8TH ASIA-PACIFIC CLIMATE CHANGE ADAPTATION FORUM

Resilience of Food Systems Outlook

Resilience for All: Enabling transformative implementation

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8th Asia-Pacific Climate Change Adaptation Forum

Resilience Outlook

Resilience of Food Systems

Prepared by

FAO Regional Office for Asia and the Pacific

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Summary

Climate change is the biggest threat to food security and nutrition in Asia and the Pacific, causing a range of shocks and impacts in food systems that affect food production, availability, access and utilization. The IPCC's Sixth Assessment Report highlights that climate impacts on food systems are growing in scale and magnitude, emphasizing the importance of integrated approaches to meet multiple objectives, including food systems resilience.

The United Nations Food Systems Summit in 2021 engaged countries in an ongoing process to strengthen resilience in national, regional and global food systems. In their National Pathways for Food System Transformation, governments in Asia and the Pacific highlight resilience to climate impacts, disasters and socio-economic shocks as vital for food security and sustainable livelihoods. Countries in the region have also prioritized a range of food systems policies and measures in their Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs), but many measures are not well targeted or costed.

Up to USD 350 billion per year will be needed globally to meet climate-related goals in food systems, and while new sources of funding are supporting climate action, less than 3% of total climate finance is being directed to the agriculture and land use sectors. Further, the significant financial impacts of Loss and Damage in Asia-Pacific constrain the ability of countries to invest in needed adaptation measures.

> **What are *food systems*?**
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> Food systems encompass the entire range of actors and their interlinked activities involved in production, aggregation, processing, distribution, consumption and disposal of food products that originate from agriculture, forestry or fisheries, and parts of the broader economic, societal and natural environments in which they are embedded. Food systems are composed of sub-systems (such as farming systems, waste management systems and input supply systems) and interact with other key systems, including energy systems, trade systems and health systems.
>
> FAO. 2018. Sustainable food systems: Concept and framework.
> www.fao.org/3/ca2079en/CA2079EN.pdf

Resilience of food systems is one of four thematic streams in the 8th Asia-Pacific Climate Change Adaptation (APAN) Forum, which notes that resilience requires action across five enablers – (1) policy and governance, (2) planning and programming, (3) science and assessment, (4) technologies and practices, and (5) finance and investment. In preparation for the Forum, this Resilience Outlook aims to foster a common understanding of barriers and opportunities associated with these enablers, as a foundation for productive discussions during the Forum to catalyze transformative actions in the region's food systems.

Status of food systems resilience in Asia-Pacific

Climate change is the biggest threat to food security and nutrition in Asia and the Pacific. The region is home to 60% of the world's population and is rapidly growing and urbanizing, increasing pressure on food production and straining food supply chains and infrastructure as people move to cities. Asia is also home to the majority of people facing hunger – 402 million, representing 55% of the world's undernourished people in 2022.[1] The Asia-Pacific region has six of the ten countries most affected by climate change during 2000-2019.[2] Exposure to climate change and multiple other hazards such as epidemics, conflict and widespread vulnerabilities, puts more than half of the region's countries at very high, high and medium risk of disasters and humanitarian crises.[3] Climate and other impacts disproportionately affect vulnerable communities, including rural and low-income populations, small-scale farmers, fishers and pastoralists, Indigenous Peoples, and women and girls, who are most at risk for suffering from climate-induced food insecurity and hunger.[4]

Climate variability and change can result in a range of shocks, impacts and feedback effects in food systems, affecting food production, availability, access and utilization (Figure 1).[5] Climate change also exacerbates ecosystem and natural resource degradation, which undermines the productive capacities of food systems. Food systems, in turn, influence the climate system through greenhouse gas (GHG) emissions resulting from the production, processing, distribution and consumption of food and the degradation of terrestrial and marine environments that support climate regulation.

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[1] FAO, IFAD, UNICEF, WFP and WHO. 2023. The State of Food Security and Nutrition in the World (SOFI). www.fao.org/documents/card/en/c/cc3017en

[2] Germanwatch. 2021. Global Climate Risk Index 2021. www.germanwatch.org/en/19777

[3] INFORM RISK.

[4] United Nations Office of the High Commissioner for Human Rights. The impact of climate change on the right to food. www.ohchr.org/en/climate-change/impact-climate-change-right-food

[5] Mbow, C. et al. 2019. Food Security. In: *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*. IPCC.
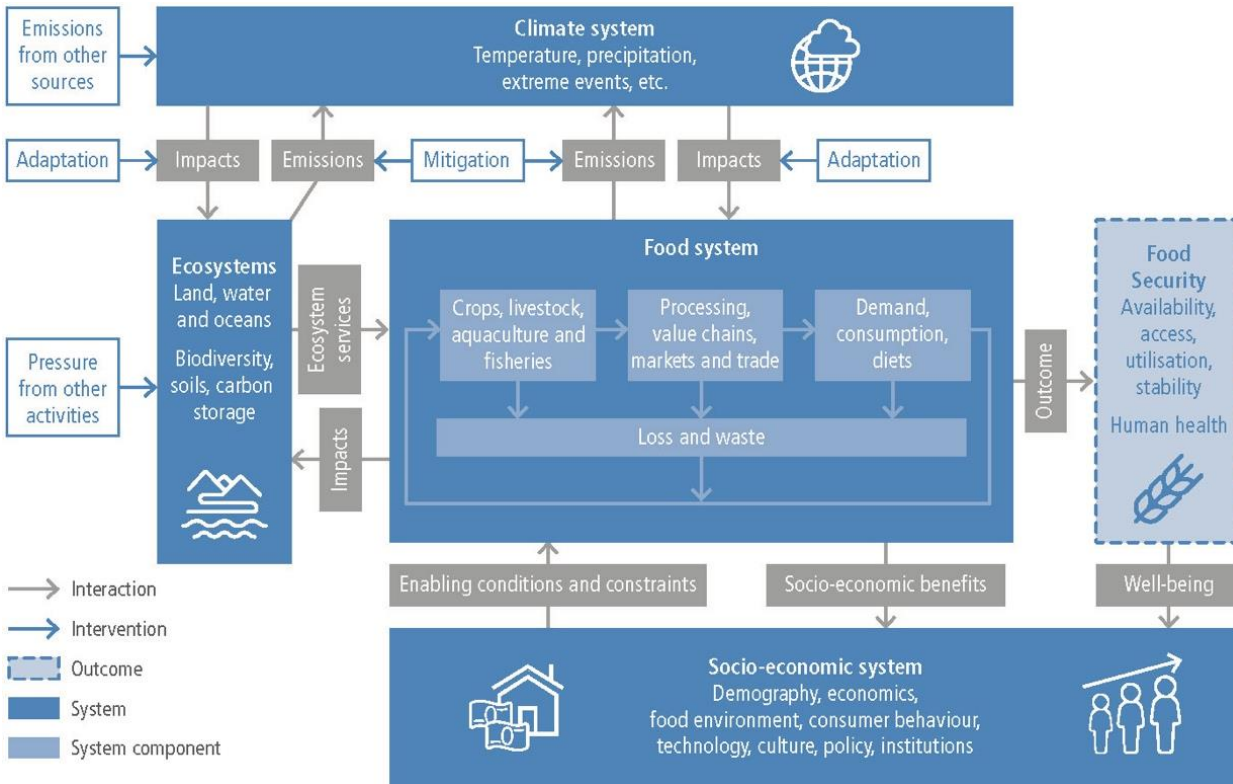
Figure 1. Interlinkages between the climate system, food system, ecosystems and socio-economic system. Adapted from IPCC. 2019. Also available at www.ipcc.ch/site/assets/uploads/sites/4/2019/11/Figure-5.1.jpg.

The Sixth Assessment Report (AR6) of the United Nations Intergovernmental Panel on Climate Change (IPCC) highlights that climate change impacts on food systems are growing in scale and magnitude. It emphasizes the importance of integrated approaches to meet multiple objectives, including food systems resilience, and underscores that sustainable agriculture, shifting to healthy diets and reducing food waste can tackle food system emissions, reduce ecosystem impacts and free up land for reforestation and biodiversity restoration.[6]

While there is extensive evidence to support rapid investment in sustainable food systems in Asia-Pacific, it is often insufficient to address the complex needs of decision-makers. Countries in the region have prioritized a range of food systems policies and measures in their Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs), but many measures are not well targeted or costed. Distinctions between core concepts in resilience building, such as adaptation, mitigation and disaster risk management, have also led to policies and institutional arrangements that are disconnected and narrowly focused. This acts as a barrier to thinking and

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[6] IPCC. 2023. AR6 Synthesis Report, Climate Change 2023. Summary for Policymakers. www.ipcc.ch/report/ar6/syr/

acting in a systemic way to address the full range of risks that climate change poses to food systems.[7]

Seeking to address these challenges, the United Nations Food Systems Summit in 2021 (FSS 2021) engaged countries in an ongoing process to strengthen resilience in national, regional and global food systems. It identified five key capacities of resilient food systems to (i) anticipate, (ii) prevent, (iii) absorb, (iv) adapt to evolving risks and (v) transform in cases where current food systems are no longer sustainable. Building resilience also requires a clear understanding of the specific food system context to develop targeted solutions and concrete measures that can be effectively operationalized (Figure 2).[8]
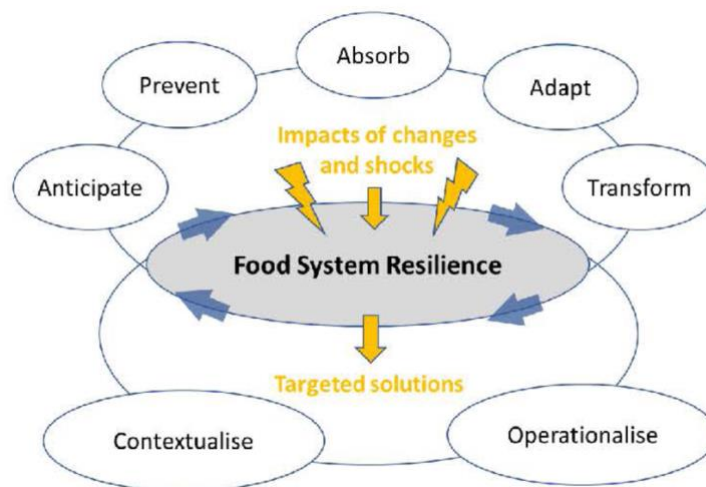
Figure 2. Resilient food systems are able to anticipate, prevent and absorb impacts from shocks, adapt and transform, through targeted solutions aligned with the food system context and concrete measures that can be operationalized.

Once established, resilient food systems are able to provide safe and affordable healthy diets to all – even in the face of structural vulnerabilities, shocks and stressors.[9] At the UN Food Systems Summit +2 Stocktaking Moment (UNFSS+2) in July 2023, countries assessed progress toward these objectives and discussed further actions to accelerate food systems transformation.[10]

Resilience of food systems is one of four thematic streams in the APAN Forum, which notes that resilience requires action across five enablers – (1) policy and governance, (2) planning and programming, (3) science and assessment, (4) technologies and practices, and (5) finance and investment.[11] In preparation for the Forum, this Resilience Outlook aims to foster a common understanding of barriers and opportunities associated with these enablers, as a foundation for

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[7] FAO. 2022. Actions to promote climate resilient agrifood systems in Asia and the Pacific region. www.fao.org/3/nh656en/nh656en.pdf

[8] UN Food Systems Summit. 2021. Action Track 5: Building Resilience to Vulnerabilities, Shocks and Stresses. https://sc-fss2021.org/materials/scientific-group-reports-and-briefs/

[9] UN Food Systems Coordination Hub. 2023. Food Systems Solutions Dialogue, Learning for food systems transformation: Building Resilient Food Systems. www.unfoodsystemshub.org/docs/unfoodsystemslibraries/solutions-dialogues/3-may-2023/eng_030523_fssd_resilience_concept-note.pdf?sfvrsn=ca628039_1

[10] UN Food Systems Coordination Hub. 2023. UN Food Systems Summit +2 Stocktaking Moment. www.unfoodsystemshub.org/fs-stocktaking-moment/

[11] UN Environment Programme. 2023. 8th Asia-Pacific Climate Change Adaptation Forum. www.unep.org/events/conference/8th-asia-pacific-climate-change-adaptation-apan-forum

productive discussions during the Forum to catalyze transformative actions in the region's food systems.

Barriers associated with the five enablers of resilient food systems

A number of challenges continue to limit progress toward resilient food systems in Asia-Pacific and globally. Broad overarching barriers associated with each of the five enablers follow. [12]

Policy and Governance

- Insufficient coordination between different levels of government (national, regional, local) and different government agencies, leading to duplication of efforts, gaps in service delivery, and a lack of overall strategic direction for food systems.
- Weak regulatory frameworks, making it difficult to enforce policies and laws designed to support resilient food systems.
- Insecurity in land tenure and inequitable access to land and other natural resources, making it difficult for smallholder farmers, rural women, indigenous communities and other food producers to invest in their land and make long-term decisions for resilience.
- Insufficient political will, undermining policy development and funding allocation for food systems transformation.

Planning and Programming

- Inadequate data and information on the state of food systems, making it difficult to identify priority challenges and opportunities and to design effective solutions.
- Short-term planning horizons, resulting in plans and programs that are not sustainable in the long term or sufficient to support broader food systems transformation.
- Lack of coordination between different food system sectors and actors, creating challenges for developing and implementing system-wide plans and programs.
- Insufficient policy environment and budgetary resources, limiting the scope and scale of plans and programs that can be developed.

Science and Assessment

- Limited connection of data from different sources and sectors, constraining the more comprehensive analyses needed to assess and predict how food systems will respond to shocks and stresses.
- Insufficient funding and investment for science and assessment, limiting the scale of data and information that can be developed to inform policy, planning and programming.

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[12] This list is not comprehensive and intends only to provide high-level context for discussions during the Forum.

- Limited capacity to conduct scientific research on food systems, making it difficult to generate the knowledge and evidence needed for decision-making.
- Lack of coordination between research institutions within countries and regionally, limiting information sharing, consensus on research priorities, and collaboration on projects to provide comprehensive assessments for food systems transformation.

Technologies and Practices

- Limited access to new technologies and limited capacity to adopt new practices, due to a lack of access to training, skills or financial resources, making it difficult for smallholder farmers, women and other food producers to transition to resilient production.
- Weak agricultural extension services, which are essential to help farmers adopt and scale new technologies and resilient production practices.
- Inadequate investment in rural infrastructure and services, limiting the ability of farmers to access markets, inputs and other resources needed for resilient production.
- Resistance to change, due to cultural norms, risk aversion, lack of trust in new technologies or insufficient awareness of the benefits of new technologies and resilient production practices.

Finance and Investment

- Insufficient climate finance directed to the agriculture, forestry and other land use (AFOLU) sectors, limiting the ability of countries to develop and implement policies and programs for food systems transformation.
- Limited private investment targeting sustainable food production, constraining the development and scaling of new technologies and practices that can improve food systems resilience.
- Lack of access to finance for smallholder farmers, women and other food producers, limiting their ability to invest in new technologies and resilient production practices and to cope with shocks and stresses.
- Insufficient policy environment to accelerate sustainable food systems finance and insufficient information on the cost-effectiveness of different investment options, limiting the ability of public and private investors to make informed decisions.
- Loss and Damage from climate impacts, causing significant financial losses that make it difficult for countries to invest in measures needed to improve food systems resilience.

Opportunities to support and catalyze transformative actions

Seeking to address the above barriers, public, private and civil society stakeholders in Asia-Pacific are collaborating to enhance resilience in the region's food systems. Examples of opportunities to support transformative actions are summarized below.

Policy and Governance

Support National Pathways for Food System Transformation: Governments in Asia and the Pacific have prioritized climate change in their national food systems transformation dialogues and processes. In their National Pathways for Food System Transformation, countries highlight resilience to climate impacts, disasters and socio-economic shocks as vital for food security and sustainable livelihoods. Promoting food systems that prioritize vulnerable populations, including women and youth, and drawing upon indigenous knowledge and experience are common 'game changers' in the National Pathways.

At the **UN Food Systems Summit +2 Stocktaking Moment** in July 2023 in Rome, governments and stakeholders reviewed progress on commitments made during the FSS 2021 and

> **National Pathways focus on food systems resilience**
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> In preparation for the FSS 2021, countries submitted *National Pathways for Food Systems Transformation* in support of the 2030 Agenda for Sustainable Development. Of the 117 National Pathways, 95 focus on resilience building. Pathway documents are available on the UN Food Systems Coordination Hub.

identified successes, enduring bottlenecks and implementation priorities for food systems transformation. Hosted by the Food and Agriculture Organization of the United Nations (FAO), International Fund for Agricultural Development (IFAD), World Food Programme (WFP), UN Food Systems Coordination Hub and wider UN system, UNFSS+2 also provided a forum to advocate for urgent action at scale, including through a plenary session focused on building resilient food systems.[13] A key realization during UNFSS+2 was that progress in sustainable development is not possible without taking concrete steps in food systems transformation, which will be the focus of development agencies in the coming years and decades.[14]

Utilize the ASEAN Climate Resilience Network: Many countries in the region are working through the ASEAN Climate Resilience Network (CRN) and its Negotiating Group for Agriculture to engage with international frameworks such as UN climate change processes and to help implement national commitments for food systems resilience. The ASEAN CRN provides policy guidelines for climate-smart agriculture, public-private partnerships, gender mainstreaming in agriculture, and other key opportunities. Through a Green Climate Fund (GCF) Readiness Grant, the network is also spearheading the implementation of the Koronivia Joint Work on Agriculture and supporting the Sharm el-Sheikh Joint Work programme to scale up climate action for the region's food systems resilience.[15] The ASEAN CRN presents a potential model and basis for other sub-regions to increase their engagement in international negotiation processes relevant to food systems and to advocate for country and region-specific priorities.

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[13] UN Food Systems Coordination Hub. 2023. UN Food Systems Summit +2 Stocktaking Moment. Reversing the food and hunger crisis: building resilient food systems. www.unfoodsystemshub.org/fs-stocktaking-moment/programme/reversing-the-food-and-hunger-crisis--building-resilient-food-systems/en

[14] Asia-Pacific Adaptation Network. 2023. Catalyzing climate resilient food systems in Asia and the Pacific: Looking ahead to the APAN Forum. www.youtube.com/watch?v=Q7DUjNAjqhM&list=PLNwcUGR4W6Q2dFmhCvLOC82rpPLh8nDsk&index=4

[15] ASEAN Climate Resilience Network. 2023. https://asean-crn.org

Foster an enabling environment for multi-sector engagement: Rallying support from stakeholders also depends on relevant policies, legislation and regulatory frameworks to enable sustainable agrifood sector development. Multi-stakeholder engagement and public-private partnerships are essential to accelerate a market-based transformation of food systems for greater resilience. FAO's Hand-in-Hand Initiative supports 11 countries in Asia-Pacific in enhancing governance and partnerships to operationalize national agricultural strategies and investment plans.[16]

Planning and Programming

Scale up climate ambition in agriculture and land use: Countries in the region have prioritized the agriculture sector in their NDCs, NAPs and related programming. In 24 updated NDCs from Asia and 12 from the Pacific, the importance of adaptation in food systems is recognized, highlighting water management, disaster risk management, nature-based solutions (NbS) and ecosystem restoration as key resilience-building measures. Some countries are also using foresight and scenario approaches in planning processes and have established monitoring and evaluation (M&E) systems for climate adaptation in the agriculture sector to provide insights for programming. Cambodia, Mongolia, Nepal and Thailand, for example, are participating in an ongoing *Scaling up Climate Ambition on Land Use and Agriculture through NDCs and NAPs programme* (SCALA), co-led by FAO and the United Nations Development Programme (UNDP). SCALA will provide strategies, approaches and lessons learned to support countries broadly in translating NDCs and NAPs into actionable and transformative climate solutions.[17]

Utilize the Climate-Resilient Food Systems Alliance: Countries in the region are also participating in the Climate-Resilient Food Systems (CRFS) Alliance, a platform for achieving climate resilient food systems through the aligned efforts of diverse food and climate actors and initiatives. Fiji and Bangladesh are part of the alliance, which provides targeted support for implementing national food systems pathways, NDCs and NAPs, facilitates access to funding, data and analytics, and accelerates partnerships to strengthen synergies for aligned action.[18]

Science and Assessment

Utilize climate services and risk assessment tools: Advancements in science and assessment are supporting improved planning, programming and investment in the region's food systems. Climate services for agriculture, integrating climate scenarios, ground observations, remote sensing and agronomic data, can help countries identify vulnerable areas, assess potential impacts on food systems (such as changes in water availability, crop yield and livestock productivity), and develop adaptation strategies. FAO-developed tools, including a Climate Risk Toolbox, Climate and Agriculture Risk Assessment (CAVA) Platform, CAVA Analytics, and Py

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[16] FAO. 2023. Hand-in-hand Initiative. www.fao.org/hand-in-hand/hand-in-hand-counties/en

[17] FAO and UNDP. 2023. Scaling up Climate Ambition on Land Use and Agriculture through NDCs and NAPs programme (SCALA). www.adaptation-undp.org/scala and www.fao.org/in-action/scala/en

[18] Climate-Resilient Food Systems Alliance. 2022. https://unfccc.int/sites/default/files/resource/crfs_cop27_newsletter.pdf

Agro-Ecological Zoning (Py-AEZ), are supporting Asia-Pacific countries in climate risk assessment and resilience building.[19]

Leverage next generation agrometeorological services: Countries in the region are also developing innovative approaches using agrometeorological services to strengthen the resilience of farmers and food systems. Combining digital technologies and agrometeorological advisories is helping farmers to better manage weather-related risks and make informed decisions related to crop selection, irrigation, fertilization, and pest and disease control. The Laos Climate Service for Agriculture (LaCSA), for example, developed with FAO support and Global Environment Facility (GEF) funding, consolidates weather station and agricultural data to
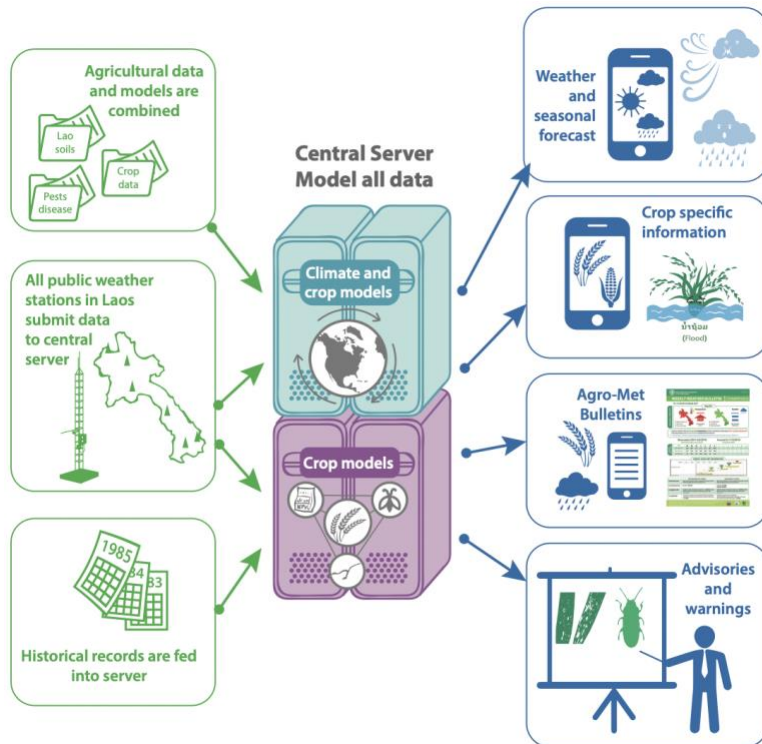
Figure 3. LaCSA combines digital technologies and agro-meteorological advisories to help farmers manage risks and increase resilience.

provide forecasts, farm management recommendations and early warnings on a seasonal, monthly and weekly basis, using diverse channels to reach decision-makers at all levels (Figure 3).[20]

A weekly bulletin for each district includes weather forecasts, climate resilient agriculture recommendations for local crops, and pest and disease risk advisories. More than 85% of farmers interviewed have changed their farming practices as a result of these bulletins, helping to strengthen resilience in the country's food systems.

FAO is extending this support to other Asia-Pacific countries and also working with partners such as the World Meteorological Organization (WMO) to facilitate the development of a *Regional Investment Roadmap for Agriculture Climate Services for Asia and the Pacific,* stimulating further investments in this critical area.

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[19] FAO. 2023. CAVA Platform: https://fao-cava.predictia.es/auth. CAVA Analytics: https://hub.climate4r.ifca.es/hub/login?next=%2Fhub%2Fspawn-pending%2Ferkinisaev%3Fnext%3D%252Fhub%252Fuser%252Ferkinisaev%252F. Py-AEZ: www.fao.org/documents/card/en/c/cc4079en

[20] FAO. 2020. Lao Climate Service for Agriculture (LaCSA). www.fao.org/3/ca9082en/CA9082EN.pdf

Technologies and Practices

Adopt resilience-building technologies at scale: A wide range of technological advancements are contributing to greater food systems resilience. Many technologies also enable GHG emission reductions in food systems and increased carbon sequestration. Examples include:[21]

- New crop varieties, livestock breeds and fish strains as well as indigenous crops and practices that offer significant resilience benefits, such as millets, which are resilient to biotic and abiotic stresses.[22]
- New technologies for sustainable management of cropland, grassland, soil and water resources that enhance agricultural productivity and resilience.
- Technological approaches to optimize nutrient requirements and fertilizer use efficiency, apply alternative fertilizer sources (e.g. bio-fertilizers) and improve soil fertility (e.g. use of underground fungi, microbiome and biochar).
- Cropping systems that couple biologically based technologies (e.g. plant-beneficial microbes, cover crops), agroecology, agroforestry, and regenerative and conservation agriculture.
- Sustainable mechanization to increase water use efficiency, reduce soil erosion, and improve planting and harvesting efficiency.
- Remote sensing and automation for weather, soil and crop monitoring, forecasting and early warning systems.
- Crop models combined with climate services and agrometeorological advisories, digital technologies and insurance products that help farmers manage risks and adopt climate-resilient practices.[23]
- Artificial Intelligence (AI), machine learning and digital technologies that improve agricultural productivity, climate assessment and services, access to markets and informed decision-making.
- Technological advances in post-harvest storage and processing to reduce food losses.

If adopted at scale, these and other technologies can help catalyze transformative change for resilience in the region's food systems. Inclusive planning and improved extension services for capacity strengthening are critical to ensure that smallholder farmers, women, youth, indigenous communities and vulnerable populations have access to and benefit from resilience-building technologies.

Invest in anticipatory action for cost-effectiveness: Many countries in the region are adopting an anticipatory action approach to protect their food systems and safeguard livelihoods before disasters occur. This approach establishes a systematic connection between early warnings, proactive measures, predetermined delivery mechanisms and financial arrangements to minimize

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[21] This list of examples is not comprehensive and intends only to provide high-level context for discussions during the Forum.

[22] FAO. 2023. International Year of Millets. www.fao.org/millets-2023/about/en

[23] FAO. 2022. Managing risks to build climate-smart and resilient agrifood value chains. www.fao.org/publications/card/en/c/CB8297EN/

harm and losses. In a notable instance in September 2022, FAO and the Vietnam Disaster and Management Authority implemented anticipatory action before Typhoon Noru hit, effectively safeguarding farmers' assets and ensuring food security. It was the first time this approach was used in Vietnam. Similarly, in December 2022, the Government of Mongolia demonstrated its commitment to anticipatory action by allocating 50% of its state reserves in hay and fodder, four months before the expected dzud event, to protect the livelihoods of herders on the steppe. In the Philippines, anticipatory actions initiated four months before the Government declared drought in Mindanao helped to save and protect the assets of vulnerable households.

Cost-benefit analyses based on experiences from Asia-Pacific and globally show that every USD 1 invested in anticipatory action yields up to USD 7 in benefits and prevented losses for families.[24] Recognizing these positive outcomes, there is rapidly growing momentum for anticipatory action as a transformative approach for resilience in the Asia-Pacific region.[25]

> **Anticipatory Action in ASEAN and the Pacific**
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> In 2022, ASEAN Member States endorsed the *ASEAN Framework on Anticipatory Action in Disaster Management*, providing a clear blueprint for governments and partners to advance this approach. The approach is gaining momentum in the Pacific as well, fuelled by various commitments made over the years, such as Section 6 in the Nadi Declaration by Ministers for Disaster Risk Reduction, which notes, "We commit to strengthening anticipatory action and disaster preparedness measures."
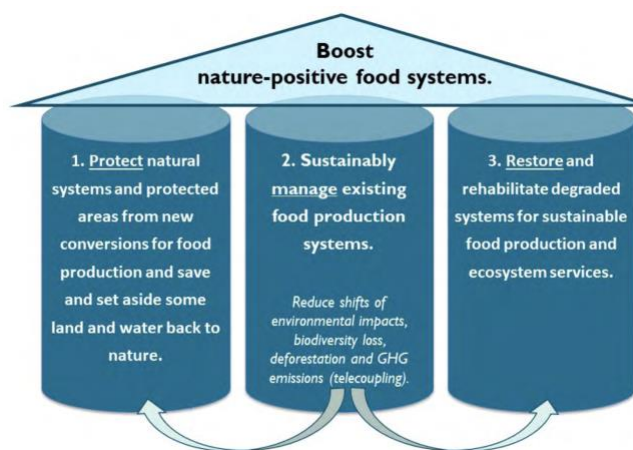
Practice agroecosystem restoration: Countries in the region are also restoring soils and agricultural landscapes, or "agroecosystems," to enable climate adaptive and resilient food systems. Practices range from natural regeneration and agroforestry, to reforestation, habitat rehabilitation, invasive species management and reclaiming degraded soils. In Pakistan, for example, FAO and other partners are supporting the repair and restoration of the Indus Basin, including agroecosystems for climate resilience.[26] Restored agricultural landscapes provide enhanced ecosystem services, including soil fertility, water purification, carbon sequestration, habitat

Figure 4. The three pillars of nature-positive food

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[24] FAO. 2020. The Philippines: Impact of Early Warning Early Action. www.fao.org/documents/card/en/c/CA9371EN/

[25] ASEAN Secretariat. 2022. ASEAN Framework on Anticipatory Action in Disaster Management. https://asean.org/wp-content/uploads/2022/06/ASEAN-Framework-on-Anticipatory-Action-in-Disaster-Management.pdf

[26] Living Indus. 2023. www.livingindus.com

availability and increased biodiversity, as well as natural resources such as timber, fish and medicinal plants, supporting local livelihoods.

Advocate for nature-positive food systems: The FSS 2021 highlighted the opportunity to build nature-positive food systems that protect, sustainably manage and restore agroecosystems. Nature-positive food systems are characterized by regenerative, non-depleting and non-destructive use of natural resources, based on stewardship of the environment and biodiversity as the foundation of ecosystem services and to enable resilience (Figure 4).[27] There is an urgent need to boost nature-positive investments, however, as nature-negative investments outpaced positive investments by three to seven times in 2022.[28] The UN Decade on Ecosystem Restoration 2021-2030, co-led by the United Nations Environment Programme (UNEP) and FAO, provides a unique opportunity to advance nature-positive food systems and investments for greater resilience.[29]

Finance and Investment

Scale up climate finance in the AFOLU sector: Mobilizing finance and investment to transform food systems has never been more urgent. Up to USD 350 billion per year will be needed globally to meet climate-related goals in food systems,[30] and while new sources of funding are supporting climate action, the AFOLU sector suffers from significant climate underinvestment, receiving less than 3% of global climate finance.[31] Many international finance institutions, donors and countries have committed to increase climate finance in the AFOLU sector and aligned support from partners and stakeholders is essential in this effort.

Repurpose current support: Governmental support to agricultural sectors (including fisheries and aquaculture) must be repurposed as a key component in mobilizing the investment needed. The majority of current governmental support to agricultural producers, approximately 87% or USD 540 billion per year globally, is either price distorting or harmful to the environment and people's health. If current trends continue, this support could reach USD 1.8 trillion by 2030. Action is needed at country, regional and global levels to phase out the most

Six steps to repurpose governmental support to agricultural sectors

1. Estimate the support already provided
2. Identify and estimate the impact of the support provided
3. Design an approach to repurpose agricultural producer support, identifying needed reforms
4. Estimate the future impact of the repurposing strategy
5. Review and refine the repurposing strategy, prior to implementation
6. Monitor outcomes of the new agricultural producer support

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[27] UN Food Systems Summit. 2021. Action Track 3: Boost Nature Positive Production. https://sc-fss2021.org/materials/scientific-group-reports-and-briefs/

[28] UNEP. 2022. State of Finance for Nature 2022. www.unep.org/resources/state-finance-nature-2022

[29] FAO. 2021. Ecosystem restoration for people, nature and climate. Becoming #GenerationRestoration. www.fao.org/policy-support/tools-and-publications/resources-details/en/c/1469987/

[30] International Food Policy Research Institute. 2022. Global food policy report: Climate change and food systems. https://ebrary.ifpri.org/digital/collection/p15738coll2/id/135889

[31] Climate Policy Initiative. 2022. Global Landscape of Climate Finance: A Decade of Data. www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-a-decade-of-data/

distortive, environmentally harmful support and to redirect it toward investments in climate-smart food production, research and development, and infrastructure to transform food systems for greater resilience.[32]

Leverage blended finance solutions: Blended finance, combining public and private capital, can de-risk investments for resilient food systems and provide needed transition and long-term finance for small-scale farmers and businesses to adopt climate-smart practices. Blended finance can also build coordination between public and private investors, attract new investors into the sector, and strengthen the capacity of local financial institutions to support food systems transformation. With support from the Sustainable Rice Landscapes Initiative (SRLI) and GEF, for example, a blended finance facility is being designed to catalyze public and private funds for climate-resilient rice farms, value chains and livelihoods. To be piloted in Bangladesh, Cambodia and Vietnam, the facility will support a sector-wide transition to sustainable rice landscapes, focusing on the funding needs of farmers, businesses and governments.[33]

Account for agricultural Loss and Damage: With the COP27 decision to establish funding arrangements for Loss and Damage (L&D), it is urgent to ensure that agriculture L&D is fully accounted for. Between 2008-2018, agriculture absorbed 26% of the impact caused by medium to large-scale disasters in low and lower-middle-income countries. Agriculture absorbed up to 82% of all L&D caused by drought in this period, however.[34] Crop and livestock production loss alone was USD 49 billion in Asia, accounting for 74% of global crop and livestock production loss. This is not the full picture, as a recent FAO review showed that very few countries in Asia-Pacific have agriculture L&D information systems; data is usually only collected for natural hazards such as floods, storms and drought; and the focus is often only on damages such as hectares of paddy fields damaged or number animals died. Economic losses from disruptions due to the damages are rarely included in L&D accounting.

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[32] FAO, UNDP and UNEP. 2021. A Multi-Billion-Dollar Opportunity: Repurposing agricultural support to transform food systems. www.fao.org/3/cb6562en/cb6562en.pdf

[33] FAO. 2023. Public-Private Blended Finance Facility for Climate-Resilient Rice Landscapes. www.thegef.org/projects-operations/projects/10929

[34] FAO. 2021. The impact of disasters and crises on agriculture and food security. www.fao.org/3/cb3673en/cb3673en.pdf

To fully account for L&D in the agriculture sector, countries are using a FAO-developed methodology that considers all agricultural subsectors (e.g. crops, livestock, fisheries, aquaculture and forestry) and measures effects from a broad range of

		DAMAGE	LOSS
Crops Livestock Fisheries Aquaculture Forestry	PRODUCTION	**Pre-disaster value of destroyed stored production and inputs** ✳ Items: seeds, fertilizer, pesticides, fodder, fish, feed, stored crops, stored meat, dead animals, etc.	**Difference between expected and actual value of production and Short-run disaster expense** ✳ Items: crop yield reduction, animal production reduction, destroyed timber, lost fish capture, cost of re-planting, etc.
	ASSETS	**Replacement or repair value of destroyed machinery, equipment, tools** ✳ Items: tractors, harvesters, silos, barns, milking, machines, boats, fishing gear, pumps, aerators, etc.	

Figure 5. FAO methodology to assess damage and loss in the agricultural sectors.

disasters, from large-scale shocks to small-scale events, and from sudden-onset to slowly evolving hazards with cumulative impacts (Figure 5).[35] This strategic tool for assembling and interpreting new and existing information is helping to inform risk-related policy decision-making, planning and investment.

Conclusion

Governments, partners and stakeholders in Asia and the Pacific are increasingly committed to transforming food systems aligned with the 2030 Agenda and are investing in resilience. They are also working together to share knowledge and best practices, overcoming challenges and barriers to build food systems that can ensure food security and nutrition for all – even in the face of shocks and stressors. The APAN Forum is a critical opportunity for adaptation practitioners in Asia-Pacific and globally to reflect on regional lessons learned, to grow and strengthen partnerships, and to formulate recommendations as inputs into COP28 discussions and other global convenings, advancing transformative actions for resilient food systems.

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[35] FAO. 2021. FAO's Damage and Loss Assessment methodology to monitor the Sendai Framework's Indicator C2 and the Enhanced Transparency Framework (ETF). www.fao.org/documents/card/en/c/CB4265EN/