the Pontifical Academy of Sciences

Final Statement of the Workshop on "Food and Humanitarian Crises: Science and Policies for Prevention and Mitigation"

Casina Pio IV, Vatican City, 9-10 May 2023

Summary

Based on an international workshop by the Pontifical Academy of Sciences, bringing together scientists, practitioners from civil society, UN, and policymakers, we draw attention to the urgent need for more engagement and actions to overcome the growing number and intensity of food and humanitarian crises. The prevalence and scale of food and humanitarian crises is unacceptable and ethically reprehensible. It is imperative that we address the causes and consequences of these problems comprehensively and innovatively.

The world is facing the highest number of violent conflicts since the Second World War. These conflicts are major triggers of humanitarian and food crises, reducing access to production factors, social safety nets and trade, and causing forced displacement.

Under global climate change, extreme weather events have become a further important trigger of humanitarian and food crises worldwide. It is crucial that international support for resilience is expanded and prioritized at upcoming Climate Summits. Policy actions must be based on the understanding that the right to life and access to basic necessities such as food and water are human rights.

We also urgently need a more proactive and better-resourced response to the global refugee crises, including a welcoming culture for refugees, as called for by Pope Francis. Respect for and adherence to international law and treaties for the protection of refugees is also required.

To prevent food and humanitarian crises, we call for context-specific and appropriate international and regional engagement, local peacebuilding, and multilateral conflict resolution by the UN, G20, and regional political bodies.

The structures, governance and management of humanitarian and food crises require comprehensive reform. This includes elements of global governance, such as nested institutions that reflect rights and responsibilities at both local and global levels to address mitigation and prevention of humanitarian crises. Women's roles and leadership in these contexts must be strengthened. We need increased and more flexible financial resources at an international level, along with redesigned emergency aid interventions. Without such reforms, we will continue to deal with symptoms rather than addressing the root causes.

Science has an important role to play in addressing food and humanitarian crises, because they are problems of complexity. Sciences can help identify policy, organizational and technological innovations.

Cooperation between faith and science is critical in overcoming humanitarian crises by combining ethics with innovation.

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

1. **The prevalence and scale of food and humanitarian crises is totally unacceptable and ethically reprehensible. It urgently requires new and comprehensive solutions.** The Pontifical Academy of Sciences has addressed food issues and armed conflicts before.[1] Based on an international workshop of scientists and practitioners, we now call for more science-based innovations, engagement and public actions to overcome the growing food and humanitarian crises. *We urge a reassessment of the mechanisms for prevention and mitigation of these crises, including political and diplomatic processes, and commitments to actions to end crises. We highlight opportunities for innovative actions by national and international organizations and call on science communities to engage with research in crises, to systematically understand the causes of crises, and strengthen the evidence base for solutions. Current resource mobilization, scientific assessment, and political engagement for preventing and mitigating crises are inadequate.*

2. **Food and humanitarian crises are caused and shaped by a complex set of drivers, triggers and aggravating factors**. Drivers include climate change, wars, armed conflicts and violence, forced displacement, poverty, low agricultural productivity, food, water and energy insecurity, underdeveloped markets, rising prices, and environmental degradation, and the appearance of

rebel groups. Triggers include extreme weather events such as cyclones, droughts and floods, and pandemics and other disease outbreaks. Lack of basic services and infrastructures and lack of social assistance aggravate the situation. At times, hunger is even used as a weapon or negotiating tool in conflicts. The recent global food crisis of 2020 to 2023, triggered by the COVID-19 pandemic and fueled by extreme weather events and the Russian Federation's military aggression against Ukraine, has led to a doubling of food prices. Economic slowdowns and downturns, exchange rate devaluation, market volatility, and job losses have increased vulnerability. As a result, many more people go hungry and live without rights. About 1.5 billion people live in fragile and conflict-affected settings; more than 800 million are undernourished and about 3 billion are too poor to afford a healthy diet; over 100 million are forcibly displaced.

3. **The world is facing the highest number of violent conflicts since the Second World War.** So-called internationalized intrastate conflicts almost tripled between 2012 and 2020. These conflicts trigger humanitarian and food crises by reducing access to production factors, social safety nets, and trade, and causing refugee flows and internal displacements. We need a better understanding of why they occur in each context, and concerted international action to reduce their impacts on the poorest populations. In general, local populations, not just warring factions, must be respected more in efforts preventing and overcoming armed conflicts. *We call for context-specific international and regional engagement, local peacebuilding, and multilateral conflict resolution by the UN, G20, and regional political bodies. Unless addressed, these confounding factors will result in growing humanitarian aid needs.*

4. **Under global climate change, extreme weather events are a major trigger of humanitarian and food crises, and their frequency will increase.** The number of climate-related disasters has tripled in the last 30 years. Heatwaves, droughts, floods, typhoons and hurricanes cause mass destruction around the world. Ninety percent of disasters are now classed as weather- and climate-related. Adapting to climate change and coping with climate-related damages will be more and more expensive for low- and middle-income countries. It is already unaffordable for them. They have contributed little to greenhouse gas emissions. Indigenous Peoples are under particular pressure from climate crises in view of their fragile living environments, where they safeguard a large share of the world's biodiversity. While some weather shocks appear suddenly, others like droughts build slowly. Related preparedness and adaptive capacities are inadequate, especially by national authorities in countries and regions most vulnerable to climate shocks. *Expanding international support for resilience must have high priority in upcoming Climate Summits.*

5. **Food and humanitarian crises are problems of complexity that require integrated, new approaches by sciences.** Crises dynamics are hard to predict due to their inter-connectedness with multiple actor groups and uncertainties. A set of determinants and triggers can happen simultaneously and adversely build on each other. For example, external shocks like severe weather events such as storms or droughts, earthquakes, or food price inflation and trade disruptions can be exacerbated by internal factors like violent conflicts and local crop shortfalls.

Fiscal and foreign exchange constraints, and corruption in political systems, drain buffering capacities. The “Triple Nexus” concept, which integrates humanitarian, development and peace activities (HDP), is a coherent framework but needs populating with research-based facts and concrete options for action. Short-term actions are often taken under conditions of limited information, low predictability of emerging crises, and constrained resources for comprehensive responses. Together, the natural and the social sciences need to explore opportunities to contribute to short-term life-saving actions in acute crises, and to connect short-term action with sustainable development. *We call on sciences for more engagement in crises, to strengthen the evidence base for initiatives and investments. Scientific research on crisis prevention and on appropriate short-term actions is lacking and needs to build on experiences gained from hotspots of current humanitarian crises, as reviewed at the workshop: Afghanistan, Cameroon, Chad, DR Congo, Ethiopia, Haiti, Nigeria, Somalia, Sudan, South Sudan, Syria, Ukraine, Yemen, and others.*

6. **To support effective actions, sciences need to be based on foresight, data and analytics and need to consider indigenous and local knowledge.** Adequate diagnosis of crises is important for decision-makers to engage appropriately. New, more disaggregated data, modelling, and analytical approaches, including early warning systems with predictive power and adequate diagnosis of crises, are important. Artificial intelligence can help understand risks and prepare for responses. Progress has been made in data systems innovations for these challenges, such as predicting El Niño-related droughts and early warnings of large storms. *Combining indigenous and local knowledge with science can contribute to resilience. Investment in information has high benefits, but must consider information asymmetries between funders, implementers, and affected populations, including data sovereignty. Innovative data systems can help reduce these asymmetries. Analytical approaches must consider the dynamic nature of crises and the inter-temporal linkages of drivers and components of complex crises.*

7. **Our main concern is marginalized population groups**, including displaced and impoverished small farmers, herders and fishers, slum dwellers, people affected by forced migration, people in fragile and conflict-affected settings. In particular, women and children in these contexts, as well as Indigenous Peoples, require special attention. Psychosocial distress and malnutrition can lead to permanent trauma and morbidity in children who suffer from displacement and are forced to live in unhealthy or inhospitable environments. **Women and children** are particularly at risk of violence and deprivation during displacement. Children’s cognitive development is impacted for the long term by malnutrition and lack of schooling. Children of women who grew up during a food crisis or violent conflict are more likely to die in early childhood, or to be stunted or underweight and have reduced educational attainment, transmitting poor health and lower contribution to national development over generations. This requires particular attention in refugee camps and in refugee settlement areas. Women and girls are at risk of physical and sexual violence, kidnapping, early and forced marriages, and domestic violence both during displacement and in refugee camps. **Indigenous Peoples** whose livelihoods and traditions are tied to their ancestral homes are particularly affected by conflict-induced displacement. They lose their income and livelihood

opportunities first, and suffer the most from water and food insecurities. During humanitarian and food crises all these groups are at increased risk of exploitation, human trafficking and modern forms of slavery. The livelihoods and food security of **smallholder farmers and herders** are particularly affected by climate- and conflict-induced crises. Nevertheless, the potential capacities of marginalized groups to self-organize must not be underestimated. *Anticipatory and early action targeted to those most affected is urgently required. Short-term food crises can lead to permanent adverse health impacts, especially in pregnancy and in early childhood. Among the many health, social, and economic harms of malnutrition, we call attention to the fact that acute malnutrition or wasting of children (i.e., being dangerously thin for their height), and stunting (i.e., being short for their age), poses a great threat for them. Solutions for prevention and treatment of wasting and stunting (e.g., with lipid-based nutrient supplements and ready-to-use therapeutic foods) need to be scaled up, as well as engaging communities in screening, cash support and infection control. Moreover, families and communities should better understand the priority for feeding mothers and infants within the family hierarchy, breaking the "women eat last" syndrome.*

8. **Policy actions need to be based on the Universal Declaration of Human Rights, which states that "everyone has the right to life, liberty and security of person" and that access to food, water and other basic necessities are human rights**. Governments have the primary responsibility to pursue preventive policies and take emergency measures to secure food access for all their populations. If a government lacks the capacity to prevent or mitigate a food crisis, it must allow and facilitate relief operations in accordance with humanitarian principles and international law. Any government or warring faction that prohibits access to food and other basic necessities must be sanctioned under international criminal law. *The actions of warring factions violating people's rights must be internationally monitored, including in relation to emergency food and other relief assistance. The legal research community is called upon to engage more deeply in the institutional aspects of humanitarian and food crises and the right to life, food and water.*

9. **The direct and indirect effects of the growing refugee, displaced populations and migration crises resulting from food and humanitarian crises must be addressed with compassion, adherence to laws, and better science.** The climate crisis will lead to a lot more displacement of vulnerable population groups. The indirect effects of humanitarian and food crises for vulnerable people, such as exploitation, human trafficking and modern forms of slavery, must also receive more attention. *We need a more proactive, and better-resourced response in support of refugees and displaced people, with an emphasis on supporting women's leadership in programs that aid refugees and displaced people inside and outside of camps in acute crises. We must also prepare for the flows of people displaced by future climate crises. A welcoming culture for refugees, as called for by Pope Francis, respect for international law and treaties, and adherence to them are essential.*

10. **Policy, technological, and institutional innovations are needed. K*ey actions include*:**

a. **Redesigned emergency aid interventions:** *Much stronger, social protection systems endowed with flexible resources are needed to facilitate crisis prevention and mitigation.* Humanitarian interventions should help build more sustainable programs and make more use of forecast- and anticipatory-based humanitarian actions. Attention should be paid to children's nutrition overall and the treatment of acute malnutrition before, during and after humanitarian and food crises, based on tested operational models. Combining young children's nutrition with cognitive programs is important.

b. **Explicit integration of affected local populations** in creating transformative policies, peace building, governance strengthening for food security is crucial, because individuals and local communities are the first and most important respondents in humanitarian crises. *Women's empowerment in local and national contexts, and listening to and engaging with indigenous peoples' concepts and resilience approaches is essential*.

c. **Comprehensive reform of structures, governance and management of humanitarian and food crises.** Effective governance, expressed by voice, accountability, rule of law and control of corruption, is closely correlated with risks of crises occurrence and outcomes. Efforts to improve governance and reduce power inequities should be part of any crisis prevention and mitigation effort. International, donor, and government structures should change toward active engagement in crisis prevention and more effective disbursement of emergency aid. Donors should be accountable for increasing anticipatory action efforts. *The establishment and strengthening of regional and international integrated "information and action platforms" should be considered. These platforms would bring together strengthened UN and civil society actors at national and regional levels, as dictated by context and humanitarian principles. They would combine data on early warning for humanitarian crises to advance anticipatory action in fragile and conflict-affected settings.*

11. **Science and research on the root causes and determinants of humanitarian and food crises and their prevention and mitigation must be strengthened.** This requires a strong commitment from scientists and science organizations, including Academies of Sciences, to engage across disciplinary boundaries with rigor and compassion. *Science communities need to engage with new theoretical and empirical approaches and interact with practitioners in acute crises to identify promising solutions. Important research areas include*:

a. **Research on the whole architecture of food and humanitarian crises prevention and mitigation.** *Implementation research on anticipatory humanitarian action, related global financial support, and evaluation research on what works to build resilience and effective delivery solutions in fragile contexts are important.*

b. **Research on ex-ante and real-time modelling of complex humanitarian and food crises and response options**, including trade-offs of actions for de-risking agrifood systems and for social

protection. *Related research areas include digital innovations, bioscience for resilience, new and healthy foods, and food storage and processing innovations for reduction of loss and waste.*

c. **Research on institutional and organizational change and innovations to address food and humanitarian crises**. Developing innovative tools to increase resilience in countries and population groups at risk can help prevent and absorb shocks. *Early identification of attempts to ruthlessly obtain political gain or create ethnic grievances is also important. Studying the impacts of military interventions on food markets, and household and community resilience during and after humanitarian crises, can provide valuable insights for early action.*

12. **Faith and science cooperation.** The high and growing prevalence and scale of food and humanitarian crises are a shame for humanity. They indicate a global and national failure of suitable engagement to help the poor and vulnerable. The root causes of these crises must be addressed through improved global governance and the evolution of nested institutions that reflect local and global rights and responsibilities, mitigation and prevention of humanitarian crises. Otherwise we will continue to deal with related symptoms. *We call on the international political system, national governments, civil society and the private sector to increase investments and rapidly scale delivery of tested solutions. UN agencies must provide clear and timely guidance, while governments hold primary responsibility. We need a strengthened and more integrated UN system to overcome these food and humanitarian crises. When government weakness or failure is a cause, other options, such as alliances of civil society, religious communities, and science must be used. Cooperation between faith and science is critical in overcoming humanitarian crises and protecting human dignity by combining ethics with innovation.*

[1] *The Pontifical Academy of Sciences (PAS) has repeatedly addressed problems of peace, poverty, inequality and injustice.* For instance, *Preventing Nuclear War and War Against Civilian Populations: Also a Task for the Sciences*. A statement by the Council of the Pontifical Academy of Sciences, The Vatican, April 8, 2022. The world food system has also previously been addressed by PAS from various angles, for example in the recent conferences on *Science and Innovations for a Sustainable Food System – Preparing for the UN Food Systems Summit*, 21-22 April 2021; and *Reduction of Food Loss and Waste*, 11-12 November 2019. Moreover, PAS climate- and biodiversity-related conferences, as well as conferences addressing innovations in bio-sciences, have also included attention to food systems and food security. The findings from these conferences and the related statements and publications form important backdrops to the concept of this workshop.

Note: Data sources mentioned in this statement are in the papers presented at the workshop (to be published in due course) and are not referenced here.

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