

## New Agricultural Research Paradigms to Build Resilient Food Systems

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Current food systems based on over-reliance on a limited number of crops and marginalisation of smallholder farmers who produce a significant portion of the world's total food grain production are neither sustainable, nor resilient. The present pandemic has exposed the vulnerabilities and inequities of our current food systems and its impact on the most marginalized communities. It has exacerbated malnutrition and slowed progress towards achieving SDG 2 (Zero Hunger) as well as many of the other SDGs around gender, health and nutrition and beyond. Sustainable changes are required to increase agricultural production, improve global supply chains and value webs, decrease food losses and waste, and to ensure that healthy and nutritious food is available and affordable for all.

A transformation of our food systems requires bridging yield gaps, fixing long and inefficient supply chains where profits accrue to intermediaries who add little value, reducing food losses and waste, curbing greenhouse gas emissions, shifting and diversifying diets to eliminate undernutrition, over-nourishment as well as the hidden hunger of micronutrient malnutrition.

Diets, and the food systems that deliver them, are at the intersection of the challenges associated with malnutrition, human health, natural resource degradation, and climate change. There is already high-quality research on various aspects of climate change, health and food and nutrition security. To transform food systems, inter-disciplinary research in support of policy makers facing difficult decisions at the intersection of human and planetary health is urgently required.

Policy makers are confronted with rapidly evolving, rapidly changing and sometimes even U-turns of scientific views across multiple disciplines. Current research fails to meet the most pressing needs of policy makers (especially in relation to managing policy trade-offs and costs). More research needs to be driven by the specific needs of national governments and their policy makers. Inter-disciplinary / multi-disciplinary / transdisciplinary research linkages across disciplines – climate, natural resources, food, health, and nutrition is required to fully address the diversity and complexity of global and local food systems. This calls for a new approach to find the solutions we and our planet desperately need. The public sector, the private sector and all participants and stakeholders at all levels in our agriculture and food systems need to work together to make this happen.

The complexity of our food systems calls for the best minds of the public and private sectors, with research institutions, civil society think tanks and advocacy groups, to pool their skills and resources to transform our dryland food systems for the benefit of all.

