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**T7 Task Force Climate and Environment**

# FOOD-CLIMATE NEXUS: THE NEED FOR AN INTERNATIONAL SMALL HOLDER FARMERS' AGRIBUSINESS CONSORTIUM

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# Executive Summary

Climate change, against the backdrop of rising populations, increasing inequality, and natural resource depletion, threatens global food and nutritional security. To make the situation worse, 1.3 billion tons of food (one-third of total production or food sufficient to feed around 33% of the global population) is wasted every year (FAO, 2011). Further, the ongoing pandemic has exposed the vulnerability of fragile supply chains. Therefore, feeding an estimated global population of 10 billion by 2050 and achieving food and nutritional security along the continuum of availability, accessibility, and acceptability requires a shared commitment and coordinated action among policy makers. This policy brief points to the agriculture-climate nexus with the underlying water-soil-energy linkages, implying that farming is a cause and consequence of climate change. This brief further highlights the vulnerability of smallholder farmers, which constitute around 85% of the production units worldwide and are particularly vulnerable to climate change. They have the biggest stake in climate-centered food and nutrition security.

The global institutional architecture that exists for promoting agriculture development, such as the Consultative Group on International Agriculture Research (CGIAR), the Food and Agriculture Organization of the United Nations (FAO), and the International Fund for Agriculture Development (IFAD), to name a few, have done a commendable job in developing high-yielding crop varieties and livestock breeds and promoting good agriculture practices that set global benchmarks for yields, quality, nutrition, and related parameters. These institutional efforts have helped developing and developed countries accelerate their agriculture growth rates and, more importantly, expand aggregate food production to feed their growing populations. Yet, smallholder farmers with micro land holdings of two hectares or less and family-owned farms that are on the receiving end of the climate change risks have not benefited much from the work of the global institutions. Now that they are exposed to more serious consequences of climate change patterns, a sharper institutional focus on smallholder farmers is imperative to the future of food and nutritional security, with a view to ensuring their easier access to technologies, information, and markets.

Raising the capacity and resilience of smallholder farmers through linkages to the global value chain would determine the climate-resilient character of global agriculture, including cropping systems, livestock farming, fishery, agro-forestry, and allied activities that harvest food from nature. With this end in view, it is recommended that the G7 announce the formation of an “International Small Holder Farmers’ Agribusiness Consortium” at its Elmau Summit. The Consortium may be funded out of the resources likely to be allocated by the G7 for the wider program of managing climate change (both mitigation and adaptation). More importantly, the proposed organization must be designed strategically to operate on the principle of Trusteeship. The spirit of Trusteeship should engender a sense of trust among the global community of smallholder farmers that there is support and commitment from the research and development; agriculture education and extension; access to credit, and above all, agribusiness trade for both inputs and farm output across the world, to appreciate the role and relevance of smallholders in the emerging paradigm of food security and enable them to collectivize and co-create institutions at the national and sub-national levels to protect and advance their interests.

# Challenge

We have made considerable progress in food production during the last five decades, yet a significant proportion of the global population remains hungry and malnourished. Around 811 million are hungry, 9.9% of the world's population is undernourished (FAO 2020), and most live in rural areas of developing countries. According to the Food and Agriculture Organization (FAO) of the United Nations, 1.3 billion tons of food (one-third of total production or food sufficient to feed around 33% of the world) is wasted every year (FAO, 2011). It is estimated that Food Losses and Wastage (FLW) emits 4.4 Gt CO<sub>2</sub> equivalent per year (approximately 8% of the GHG emission) (FAO, 2011). Our World Data estimate the GHG emissions at 6% of the total GHG emissions in 2020 (Ritchie, 2020). The average per capita food waste is alarmingly high at 70 kilograms. A substantial amount of food is lost/wasted at the post-harvest and transportation stages, and this has become a bottleneck to enhancing farm incomes, particularly of smallholder farmers, even as more effort is needed to link their livelihoods with the global value chains.

Therefore, feeding an estimated global population of 10 billion by 2050 and achieving food security along the continuum of availability, accessibility, and acceptability requires a shared commitment and coordinated action among the global community of policy makers. The Commission on Sustainable Agriculture and Climate Change (2012)<sup>1</sup> had outlined major areas for policy focus “to bring our interconnected food and climate systems within a ‘safe operating space’ for people and the planet”. Thereafter, the post-2015 development agenda of the United Nations adopted the 17 Sustainable Development Goals (SDGs), the second goal being to end hunger, achieve food security, improve nutrition, and promote sustainable agriculture. The problems and prospects of achieving this goal were dissected in-depth at the United Nations Food Systems Summit (2021), which highlighted that 811 million people worldwide faced hunger in 2020. This was 20% higher than the figure for the previous year.

Among the drivers of food insecurity, the rise in extreme climate-related events is the most worrying as farming and food production systems are most vulnerable to climate change, impacting the availability and accessibility dimensions of food security. “The intersection between climate and food is profound – if we do not address food systems-driven climate emissions, we simply cannot make our 1.5 °C target; and if we don't, food systems will suffer the most. So, for many of us, postponing this conversation is a luxury we cannot afford” (Kalibata, 2021)<sup>2</sup>. Since agriculture itself accounts for around 20% of greenhouse gas (GHG) emissions, climate-related risks to agriculture systems can be seen as both the cause, to an extent, and the consequence of climate change. Within farm production systems, smallholders and family farms, which constitute around 85% of the production units worldwide, are particularly vulnerable to climate change. This policy brief seeks to address the challenge of the agriculture-climate nexus, focusing on smallholder farmers.

Raising the capacity and resilience of smallholder farmers through linkages to the global value chain would, therefore, determine the climate-resilient character of global agriculture, including cropping systems, livestock farming, fishery, agro-forestry, and allied activities that harvest food from nature. Some studies have established that the global aggregate of such smallholding farms is around 550 million, but this figure can best be deemed conservative, considering the fact that the revision and modernisation of land records

in most parts of Asia and Africa have remained in arrears for decades. Given the insights from supply chain disruptions caused by the ongoing pandemic, it is vital that all global and national policies oriented towards imparting resilience to farming systems must prioritise the role of the smallholder farmers in securing availability, accessibility, and acceptability of food and, more importantly, reckon with the indigenous knowledge systems that guide their food production and consumption patterns and practices. To make farming the career of choice and improve food and nutritional security, livelihood, and wellbeing of rural families, and reduce inequality, an institution that links the smallholder farmers to the local, national, and global value chains and acts as a central pillar for rural and agricultural transformation is an institutional gap waiting since long to be filled.

## Proposals

Ensuring food and nutritional security, reducing rural poverty, and improving the resilience of smallholder farmers require various policy interventions. The G7 may consider adopting one such intervention at Elmau, which is recommended below.

### **Revamping the Multilateral Institutional Architecture on the Principles of Trusteeship**

The entire institutional architecture for promoting agriculture research, extension, production, processing, and trade in agriculture over the last century has evolved around the principles of globalized benchmarks and performance standards to measure and manage farm yields; post-harvest storage and processing; and supply chain management to push the frontiers of international trade in food and agriculture produce. The global institutions established for promoting agriculture development, such as the Consultative Group on International Agriculture Research (CGIAR), the Food and Agriculture Organization of the United Nations (FAO), and the International Fund for Agriculture Development (IFAD), to name a few, have done a commendable job in developing high-yielding crop varieties and livestock breeds and promoting good agriculture practices that set global benchmarks for yields, quality, nutrition, and related parameters. These institutional efforts have helped developing and developed countries accelerate their agriculture growth rates and, more importantly, expand aggregate food production to feed their growing populations.

Yet, the smallholder farmers with micro land holdings of two hectares or less and family-owned farms that are on the receiving end of the climate change risks have not benefited much from the work of the global institutions, and now that they are exposed to more serious consequences of climate change patterns, a complete revamp of the multilateral institutional architecture in favour of smallholder farmers is an imperative that is central to the future of food and nutritional security. Even the private sector multinationals and transnational agribusinesses, as well as non-government organizations, may need to be incentivized to innovate and develop technologies, products, and services that directly contribute to the capacity of small farmers to cope with the challenges of climate change with due regard to their indigenous knowledge on one hand and the compulsions of sustainable development on the other hand. To ensure that their localized, distinctive, and agro-climate specific challenges are not ignored in the global frameworks and globalized agenda of the multilateral institutions, and the asymmetry of information and market access between large agribusinesses and smallholders is duly addressed, the G7 would be making a humongous contribution by



announcing the formation of an **‘International Small Holder Farmers’ Agribusiness Consortium’** that could be mandated to work on the core value of ‘Trusteeship’ and a well-defined agenda for enhancing the economic viability of small farms while protecting their indigenous knowledge systems.

The spirit of Trusteeship should engender a sense of trust among the smallholder farmers that there is support and commitment from the research and development; agriculture education and extension; access to finance, and above all, agribusiness trade for both inputs and farm output across the world, to appreciate the role and relevance of smallholders in the emerging paradigm of food security and enable them to collectivize and co-create institutions at the national and sub-national levels to protect and further their interests. As the global apex institution of trusteeship charged with the responsibility to identify, integrate, and implement opportunities for expanding the growth of the smallholder producers and their local institutions and insulate them from the vulnerabilities arising from climate change, the proposed ‘International Small Holder Farmers’ Agribusiness Consortium’ may be allocated a portion of the resources envisaged for the wider task of battling climate change. The level of resource allocation and outlay for creating the proposed institutional platform for the smallholder farmers would be a matter of detail to be examined when the feasibility study is mounted and the strategic and operational agenda is drawn up. If accepted by the G7, this recommendation has the potential to revolutionize farming and food production systems around the world, particularly in the G20 and other developing countries, where a feeling of neglect and despondency dominates smallholder farmers, their associations, and leadership. It would also contribute to global learning along value chains configured to small producer conditions, confidence-building, and concrete strategizing on how to tackle the climate-linked problems of food production and distribution, building upon the indigenous knowledge of local communities while promoting their participation in global post-harvest processing, trade, and supply chains.

## Implementation

The G7 is the most influential and resourceful grouping of nations that has historically contributed to the emergence of the multilateral institutional architecture that is available to the world today. They have also been the early movers and primary beneficiaries of the technological developments and innovations that the global institutions proffered in the decades before the climate change risks began to be evaluated and recognized. For instance, most developing countries of Asia and Africa could draw benefits from the use of chemical fertilizers and crop chemicals only from the 1970s as their agriculture extension systems gathered momentum. Significantly, within a single generation of farmers, contradictory extension messages are having to be communicated that the use of agrochemicals is not conducive to the sustainability of agriculture practices and hence the pressure on adapting to the new realities of climate change even before they have fully assimilated the knowledge and skills imparted not long ago. Proposing and implementing the formation of the **‘International Small Holder Farmers’ Agribusiness Consortium’** could be a logical payback from the G7 to the developing world, where the smallholder farmers predominate the farming and food systems.

The principal actors who could serve as champions and supporters of the proposed initiative would be climate change advocates and activists, smallholder farmer associations, governments of the G20, and other developing countries. The existing multilateral institutions operating in the agriculture development space would also be glad to dovetail their strategic plans and activities with the proposed consortium. As the new body front-ends the voices of smallholder farmers around the world, the linkages between the legacy institutions and the **'International Small Holder Farmers' Agribusiness Consortium'** will gather strength and resonance, leading to a new ecosystem of support and capacity building for the smallholders. They have a very important role to play in fighting hunger and achieving the second SDG on the UN Development Agenda. Besides, the proposed recommendation has great potential to contribute to other SDGs, particularly SDG 1 (No Poverty), SDG 2 (Good Health and Well-being), SDG 5 (Gender Equality), SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 10 (Reduced Inequality), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action).

## Endnotes

<sup>1</sup> The Commission on Sustainable Agriculture and Climate Change was established by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) with support from the Global Donor Platform for Rural Development (GDPRD) to produce a clear and authoritative set of policy recommendations. The Commission brought together senior natural and social scientists working in agriculture, climate, food and nutrition, economics, and natural resources in governmental, academic, and civil society institutions in Australia, Brazil, Bangladesh, the People’s Republic of China, Ethiopia, France, Kenya, India, Mexico, South Africa, the United Kingdom, the United States, and Viet Nam. In 2011, the Commissioners undertook a synthesis of major assessment reports to clearly articulate scientific findings on the potential impact of climate change on agriculture and food security globally and regionally and to identify the most appropriate actions and pathways to achieve food security in the context of climate change.

<sup>2</sup> Dr. Agnes Kalibata is the UN Special Envoy to the UN Food Systems Summit.

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