



**zef**

Center for  
Development Research  
University of Bonn



**UNITED NATIONS  
FOOD SYSTEMS  
SUMMIT 2021**

<https://sc-fss2021.org/>

# **Food Systems Thinking and the Role for Research and Innovation – the UN Food Systems Summit and Follow up**

## **Joachim von Braun**

Professor for Economic and Technological Change, Bonn University; Chair of the Scientific  
Group for the UN Food Systems Summit 2021

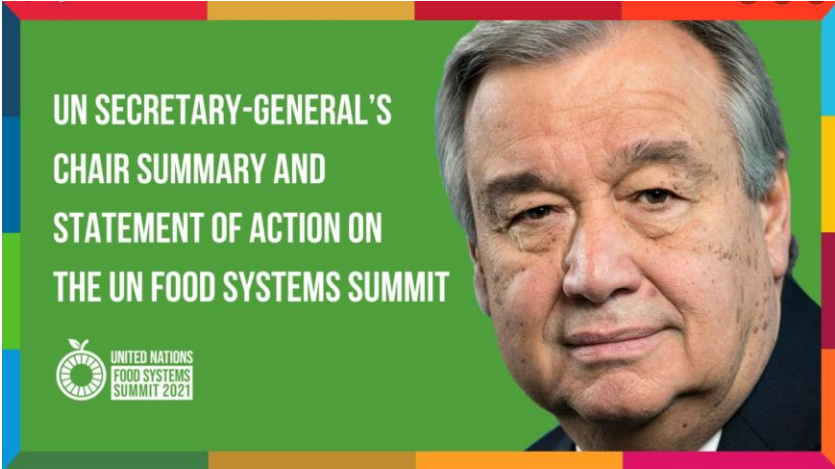
Research and Innovation for Sustainable Food Systems: Delivering on the Ambition of Food Vision  
2030. Department of Agriculture, Food and the Marine. Dublin, June 3, 2022

# Food Systems Thinking and the Role for Research and Innovation – the UN Food Systems Summit and Follow up

## Overview

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2. What were main outcomes from science communities for UN FSS?
3. How does the public and private R&I system need to act now?
4. Assessment of UNFSS

# The Food Systems Summit Made It Clear that Transformative Action in Food Systems is Fundamental to Achieving the SDGs...

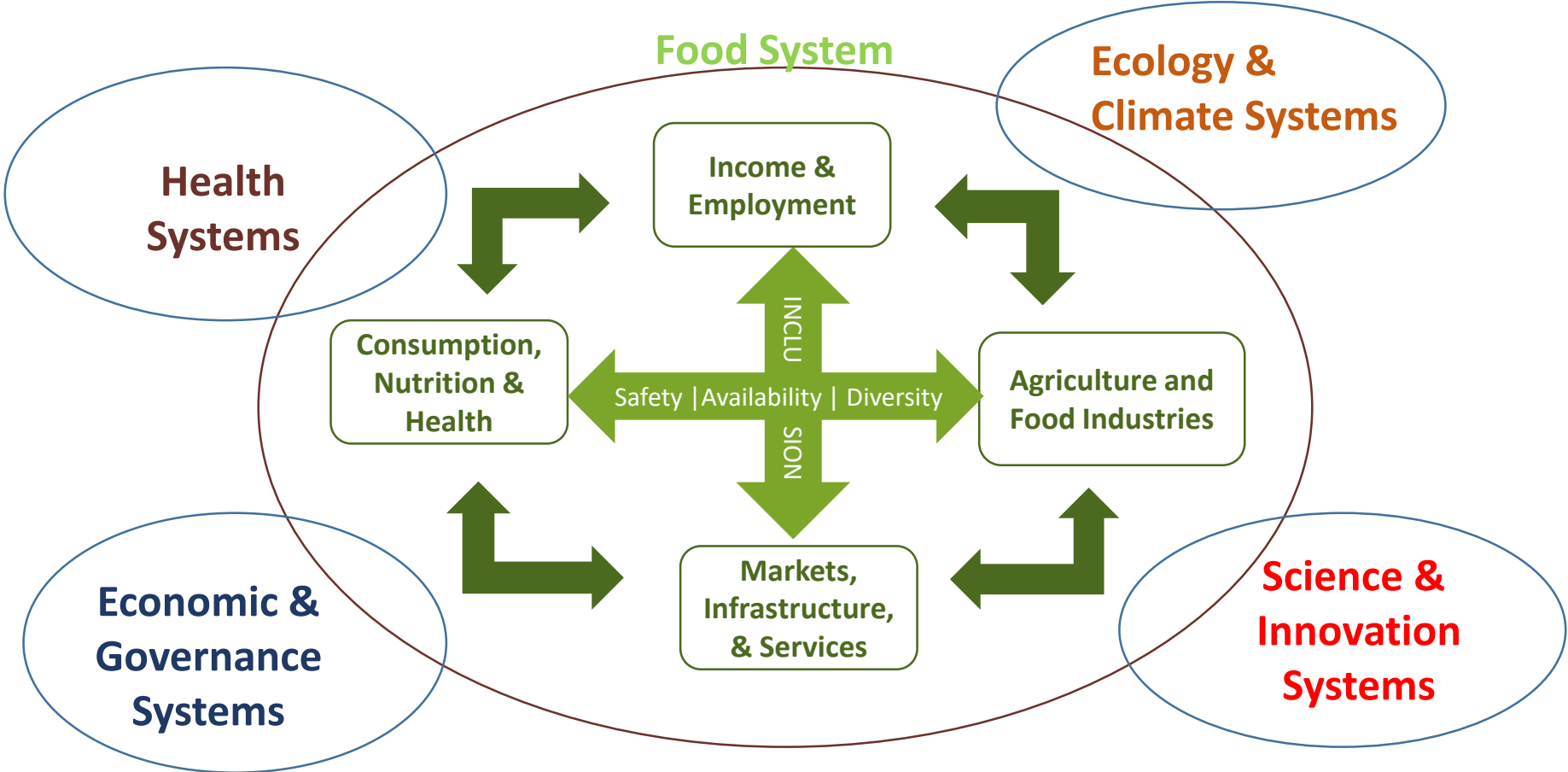


*“Across the SDGs, the world has established clear and ambitious goals for food systems...; we need to move boldly – now – to implement the transformative actions needed to achieve the goals we have.”* (Secretary-General’s Chair Summary and Statement of Action on the UN Food Systems Summit)

## ... And Generated a Range of Deliverables that Serve As A Strong Basis for Follow-up Action



# Systems Perspective now broadly accepted



Joachim von Braun, Kaosar Afsana, Louise Fresco, Mohamed Hassan and Maximo Torero (2021) Food system concepts and definitions for science and political action. Nature Food. Sept 2021. <https://rdcu.be/cxPxJ>

# Five Action Areas in SG's Statement of Action at UNFSS

Action must be driven at country-level by governments in their local contexts.

Five action areas to help inform the transitions needed to realize the vision of the 2030 Agenda have emerged from the Summit process. These include:

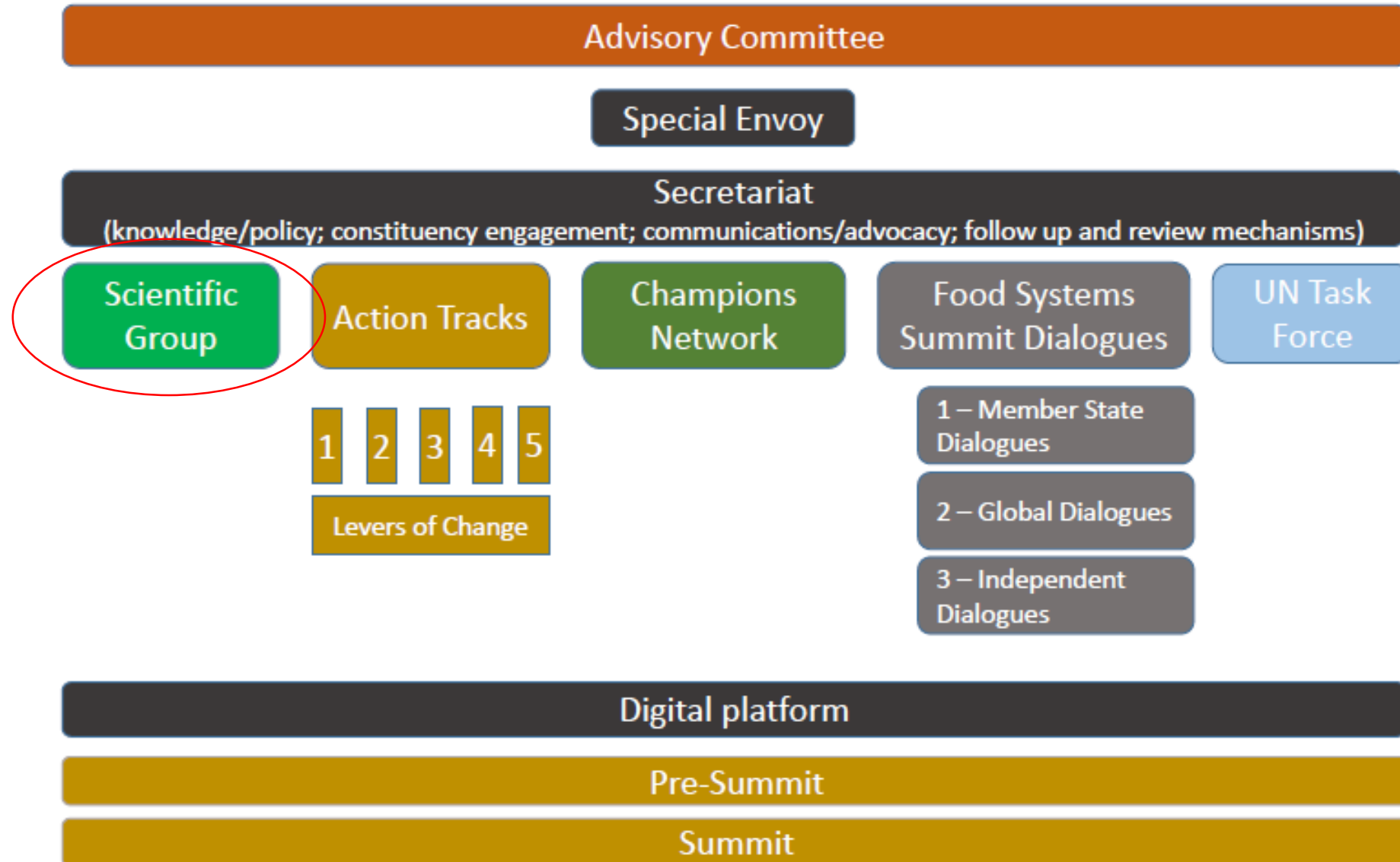
- (1) Nourish All People;
- (2) Boost Nature-based Solutions;
- (3) Advance Equitable Livelihoods, Decent Work and Empowered Communities;
- (4) Build Resilience to Vulnerabilities, Shocks and Stresses; and
- (5) Accelerating the Means of Implementation.

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# Overview of Areas of Work on the UN Food Systems Summit



# The 7 Science and Innovation Proposals by Sc. Group for UNFSS

1. A bundle of context specific policy and institutional **innovations to end hunger and increase availability and affordability of healthy diets** and nutritious foods
2. **De-risk food systems** and strengthen resilience, in particular for climate-neutral, climate-positive, and climate-resilient food systems
3. Innovations for efficient and fair **land, credit, and labor arrangements**
4. **Bioscience innovations** for peoples' health, systems' productivity, and ecological wellbeing
5. Technology-based and policy innovations for productive **soils, land and water, and to protect the agricultural genetic base and biodiversity**
6. Innovations for sustainable **fisheries, aquaculture**, and protection of coastal areas and oceans
7. **Digital innovations** for efficiency and inclusiveness of food systems and rural communities

J von Braun, K Afsana, L Fresco and M Hassan. 2021. Food systems: seven priorities to end hunger and protect the planet. *Nature* **597**, 28-30 (2021) <https://doi.org/10.1038/d41586-021-02331-x>



# Understanding TRUE COSTs OF FOOD

**Market** prices do not take into account...

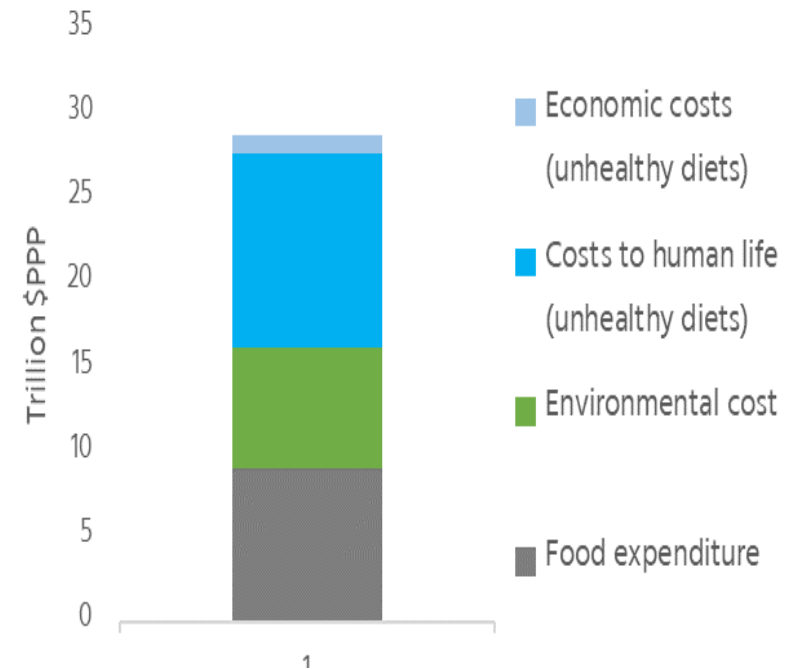
- benefits of affordable or healthy food
- costs of unhealthy or unsustainable food

**Business' profits** not reflect value created/reduced for society

**GDP** of food system does not reflect contribution to welfare

> Sustainable & healthy food is too expensive

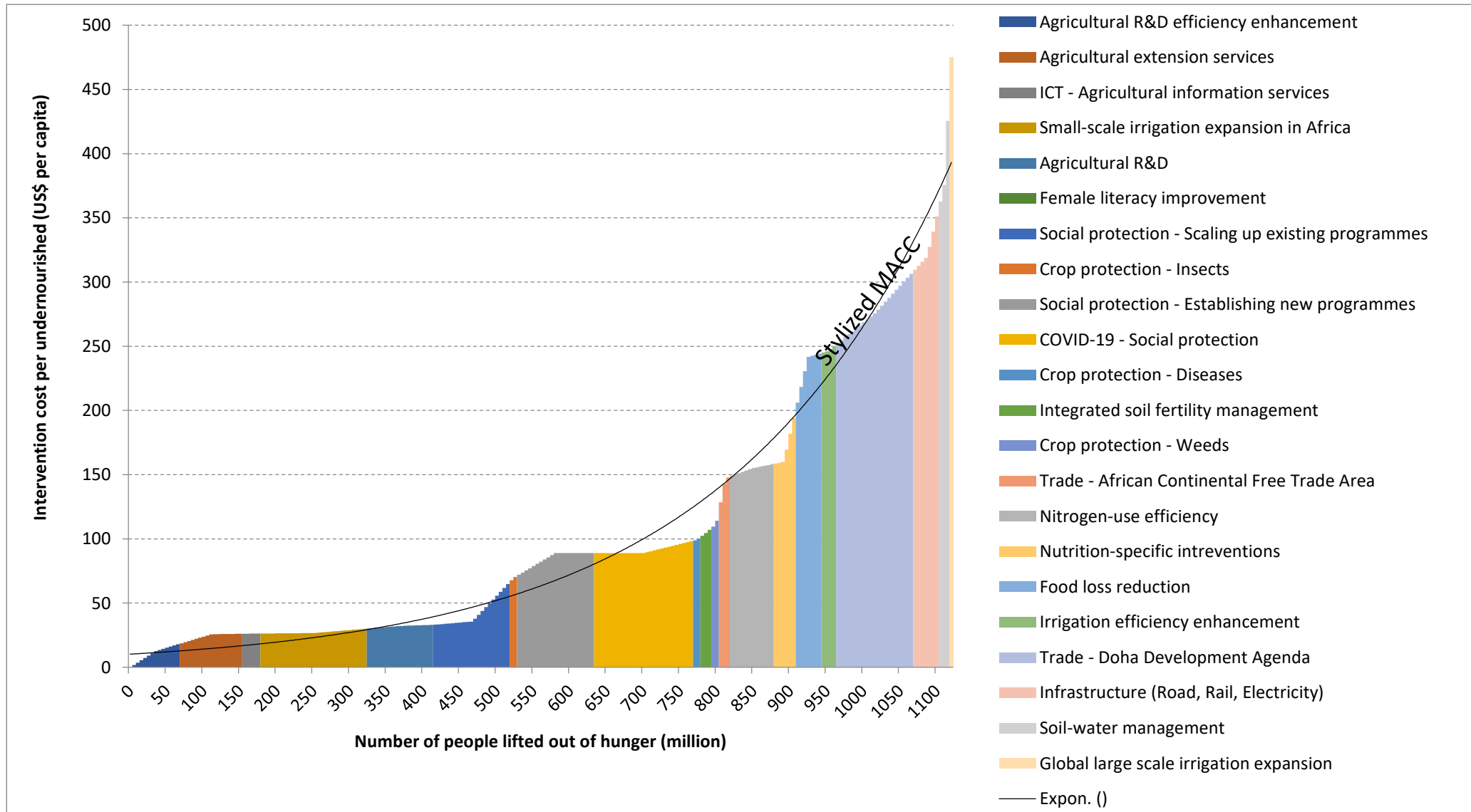
> Unsustainable & unhealthy food is too cheap



**US\$ 9 trillion in market**  
**28 trillion True Costs per annum**

S. Hendriks et.al. 2021. The True Cost and True Price of Food. A Brief for the Scientific Group UN FSS

# Estimation of the Incremental Costs of Hunger Reduction



Source: B. Chichaibelu, M. Bekchanov, J. von Braun, M. Torero. In Food Policy (Oct, 2021).

<https://www.sciencedirect.com/science/article/pii/S0306919221001299?via%3Dihub>

# Understanding Synergies and Trade-Offs from Modelling

	<b>TRANSFORMATIONS</b>	<b>OUTCOMES</b>				<b>Quantitative studies</b>
		Target 2.1 Target 2.2		Target 2.3	Target 2.4 and envt. SDGs	
		Food availability (quantities)	Food access (prices)	Smallholder income	Environmental outcomes	
Demand side	Reducing waste and overconsumption					1, 4, 5, 6, 7
	Adopting healthy diets					4, 5
	Adopting sustainable diets					1, 2, 3, 6, 7
Trade	Improving trade integration					1, 5, 6
Supply side	Increasing agricultural productivity					1, 2, 3, 4, 5, 6, 7
	Reducing food losses					1, 4, 5, 6, 7
	Improving agricultural practices and resource management					1, 3, 4, 7
	Protecting and reallocating resource to other SDGs					1, 3, 5, 6, 7

blue = positive impact, red = negative impact, orange = ambiguous impact.

Source: Hugo Valin, Thomas Hertel, Benjamin Bodirsky, Tomoko Hasegawa, Elke Stehfest (2021). Achieving Zero Hunger by 2030: A Review of Quantitative Assessments of Synergies and Tradeoffs amongst the UN Sustainable Development Goals. Report for Scientific Group FSS

# The Scientific Group for UNFSS

## – new ways of science/policy interaction

1. Established credibility with the science community – social science and natural science (science leaders of diverse disciplines; academies of sciences; peer review; journal publications)
2. Mobilized the global science (engaged in specialized and country dialogues, Science Days...)
3. Independent interaction with governments, private sector science, farmer organizations, Indigenous Peoples' knowledge communities
4. Engaged in the world regions with bottom up report development. (Africa, South Asia, East Asia, China, India, Russia, LAC, Europe,...)

# Outcome? Science, innovation among top priorities of Member States



## Outcome? Science and innovation prominently in UN Secretary General's Statement of Action at UNFSS 2021

- “There is a recognition that we must build on good practices — such as Indigenous food systems — **invest in science and innovation**, and engage all people — particularly women and youth, Indigenous Peoples, businesses and producers — in achieving the SDGs.
- There is also a need to **shift and scale public and private financing for food, including for science and research**. This innovation and change in financing approaches must avoid excessive hidden costs and support healthier, more inclusive, and more sustainable outcomes.
- Progress will require local and global communities of practice and stakeholders coming together with national governments under the umbrella of these action areas. In particular, **support to enhance implementation through financing, data, science and innovation**, governance and trade.
- Global initiatives to **reinforce the ambition of science-based solutions** will be key to deliver on the 2030 Agenda.
- Collaborating with the High-level Panel of Experts (HLPE) of the CFS at global level, support **strengthening the science-policy capacities and interfacing at local and national levels.”**



# UNLOCKING THE POTENTIAL OF SCIENCE, TECHNOLOGY AND INNOVATION FOR FOOD SYSTEMS TRANSFORMATION

**#1 CONTRIBUTION OF STI TO FOOD SYSTEMS + ROLE OF INTERNATIONAL ORGANISATIONS**

**QU DONGYU**  
UN - FAO

WE ARE IN A CRITICAL MOMENT

COVID-19

CLIMATE CHANGE

BIODIVERSITY LOSS

HARNESS TECHNOLOGY

DATA + PARTICIPATION

HOLISTIC APPROACH

HARNESS SCIENCE

HARNESS INNOVATION

WE ARE A FACING BARRIERS TO GET THE SDG'S

STRENGTH SCIENCE-POLICY INTERFACE

EFFECTIVENESS

INCLUSIVE

CHANGE POLICIES, MINDSETS, BUSINESS MODELS

ZERO HUNGER

**#2 KEY ELEMENTS TO TRANSFORM FOOD SYSTEMS**

**AMINA J. MOHAMMED**  
UNITED NATIONS



**#3 STI + KNOWLEDGE OF ALL ACTORS CONTRIBUTION TO FOOD SYSTEMS + ROLE OF SCIENCE ON FSS**

**AGNES KALIBATA**  
UN SG'S ENVOY

FOOD SYSTEM DEPENDS ON NATURE

PEOPLE DO NOT TRUST IN FOOD SYSTEM

WE HAVE A RESPONSIBILITY TO SHIFT THIS BY SCIENCE BASED

PUT POLICY MAKERS + SCIENCE SHARE KNOWLEDGE

CALL FOR ACTION

HOW?

BY PUTTING PEOPLE TOGETHER

SCIENTIST

POLICY MAKERS

COMMUNITIES

**#4 INTRODUCTION TO THE STRATEGIC PAPER FROM THE SCIENTIFIC GROUP**

**JOACHIM VON BRAUN**  
SCIENTIFIC GROUP UN

WE SHOULD PROMOTE CROSS-SECTORS DIALOGUE!

CONTINUE WORKING

SCIENTIST RESEARCHERS POLICY MAKERS

IMPLEMENTABLE SOLUTIONS

SET OF INNOVATION

DEVELOPING FOOD SYSTEMS + INCREASE RESILIENCE

SET OF INNOVATION

OVERCOMING UNFAIR LAND CREDIT + LABOUR ARRANGEMENT

SET OF INNOVATION

INTEGRATED APPROACH

1% GDP ON FOOD SYSTEM INNOVATION

REALLOCATE SUBSIDIES TO SUSTAINABLE PROJECTS

HOW SCIENCE HAS INFORMED ON GOVERNANCE ISSUES?

LOCAL GOVERNMENT SHOULD BE ENGAGED

RESPECT

SCIENCE BASED

FARMERS' ORG.

SCIENTIST

INDIGENOUS ORG.

**OPENING INCLUSIVE COLLABORATIVE PLATFORMS**



WE PROMOTE + SPEED UP THE ACCESS TO THE DIGITAL WORLD

HOW TO CAPITALISE THE PARTICIPATION OF YOUTH + WOMEN?



THE SUMMIT IS AN OPPORTUNITY TO PUT ALL PEOPLE TOGETHER



UN FOOD SYSTEMS SUMMIT 2021: SCIENCE DAYS | 08-09 july 2021

The Scientific Group for the UN Food System Summit

Visual notetaking by:



www.aelistsens.com



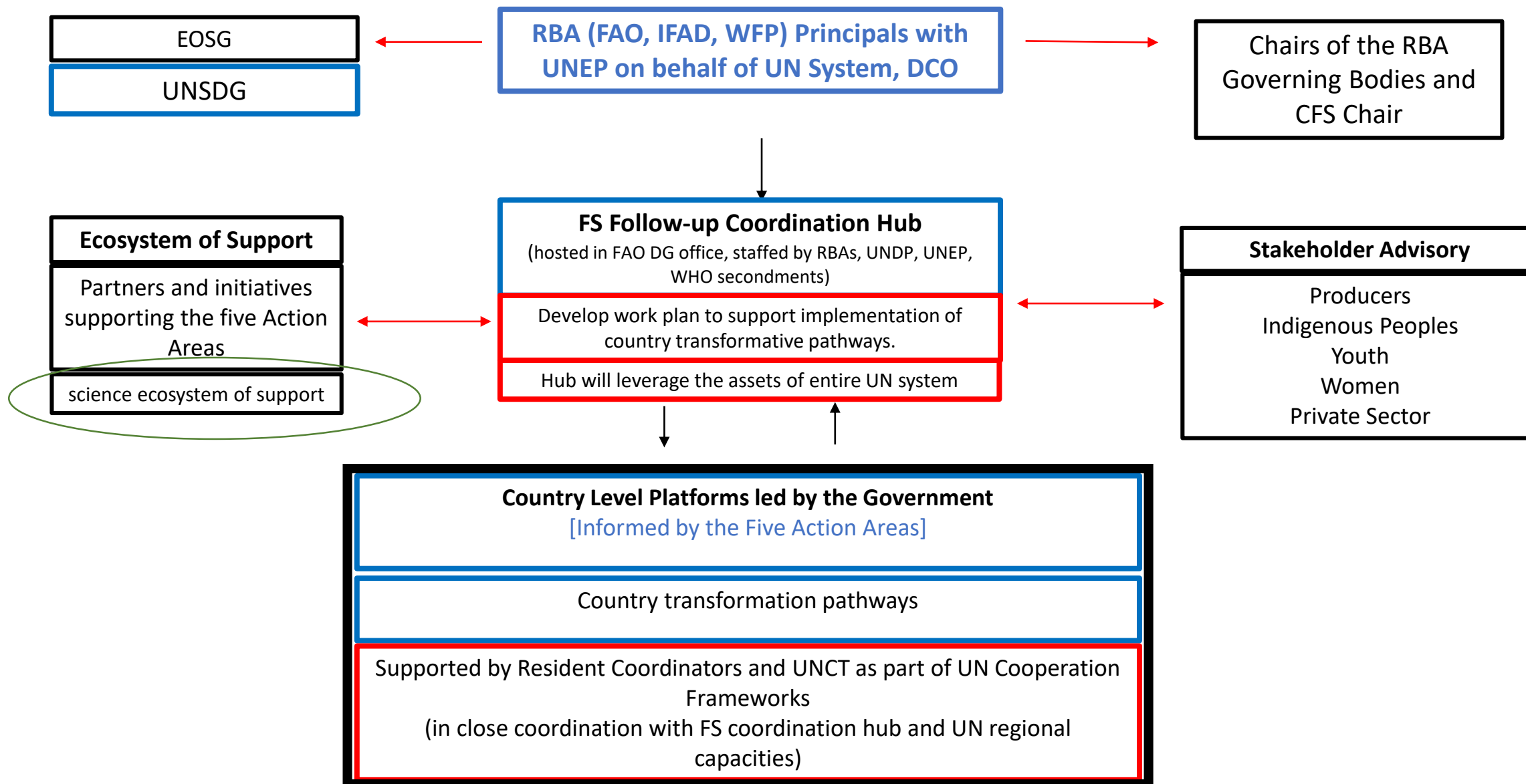
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# FOOD SYSTEMS SUMMIT FOLLOW-UP COORDINATION, SUPPORT AND REPORTING



# Science for the Implementation of Action Agenda of UNFFS

## Concept

1. Mobilize the science at **country levels** and establish structured Science & Policy interface

2. Mobilizing science at **regional and global levels** and establish structured Science & Policy interface

**and connect 1. & 2. for an inclusive, networked Science-Policy Interface (with Academies, Universities, professional acad. orgs, NARS, indigenous knowledge, etc. ...) toward an IP-Food**

Source: J. von Braun, 2021. Engaging Science for National and International Level Implementation of the Action Agenda of the United Nations Food Systems Summit. At <https://sc-fss2021.org/materials/scientific-group-reports-and-briefs/>

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- 4. Preliminary assessment of UNFSS and open issues**

# How to assess the Food Systems Summit?

## Benchmarking against earlier Summits?

<u>Summits...</u>	<u>triggers...</u>	<u>focus, actions...</u>
1. <b>1943 World Food Congress, USA</b>	– <i>hunger, WW2</i>	- FAO founded
2. <b>1963 World Food Congress</b>	– <i>famine Asia; trade</i>	- WFP, Freedom f Hunger Campaign
3. <b>1974 World Food Conference</b>	– <i>famine Africa; prices</i>	– World Food Council, IFPRI
4. <b>1996 World Summit on Food Sec.</b>	– <i>broad declaration</i>	– hunger in half 2015; unfocused
5. <b>2002 World Food Summit</b>	– <i>reaffirming, reiterating</i>	- Right to food guidelines (2004)
6. <b>2009 World Summit on Food Security</b>	– <i>price crisis</i>	- eradicate hunger; CFS;
7. <b>2021 UN Food Systems Summit</b>	- <i>SDG2; Covid; climate</i>	-- Food Systems, Multi-stakeholder, incl. science

# Assessing UNFSS 2021: Positive Outcomes

- 1. Political and societal Engagement at scale**
- 2. Food system focus**
- 3. Science Engagement**
- 4. Action agenda**
- 5. National level implementation.**

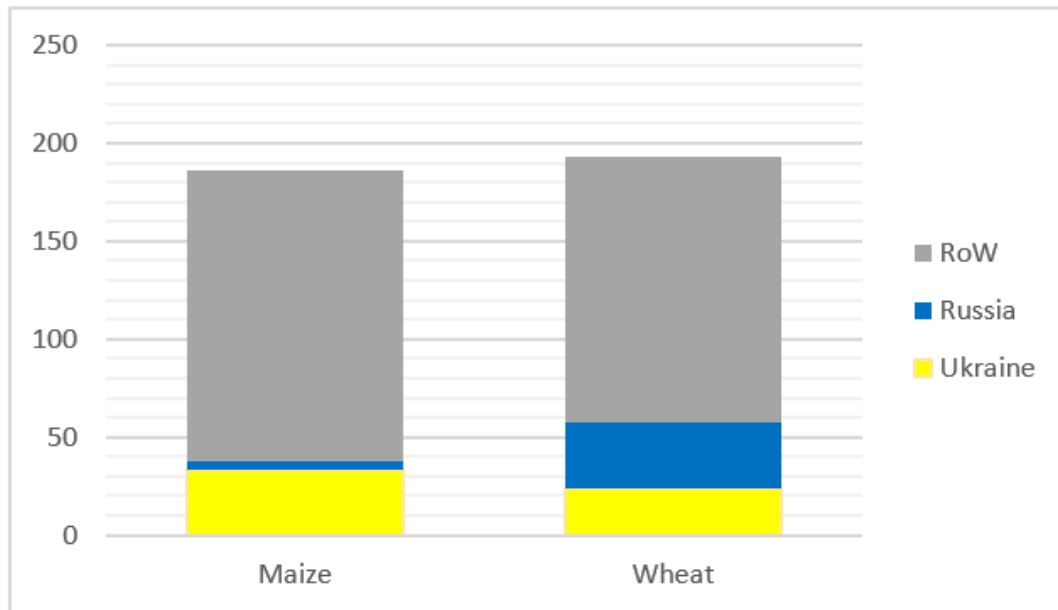
## Assessing UNFSS: Unfinished business

1. Strengthening **capacities** for national level implementation of actions in emerging economies.
2. Developing a strong **finance** agenda for needed investments.
3. Establishing improved **science - policy interfaces**.
4. Facilitating **synergies with other key areas** (climate policy, Covid-19-, trade policy; peace and security; food crises)

UN DSG (Dec 29, 2021) [https://sc-fss2021.org/wp-content/uploads/2022/01/2021-12-29\\_DSG\\_to\\_Joachim-von-Braun.pdf](https://sc-fss2021.org/wp-content/uploads/2022/01/2021-12-29_DSG_to_Joachim-von-Braun.pdf)

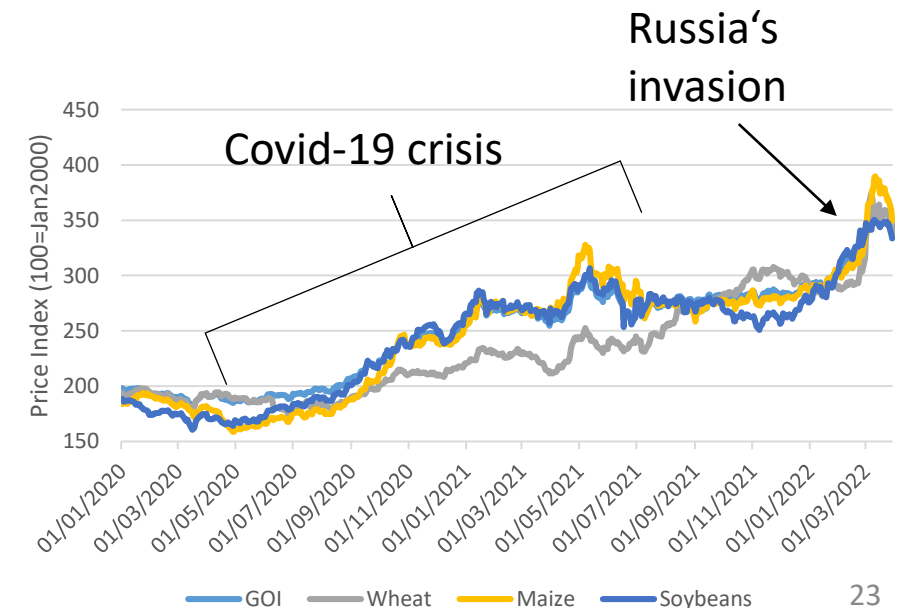
# A Lithmus Test for Food System Governance: response to 2022 food crisis

Fig.: Global maize and wheat trade - 2021/2022 forecast



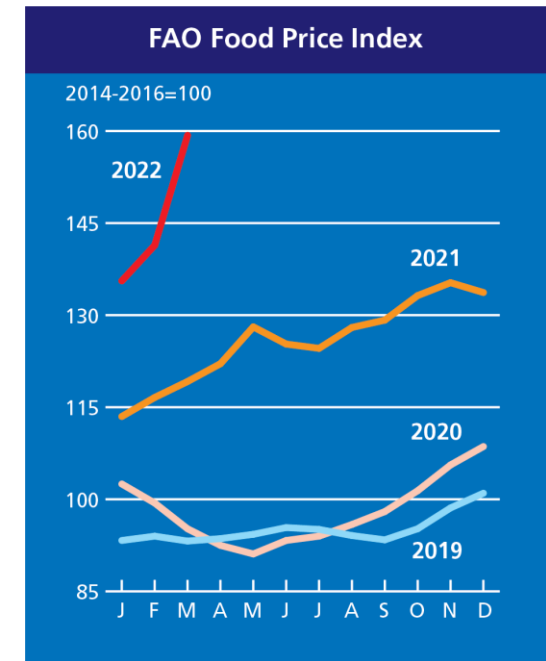
Source: AMIS (2022).

- Price crisis
- Export disruptions
- Security and food security



# Governance Challenges to deal with complex global food crises

- UN: Committees and Task Forces
- G7: Alliance for Food Security (with UN & G20)
- Superpower food dissonances
- LDC Gov.s: social protection; debt
- Civil society and NGOs: significant initiatives
- Private sector: engagement
- Consumers in ind. countries: inflation
- Missing: science policy interface



AP file photo Times of India

Kornher, Baumüller, von Braun. G7 Development Assistance for Food Systems to Lift 500 Million People out of Hunger by 2030 Policy Brief, March 2022.

[https://www.zef.de/fileadmin/user\\_upload/ZEF\\_Policy\\_Brief\\_39.pdf](https://www.zef.de/fileadmin/user_upload/ZEF_Policy_Brief_39.pdf)

J von Braun June 3, 2022



# Policy actions to address the global food crisis 2022

## Short term:

1. Keep food and fertilizer markets open, avoid restrictive trade policies
2. Grain stock releases by EU, USA, India, China...
3. Short-term changes in food production – reduce bioenergy and feed
4. Social protection and nutrition actions and support for affordable input prices (in LMICs)

## Long-term:

1. Further investment in food systems infrastructures to increase resilience
2. Massive increase in R&D for agricultural productivity

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