

Report on First Consultative Science Platform – 16 June 2020

Bouncing Forward Sustainably: Pathways to a post-COVID World Resilient Food Systems

Frank Sperling, Petr Havlik, Mathieu Denis, Hugo Valin, Amanda Palazzo, Piero Visconti, Franziska Gaupp

[10 July 2020]

Table of contents

Acknowledgments	2
Summary Note	3
COVID-19: A humanitarian and socio-economic crisis	3
Towards Recovery: Considerations for resilient and sustainable food systems.....	4
1. Recommendations for background note.....	6
2. Considerations for next steps	7
Participants of the online consultations	8

© International Institute for Applied Systems Analysis (IIASA) and International Science Council (ISC). For any reviews or commercial use please contact gomez@iiasa.ac.at

This background paper has received only limited review. Views or opinions expressed herein do not necessarily represent those of IIASA, ISC or other organizations supporting the work.

Acknowledgments

The team would like to thank the Chair and all participants in the 1st consultative meeting for their valuable contributions. The team also acknowledged the assistance of Anastasia Aldelina Lijadi for the administrative and logistic support in the preparation and hosting the online consultation.

Summary Note

The COVID-19 pandemic and global lockdown confront us with a new reality for sustainable development. This particularly applies for the transformation of food systems, which plays a key role in making progress towards the Sustainable Development Goals (SDGs) and the Paris Agreement on climate change.

As part of the IIASA-ISC Consultative Science Platform, this note represents a snapshot of the first round of consultations, chaired by Ismail Serageldin on June 16, 2020 and bringing together a group of high-level experts, including Joachim von Braun, Fernando Chaparro, Ismahane A. Elouafi, Shenggen Fan, Nina Federoff, Uma Lele, Sir Richard Roberts and Pedro Sanchez. Please refer to the participant list for further detail on affiliations and team composition.

The consultation focused first on discussing i) the immediate impacts of COVID-19 on our food systems, and ii) challenges and opportunities for utilizing the recovery process to embed resilience in our food systems and support sustainable development pathways. This is then followed by an overview of expert recommendations from the consultation for further development of the background paper and concludes with considerations for the next consultations. Select additional informative links have been added in support of the discussion.

COVID-19: A humanitarian and socio-economic crisis

The impacts of the COVID-19 pandemic and global lockdown undermine long-term development gains:

- With numbers of people infected and fatalities linked to COVID-19 reaching over 10 million confirmed cases and 500 000 deaths globally by the end of June 2020¹, the crisis is expected to lead to a reversal in the long-term trend of decreasing levels of extreme poverty² and threatens to unravel the global progress made over decades in eradicating hunger;
- The pandemic has further revealed the exacerbating impacts of inequalities within and across societies and put pressure on governments to implement and expand effective social safety nets³.

Pre-existing inequalities exacerbated the impacts of the lockdown:

- In several countries and regions access to health services differed by age, gender, race and income groups⁴;
- Lack of access to basic services, such as water and sanitation, and informal employment situations, put many people in front of impossible choices between following social distancing measures or maintaining basic income and access to food.

¹ <https://coronavirus.jhu.edu/map.html>

² <https://www.economist.com/international/2020/05/23/covid-19-is-undoing-years-of-progress-in-curbing-global-poverty>

³ e.g. <https://pim.cgiar.org/2020/06/09/social-safety-nets-and-covid-19-can-we-protect-food-security-and-nutrition/>

⁴ e.g.: <https://www.unwomen.org/-/media/headquarters/attachments/sections/library/publications/2020/policy-brief-the-impact-of-covid-19-on-women-en.pdf?la=en&vs=1406>; <https://www.ifpri.org/blog/why-gender-sensitive-social-protection-critical-covid-19-response-low-and-middle-income>

- Where they are the primary person in charge of water supply, women suffered in particular of sanitation and hygiene recommendations (e.g. regular hand washing for market vendors)^{5,6}.

While the global lockdown exerted supply and demand shocks across economic sectors, the crisis in the food systems has to do with employment and income rather with agricultural production:

- Global food supply has been robust and stock to utilization ratios remained solid throughout the crisis
- However, job and income losses, insufficient safety nets and constraints on local access increase the number of people suffering from acute hunger in developing countries, and intensifies food insecurity in several developed countries, particularly in urban areas.

Furthermore, international trade of agricultural products remained fairly robust with impacts mostly limited to logistical constraints⁷:

- With an increasing number of countries depending on imports for food security, it was positive to note that food exporting countries by and large refrained from applying export bans and trade in food commodities;
- The early mobilization of scientists against measures that could affect international food trade needs to be mentioned.

However, COVID-19 also revealed the vulnerability of food systems:

- Lockdowns and travel restrictions uncovered the fragility of some supply chains, e.g. the dependency on international labor and informal urban markets⁸;
- With restaurants closed-down and bottlenecks in the agro-industry (e.g. meat packing in the US), farmers struggled to sell their products;
- Income loss, local price spikes and access challenges, also meant that consumers began shifting to cheaper and nutrient poor foods;
- These and other factors increased food loss and waste of perishable food items such as fruits and vegetables and revealed flaws in transportation infrastructure, storage and cooling facilities.

Towards Recovery: Considerations for resilient and sustainable food systems

The widespread socioeconomic impacts of the pandemic have led to calls for harnessing the recovery process to enable the transition towards more sustainable development pathways⁹, including the transformation of food and land-use systems¹⁰. To avoid trading off one crisis against another means increasing levels of preparedness

⁵ <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0155981>

⁶ <https://www.wsscc.org/wp-content/uploads/2017/03/WASH-in-the-informal-sector-Experiences-of-women-from-West-and-Central-Africa-Presentation.pdf>

⁷ <https://www.ifpri.org/project/covid-19-food-trade-policy-tracker>

⁸ <https://www.ifpri.org/blog/covid-19-lockdowns-threaten-africas-vital-informal-urban-food-trade>

⁹ e.g.: <http://www.lse.ac.uk/granthaminstitute/news/from-rescue-to-recovery-to-transformation-and-growth-building-a-better-world-after-covid-19/>

¹⁰ e.g.: <https://www.cirad.fr/en/news/all-news-items/press-releases/2020/pandemic-coronavirus-threat-agriculture-food>; <https://www.foodandlandusecoalition.org/a-call-to-action-for-world-leaders/>; <https://clubofrome.org/impact-hubs/climate-emergency/open-letter-to-global-leaders-a-healthy-planet-for-healthy-people/>

and risk management capacities against future pandemics, while also accounting for other potential socioeconomic or climate/environmental shocks.

There is genuine concern that policy dynamics and entrenched interests will lead countries to revert back to business-as-usual. With global numbers of infection still climbing, a considerable uncertainty remains about the pandemic's evolution and how fast countries can start transitioning out of crisis management and into a socioeconomic recovery process. The implications of a lengthy sanitary crisis and delayed recovery for advancing sustainable and resilient food systems need to be fully appreciated.

In that regard, the experts highlighted, *inter alia*, the following aspects:

The critical role of digital technology, precision agriculture and biotechnologies in improving agricultural productivity and food security of countries during the recovery process and beyond, must be seized. There is however a concern that the constrained fiscal space may widen the technology gap between rich and poor countries. Furthermore, there is a necessity to engage with the worries of populations towards the role of technologies, and biotechnologies in particular. Additional rounds of discussions could explore:

- how can fiscal constraints can be overcome, considering tailored solutions and also upscaling of sustainable land management practices;
- the potential of demand-based measures, such as dietary shifts, particularly with regards to enabling behavioral change.

There is value in exploring alternative narratives and scenarios for the recovery, supporting decision-makers in assessing the long-term implications of strategic choices (Fig. 1). As proposed in the background note, such efforts should entail contrasting business-as-usual scenario with others coupling recovery with transition towards resilient food systems. In this context, further discussion is needed on

- the framing of such narratives and scenarios, considering, *inter alia*, the implications of different assumptions on impacts on GDP, timing of recovery, investments in technologies and sustainable practices, trade, inequality, and environmental sustainability constraints.

Systems-based approaches are particularly useful to support the development of resilient food systems. However, it is important to re-examine the concepts and methods of those approaches in light of COVID-19, especially to account for the heterogeneities of, and interdependencies between global and local contexts for food systems. The notion of resilience should be understood in the context of the Sustainable Development Goals and other international policy frameworks, such as the Paris Agreement on climate change and the emerging post-Aichi biodiversity framework.

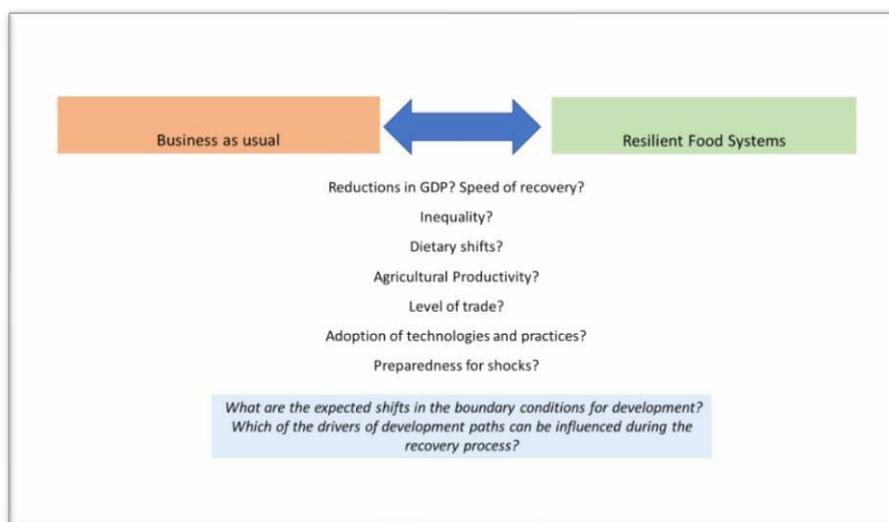


Figure 1. Accounting for and adapting to new realities for development pathways. Systems analysis approaches should consider the implications of the impacts of COVID-19 and strategic choices made during the socioeconomic recovery for pathways towards sustainable food and land-use systems, exploring alternative narratives and scenarios.

1. Recommendations for background note

The rich discussions of the first expert consultation led to helpful feed-back on and recommendations for further development of the background paper, by:

- Underlining the contextual setting for the discussion of the COVID-19 impacts, e.g. by describing key characteristics of current food systems and providing greater detail on demographic, consumption and environmental challenges, such as land degradation, biodiversity loss and vulnerability to climate change;
- Emphasizing the uncertainty about the duration of the pandemic, the timing of the recovery, and the implications for sustainable development;
- Affirming the importance of circular economy and bio-economy thinking for the recovery;
- In conjunction with longer-term demographic, socio-economic and environmental challenges, highlighting the role of technologies for food security for sustainable and resilient food systems, looking at digital and bio-technologies, and considering the implications of technology gaps between and within countries;
- Considering the role of biodiversity in strengthening food security and the resilience of agricultural systems;
- Emphasizing the role of values and behaviors for transformative and systemic change, in relation to the acceptance of new technologies and dietary shifts
- Acknowledging the variety of contexts and referring to region specific examples;
- Emphasizing the role of systems analysis to better understand the pandemic and its aftermath and to design sustainable responses;
- Recognizing the importance of science communication and stakeholder engagement in building awareness, ownership and momentum for food systems transitions.

2. Considerations for next steps

The subsequent consultations need to further explore how the science-to-policy interface can be strengthened to facilitate the implementation of resilient and sustainable food systems in a post-COVID-19 world. They should look among other things at the requirements, assumptions, opportunities and constraints for fostering more sustainable, resilient and equitable food systems after COVID-19. The aim is to inform narratives and scenarios for the development of sustainable pathways, and to inform strategic responses by policy and decision-makers. To help inform decision-making processes, the development of new narratives and scenarios will depend on addressing data needs and information gaps in order to all models to integrate drivers that were not, or insufficiently reflected in previous scenarios.

Participants of the online consultations

Chair: Ismail Serageldin (Emeritus Librarian of Alexandria and Founding Director of the Bibliotheca Alexandrina)

Joachim von Braun – Professor for Economic and Technological Change and Director, Center for Development Research (ZEF), Bonn University, President, Pontifical Academy of Sciences and former Director General, IFPRI

Fernando Chaparro – Honorary Member, Colombian Academy of Physical and Natural Sciences, Bogotá and former Executive Secretary, Global Forum on Agricultural Research (GFAR)

Ismahane A. Elouafi – Director General, International Center for Biosaline Agriculture, Dubai, UAE

Shenggen Fan – Former Director General, IFPRI, Washington and Chair Professor, China Agricultural University, Beijing, China

Nina Fedoroff – U. S. National Medal of Science Laureate 2006, former President, American Association for the Advancement of Science (AAAS)

Uma Lele – International Policy Expert, President Elect, International Association of Agricultural Economists (IAAE)

Sir Richard Roberts – 1993 Nobel Laureate in Physiology or Medicine

Pedro Sanchez – Research Professor, Soil and Water Sciences Department, University of Florida and World Food Prize Laureate

IIASA- ISC Project Team

Leena Srivastava (IIASA)

Flavia Schlegel (ISC)

Luis Gomez Echeverri (IIASA)

Petr Havlik (IIASA)

Mathieu Denis (ISC)

Frank Sperling (IIASA)

Amanda Palazzo (IIASA)

Franziska Gaupp (IIASA)

Hugo Valin (IIASA)

Piero Visconti (IIASA)

Shonali Pachauri (IIASA)

Steffen Fritz (IIASA)

Team support: Anastasia Aldelina Lijadi (IIASA)