



Accelerating Comprehensive Risk Management in Agrifood Systems

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Why integrated planning is key to resilient agrifood systems

Globally, climate-related slow-onset and extreme events lead to significant losses and damages in agrifood systems – from reducing agricultural production to interrupting value chains and markets – and contribute to greater food insecurity and malnutrition. In 2023, over 281 million people in 59 countries experienced high levels of acute food insecurity. Climate shocks were a key driver of food crisis for 72 million people across 18 countries, leading to emergency levels of hunger – a 26 per cent increase on the previous year.¹

Over the last 30 years, an estimated US\$3.8 trillion worth of crops and livestock production has been lost due to disaster events, i.e. an average annual loss of US\$123 billion, in addition to non-economic losses, loss of culture and way of life and those resulting from. The total losses over 30 years was approximately equivalent to Brazil's gross domestic product (GDP) in 2022. In small island developing States (SIDS), disasters caused them to lose nearly 7 per cent of their agricultural GDP.²

Apart from impacting local food production, climate-related events also adversely affect infrastructure, value chain functioning and markets. Climate change, combined with global crises of conflict, land degradation and biodiversity loss, is already negatively affecting and disrupting the agrifood system and overall food security. Without adequate and appropriate action, these negative effects will continue their upward trend. Hence, integrating agrifood systems – including agricultural

production, agricultural livelihoods and food systems – into disaster risk reduction (DRR) and climate change adaptation (CCA) planning is key to building approaches that better transition communities from relief to recovery and development, while enhancing their resilience to the adverse impact of climate change and disasters.

To date, DRR and CCA in agrifood systems have focused primarily on agricultural production, without considering the entire system, its value chain and connected actors. This is, in part, due to the divergence of policies, plans and practices that lead to fragmented decision-making and inefficient use of resources while creating competing priorities for policymakers and practitioners.

This issue brief examines challenges in addressing today's multiple food crises and showcases and outlines opportunities for effectively integrating DRR into CCA and agrifood systems policies and action plans. At the same time, it highlights the importance of understanding food system outcomes, especially food security and nutrition, to inform DRR and climate action. It advocates for adopting a comprehensive (disaster and climate) risk management (CRM) approach to steer global food systems' resilience to climate change and disaster risk through policy coherence and enhanced stakeholder coordination across sectors and levels, from production to consumption, in planning and implementation.

1 FSIN and Global Network Against Food Crises, Global Report on Food Crises 2024 (Rome, 2024). Available from www.fsinplatform.org/grfc2024.

2 Food and Agriculture Organization of the United Nations (FAO), Report. The Impact of Disasters on Agriculture and Food Security 2023 – Avoiding and reducing losses through investment in resilience (Rome, 2023).

Key concepts

Comprehensive risk management (CRM) is a holistic approach to managing risks associated with climatic and non-climatic hazards. The approach intends to address and build long-term resilience among countries, vulnerable populations and communities, including resilience to loss and damage from extreme and slow-onset events.³ CRM is articulated in the Paris Agreement as an area of cooperation and facilitation to enhance understanding, action and support on loss and damage. It involves managing risks associated with extreme and slow-onset events through near-, medium- and long-term risk reduction and adaptation actions, fostering active collaboration among government institutions, non-state actors and other stakeholders. CRM ensures that coherence and synergies between adaptation and DRR measures are sufficiently reflected in planning and implementation frameworks.⁴

Agrifood systems comprise the entire food-related ecosystem along the rural–urban continuum. They entail the full range of actors and interlinked value-adding activities that are involved in the production, aggregation, processing, distribution, consumption and disposal of food products that originate from agriculture, forestry or fisheries. Agrifood systems are inherently linked to healthy ecosystems and are critical to ensuring food security, improving nutrition and achieving sustainable development.⁵

They are embedded within global economic and environmental systems through interdependent components such as energy and biodiversity, making them susceptible to changes. A system's interconnectivity varies by region, with some areas being food suppliers or consumers, influenced by global price fluctuations. Thus, understanding risk and vulnerability in agrifood systems requires knowledge of regional structures and their relation to the global agrifood system.

This issue brief, a joint output of the Climate Resilient Food Systems Alliance (CRFS Alliance) members, promotes collaboration across sectors to support country-led policy coherence and synergy in implementation. It advocates for stakeholder cooperation to strengthen disaster and climate risk governance in vulnerable countries and to accelerate progress towards integrated policies and plans by showcasing successful initiatives.

The CRFS Alliance provides a platform for achieving climate-resilient food systems by synergizing efforts across its various actors. The mission of the alliance is to join forces to accelerate action towards climate-resilient, sustainable, equitable and inclusive food systems in a coherent manner, focusing on the most vulnerable countries and regions, particularly arid and semi-arid lands (ASALs), SIDS, landlocked developing countries (LLDCs) and least developed countries (LDCs).

This brief links to the COP 28 Presidency Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action, endorsed by 160 countries and supporting a holistic approach to agrifood systems.⁶ The declaration includes a commitment to integrate agrifood systems into national plans (national adaptation plans [NAPs], nationally determined contributions [NDCs], long-term strategies and biodiversity strategies) by COP 30, which will be held in 2025. Furthermore, it contributes to the disaster risk governance principles and priorities of the Sendai Framework for Disaster Risk Reduction and the target on “attaining climate-resilient food and agricultural production” under the UAE–Belém work programme on indicators for the global goal on adaptation.⁷

3 UNFCCC Executive Committee of the Warsaw International Mechanism for Loss and Damage (WIM ExCom), Teaser 2: The compendium on comprehensive risk management approaches, vol.2.

4 United Nations Office for Disaster Risk Reduction (UNDRR), “Comprehensive Disaster and Climate Risk Management (CRM)”, no date.

5 FAO, Sustainable Food Systems: Concept and framework (2018).

6 United Nations Framework Convention on Climate Change (UNFCCC), “COP 28 UAE Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action”, 2023.

7 UNFCCC, Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation referred to in decision 7/CMA.3, Decision 7/CMA.5, para. 9b.



Enhancing agrifood systems resilience through comprehensive risk management

Current challenges and gaps in accelerating resilience-building in agrifood systems call for policy coherence and integrated planning and implementation.

Globally, 129 countries have reported the existence of national DRR strategies and plans in line with the Sendai Framework. Meanwhile, 59 countries have submitted NAPs, of which 55 identify the agrifood sector as a priority.⁸ Those two planning instruments – as well as the current development of NDCs, National Biodiversity Strategies and Action Plans and other related strategies – present opportunities for integrating agrifood systems into climate resilience planning. It is recommended that countries that have either a NAP or a DRR strategy should build upon the existing plan, build an integrated plan if neither exists or in case both exist, consider

joint implementation including through common action plans. Such integration in approaches is at the heart of CRM, wherein agrifood systems offer a common basis for implementation through risk management across timescales – in the short-, medium- and long-term. Pursuing CRM-centric implementation helps maximize resources, enhances long-term agrifood resilience and enables multi-sector action.

On this basis, this brief recommends three key areas for achieving resilience-building through policy coherence and integrated planning and implementation. It is acknowledged that biodiversity, healthy soils and ecosystems are the foundation for agrifood systems and for any other action.

8 International Institute for Sustainable Development (IISD), NAP Global Network, "NAP Trends", 2024.



1. Risk-informed agrifood systems

Action and investments in agrifood systems must be risk-informed, including observed and projected impacts, past and future climate information, and potential cascading and compounding hazards. In addition to integrating the existing understanding of risk into these systems, more research is required, particularly on the underlying drivers of disaster risk and their cascading and compounding impacts on agricultural production and value chains, as well as an assessment of how food system actions and actors influence the reduction of risks and recovery after a shock.⁹



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Good practice – Boosting agrifood systems resilience at different levels

Micro level: The Forest and Farm Facility (FFF) operates in 10 countries in Latin America, Africa and Asia, supporting smallholder organizations, women's groups and Indigenous Peoples' institutions to improve their technical knowledge and business skills. Supporting these cooperatives, the FFF promotes the resilience of livelihoods and landscapes through the diversification of seeds, value chains, and farm and forest products.¹⁰

It also provides funding, information and advice, allowing farmers to make risk-informed decisions, connecting the abovementioned organizations with policymakers and thereby feeding back into the policy landscape. This ultimately enables risk-informed investments

across public and private finance. For instance, the FFF has directly increased investments in forest and farm producers.

Meso-macro level: The Resilience Rating System (RRS) helps guide investment decisions to improve climate resilience by evaluating projects on two fronts: i) their ability to achieve outcomes despite climate risks and ii) their contribution to strengthening resilience. Through its rating and resilience assessment, the RRS supports better project planning and monitoring. Thus, it can help build more-resilient agrifood systems, including through mobilizing capital for climate-resilient investments.¹¹

⁹ FAO, The Impact of Disasters on Agriculture and Food Security 2023 – Avoiding and reducing losses through investment in resilience (Rome, 2023).

¹⁰ FAO, "Forest and Farm Facility", 2024.

¹¹ World Bank, Resilience Rating System: A methodology for building and tracking resilience to climate change - Synthesizing key lessons from IDA19 piloting (2024).

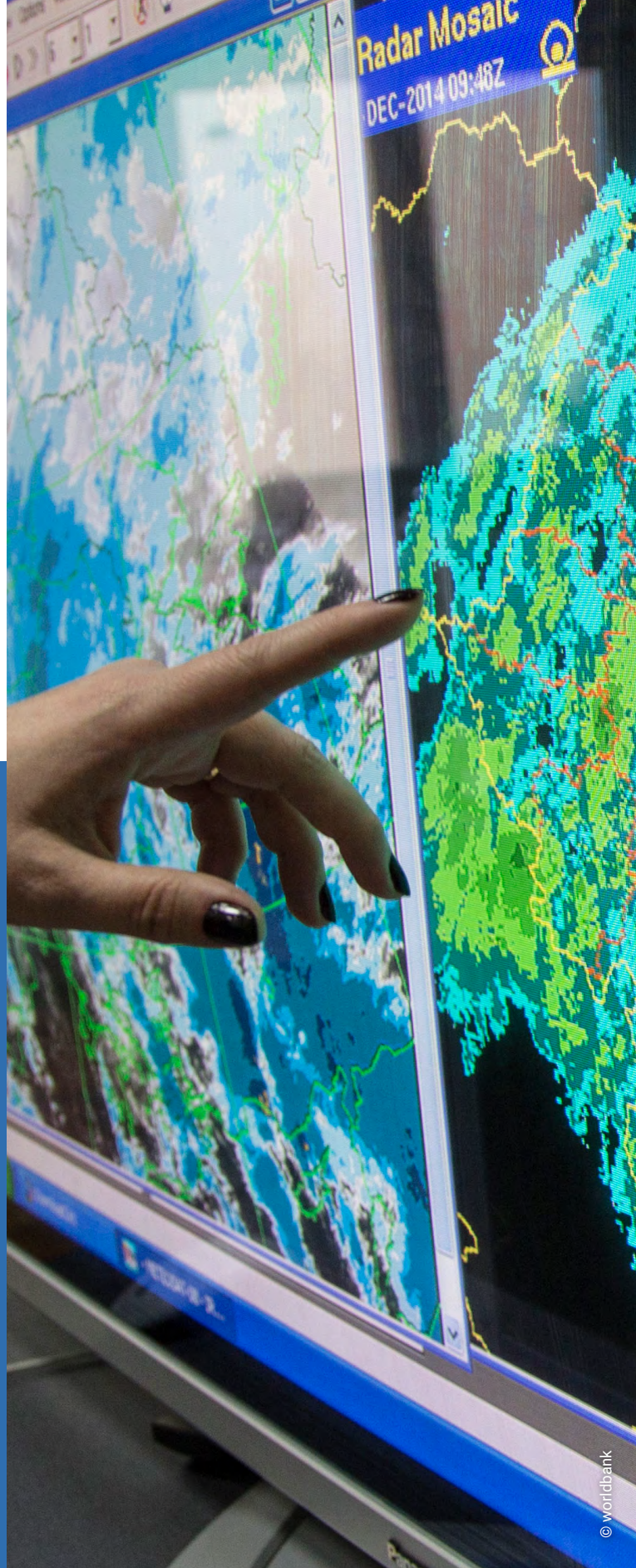


2. Enhancing early warnings and climate information for agrifood system resilience

Multi-hazard early warning systems (MHEWS) linked to early action are critical to prevent significant losses and damages in agrifood systems. End-to-end MHEWS follow a value-cycle approach to ensure alerts are issued in time to prevent, or minimize the impact of, disasters at different levels of an agrifood system. Accessible information on weather and climate extremes can play a key role in anticipating disasters, triggering anticipatory action and preventing negative coping strategies, all while improving productivity and food security.

Good practice – Early warning and climate information services in agrifood systems

In Bangladesh, climate service advisories have been combined with mobile-phone-based interactive voice response services to transform mung bean farming. So far, over 1 million automated weather-forecast-based harvesting advisory calls have been made, enabling farmers to take early action to save their crops from weather-induced loss and damage.¹²



¹² CGIAR, "Empowering Bangladesh's mung bean farmers to overcome climate risk-induced loss and damage", 2023.



3. Coherent planning and implementation

Building climate resilience requires multi-stakeholder and cross-sectoral collaboration along the entire food value chain, including global and localized actions to enhance resilience against the backdrop of escalating and compounding threats. It is particularly important to ensure that local communities and marginalized groups are included, as they play a vital role in protecting food security and are also often the most vulnerable to climate change losses and damages.

Sharing good practices, knowledge and data combined with large-scale capacity-building can boost the resilience of stakeholders, particularly smallholders, and facilitate the integration of risk into national strategies, policies and processes, thus enabling synergies in implementation. For instance, in agrifood systems, social protection programmes offer a common basis for implementation. Combined with MHEWS, social protection becomes a proven vehicle for risk transfer and anticipatory action, thereby enhancing adaptive capacity and reducing risk.



Good practice – Resilient agrifood value chains through comprehensive approaches

The Building Resilient Commercial Smallholder Agriculture project in Bhutan establishes inclusive and resilient agrifood systems through interconnected project components, namely resilient production systems, strengthened value chain coordination and market linkages. By strengthening market linkages and farm-to-school connections, introducing post-harvest and marketing assistance, and building the capacities of government staff in agriculture and marketing, this project has established an innovative and competitive agrifood sector.¹³

Furthermore, the introduction of financial innovations, such as inclusive insurance linked with savings groups, and adaptive social protection systems through the R4 Rural Resilience Initiative in Senegal demonstrates that a CRM approach can help vulnerable families reduce the impacts of extreme weather events and strengthen their resilience. It allows farmers to access insurance by participating in risk reduction activities and at the same time links to a whole set of other resilience-building measures concerning the agrifood value chain.¹⁴

¹³ World Food Programme (WFP), Building Resilient Food Systems in Bhutan (Rome, 2024).



Risk governance of agrifood systems calls for coordination

While national agricultural plans mostly consider disaster impacts, the multitude of agrifood-related policies and plans do not adequately integrate CRM aspects yet. This is particularly important for policies seeking to improve resilience and sustainability along food value chains beyond just the production of food, particularly in terms of its storage, transportation, consumption and disposal. On the other hand, while in many countries agrifood systems are outlined as key sectors in national DRR strategies and NAPs, the integration of relevant sectors and stakeholders in concrete disaster risk management planning needs to be aligned and strengthened similarly.

Together with other actors, the role of national, subnational and local governments remains crucial in further integrating climate risk and promoting cross-sectoral and stakeholder collaboration. Risk can be integrated by, for instance, incorporating climate considerations and sustainability standards into public investment appraisals and decision-making processes and by deploying risk-assessing tools and risk reduction mechanisms through innovative finance strategies and partnerships.

In summary, accelerating action in adaptation and DRR for resilient and sustainable agrifood systems requires a comprehensive and holistic approach, across and within systems, starting from ecosystems and the entire agrifood system (from production to consumption). Losses and damages to agrifood systems can only be averted, minimized and addressed with measures that address DRR and adaptation at the community, national and regional levels with different types of complementary interventions or solutions. This requires a comprehensive set of DRR policies, plans and strategies but also the application of different risk reduction and risk transfer instruments such as climate and weather information services, including MHEWS, risk insurance schemes, combined with ecosystem-based approaches, climate-proofing of infrastructure, social protection, the reduction of food loss and waste, improved diets and nutrition and other resilience-building measures. Ultimately, a comprehensive approach with collaboration across sectors and levels of governance enables more-efficient and more-effective implementation of measures, including through better access to domestic and international finance, including climate finance.

