



The Scientific Group for the  
UN Food Systems Summit  
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## **Scientific Group Report Summary**

# **BUILDING RESILIENCE TO VULNERABILITIES, SHOCKS AND STRESSES**

by

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Action Track 5 of the Food Systems Summit aims to ensure food system resilience in the face of increasing stresses from climate change, population growth and conflict over limited natural resources. We identify five distinct capacities that are key to a resilient food system in the face of these shocks: (i) to anticipate, (ii) to prevent, (iii) to absorb, (iv) to adapt to an evolving risk and (v) to transform in cases where the current food system is no longer sustainable. Our definition also includes two more aspects which are critical to achieving targeted solutions. Building resilience requires clear understanding and consideration of the specific food system context (region, time-period, system complexity, involved actors, institutional structures, etc.). At a broader level, there is a need for novel solutions which bridge all five capacities of resilient food systems.

Food systems are becoming increasingly global, dynamic, and complex. Today, our food purchases pass through elaborate agri-food supply chains involving networks of farms, production and processing facilities, as well as storage and distribution channels. With this growing complexity, new and challenging risks are emerging, as evidenced by the ongoing COVID-19 pandemic, the impacts of which are skewed towards the world's most vulnerable populations. In addition, there are many ongoing challenges, including technological failures, infectious diseases, transportation hazards, cyber-at-

tacks, product contamination, theft, and unexpected shutdowns of key supply chain nodes. As we have seen during this pandemic, such disruptions can have significant consequences for public health and economic well-being.

Resilience at the individual, community, government and global food system level must be established in such a way that the economic, social and environmental foundations for food security and nutrition for current and future generations across the world are not compromised. This requires food system outcomes to be equitable in a financial sense (economic resilience), supportive of the entire community (social resilience), and supportive of the natural environment (ecological resilience).

There are a number of key trade-offs which must be navigated as we strive to achieve greater food system resilience. These include the need to: deliver short term humanitarian aid without jeopardizing long run development, mitigate rising global temperatures even as the food system adapts to the inevitable changes in the earth's climate, take advantage of the benefits of globalization while avoiding its downsides, and encourage agricultural production and boosting rural incomes while also protecting the environment. All of these trade-offs become more pronounced in the context of small farms operating in marginal environments. In order to address these trade-offs, cooperation and coordination across policy makers, local communities

and public and private institutions and investors will be required.

To address these resilience challenges, solutions need to be defined around cross cutting levers of joined-up policy reform, coordinated investment, accessible financing, innovation, traditional knowledge, governance, data and evidence, and empowerment. Much can be learned from successful ongoing initiatives and programs. A range of local, regional, national and global solutions covering different parts and contexts of the food system have been reviewed to understand progress and challenges in building resilience to improve food security. These include (a) famine early warning systems; (b) weather index insurance; (c) enhanced market information; (d) addressing food insecurity in conflict zones; (e) social protection; (f) aquaculture diversification; (g) postharvest loss reduction; (h) development, dissemination and utilization of agricultural big data; (i) enhanced equity in food systems; (j) agro-ecology; (k) trans-national policy coordination; (l) food safety policies; and (m) community organization and local innovation. Re-

silience interventions will have differential impacts depending on their agroecological context, cultural aspects, policies and institutional capacities.

The resilience framework is helpful to conceptualize complex problems related to food security and allows us to point to important challenges that need to be overcome. From this analysis we conclude that operationalizing resilience will always be context-specific and requires the involvement of relevant local, national and international actors, organizations and agencies. Hence, there is no single game changing solution that will ensure resilience across multiple food security challenges. Instead, adopting a systems approach to resilience considering local and regional actors will contribute most effectively to the development of context-specific solutions. Beyond that, much will be gained by highlighting successful solutions and facilitating exchange of tools, data, information and knowledge and capacity. This will also contribute to the further development of the resilience approach as a key element of any successful food security strategy.

The Scientific Group Papers for the UN Food Systems Summit are shared with the aim of providing information and facilitating discussion for transparent and evidence-based Summit preparations. The full paper can be accessed at <https://sc-fss2021.org/materials/scientific-group-reports-and-briefs>. Authors' affiliations are listed there as well.

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