourished, youth, women, Indigenous Peoples, and all those marginalized have the right of agency on all matters of their food systems.

As part of this process, the [Scientific Group](#) of the UN Food System Summit 2021 (ScGroup) – an independent group of leading researchers and scientists from around the world – was mandated by the Deputy Secretary-General of the United Nations to ensure “that the Summit brings to bear the foremost scientific evidence from around the world and helps expand the base of shared knowledge about experiences, approaches, and tools for driving sustainable food systems that will inform the future”. It was a bold decision by the UN leadership to unleash a multi-stakeholder process as well as invite an independent Scientific Group to mobilize science communities around the world to advise the Summit agenda with science-based evidence. The science communities welcome that move by the UN, and have become energized to

address the complex food systems problems with renewed commitment to identify solutions.

The ScGroup brings to the Summit diverse viewpoints through its own research and that of its networks of partners from all regions of the world who have contributed more than 50 research briefs. These and other scientific contributions were extensively discussed at the [Science Days](#) for the UN Food Systems Summit on 5-9 July, an international conference organized by the ScGroup and hosted and facilitated by FAO with more than 40 side events. The event brought together more than 2,000 participants from research, policy, civil society and industry to examine how to unlock the full potential of science, technology, and innovation to transform food systems.

Key outputs from this inclusive process have been distilled in a comprehensive [Science Reader](#) that includes research reports by the ScGroup along with briefs prepared by its global partners. **The Reader brings research-based, state-of-the-art, solution-oriented knowledge and evidence to inform the transformation of contemporary food systems to achieve more sustainable, equitable and resilient food systems.** Most of the papers have been peer-reviewed and were further scrutinized by governments, civil societies, and the general public. Some of the papers are still in draft form, open for further discussion.

The preparation of this Reader was made possible through the valuable contributions of the Scientific Group [members](#) and its [partners](#) with many research organizations and experts who have volunteered to share their knowledge and expertise. Their tremendous support is gratefully acknowledged.

**Drawing on this extensive knowledge base, the ScGroup has identified seven science-driven innovations that *must* be pursued in an integrated manner for a successful transformation of the food systems:**

1. Innovations to end hunger and increase availability and affordability of healthy diets and nutritious foods
2. Innovations to de-risk food systems and strengthen resilience, in particular for negative emission farming and drawing on both, advanced science as well as traditional food system knowledge
3. Innovations to overcome inefficient and unfair land, credit, labour, and natural resource use arrangements, and to facilitate inclusion of and empowerment and rights of women and youth and Indigenous Peoples
4. Bioscience and related digital innovations for peoples' health, systems' productivity, and ecological wellbeing
5. Innovations to keep – and where needed, regenerate – productive soils, land and water, and to protect the agricultural genetic base and biodiversity
6. Innovations for sustainable fisheries, aquatic foods, and protection of coastal areas and oceans
7. Engineering and digital innovations for efficiency and inclusiveness of food systems and empowerment of the youth and rural communities.

We call on national and global policymakers to work hand in hand with the public- and private-sector scientists, academia, civil societies, and with grassroots organizations of marginalized groups including women, and youth. Propositions for **meaningful implementation** include continuation of dialogues at national and global levels, science and evidence-based planning supported by

- strengthening research cooperation between science communities and Indigenous Peoples knowledge communities,
- calling on governments to spend at least 1% of food systems GDP on food systems science, and
- establishing pathways toward strong science - policy interfaces at national and international levels to enable evidence-based follow up to action agendas established at the summit.

The follow up processes to the UN FSS would also benefit from bi-annual events like the Science Days.

The ScGroup finds it of great importance that not just its own perspectives, but **the large diverse body of research of relevance for the UN Food Systems Summit** is acknowledged and utilized for shaping the perspectives of the Summit processes. Therefore a documentation of particularly important recent research products and reports has been established on the website of the ScGroup at [sc-fss2021.org](https://sc-fss2021.org).

### About the Scientific Group of the UN Food Systems Summit

The Scientific Group of the UN Food Systems Summit is an independent group of leading researchers and scientists from around the world with a mandate from the United Nations. Chair of the Scientific Group is **Joachim von Braun**, Director of the Center for Development Research (ZEF), Bonn University, and Professor for economic and technological change. Vice Chairs of the Scientific Group are **Kaosar Afsana** (Bangladesh), Professor, BRAC James P Grant School of Public Health, BRAC University, Dhaka; **Louise O. Fresco** (Netherlands), President of the Executive Board, Wageningen University & Research; and **Mohamed Hassan** (Sudan), President of The World Academy of Sciences for the advancement of science in developing countries (TWAS).

**For further information about the Scientific Group:**

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