



Food and Humanitarian Crises: Science and Policies for Prevention and Mitigation

A PAS workshop in cooperation with the UN Food and Agriculture Organization (FAO) and other partners



Building on earlier food related PAS conferences: The Pontifical Academy of Sciences (PAS) has repeatedly addressed problems of the world food system in the past from various angles, and issued statements for action and research. Recently this included conferences on *Science and Innovations for a Sustainable Food System - Preparing for the UN Food Systems Summit*, 21-22 April 2021[1], and *Reduction of Food Loss and Waste*, 11-12 November 2019[2]. Moreover, PAS *climate* related conferences and *biodiversity* related conferences, as well as conferences addressing innovations in bio-sciences also included attention to food systems and food security.[3] The findings from these conferences and the related statements and publications form important backdrops to the concept of this workshop.

Addressing multi-dimensional crises: Food systems are impacted by a complex set of multi-dimensional problems. The set of problems include:

1. Wars and armed conflicts add to risks and uncertainty, disrupt food supply chains, and hinder production (e.g. access to inputs such as fertilizers) and food trade. The workshop will have strong attention to these related issues.
2. Climate change and water stress undermine agrifood systems' resilience,
3. Covid19 and other disease related disruptions of food value chains,
4. Economic slowdowns and downturns, accelerated inflation, exchange rate devaluation,

market volatility, and income and job losses.

These problems are interconnected and reinforce each other, and result in humanitarian crises and food access problems, 3.1 billion people with no access to healthy diets, and with accumulated debts, curtailing finance of social protection and nutrition programs. Moreover, there is regional diversity in the set of determinants of agrifood systems' crises, as well as diversity in capacities to respond.

Focus on short-term actions: While above mentioned earlier PAS conferences offered important insights and solutions mainly for the medium- to long-term, this workshop has a focus mainly on acute food insecurity and nutrition crises and related short-term actions.

The UN World Food Systems Summit of 2021 too, had mainly a focus on medium- to long-term actions.[4] Follow up to the Summit will need to have a stronger focus on acute crises. Addressing acute food crises effectively in the short-term also requires more attention because new research findings point to significant human impacts in terms of child underdevelopment (stunting) and mortality due to even short-term price and income shocks. Effective action for protecting the poor in crises cannot wait. Tradeoffs and synergies between short-term and long-term actions and investments also need to be on the policy agenda and will be addressed by this workshop.

Framing the workshop: A concept that may shape the agenda of the workshop is the “Triple Nexus” approach, which postulates integration the interlinkages between the humanitarian, development and peace sectors (HDP). It specifically refers to attempts in these fields to work together to more effectively meet peoples' needs, mitigate risks and vulnerabilities, and move toward sustainable peace. Sciences, i.e. natural sciences and social sciences, need to explore opportunities for their contributions to short-term lifesaving actions in acute food crises. Noting that there are significant practical experiences with such actions, sciences have not paid much attention to short-term food crises mitigation and prevention. Theoretically, short-term actions need to be based on foresight, information about risks and consideration of uncertainties, and the need to make decisions while there is a high degree of information deficiency. New data, modelling, and analytical approaches, incl. application of Artificial intelligence, may be helpful to explore for narrowing risks and uncertainty and for effective actions. Political economy aspects, governance, and power need consideration. Short term actions are often taken under conditions of lack of information, missing predictability of emerging crises, and lacking resources for comprehensive responses. There are also hard choices between the short and long term, i.e. to address the challenge of systems' transformation toward sustainability, while also addressing the acute food crisis with urgency. And it must be noted that initially considered short term issues can result in very long-lasting consequences, such as populations in refugee status in the Levant Region, Afghans in Pakistan, Darfur, etc.

Moral and ethical Issues: the focus of the workshop shall be on marginal population groups, incl. small holder producers, slum dwellers, migrants, women, children, as well as indigenous peoples.

Direct and indirect effects on vulnerable people in food crises situations shall be considered prominently, such as exploitation, human trafficking and modern forms of slavery. The short cum / versus long term choices raise moral and ethical issues that will be considered in the workshop. A focus on science related to helpful short-term actions is justified for at least three reasons: first, because lives at risk in crises must be saved, and second, it is likely, that complex crises of agrifood systems triggered by the set of the causes mentioned above may occur more frequently in the future, and third, there is a lack of scientific insights into appropriate short-term actions, as indicated by many ad hoc initiatives in food crises, and lack of science involvement.

Focus on Solutions: At the center of solutions to the challenges are innovations, that is, policy-, technological-, and organizational innovations. These must be guided by science, be context specific, and some must be international. They include to find ways to promote local agency in acute food crises, because individuals, households/families, and communities are invariably the first and most important respondents in crises. Expanding the choices available to them in real time may be vital – i.e., in addition to getting external support to them. A set of key actions and innovations are considered in this workshop, mapped into relevant contexts and regions. They may include actions such as:

- Emergency aid interventions incl. forecast based actions and investments,
- Modelling agrifood systems shocks and tradeoffs of actions / incl. over time,
- Explicit integration of transformative policies, peace building, governance strengthening for food security,
- Digital innovations, bio-science, new foods, processing, technology innovations for de-risking the food systems.
- Organizational innovations, to identify best operational/institutional models to alleviate malnutrition and speed up humanitarian work during and post-conflicts.

[1] https://www.pas.va/en/events/2021/food_systems/final_statement.html

[2] https://www.pas.va/en/events/2019/food_waste/final_statement.html

[3] Resilience of People and Ecosystems under Climate Stress, 13-14 July 2022

<https://www.pas.va/en/events/2022/resilience.html>; Health of People, Health of Planet, and Our Responsibility https://www.pas.va/en/events/2020/book_launch.html; Science and Actions for Species Protection – Noah’s Arks for the 21st Century 13-14 May 2019,

<https://www.pas.va/en/events/2019/noah.html>; *Food & Nutrition – The Role of Biotechnology in Agriculture*. Special session in the Plenary Conference 2016 on Science and Sustainability.

Impacts of Scientific Knowledge and Technology on Human Society and its Environment

<https://www.pas.va/en/events/2016/sustainability.html>

[4] von Braun, et al., 2023 “Science and Innovations for Agrifood systems Transformation”.

<https://link.springer.com/content/pdf/10.1007/978-3-031-15703-5.pdf?pdf=button>